Master of Science

International Business

Master Thesis:

The Effect of Cultural Distance Between Acquiring and Target Companies and the Innovation Output of Acquiring Companies on Cross-Border Mergers & Acquisitions Performance.

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Abstract

This Master thesis researched the impact of Cultural Distance and Innovation Output on the performance of cross-border Mergers and Acquisitions (M&A's). To do so, a dataset of 1.337 M&As has been constructed and used to determine how the Cumulative Abnormal Returns (CARs) have been affected by Cultural Distance and Innovation Output over the short (one year) and long (three years) term. The findings, controlled for the control variables of Firm Age, number of Employees and Tobin's Q, show that Cultural Distance has a positive significant effect on short-term M&A Performance with a significance threshold of a P-value of 0,1, with every increase in Cultural Distance leading to an increase of 0,750 in CAR. In contrast, Cultural Distance has not shown to significantly impact the long-term CAR, although the effect size is larger (1,762). Innovation Output do not show to have a significant impact on M&A Performance in either the long or short term. The analysis shows that while Acquiring innovative Targets could theoretically enhance an Acquirer's technological base, this effect has not seemed to translate into significant performance gains within the observed periods and observations. The results contribute to the literature by highlighting the effects of Cultural Distance and Innovation Output on M&A Performance, with importance on short- and long-term effects. The findings mention a need for further research into potential factors influencing cross-border M&A Performance.

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1. Introduction

Mergers and Acquisitions, hereinafter M&A, are popular strategies for firms to expand their current practices. When financially possible, 'Acquirers' are looking to merge with and acquire companies called 'Targets' (Bena and Li, 2014). In recent years, technological development and globalization have contributed to the popularity of these cross-border M&As (Shimizu et al., 2004), leading up to 19.105 global acquisitions with a combined worth of $4.1Trillion in 2018 (Kiessling et al., 2021). However, most M&A's have found to be unsuccessful with only 17% of the M&A leading to create shareholder value in some way or another, while 53% managed to destroy shareholder value (Shimizu et al., 2004). One of the main and critical aspect that influences M&A Performance is distance, which comes in a variety of ways: Institutional Distance, Geographic Distance, Financial Distance and Cultural Distance, etc. (Galdino et al., 2022).

This thesis will specifically focus on the notion of cultural distance, which is the degree of how dissimilar the different cultures are in which acquirers and targets operate. In the context of M&As, Acquiring and Target companies have a need to incorporate and combine their practices, but this often leads to 'Cultural Clashes', especially when the cultural distance between the countries of the Target and Acquirer, is high (Alexandridis et al., 2015). Additionally, this thesis will look into the effect of the innovation output of the Acquiring company. M&As are often used to enhance the company's innovative capabilities to further increase M&A Performance, and can thus be seen as vital for firms who lack in house innovation (Christofi et al., 2019).

It is therefore the aim of this Master thesis, to discover the effect of the innovation output of the acquirer, and the cultural distance between Acquiring and Target companies on cross-border Mergers & Acquisitions performance.

Innovation Output

As described, there is a difference in the amount each company is able to innovate. The amount of innovation a company undertakes, determines their attractiveness of being acquired, or of acquiring another company. In this context, there are two different kinds of firms: Acquirers and Targets. Acquirers are companies who have a large patent portfolio, but low innovation output and expenses. This contrasts with Target companies, who have a slow patent output, but

high expenses in innovation (Bena and Li., 2014). By acquiring the Target company, the Acquiring company enhances the skilled workforce and enriches the technological knowledge base within the company. This acquisition forms the foundation for generating new ideas that can be rolled out to the market, thus further increasing the innovation output of the company (Sarpong et al., 2023).

There is a division and conflict in the literature however, on the impact of the innovation output between Targets and Acquiring companies and the effect on M&A performance. One stream argues that the more innovation the Acquiring firm practices, the higher the M&A Performance will be. When the Acquiring firm is innovating itself, it is more likely that there are less information asymmetries within the M&A when it attracts a Target, making it easier to absorb and exploit the newly added information. This is because both the Acquiring firm and the Target firm are familiar with outputting innovation, sharing a similar thought process and mindset. Having absorptive capacity through their own knowledge eases the integration process within the post-merger phase, leading to increased performance compared to an acquiring firm with low innovation output, where the environment is not supportive of innovative integration, and where incentive schemes and rewards do not yet foster innovative thoughts and processes (Cohen and Levinthal, 1990 ; Zahra & George, 2002). It is this view that argues that the Acquirers organic innovation output, and the acquired innovation output should be complementary to increase the M&A performance. If not, it mentions that it has the potential to overpay for the Target firm, as it is not familiar with their innovative knowledge and the extent to which it can increase M&A Performance post-Acquisition, making it harder to correctly identify potential synergy opportunities. In addition, it calls that if an innovative Acquirer mergers with an innovative Target, that the one fills in the other's gap within its patent portfolio, resulting in a more competitive positioning (K. Li, 2017).

A contrasting stream of literature opposes this view and mentions that a lower innovation output of the Acquirer will in the end enhance its M&A Performance. It mentions that the lower the innovation output of an Acquiring company is, the more likely acquiring companies would be to start acquisitions with Targets in the first place. These companies aim to make up for their lack of innovation output by acquiring targets with high innovation capabilities (Bena and Li., 2014). It is the Acquiring firms that themselves participate less in innovation, and whom technological innovation over the last year has vastly declined (Zhao., 2009). Interestingly, the more a firm practices innovation the less likely it is to start and complete a M&A with a Target

company. When it does complete a deal for a M&A, results show that during the first three years after the acquisitional bid has been accepted, successful bidders do not underperform their matching firms (Zhao., 2009). Thus, the lower the innovation output of an Acquiring company is, the more likely an Acquiring firm is to acquire a Target firm, and if this acquisition is successful, it is able to match their competition in terms of innovation (Zhao., 2009). This stream thus argues in the end that formerly less innovative bidders, would thus benefit more from these acquisitions.

In summary, acquiring another firm seems thus to be a valid option to compensate for a firm's own lack of innovation. However, a crucial question, that this thesis will try to uncover, is: Should Acquiring firms innovation output be high, reducing information asymmetries with already having the right corporate innovation culture in place, or should they aim to have a lower Innovation output before an M&A, so that they can learn more from their Target company, introducing new innovative knowledge but potentially facing more information asymmetries and risks like overpaying and selecting the wrong target firm?

Cultural Distance

Another factor that affects M&A performance, is culture. Culture, as defined by Hofstede (2011) is: 'the collective programming of the mind that distinguishes the members of one group or category of people from others.' In its famous work, the Hofstede model, it distinguishes six dimensions of national cultures that can be used to compare them: Power Distance, Uncertainty Avoidance, Individualism/Collectivism, Masculinity/Femininity, Long/Short term orientation and Indulgence/Restraint.

Culture has shown to be one of the most dominant disturbances for successful M&A integration, with up to 30% of failed integrations being blamed on culture. Culture is implicit, resilient and influences how people act and how they understand their own actions. Because of this, the cultural influences and challenges when a Target and Acquiring company come together are not limited to the following: their decision-making style, leadership style, their ability to change, how people work together and their beliefs regarding personal success (Miller and Fernandes., 2009). This difference is referred to in the literature as 'cultural clashes' (Alexandridis et al., 2015).

Consequently, as Target companies merge with Acquiring companies who are culturally different it is likely that there is a cultural clash between companies, due to the cultural distance. Resolving these clashes is crucial, since it has been seen that companies with different cultures can find it hard, and sometimes impossible, to make the right decisions quickly, and to operate in an effective manner, limiting M&A performance (Miller and Fernandes, 2009). This suggests that as the cultural distance between countries increases, there is an increase in the likelihood of cultural clashes happening between the Target and the Acquiring company, within a M&A (Beugelsdijk et al., 2017).

Culture and the distance between culture thus affects M&A performance. Especially the notion of cultural distance has found to be a significant factor in the M&A as location choice has shown to be a critical factor, leading to a high cultural distance being associated with a reduction of investment, or M&A, in a country (Beugelsdijk et al., 2017)

Moreover, cultural distance increases the need to transfer the home country practices to bring the parent company and subsidiary closer together. A greater cultural distance decreases the effective success rate of this happening in a successful manner, but firms who are able to do so and overcome the cultural distance, are supposed to benefit greatly from this (Beugelsdijk et al., 2017). There is thus a divide in the literature making the relationship between cultural distance and the integration of a foreign subsidiary through M&A complex and paradoxal:

On the one hand, cultural distance should negatively affect the degree and ease of integration due to conflicts in different organizational practices, communication, trust, and the way of doing business (Beugelsdijk et al., 2017; Miller and Fernandes., 2009).

The other side of the paradox gives a different perspective compared to the previous literature mentioned and says that the decision to invest in foreign markets, despite significant cultural distances, is frequently driven by the strategic belief that the company possesses unique competencies that, when transferred to the overseas location, can generate value, or alternatively, that they can acquire knowledge from the host country and utilize it to enhance their competencies on a global scale (Beugelsdijk et al., 2017).

The literature is thus divided if a bigger cultural distance between an Acquiring and Target company is more beneficiary for the M&A performance or, in contrast, leads to negative effects and hinders the integration between the two companies and its M&A performance.

This thesis however, will try to answer the following question: Should Acquirers target firms with a low Cultural Distance, emphasizing easier integration processes and fewer cultural clashes but potentially missing out on acquiring knowledge enhancing competencies and knowledge, or should they aim to for firms with a larger cultural distance by transferring their unique competencies to acquire these host country competencies and knowledge, and if they manage to do so successfully, benefit from this. However, this means dealing and navigating the arising cultural clashes.

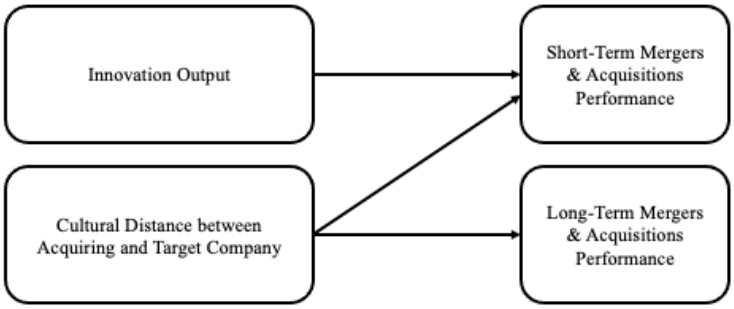
Interestingly, Alexandridis et al. (2015) do not find this paradox in their research about the impact of corporate cultural distance on mergers and acquisitions, but they find support for both sides of the paradox, within a M&A. On a short term, the previously mentioned 'cultural clashes' theory finds support in his article between deals with a large cultural distance. However, it finds that this effect is reversed on the long run: Cultural distance allows space for learning and creates value creation opportunities. It states that: 'Positive long run effects can possibly offset the short-run integration obstacles' (Alexandridis et al., 2015). This finding echoes Chakrabarti et al. (2008) who mention that M&As perform better in the long run if countries are culturally more different, and Beugelsdijk et al. (2017), who mentioned that successful transfer of home country practices to subsidiaries can mitigate the effects of cultural distance, facilitating the chance of value creation when these cultural clashes are overcome.

This leads to the main research question of this thesis:

What is the Effect of Cultural Distance Between Acquiring and Target Companies and the Innovation Output of Acquiring Companies on Cross-Border Mergers & Acquisitions Performance?

Model

The dynamics of cross-border M&A's present a complex interplay and a variety of factors, with innovation output and cultural distance emerging as important aspects that can hinder or foster cross-border M&A performance. This leads to the following model:



Model 1

This thesis investigates the impact that Cultural Distance and Innovation Output has on the performance of cross-border Mergers and Acquisition. With the help of a dataset of 1.337 M&As observations, the results show that Cultural Distance positively affects M&A Performance within short-term (one year). It's long-term implications, however, are not statistically significant. In contrast, Innovation Output has not shown the give significant results to influence M&A Performance in either the short or long term.

This thesis distinguishes itself from prior research through several different aspects. At first, it extends and increases the analysis window for CAR from a 370-day window (-5, +365) and a 1100-day period (-5, +1095), surpassing Alexandridis et al. (2015) focus of an 11-day window (-5, +5). By making use of this broader timeframe, this study allows for a broader assessment of M&A Performance over both the short and long terms. In addition, while the paper of Alexandridis et al. (2015) examined a dataset of just 220 M&As until 2012, this thesis uses a larger dataset of 1.337 M&A transactions up until 2018.

In contrast to Chakrabarti et al (2008), which mainly addresses the positive long-term outcomes of an M&A with a larger cultural distance, this thesis incorporates and seeks to see the differences between both the short and long term of M&A Performance.

At last, regarding innovation output, it differentiates itself from studies like Zhao (2009) and Bena and Li (2014) by using an updated dataset, and its focus on the direct impact of R&D expenditures on M&A Performance measured in CAR instead of broader innovation metrics.

In conclusion, this study offers a more recent and broad analysis that combines both cultural distance and innovation output on M&A Performance, that challenges existing assumptions. It provides insights which hopes to have practical relevance for managers and policy makers that are involved within cross-border M&As.

The structure of the rest of this thesis is as followed: Firstly, after the introduction, the literature review explores existing research on Cultural Distance and Innovation Output. Next, the methodology section gives a detailed description of the data that has been collected and analytical techniques that have been used. Moving on to the results, this is where the statistical findings are presented which is followed up in the discussion where the results are interpreted and theoretical and managerial implications are considered, in addition to the limitations and future research directions. At last, within the conclusion, the key insights of the study are summarized.

2. Theory

This section outlines the key theories of the study. It delves into the varies theories and how they are connected. In the end, the research questions are stated.

Cultural Distance

Mergers and Acquisitions can bring and cause large benefits for an Acquiring company but are also not limited to potential challenges. This can, according to the literature, especially be the case when cultural differences between the acquiring and target companies are high, which can lead to cultural clashes. These cultural clashes consist of a difference in values, norms and practices, that come to the fore when a target and Acquiring company merge together, and often play a critical role in the success or failure of M&A transactions. The cultural clashes can hinder the post M&A integration process and are frequently cited as a primary reason to the failure of M&As to create shareholder value (Alexandridis et al., 2015; Miller and Fernandes, 2009).

The Paradox of Cultural Distance

The literature has revealed a paradoxical challenge that cultural distance creates in the integration process. On one hand, a large cultural difference between the acquiring and target companies can disrupt integration efforts. Conflicts in organizational practices, communication, trust and business methods often emerge, hindering the smooth integration of the two companies and leading to cultural clashes (Miller and Fernandes,2009).

However, on the other hand, there is an alternative perspective that highlights potential benefits of cultural distance in M&A integration. Despite initial challenges, companies may strategically choose to invest in these foreign markets, with the strategic belief that their unique competencies, combined with local knowledge, can significantly create value. It is this perspective that suggest that cultural distance can create long-term benefits by leveraging diverse knowledge and enhancing global competencies (Beugelsdijk et al., 2017).

Short vs Long-Term

Support for both sides of the paradox are given, but also not excluded to happen both. It is not a ‘if this, then not that’ situation, but a process where Targets and Acquirers go through, which evolves over time. On the short term, cultural clashes are bound to happen due to changes and a lack of agreement in organizational practices, communication, and trust, which can lead to

affect employee morale and cooperation, which eventually resolves in reduced M&A Performance (Alexandridis et al., 2015; Stahl & Voigt, 2008).

From the view of the Institutional Logic theory, organizations are all embedded with their own specific cultural and institutional environments that shape their behaviors and practices. It is then, when companies from different cultural backgrounds begin and enter a M&A, that these logics can come into conflict with each other. Entering a Culturally distant environment through M&A means that the Acquiring company has to deal with institutional differences, where they have to navigate different legal systems, compliance requirements and social expectations (Li et al., 2020).

This all, being internal struggles like a lack of alignment in organizational practices, trust, employee morale, or external practices like dealing with institutional differences, adds to the complexity and costs of the integration process, especially on the short term.

This leads to hypothesis I a:
Hypothesis I a: On the short term, M&A performance reduces when there is a big cultural distance between the acquirer and target company.

However, on the long term, the initial negative effects of cultural distance may be offset by the benefits of learning and adaptation. Companies can gradually overcome cultural differences, leading to the creation of value through enhanced collaboration and innovation. This long-term perspective suggests that cultural distance provides valuable opportunities to grow and for development, to in the end improve M&A performance (Alexandridis et al., 2015; Chakrabarti et al., 2008).

It is here that the Resource Based View provides an explanation for a potential increase in firm performance. The RBV says that the own firm's competitive advantage lies within its own unique resources and capabilities, which can include the ability to navigate and manage cultural diversity (Barney, 1991). As mentioned earlier by Beugelsdijk (2017), firms can be able to overcome the initial integration challenges of Cultural Distance by learning and adapting to their new context. Over time, this learning and new generated knowledge becomes a unique, valuable, rare, inimitable and non-substitutable resource that contributes to a firms competitive advantage. Over time, it is firms that can successfully integrate these diverse cultural practices

that can develop unique organizational capabilities that increase their long-term performance (Barney, 1991).

This leads to hypothesis I b:
Hypothesis I b: On the long term, M&A performance increases when there is a big cultural distance between the acquirer and target company.

The hypotheses reflect the paradoxical nature of cultural distance on M&A. At first, large cultural differences can hinder and affect integration efforts, resulting in a loss of M&A Performance. However, as companies adapt and overcome these initial challenges over time, these differences could lead to valuable synergies and improved M&A Performance. The impact of cultural distance thus varies depending on the timeframe that is considered.

Innovation Output

M&As are widely acknowledged as important and critical strategies for firms wanting to grow and enhance their capacity for innovation. The idea of potential possibilities for synergies between a Target and Acquiring firm is one of the influences that typically decides to pursue a M&A. However, there are numerous aspects and conflicting literature about the M&A performance and Innovation output of the Acquiring company. Proponents of M&A transactions mention that improved M&A performance results from a lower Innovation output from the Acquiring company when entering a M&A. This leads the Acquiring firm to gaining access to more innovative technology, highly qualified employees, and valuable intellectual property. This added innovative knowledge has the opportunity to increase the development of new innovation, increasing the Acquirers innovation capabilities and competitiveness (Sarpong et al., 2023). In addition, Acquirers with lower levels of innovative activities will be more inclined to pursue M&A activities to compensate for their own lack of innovative operations by tapping into this broader pool of resources. The larger the innovation output is between the two companies, the more likely the Acquiring firm benefits for the acquisition. This is also exactly what these firms do, especially firms who let their technological innovation decline over the last years, and thus increasing the innovation output difference, are more likely to make acquisitional bids (Zhao., 2009).

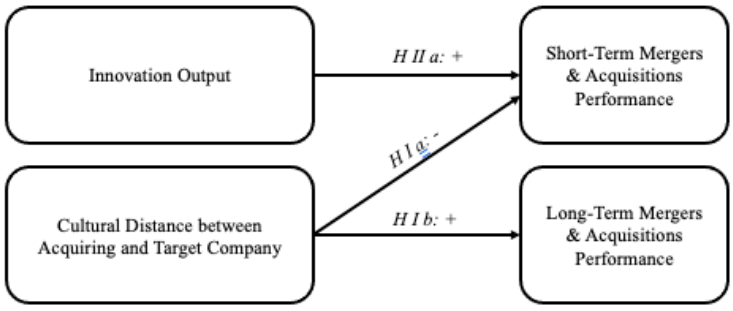
In contrast, opposing literature suggests that M&A transactions consisting of an Acquiring company with a higher innovation output results in a higher M&A performance. Arguments made are that both parties are innovative and have innovation based within their organizational culture, minimizing the chance to for information asymmetries, and thus facilitating a smoother integration process. It is the shared knowledge and background that can offer immediate synergy between the Target and Acquiring company, which can lead to increased efficiency and performance (Cohen and Levinthal, 1990; K. Li, 2017; Zahra & George, 2002).

Despite these contrasting viewpoints however, M&A performance is likely to be more enhanced when Acquiring company has a lower innovation output. While both sides present compelling arguments, it seems more likely that M&A performance is more likely to be optimized when there is a significant innovation output difference between the Acquiring and Target company, due to the fact that the acquisition of a target with a higher innovation output not only provides immediate access to resources that can be seen as valuable but can also cause long-term success and increased M&A performance (Beugelsdijk et al., 2017; Alexandridis et al, 2015). To further support the statement why I think this is more likely, we can use so called Knowledge Transfer Theory, which emphasizes how important it is to be able to transfer knowledge within organizations (Argote & Ingram, 2000). Argote and Ingram (2000) mention that the transfer of knowledge within a firm has the potential to provide the firm with a basis for a competitive advantage. It is thus then, when lesser innovative Acquiring firms merge with a Target firm, that it has the potential to significantly increase M&A Performance, with less innovative firms gaining more than firms that already have higher innovative capabilities.

This leads to hypothesis II a :

Hypothesis II a: M&A Performance increases when the Acquiring firm has a low innovation output.

All in all, this leads to the following updated model:



Model 2

3. Methods

The methods section gives more detail to the research design, data collection methods and the analytical procedures used within the study. It involves the approach taken to investigate the research questions and the methodologies. In addition, it involves a description of how the data has been collected.

Dataset

The data to create the dataset uses a variety of different sources. At first, Orbis M&A was used to gather and filter through M&A deals. Orbis M&A contains information about more than two million deals and can contain a variety of financial and firm level information. To start the dataset, I have applied the filters to search for Acquisition and Mergers that have been completed between a time period of 1/1/2000 and 31/12/2018. This time period has been chosen to allow for a three-year post M&A analysis. With this, a five-year post M&A analysis would have been possible, however due to data collection and retrieval issues, a three-year analysis has been chosen. The percentage of the acquiring stake has to be at least 51%, to receive a majority stake in the Target firm, and a maximum of 100% for a complete take over.

The Acquirer has to be listed to be able to find and retrieve the necessary financial in firm specific information and has to be listed within the New York Stock Exchange (NYSE). In addition to this, I asked Orbis M&A to add the International Securities Identification Numbers (ISIN) codes of both the Acquiring and Target company, the announced date and the completed date as these are necessary for further data collection steps.

Following this, the start of the estimation window has been calculated from the announced date (-100,-30) and the end of the event window has been calculated two times from the completed date (-5,+365) (-5,+1095) for the after one year and after three years after the acquisition.

With this information, it was possible to use LSEG Workspace to gather and load in the needed stock returns and index returns per firm specific Acquisition, based on the ISIN codes and on the start dates of the estimation window, and the completed dates of the end of the event windows.

Then, I used and ran the code which can be seen in *Appendix I* in STATA two times (as provided by the RU Library Team), to retrieve the CAR's for both the (-5,+365) (-5,+1095) dates.

The next step was to retrieve the Acquisition R&D spendings, Tobin's Q ratio, firm size and firm age through LSEG Workspace with the use of the companies ISIN numbers.

The final step in completing the dataset was to calculate the cultural distance using the Kogut and Singh Index, using Hofstede's scores on the six different dimensions of culture. As of my knowledge, there is no publicly available index and therefor I have run the calculations myself with the help of Hofstede's publicly available scores (Hofstede, 2022), with the formula that is explained below, per combination of Acquiring and Target nation. Then, the dataset was further refined by filtering all the deals on cross-border deals, and by removing the deals where there was no data or information retrieved, and where the CAR was exactly 0,0. This has been done since it is more likely that this has resulted in a calculations error, than an actual CAR of 0,0. In the end, the dataset consists of 1.337 unique M&A deals, without any missing's.

The companies within the sample mainly consist of US Acquiring companies (77,9%), followed by Ireland (5,4%) and Canada (2,92%). Table 1 gives an overview of the top 5 country combination of Acquiring firms and Target firms within the sample, and a more complete table is shown within *Appendix II*:

Acquiring Country	Target Country	Count	Percentage
US	GB	259	19,4%
US	CA	156	11,7%
US	DE	95	7,1%
US	FR	72	5,4%
US	NL	52	3,9%

Table 1: Overview Acquiring and Target nations

The most represented Acquiring company within the sample is Accenture PLC with 46 deals, which is in stark contrast with the most represented target, Schlage Lock De Colombia, with 2 deals. All in all does the data show that a significant portion of the deals involve US companies as Acquirers, which is as to be expected from making use of the New York Stock Exchange. Despite the dominance of US acquirers, target companies appear to be way more spread across a very diverse set of countries.

For the analysis of the results, a significance level of 0.1 will be used to accept or reject the null hypothesis. This threshold, although not standardly used like the 0.05 threshold, has the potential to increase the likelihood of a Type I error (incorrectly rejecting the null hypothesis), but decreases the opportunity and risk for a Type II error (failing to reject the null hypothesis while it is actually true). For this research, I am willing to make this trade-off, while still allowing for statistical meaningful findings that can support further robust findings that can support a further conclusion of the M&A deals analyzed.

Unit of Analysis

The unit of analysis are cross-border M&A deals, that involve Target and Acquiring companies from different cultural backgrounds and innovation outputs. For this research, companies listed on the New York stock exchange will be used, specifically looking at those Acquiring and Merging with firms in other countries.

Innovation Output

Innovation output will be measured through the R&D spending of the acquiring companies. R&D spendings is able to give an indication in the amount of innovation activities within a company, where companies with a high R&D spend are more likely to have a greater innovation output compared to companies with a low R&D spending. It has been shown in research of Widianingsih et al. (2023), that a higher R&D Spending, positively influences a firms innovation output, resulting in this measure being chosen. Unfortunately, due to the Target companies not being listed, or being private, it is not possible to gather the R&D Spendings of the target companies, and thus these have been left out of the analysis.

M&A Performance

The way this thesis will measure M&A Performance, will be through the financial measure of the Cumulative Abnormal Returns, or CAR. The CAR is the ‘Sum of the differences between the expected return of a stock and the actual return’ (NASDAQ, 2018). This means that this thesis will entail an event study. As per MacKinlay (1997) an event study follows the following structure: Frist, the event date is specified, second the estimation window is decided in which the normal returns are calculated, and at last, the abnormal return of a firm around the event date must be calculated. Figure 1 below gives an illustration of the event study timeframe that is used.

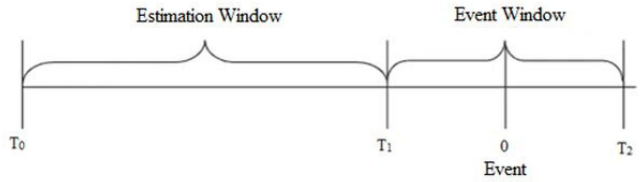


Figure 1: Illustration of the event study timeframe (Dzar et al., 2023).

The event date this thesis will use is the day of announcement of a M&A. To calculate the normal returns in the estimation window, a time period of 100 days before the announcement of the M&A is chosen, until 30 days before the announcement of the M&A (-100, -30). It is within this period that no event is or has taken place, and therefore the normal returns can be calculated. The formula to calculate this is with the help of the so-called market model, which is a widely used method in event studies. It follows the following equation, presented by Muller (2023):

$$Ri,t = \alpha i + \beta i * Rmt + \varepsilon i,t$$

- $R_{i,t}$ is the return of stock i at time t.
- α_i is the intercept term, representing the average stock return that is not explained by market movements.
- β_i is the beta coefficient, representing the sensitivity of the stock return to the market return.
- R_{mt} is the market return at time t.
- $\varepsilon_{i,t}$ Represents firm specific factors not captured by the market return.

This, in turn, is used to calculate the Abnormal Returns around and containing the event date. An 370 -day (-5, +365) and a 1100 -day (-5, +1095) event window will be used, to see the acquirers CAR over deal announcement based on the market model on both the short and long term. The time periods chosen will be further highlighted below. The Abnormal Return, is calculated as followed, also presented by Muller (2023):

$$ARi,t = Ri,t - (\alpha i + \beta i * Rmt)$$

In the end, the CAR for i is the sum of all abnormal returns within the event window, which in this instance is (-5, +365) and (-5, +1095) for the 370 day and the 1100-day event windows. To measure CAR, the following formula is used:

$$CAR = \sum_{t=1}^{t=2} ARi, t$$

In the end, the lower the CAR, the lower the M&A Performance is, indicating that the stock's performance has been worse than expected in response to the event (M&A), and vice versa.

Time affects have to be taken into account due to hypothesis I a and I b, however, no true consensus about the time period for measuring M&A Performance for long and short term has been reached in the past. Over time, researchers have used two years, three years, five years, seven years and even 10 years after the deal completion (Thanos & Papadakis, 2012). This thesis will take time periods into account for the hypothesis I, where the short term is based upon one year after the M&A has taken place, while the long term is based upon three years after the M&A has taken place. Even for the short term, this is quite long since for an event study, the event window usually consists of 11 days (-5, +5) or 7 days (-3, +3). However, the one-year period is chosen due to the fact that it would be unlikely to capture the true cultural distance effect only after 3 or 5 days. As per Engert et al. (2019), Cultural issues can arise rather quickly, but as taken from the case studies included, it takes a little bit before the effect of the cultural issues and clashes truly come to the fore, and for eventual unhappiness and affects to take place (like employees deciding to leave the company). This effect would be unlikely to be fully captured just 5 days after a M&A. In research, this is also called the honeymoon effect, the hailing of advantages of a M&A during the initial and early stages within an M&A, and the hangover effect, which is decline of employee's satisfaction that eventually actually happens after a deal (Lattuch & Ruppert, 2021).

CAR can be used to gain insights into the M&A performance over a three-year period by providing insights into the market's reaction to the M&A announcement and its impact on the acquiring and targets companies stock prices over time.

By assessing the CAR over a one-year period, it provides a short-term overview of the M&A performance relatively soon after announcement date post honeymoon phase. By examining the CAR over a three-year period, the overall trend in the stock price can be observed and gives a more comprehensive perspective of M&A performance over a longer time frame.
A positive and significant CAR suggest that the market has received the M&A as successful, and thus the M&A Performance will have gone up.

Cultural Distance

One way of measuring the cultural distance between countries, and that will be used in this thesis, is via the Kogut and Singh Index. This index considers the scores of Hofstede on all different dimensions: 1) Power Distance, 2) Individualism, 3) Motivation towards Achievement and Success, 4) Uncertainty Avoidance, 5) Long Term Orientation and 6) Indulgence. The input for the algebraic formula mentioned below, goes as followed:

1. Hofstede's scores on all six dimensions of home and host countries
2. The difference in host and home countries scores
3. The squared differences in host and home countries score
4. Divide the squared differences by the variance of the Hofstede's scores, per dimension
5. Sum up the scores for each dimension and divide by 6.

$$CD_j = \sum_{i=1}^{4} \{(I_{ij} - I_{iN})^2 / V_i\} / 4$$

The above formula can be explained as followed: CD_j stands for the cultural differences between a host and a home country. I_{ij} is the host countries score on dimension Y, while I_{iN} the score of the home country is on dimension Y. V_i is the amount of Variance of the score of dimensions Y (Drogendijk and Slangen, 2006).
From this, a score can be computed making it able to see the computed cultural differences between countries. The closer the score is to 0, the less Cultural Distance there is between the Acquiring and Target company. The Hofstede's scores have been found through Hofstede's website (Hofstede, 2022).

Control Variables

Tobin's Q

Tobin's Q will be one of the control variables used for M&A Performance. Tobin's Q is a ratio that expresses the connection between a market valuation of a firm, and its intrinsic value. A low Q ratio is found to be between 0 and 1, meaning an undervalued stock. A Q ratio higher than 1 indicates an overvalue of stock (Hayes, 2021). The following formula will be used to calculate Tobin's Q:

$$\text{Tobin's Q} = \frac{Total\ market\ value\ of\ Firm}{Total\ asset\ value\ of\ Firm}$$

A paper by Servaes (1991) has researched the relation between takeover gains and the Q ratio between Targets and Acquirers, finding that the lower the Q ratio of the Targets is and the higher the Q ratio of the Acquirer is, the larger the total returns are. It is the Acquirers that have high Q ratios, which have significant abnormal returns when taken over a Target company compared to low Q ratio Acquirers (Lang et al., 1989).

Firm Size

Firm size will be another control variable used for M&A Performance and will be measured by using the amount full time permanent employees. It is found that the larger the size of the Acquirer company, the better the long-term M&A performance is (Zhao et al., 2019).

Firm Age

Firm age will be the last control variables used for M&A Performance. It is found that older firms are better at making use of their experiences and therefore, have a higher post M&A performance compared to younger firms (Liou & Rao-Nicholson, 2019). This control variable will be measured by taking the year the company is founded in, and subtracting this from the year of when the M&A took place.

4. Results

This section represents the empirical findings of the research, including data and statistical analysis. It begins with a representation of the data collected, followed by an analysis of the results. All SPSS output with full numerical are put in the Appendix.

Descriptive Statistics

Within Table 2, the descriptive statistics are shown. As mentioned above, the total amount of Unique M&A deals is 1.337 within the dataset, with no missing's. After one year (CAR 5,365), the CAR mean is -4,4, and after three years, the CAR mean (CAR 5,1095) becomes -19.1. For cultural distance the mean has shown to be 6.7, and rages from a very minor distance of 0.12, to a highly cultural distance of 28.6. The R&D spendings also show a very broad range, with some companies within the dataset spending nothing on Research and Development, while the most spend is 7.872.000, with a mean of 62.5656,77. The greatest number of employees a company has is 2.100.000, and the oldest company within the dataset was 183 years old at the time of the completion of the M&A.

All variables are metrically scaled, however one main thing that is noticeable from the descriptive statistics is that some variables (R&D Spendings, Tobin's Q, and Employees) fall outside the normality range of a Skewness of -/+3 and a Kurtosis of -/+3. The CAR's values also fall out of this range, but because a CAR can be negative and is my dependent variable, these do not come into consideration of a log transformation, in contrast to the other mentioned variables, who do. A log transformation is used to stabilize highly skewed data and transforms the data to make it more conform the assumptions that require normality. The new Descriptive Statistics, with the transformed data, can be seen in Table 1. The Descriptive Statistics pre Log's can be found within *Appendix III a.*

Descriptive Statistics									
	N statistics	**Min. Statistic**	**Max. Statistic**	**Mean Statistic**	**Std. Dev. Statistic**	**SK Statistic**	**SK Std. Error**	**KT Statistic**	**KT Std. Error**
CAR 5,365	1337	-1438,624	694,110	-4,444	94,758	-2,372	0,067	42,834	0,134
CAR 5,1095	1337	-4160,523	2024,066	-19,079	263,437	-2,773	0,067	49,594	0,134
Cultural Distance	1337	0.124	28,581	6,720	6,139	1,136	0,067	1,380	0,134
R&D_LOG	1208	5,71	15,88	11,868	1,850	0,121	0,070	-0,260	0,141
Tobin's Q_LOG	1337	-0,33	2,48	0,615	0,404	0,822	0,067	1,237	0,134
Employee_LOG	1337	4,23	14,56	9,909	1,411	-0,82	0,067	0,180	0,134
Firm Age	1337	1	183	50,30	38,994	0,616	0,067	-0,554	0,134
Valid N (Listwise)	1337	-	-	-	-	-	-	-	-

Table 2: Descriptive Statistics with LOGS

Correlation

Within *Appendix III b*, the correlation matrix for all the variables is shown. The main results consist of the fact that the Pearson correlation between CAR short term (-5, +365) and CAR long term (-5, +1095) is high (Pearson correlation: 0.960) and significant (P-value: <0.001), suggesting a rather strong positive relationship between short-term and long-term M&A Performance. The correlation between Cultural Distance and CAR short term is significant at the p<0.1 level (Pearson correlation: 0,046, P-value: 0,096), however shows a weak positive relationship between the two factors. The correlation between Cultural Distance and CAR long-term is shows a Correlation of 0.039 but shows an insignificant relationship due to the P-value exceeding the 0.1 threshold (P-value: 0.150), indicating no meaningful relationship between Cultural Distance and long-term M&A Performance. However, Cultural Distance has significant, although rather weak correlation with Employees (Pearson Correlation: -0,074; P-value: <0,001) and Firm Age (Pearson Correlation: -0,069; P-value: 0,011), suggesting that firms with a higher Cultural Distance tend to have fewer employees, and are relatively younger. Furthermore, R&D Spendings has a strong and positive Correlation with Employees (Pearson Correlation: 0,780; P-value: <0,001), and a low but positive Correlations with Tobin's Q

(Pearson Correlation: 0,128; P-value: <0,001) and Firm Age (Pearson Correlation: 0,231; P-value: <0,001).

Moving to the Control Variables, Number of Employees has a weak negative correlation with Tobin's Q (Pearson Correlation: -0,086; P-value: 0,002), but a moderate and positive correlation with Firm Age (Pearson Correlation: 0,311; P-value: <0,001), and Tobin's Q shows a significant Correlation with Firm Age (Pearson Correlation: -0,121; P-value: <0,001).

Multicollinearity and Homogeneity

The variables have also been tested for Multicollinearity, shown in Appendix III c and Homogeneity which is shown in Appendix III d. To test for Multicollinearity, the rule of that the Tolerance should be higher than 0,25 to avoid Multicollinearity, and if it is below 0,25, there is a chance of Multicollinearity has been used. In addition, the VIF value has also been controlled with a threshold of 0,10. As can be seen in the Appendix, all Multicollinearity test were passed within the analysis.

For Homogeneity, the P-Plots are used and analyzed. As can be seen in the Appendix III d, these plots all show accurate homoscedastic predictions with a few, but no data infringing outliers.

Regression Model

Table 3 shows the Multiple Linear Regression Model run. Model 1 shows only the Control Variables on CAR short-term, while Model 2 shows only the Control Variables on CAR long-term. Model 3 shows CAR short-term with the Control Variables and Cultural Distance. Model 4 shows CAR long-term with the Control Variables and Cultural Distance. Models 5 and 6 follow a similar pattern, however here Cultural Distance is changed for R&D Spendings. The numbers stated are the Unstandardized Beta coefficients, with the Standard Error in-between brackets. Significance levels are indicated with the stars.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Cultural Distance			**0,750***	1,762		
			(0,425)	(1,181)		
R&D Spendings					-1,859	-6,933
					(2,533)	(7,093)
Tobin's Q_LOG	0,354	4,795	0,096	4,191	2,187	12,296
	(6,472)	(17,996)	(6,469)	(17,993)	(7,086)	(19,838)
Employees_LOG	-0,237	-1,228	-0,054	-0,799	2,256	7,800
	(1,940)	(5,394)	(1,941)	(5,399)	(3,401)	(9,521)
Firm Age	0,099	0,277	0,106	0,292	0,062	0,182
	(0,070)	(0,196)	(0,071)	(0,196)	(0,076)	(0,212)
Constant	-7,277	-23,440	-14,313	-39,971	-8,693	-30,250
	(19,481)	(54,167)	(19,869)	(55,264)	(21,029)	(58,876)
R-Square	0,002	0,002	0,004	0,003	0,001	0,002
N	1337	1337	1337	1337	1208	1208

*** is significant at the 0,01 level

** is significant at the 0,05 level

* is significant at the 0,1 level

Table 3: Regression Models

Model 1

Model 1 shows a linear regression to examine the effect of the control variables on the cumulative abnormal returns in the short-term period (-5, +365). As seen, the control variables added are *Tobin's Q_LOG, Number of Employees_LOG*, and *Firm Age*. The regression results for Model 1 show that Tobin's Q is not significant, although having a positive Beta Coefficient, it does not reach the 0.1 significance threshold. In addition to this, the other control variables also have not shown to stay under the 0.1 significance threshold and can therefore be called insignificant; Tobin's Q, the amount of Employees and Firm Age do not affect the cumulative abnormal returns on the short term, post event.

The model shows an R-Squared value of 0,002, meaning and indicating that only 0,2% of the variance in the short term CAR, is explained by these control variables. The F statistic of this

model is 0,702, with a P-value of 0,551 which suggests that the control variables do not provide a significant explanation for the short term CAR, which underlines the need for additional explanatory variables to increase the understanding of the factors that influence CAR short-term.

Model 2

Model 2 adds to the analysis by including the long-term impact (-5, +1095) of the same, earlier mentioned control variables on CAR. The goal here is to find out if the same variables that were insignificant in the short term, show any significant effects over a longer period. The outcome of this regression also show that Tobin's Q has no significant effect on the cumulative abnormal returns (Unstandardized B coefficient: 4,795; P-value: 0,790). In addition, the number of Employees also show an insignificant effect (Unstandardized B coefficient: -1,228; P-value: 0,820) just as Firm Age (Unstandardized B coefficient: 0,277; P-value: 0,158). Just like the short term, the long-term CAR underlines the finding that Tobin's Q, the number of Employees and the Firm age show no significant impact.

The models R-Squared is identical to Model 1, with a score of 0,002 indicating that these control variables explain only 0,2% of the variance in the long-term CAR. The F-statistic of this model is 0,685 with a P-value of 0,561, again underlining the lack of the collective significance of these variables in explaining the long-term CAR. Thus, these results suggest that similar to Model 1, that the control variables in this model do not significantly influence the long-term CAR, needing the addition of other potential predictors in further analysis.

Model 3

In model 3 Cultural Distance is added as an additional explanatory variable to uncover its impact on the short-term CAR, in addition to the control variables. Adding Cultural Distance hopes and aims to explore whether differences in cultural normal and practices between the acquiring and target firms influence short-term market performance. The regression output shows that Cultural Distance has a positive significant effect on short-term CAR (Unstandardized B coefficient: 0,750; P-value: 0,078), indicating significance at a 0.1 level. This suggest that the greater and larger the cultural distance is between the Acquiring and Target company, leads to a higher CAR for the short-term.

Tobin's Q (Unstandardized B coefficient: 0,750; P-value: 0,988), the number of Employees (Unstandardized B coefficient: -0,054; P-value: 0,978) and the Age of the Firm (Unstandardized B coefficient: 0,106; P-value: 0,134) do not show significant affects at a 0.1 level.

The R-Squared for this model is 0,004, indicating a slight increase in the explanatory power compared to Model 1 (0,4% compared to 0,2%), but is still relatively low. The overall models F statistic is 1.307 with a P-value of 0,265, suggesting that although cultural distance has a significant impact on the CAR short-term, the collective explanatory power of all included variables remains limited.

Hypothesis

This finding contradicts with hypothesis I a:

On the short term, M&A performance reduces when there is a big cultural distance between the acquirer and target company.

The results have shown that on the short term, M&A performances increases when there is a big cultural distance between Acquiring and Target company.

Model 4

Model 4 uncovers the long-term impact of Cultural Distance on CAR, three years after the event has taken place. This model helps to see if the effects of cultural distance observed in the short term, persist or change over a longer period.

The results show us that Cultural Distance does not have a significant P-value over the long-term on CAR (Unstandardized B coefficient: 1,762; P-value: 0,136). In addition, Tobin's Q (Unstandardized B coefficient: 4,191; P-value: 0,816), the number of Employees (Unstandardized B coefficient: -0,799; P-value: 0,882) and the Firm Age (Unstandardized B coefficient: 0,292; P-value: 0,137) do not show significant effects again.

The R-Squared for this model is 0,003, indicating that the variables included only explain 0,3% of the variance on the long-term CAR, which is the smallest increase of 0,1% over Model 2. The F statistic for this model results in 1.071 with a P-value of 0,370, suggesting a low collective explanatory power. While Cultural Distance has showed significance in the short-term, its long-term impact is less clear and has shown to be insignificant.

Hypothesis

This finding contradicts with hypothesis I b:

On the long term, M&A performance increases when there is a big cultural distance between the acquirer and target company.

The results have shown that on the long term, Cultural Distance shows no significant effect on M&A Performance.

Model 5

In model 5, we shift our attention to the inclusion of the variable R&D Spendings on the short term CAR, alongside the control variables. The regressions shows that R&D Spendings show no significant effect on the short-term CAR (Unstandardized B coefficient: -1,859; P-value: 0,463). In addition, Tobin's Q (Unstandardized B coefficient: 2,187; P-value: 0,758), the number of Employees (Unstandardized B coefficient: 2,256; P-value: 0,507) and the Firm Age (Unstandardized B coefficient: 0,062; P-value: 0,414) do not show significant effects again.

This Model's R-Square indicates to be 0,001, with an F statistic of 0,356 and a P-value of 0,840. The findings underline a limited and insignificant impact of R&D Spendings on CAR, again highlighting further exploration of other potential factors.

Hypothesis

This finding contradicts with hypothesis II a :

M&A Performance increases when the Acquiring firm has a low innovation output

The results have shown that a larger innovation output shows no significant effect on M&A Performance.

Model 6

At last, and although not initially hypothesized, the data is there to see how R&D Spendings affect M&A Performance for the long term. To see if this has led to any unexpected results or further additions, I have added it to the regression analysis so tee if the effects of R&D Spendings observed in the short term, change within a larger timeframe.

However, the results show paint a similar picture, with R&D spendings showing an insignificant relationship with CAR over a long-term period (Unstandardized B coefficient: -6,933; P-value: 0,328). In addition, just like the previous Models, all the control variables show

up to be insignificant with Tobin's Q (Unstandardized B coefficient: 12,296; P-value: 0,535), number of Employees (Unstandardized B coefficient: 7,800; P-value: 0,413) and and the Firm Age (Unstandardized B coefficient: 0,182; P-value: 0,389) showing to be above the significance threshold of 0.1.

The R-Square of this model is 0,002, with an F statistic of 0,481 and a P-value of 0,750. The findings underline a limited and insignificant impact of R&D Spendings on CAR, again highlighting further exploration of other potential factors.

Table 4 shows a summary of the hypotheses and results.

	Hypothesized	**Unstandardized B**	**P-Value**	**Outcome**
H I a	-	+0,750	0,078	Rejected, significant but positive
H I b	+	+1,762	0,136	Rejected, Insignificant
H II a	+	-1,859	0,463	Rejected, Insignificant

Table 4: Summary of results

5. Discussion

This section interprets the results, discussing its implications and limitations. It summarizes the key findings and puts these in relation to the literature. It proposes practical and theoretical implications of the results, and limitations and possible further research of the study are mentioned. The findings of this study highlight the relationship between Cultural Distance and R&D spending, measured by Cumulative Abnormal Returns over both the long and short term, by using a dataset containing 1.337 cross-border M&A deals.

Cultural Distance

Following from the results, Cultural Distance has a significant effect on the short-term CAR. Every increase of one in Cultural Distance, means that the CAR increases by 0.750. This means that we can reject the null hypothesis, and say that at a significance level of 0.1, Cultural Distance, on the short term, has a positive effect on their CAR, and thus M&A performance increases, while being controlled for by the control variables. This is in contrast what was hypothesized in Hypothesis I a, which has to be rejected:

Hypothesis I a: On the short term, M&A performance reduces when there is a big cultural distance between the acquirer and target company.

It thus means that from this sample used, the effect of cultural clashes has not been substantial enough to decrease M&A performance, and that conflicts in the organization, communication and trust do not have the large negative effects to disturb the integration of the two companies to the degree of where it decreases M&A Performance. However, on the contrary, it has shown that the risks these firms have taken to perform a M&A in a culturally distant country has shown to pay off, with the knowledge that they possess unique competencies that, when transferred, has generated value for them. In addition, it is firms with acquisitional experiences that may have gained more experience when it comes to managing cross-border M&As in the past, and the cultural challenges that come with it. They are better at codifying the potential advantages early in the integration process, and they can benefit from this (Reus and Lamont, 2009).

In contrast, the results did not find a significant effect for Cultural Distance on the long-term CAR , while being controlled for by the control variables. This means that we must accept the null hypothesis, which is that the Cultural Distance does not have an effect on the Cumulative Abnormal Returns in the long-term. This insignificant effect had a P-value of 0.136, slightly above the 0.1 threshold.

Unfortunately, due to the slightly insignificant P-value, hypothesis I b indicates that the long-term implication of cultural distance are more complex, and must be rejected:

Hypothesis I b: On the long term, M&A performance increases when there is a big cultural distance between the acquirer and target company.

This result indicates that the initial benefits that come with the cultural diversity can diminish over a longer period of time. This can for example happen because the organizations standardizes its practices and therefore reduces the unique advantages initially gained with the cultural differences. Further research could look into this.

Innovation Output

Following from the results, it is shown that within the observations within the dataset, the amount of Research and Development spendings does not have a significant influence on the cumulative abnormal return of the company, while being controlled for by the control variables. However, as seen from the results output, the unstandardized B showed up as being negative (-1.859), meaning that every increase in R&D spendings, the company decreases M&A Performance after a M&A has taken place. Due to the insignificance of the results, we must accept the null hypothesis meaning that we reject hypothesis II a:

Hypothesis II a: M&A Performance increases when the Acquiring firm has a low innovation output

A crucial aspect of the relationship between innovation and M&A performance is the integration process. If the post-integration is managed in a bad way, which is a challenging component, it can often wipe out any potential gains initially thought (Cassiman et al., 2003). It is the misalignment between the innovation strategies of the Acquiring and target firms that can hinder the benefits which might be expected (Puranam et al., 2009). It is the factor 'integration process', that might be a better way to understand what the effect of innovation is on M&A Performance, as Innovation output seems to cover this area in insignificant manner. This can be looked into in further research.

At last, within the results section I have also added the inclusion of the effect between R&D spendings and CAR after three years. This has not been hypothesized within the earlier chapters, however these results, similar to R&D Spendings on the short term, has also shown the be insignificant, while being controlled for by the control variables.

Main Research Question

To answer the main research question, which is stated to be: 'What is the effect of Cultural Distance and Innovation output between Acquiring and Target companies on cross-border M&A Performance', this master thesis finds that it is Cultural Distance that positively affects short-term M&A Performance, but its impact on the long run remains unclear and insignificant. Meanwhile, Innovation Output has not shown to have a significant effect on M&A performance. The findings highlight the importance of considering the short- and long-term impacts on cross-border M&A's, and suggest that the benefits of cultural diversity may be more immediate than thought.

Theoretical Implications

The findings overall contribute to the literature by highlighting and underlining the role of Cultural Distance on M&A Performance which is complex. In contrast to prior studies mentioned, which suggest that cultural clashes negatively impact M&A outcomes within the short-term, this master thesis has shown that cultural diversity can increase short term M&A Performance. The outcomes align with the view that diverse cultural backgrounds can foster innovation and creativity and benefits from transferring their knowledge enhancing competencies immediately. The lack of any long-term effect or significance within the results

suggests that standardization processes, might neutralize the short-term gains over the longer term.

From a theoretical perspective, the results of this thesis challenge a negative view of Cultural Distance within the M&A context, and support and acknowledges the potential benefits and challenges. The findings for example, are consistent with the Resource-Based View (RBV), which states that a firm's own resources and know how can provide itself with a competitive advantage, also abroad. Cultural diversity, or the knowledge and experience to handle it effectively, can thus be seen as a valuable resource for a firm to use, to increase its capabilities and performance within the short-term.

Innovation Output being insignificant on M&A Performance challenges the view that Acquirers whom have a smaller R&D output, benefit significantly from acquiring Target companies. The results suggest that just acquiring these targets is insufficient to increase M&A Performance and suggest that the integration and utilization phase could be more critical for realizing an increased M&A Performance, which could be looked into in further research.

Managerial Implications

For managers, these findings suggest that Cultural Distance should not be viewed at as a challenge alone, but as an opportunity to increase short-term M&A Performance. The diverse perspectives and practices a Target from a culturally diverse country could bring, can be extracted to drive performance gains. Managers could think of setting up multi-cultural teams or cross-border training programs to make use of Culturally different views. However, these should be carefully managed to sustain long-term benefits. It should be the managers aim to create an organizational culture that respects and integrates cultural identities, also after the short-term. In addition, they should be wary to not standardize the practices too much, as it could lead to the potential of eroding the added benefits the cultural differences bring to the company.

For Innovation Output, managers should not only rely on the innovation a Target company can bring, but they should carefully target a company with whom they can seamlessly integrate their strategies to transfer and apply their capabilities to increase M&A Performance. Managers could focus on a more supportive innovation integration by fostering a culture that encourages to experiment and innovate and is also awarded with aligned incentives and rewards by doing so.

Limitations and Future Research

A limitation of this studies is that it only uses 1.337 M&A deals. Although not an insignificant amount, it might struggle to capture a full range of all the industries, sectors, and regions. In addition, the usage of the New York Stock Exchange market could give this research a Western bias, not including many African or Asian countries partaken within a M&A in the dataset. Future research could include a more diverse and extensive dataset, using a variety of different stock exchanges to make sure that the results are more generalizable and that the findings are more robust.

In addition, the study uses the Kogut and Singh index to account for Cultural Distance. Although widely used in past research, the index is not without its critiques. Konara and Mohr (2019) for example, call the Kogut and Singh Index outdated and call that capturing the squared cultural distance is misleading. They propose that the Euclidean distance is the 'correct' form to measure distance. Future research could take this in account and calculate a variety of results using the Kogut and Singh index, the Euclidean distance, and other ways to measure Cultural distance. By taking these together, results will show the differences between techniques, and if this affects the outcomes.

At last, the study focusses on a fairy limited set of variables, that, as seen through the R Square, do not come close in explaining the whole model. Future research should include a broader range of variables to understand the nature of M&A performance even better.

6. Conclusion

This Master thesis has provided insights into the relationship between Cultural Distance on M&A performance, and Innovation output on M&A Performance, focusing on both the long- and short-term effects, to answer the main research question:

What Is the Effect of Cultural Distance Between Acquiring and Target Companies and the Innovation Output of Acquiring Companies on Cross-Border Mergers & Acquisitions Performance?

The main key finding is that cultural distance positively influences short-term M&A Performance, which challenges a stream of literature that the more cultural distant a Target is from an Acquirer, the more integration difficulties arise (cultural clashes), leading to a decline in M&A Performance. Instead, this thesis agrees with the stream of literature that mentions that cultural diversity leads and facilitates short-term synergies and value creation, potentially due to the transfer of their unique competencies and knowledge abroad.

This thesis has, in contrast to hypothesized, not found a significant impact of cultural distance on long-term M&A performance. Despite the larger effect size observed within the analysis, the results have not found to be significant. This finding indicates that while cultural distance can provide immediate benefits, its long-term implications could be more complex.

The analysis of Innovation Output has shown to not have any significant impact on M&A performance, both on the long and short term. This suggest that the hypothesized benefits of acquiring Targets like the increased access to technological capabilities and increased innovation outputs, while the Acquiring company does not spend a lot on R&D, do not significantly improve the M&A Performance.

To conclude, this Master thesis has highlighted the importance of considering both Cultural Distance and Innovation Output in the context of cross-border M&A's. While Cultural Distance can increase short-term performance, its long-term effects remain uncertain. Innovation Output, however, does not significantly influence M&A Performance, potentially suggesting that M&A Performance relies on a broader set of factors. These findings highlight the complexity that comes with M&A dynamics and understanding and improving M&A performance, but show that, for the short-term, Cultural Distance does not hinder success.

Appendix

Appendix I:

```
clear all
set more off
cd "I:\Schoolthesis\Final"
import excel "I:\Schoolthesis\Final\Excel cross border.xlsx", sheet("Returns 1") firstrow clear
describe
destring stock_return index_return, replace force
save returns1.dta, replace
import excel "I:\Schoolthesis\Final\Excel cross border.xlsx", sheet("Returns 2") firstrow clear
describe
destring stock_return index_return, replace force
save returns2.dta, replace
import excel "I:\Schoolthesis\Final\Excel cross border.xlsx", sheet("Returns 3") firstrow clear
describe
destring stock_return index_return, replace force
save returns3.dta, replace
import excel "I:\Schoolthesis\Final\Excel cross border.xlsx", sheet("Returns 4") firstrow clear
describe
destring stock_return index_return, replace force
save returns4.dta, replace
append using "returns1.dta"
append using "returns2.dta"
append using "returns3.dta"
save returns.dta,replace
import excel "I:\Schoolthesis\Final\Excel cross border.xlsx", sheet("Deal dates") firstrow clear
describe
save "deal_dates.dta", replace
bys ID: gen sub_id = _n
bys ID: egen max_number_events = max(sub_id)
order sub_id max_number_events
save deal_dates_temp, replace
duplicates drop ID, force
keep ID max_number_events
merge 1:m ID using returns
keep if _merge==3
drop _merge
expand max_number_events
bys ID Date: gen sub_id = _n
sort ID sub_id Date
order sub_id
merge m:1 ID sub_id using deal_dates_temp
keep if _merge==3
drop _merge max_number_events
egen id = group(ID sub_id)
order id
drop sub_id
gen dummy_announce_before_date = (Announced_date<Date)
bys id: g j = _n if Date < Announced_date
```

```
bys id: egen N = max(j)
replace j = j - N - 1
bys id: replace j = _n if Date > Announced_date
replace j = j - N - 1 if Date > Announced_date
replace j = 0 if Date == Announced_date
order id- Announced_date j dummy_announce_before_date
gen dummy_complete_before_date = (Completed_date<Date)
bys id: g k = _n if Date < Completed_date
bys id: egen M = max(k)
replace k = k - M - 1
bys id: replace k = _n if Date > Completed_date
replace k = k - M - 1 if Date > Completed_date
replace k = 0 if Date == Completed_date
gen estimationwindow= inrange(j,-100,-30)
gen eventwindow = inrange(k,-5,5)
gen estimationwindow_day = j if estimationwindow
gen event_window_day = k if eventwindow==1
bys id: gen subid = _n
order id subid
bys id: egen count_event_days = count(event_window_day)
bys id: gen max_days_in_window = count_event_days if subid==1
tab max_days_in_window
qui su count_event_days
keep if count_event_days==r(max)
egen id2 = group(id)
drop id
rename id2 id
gen AR=.
gen alphas=.
gen betas=.
su id
local maxid = r(max)
forval i=1/`maxid' {
di "Regression " `i' " of " `maxid' " ... To stop click Break button on top of this window"
cap qui reg stock_return index_return if estimationwindow==1 & id==`i'
cap replace AR = stock_return - _b[_cons] - _b[index_return]* index_return if
eventwindow==1 & id==`i'
cap replace alphas = _b[_cons] if estimationwindow==1 & id==`i'
cap replace betas = _b[index_return] if estimationwindow==1 & id==`i'}
bys id: egen CAR=sum(AR) if eventwindow==1
save "CARs_complete_dataset_kleine window.dta", replace
keep if event_window_day == 0
save "CARs_one_Car_per_deal_kleine window.dta", replace
export excel using "I:\Schoolthesis\Final\CAR kleine window.xlsx", firstrow(variables) replace
```

Appendix II:

Number of Deals	Column Labels																																																							
Rowlabels	MA	AR	AT	AU	BE	BG	BR	CA	CH	CL	CN	CO	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HK	HR	HU	ID	IE	IN	IT	JP	KR	LT	LU	MX	MY	NL	NO	NZ	PE	PH	PL	PT	RO	RS	RU	SE	SG	SI	SK	SV	TH	TR	TT	TW	US	UY	VE	(leeg)	Total
AU																			1	2															1		1																	2				7
BE																																								1														1				2
BR										1																							1																					1				3
CA										1				1						2													1		2		1																	30		1		39
CH								1			1			1				1	3						1			1	1							1									1									20				32
CL																																																						1				1
CN																						2																																				2
DE										1										1													1	1	1																			14				19
ES																																			1			1																3				5
FI														3					1	1																																						5
FR				3				1									1			2								1																										7				15
GB								2		1									1									1							1	1																		25				32
GR									1																			2															2															5
HK											1																																											2				3
IE				2	1		4	2	3		1	1		5	1		2	1		15		1		1				5							2											1								24				72
IN									1										1	1				1																														3				7
IT																																																						2				2
JP																				2		1			1			1					1																					9				15
KR																																																						1				1
LU																				1																																		2				3
MX																																																						2				2
MY																																														1												1
NL																				1																																		5				6
NO								1																																					1									1				3
PT																																																						1				1
SE																																																						11				11
SG																																		1																								1
US	4	6	5	45	13	1	21	156	34	5	26	2	7	95	16	1	11	8	72	259	2	4	1			14	19	37	3	4	1	3	17	1	52	19	6		3	11	1	2	2	8	27	6	1	1	1	1	4	2	1		1			1042
(leeg)																																																										
Total	**4**	**6**	**5**	**50**	**14**	**1**	**25**	**163**	**39**	**9**	**29**	**3**	**7**	**105**	**17**	**1**	**14**	**10**	**79**	**287**	**2**	**8**	**1**	**2**	**2**	**14**	**19**	**48**	**4**	**4**	**1**	**3**	**21**	**3**	**60**	**21**	**8**	**1**	**3**	**12**	**1**	**2**	**4**	**8**	**29**	**8**	**1**	**1**	**1**	**1**	**4**	**2**	**1**	**167**	**1**	**1**		**1337**

Appendix III:

III a:

Descriptive Statistics									
	N statistics	**Min. Statistic**	**Max. Statistic**	**Mean Statistic**	**Std. Dev. Statistic**	**SK Statistic**	**SK Std. Error**	**KT Statistic**	**KT Std. Error**
CAR 5,365	1337	-1438,624	694,110	-4,444	94,758	-2,372	0,067	42,834	0,134
CAR 5,1095	1337	-4160,523	2024,066	-19,079	263,437	-2,773	0,067	49,594	0,134
Cultural Distance	1337	0.124	28,581	6,720	6,139	1,136	0,067	1,380	0,134
R&D	1337	0	7.872.000	625.656,77	1.387.413,167	3,219	0,067	10,237	0,134
Tobin's Q	1337	0,721	11,921	2,027	1,051	3,029	0,067	14,610	0,134
Employee	1337	0	2.100.000	58.267,11	147986,909	10,257	0,067	124,099	0,134
Firm Age	1337	1	183	50,30	38,994	0,616	0,067	-0,554	0,134
Valid N (Listwise)	1337	-	-	-	-	-	-	-	-

III b:

Correlations							
	1	**2**	**3**	**4**	**5**	**6**	**7**
CAR 5,365	1						
CAR 5,1095	**0,960 *****	1					
Cultural Distance	**0,046***	0,039	1				
R&D_LOG	-0,003	-0,007	-0,10	1			
Tobin's Q_LOG	-0,003	0,003	-0,035	**0,128*****	1		
Employee_LOG	0,009	0,006	**-0,074***	**0,780*****	**-0,86*****	1	
Firm Age	0,40	0,039	**-0,011****	**0,231*****	**0,311*****	**-0,121*****	1
*** Correlation is significant at the 0,01 level ** Correlation is significant at the 0,05 level							

* Correlation is significant at the 0,1 level

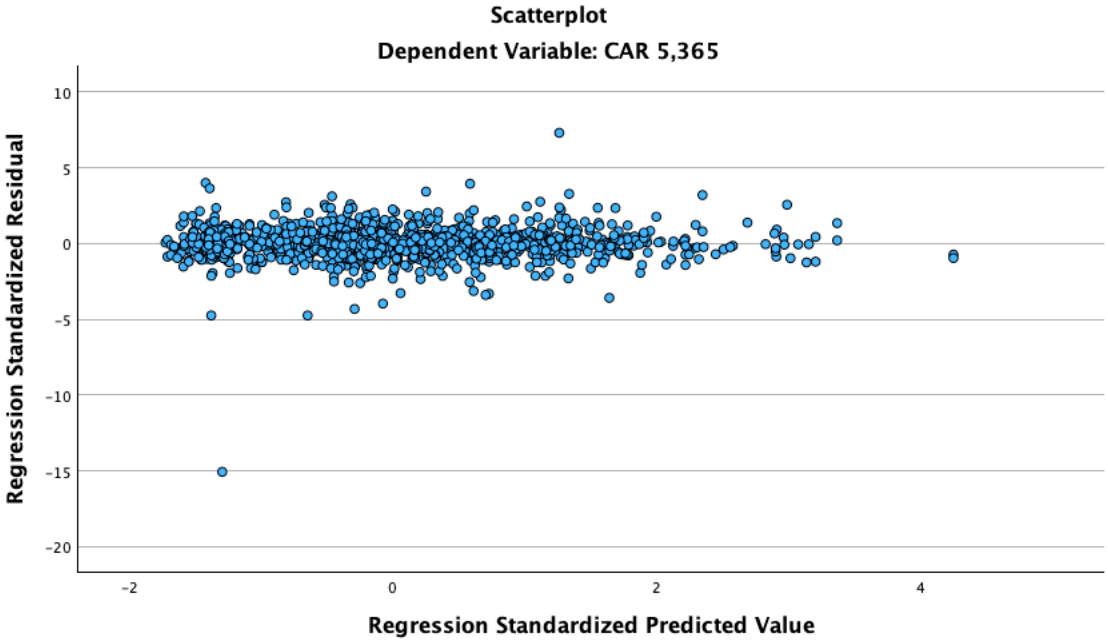
III c

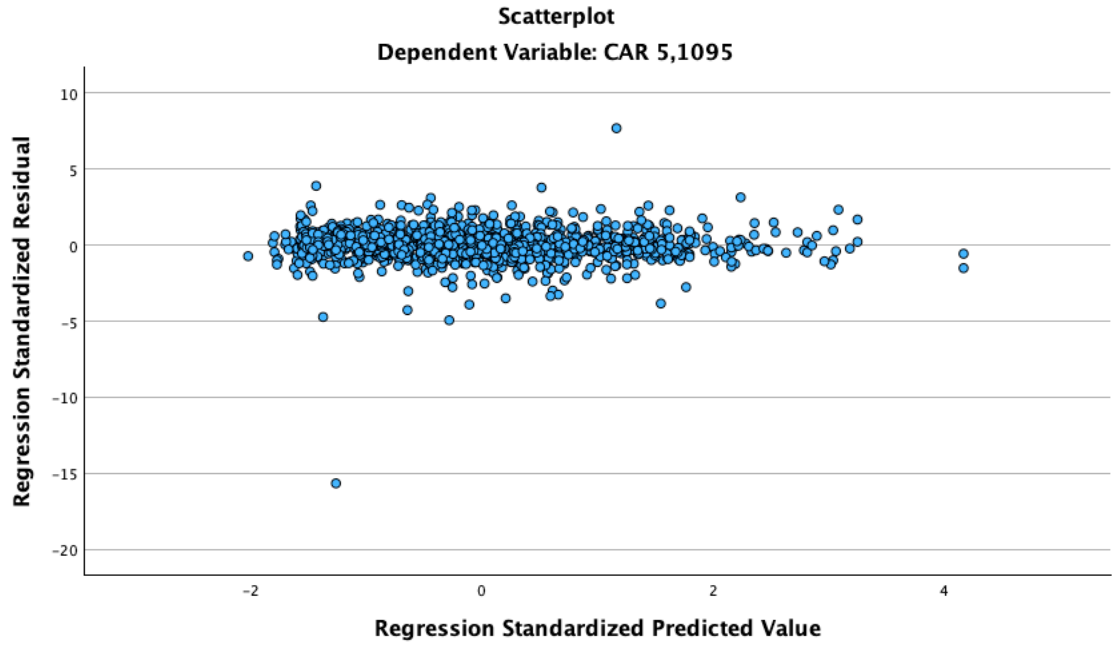
Coefficients		
Model	**Tolerance**	**VIF**
(Constant)	-	-
Cultural Distance	0,991	1,009
Tobin's Q_LOG	0,982	1,018
Employees_LOG	0,898	1,113
Firm Age	0,892	1,122

Coefficients		
Model	**Tolerance**	**VIF**
(Constant)	-	-
R&DSpenings_LOG	0,352	2,842
Tobin's Q_LOG	0,883	1,132
Employees_LOG	0,338	2,956
Firm Age	0,875	1,143

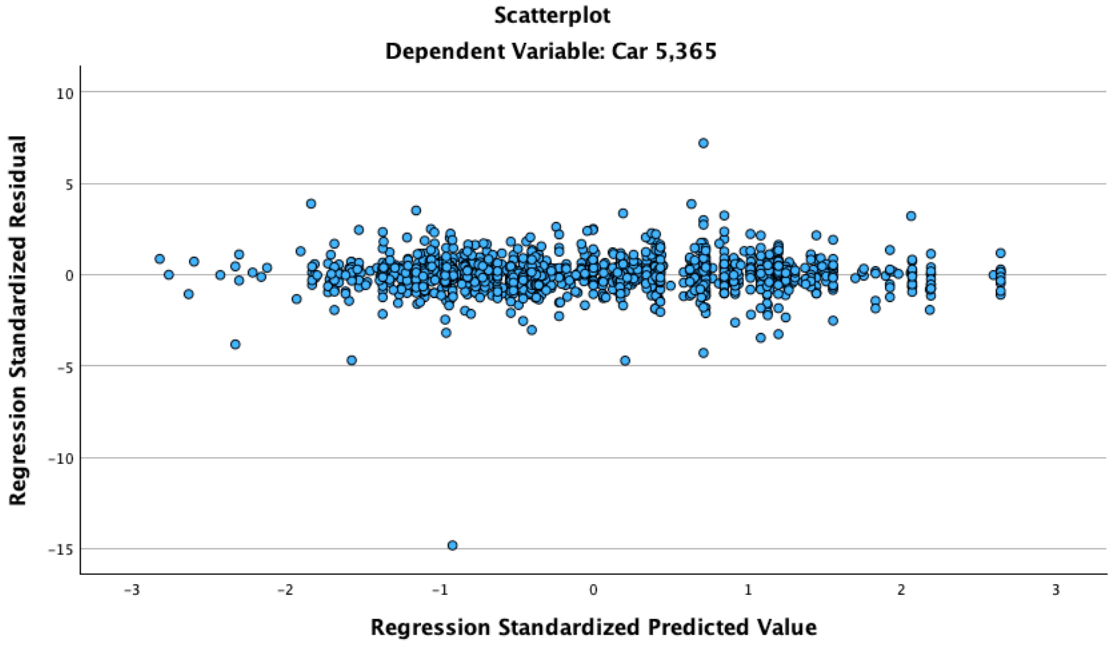
III d

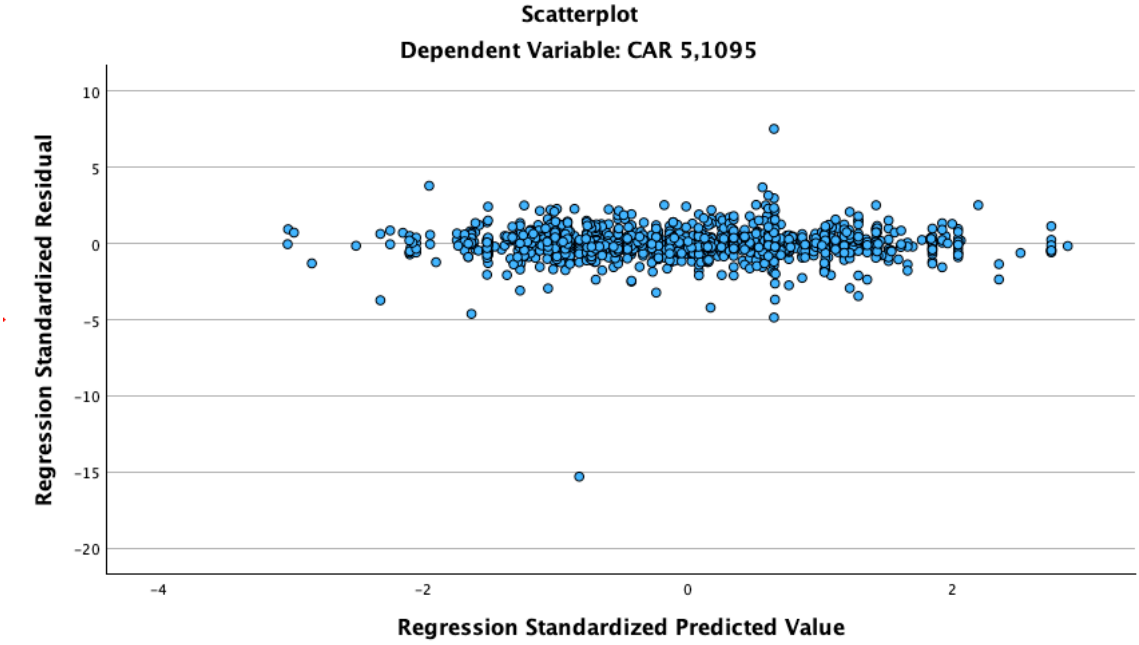
Cultural Distance:





Innovation Output





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