On the Relationship of Liability Action and Reputational risk: An Empirical Analysis

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Abstract

Today there is still widespread uncertainty as to whether it is convenient to refer internal corporate disputes to arbitration rather than judicial litigation and it is often possible to encounter legal systems that still limit the use of arbitration to specific conflicts. The purpose of this study is to analyze the relationship of liability action and reputational risk, the way it may undermine the company's stability if compared to the case where a more discreet arbitration clause is adopted. The cases of application of the liability action and those which have adopted the arbitration clause as a term of comparison have been defined on a population of 428 Italian unlisted joint-stock companies. The technique of Chi-Square was used to avoid empirical evidence being determined by chance. These work findings allow demonstrating the substantial correlation between the adoption of the arbitration clause - replacing the liability action against directors - and the reduction of cases of reputational problems regardless of their causes.

Keywords: Corporate Governance; Reputational Risk; Corporate Performance, Strategy, Conflict Management

1. The literature background concerning the internal corporate conflict

Analyzing the wide range of corporate law and corporate governance regulations, it is clear that the discipline of responsibility for decisions taken by managers or the board of directors is still too much tied to a profound principle of legal hermeneutics.

Over the years the literature has broadly defined the critical issues that may arise from the relationship between corporate bodies and even more their competences. In this way, specificstudiesrelatingtocorporate governance are particularly relevant for thedefinition of criticalissuesbetweencorporatebodies. In the context of corporate development, the separation of ownership and control and the related typologies of control have been deeply investigated by Berle and Means (1932), Jensen and Meckling (1976), Chandler (1980), Freeman and Reed (1983) and Zahra (1996). The Principal-Agent relationship andrelatedcosts is a critical theme first analysed byJensen and Meckling (1976), Jensen (1986) and subsequently by Branson (2002), Cuevas-Rodríguez*et al.* (2012), Martin *et al.*(2016).These foundamental theories about the relationship between management and ownership provided an important basis for the specific successive analyses concerning:

– the relationship between Managerial Capitalism and shareholders(Kiefer 2017; Penhall 2015; Zhang*et al.* 2014; Davies *et. al.* 2013; Tompkins and Hendershott 2012;Clarkson*et al* 2011; Chew 2004; Healy and Palepu 2001;Hopt and Wymeersch 1997; Eisenhardt 1989).
– thecorporatecomplexityandnew managerial functions (Seifzadeh 2017; Buono and Kerber 2008; Tudway and Pascal 2006; Trong Dan 2005; KirchnerandPainter 2000).
– The efficiency of managers and their responsibility for decisionstaken (Dou*et al.* 2015;Davies *et. al.* 2013; Siegel 2013; Warburton 2011; Radin and Block 2009; Baxt 2005; Chew 2004; Hopt and Teubner 1985);
– theweakness of shareholders (Roe 1994).
– the role of managersandthe board of directors (Penhall 2015; Davies *et. al.* 2013; Moore 2013; Macey 2008; Bainbridge 2004 and 2006; Moustafa 2005; Baxt 2005; Ferrara *et al.* 2005; Kaufman 2002; Knowles and Flannery 1995; Hopt*et al.* 1985; Hinsey 1984; Ubelaker 1981).
– managers' interest, myopia or short-termvision (Tong *et al.* 2013; Fischer and Louis 2008;Laverty 2004; Chung and Pruitt 1996;Perry and Williams 1994; Eisenberg 1993;Donaldson and Davis 1991).

The study of the literature has prompted to investigate the countless contraindications that can arise from critical issues related to governance issues and that inevitably affect the entire organization. From this principle arises the need to observe the link between governance and reputational risk, a connection that is still neglected under innumerable profiles but which will certainly be investigated in the years to come given the importance that managers increasingly place in the company's reputation in relation to the performance management.

2. The correlation between business criticalities and reputational risk: the analysis of the specific literature

2.1 Size of reputational risk and reputational assets

In the digital age, presence and promotion on the web or social media are considered existential requirements for companies. Therefore, should such events occur, it would easily attract the attention of the media, which are able to transform every news item into a media echo that is difficult to overcome and sometimes into real dramas (Culbert 2009). This is mainly due to the fact that today's companies play an important social role (TetraultSirsly 2009; McWilliams 2001) as well as an economic one, and their ethical responsibility depends on it (Barzaghi*et al.* 2009). The risk that the company runs in such situations can therefore generate a significant worsening in the perception of the company, leading to potential reputational damage (Martín de Castro *et al.* 2006; Roberts and Dowling 2002). In the literature, reputation is defined as "amorphous" and "difficult to frame" (Stansfield 2006), but also as a collective assessment of a company's behaviour and skills (Bromley 2002; Fombrun and van Riel 1997), while by definition reputational risk is the current or prospective risk of a decline in profits or capital (Power *et al.* 2009) resulting from a negative perception of the company's image by stakeholders such as customers, counterparties, shareholders, investors or supervisory authorities. Generally, reputational risks may arise from different criticalities: "health and safety incidents" (Larkin 2003),"violation of privacy policy" (Bertino and Ferrari 2017; Mobasher and Anand 2005; Andrade *et al*. 2002),"operational events and crises" (Yu and Lester 2008), "product recalls and quality control errors" (Larkin2003; Weigelt and Camerer 1988), "interruption of activities and services" (Martín de Castro *et al.* 2006), "irregularities and financial losses" (Stansfield 2006; Roberts and Dowling 2002), "negative partnerships with third parties" (Larkin 2003; Dollinger *et al.* 1998), "internal governance issues" (Stansfield 2006; Gaultier-Gaillard and Louisot 2006; Drew and Kendrick 2005; Srivastava *et al.* 1997), "legal and regulatory investigations" (Stansfield 2006), "accusations regarding company procedures" (Gotsi and Wilson 200; Fombrun and Shanley 1990), "ethical issues and violations" (Gisti 2018; Fombrun and Shanley 1990), "scandals involving the brand" (Davies and Chun 2002).As these are crucial areas of business operations, reputational risk can significantly undermine the stability of the company. As a direct consequence there may be a contraction in business volume (Stansfield 2006), a reduction in brand value (Davies and Chun 2002) and additional expenses to respond to the crisis and to accusations or legal investigations (King *et al.* 2002). In such a scenario a single negative event is capable, even in a short period of time, of destroying the public image of the company and sometimes of excluding from the market a company that has not properly cared for and protected its reputation in the reference environmental context (Aula 2010). The 2017 Global CEO Outlook survey conducted by KPMG showed that reputational risk is, along with operational risk, the most feared risk by CEOs in 10 countries and 11 different industries. Survey results show that reputational risk has increased in importance for CEOs over the past year, becoming one of the top three most important risks to be addressed (out of 16 in total) (KPMG 2017). Therefore, for a company, reputation management means first of all communicating its essence, its way of being and not only what it offers on the market. Reputation is primarily an emotional bond (Reputation Institute 2017) that is created with stakeholders by demonstrating specific requirements. If this perspective is considered, it becomes clear that reputation must be valued as a real intangible asset useful to build one's financial solidity. The reputational heritage (Adeosun and Ganiyu 2013; Gaultier-Gaillard and Louisot 2006) is therefore a strategic tool for creating competitive value and making the company increasingly competitive in an era where news and information dissemination takes place in real time and on a global scale. It turns into real capital capable of generating profits (Jackson 2004) or losing them if it is lost. Reputation therefore proves to be not only a means to grow one's business, but also a form of long-term protection. The analysis of the reference literature and of the major international scandals involving multinational companies provides more than evident elements of the potential negative effects, especially economic ones, that may fall on the company as a result of actions promoted internally (by internal stakeholders) or externally (by external stakeholders), thus undermining economic and financial stability.

2.2 Media exposure and reputational risk. Considerations about the alternatives

Thanks to the analysis of the literature it has been possible to underline how sometimes unpredictable the judicial solution can be in cases of liability action against the managerial class, especially in situations where the guilt of managers is not clear or not supported by clear empirical evidence. This is because the legal procedures make extensive reference to the Business Judgement Rule principle analysed above. The liability action can therefore represent a double-edged sword, since not only can the outcome of the judgment be favorable to the party involved (in this case the manager) but also because the dispute would become public knowledge and would expose the company to a very delicate media judgment involving the most important corporate stakeholders.

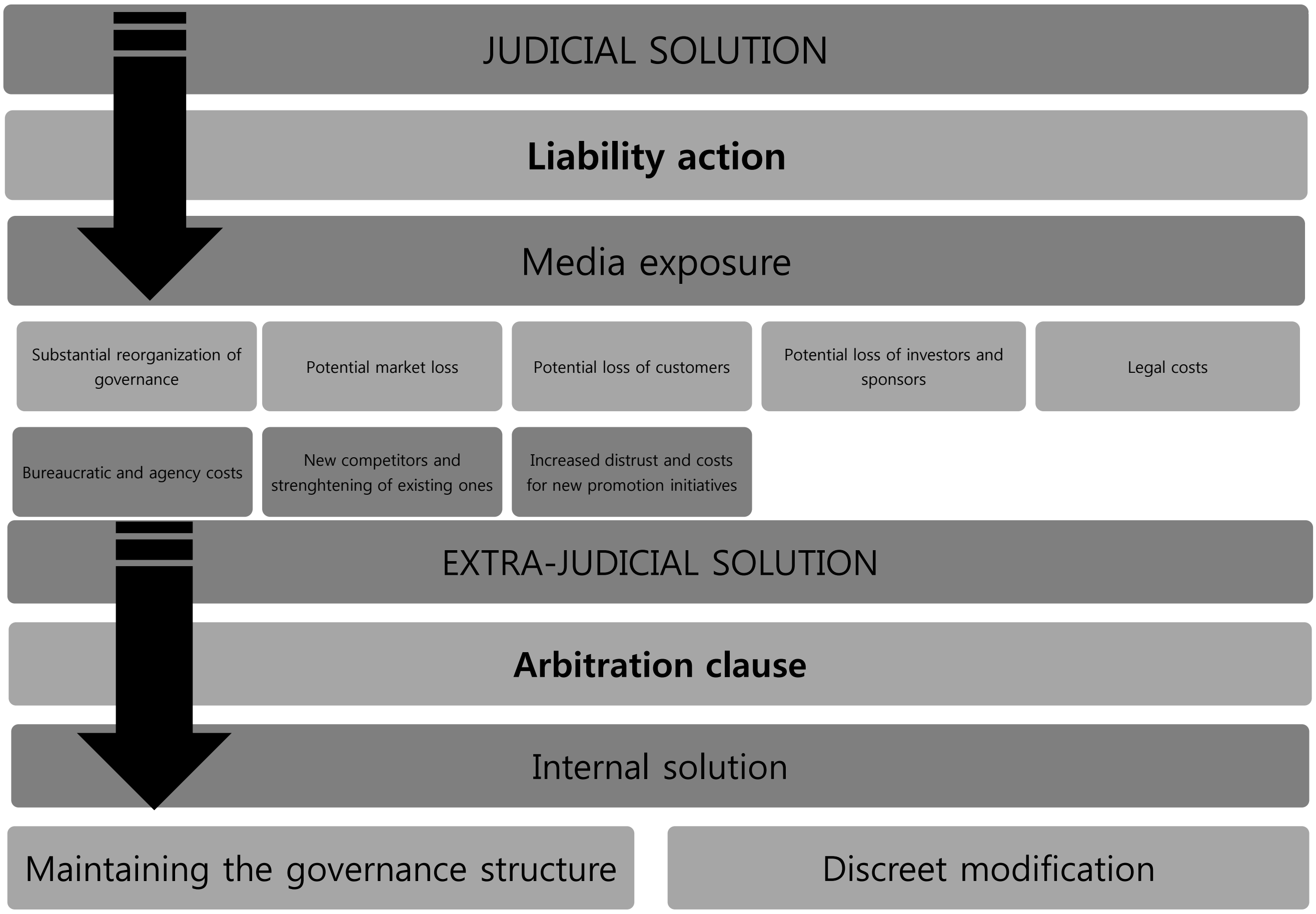

Figure1. Potential consequences of judicial and extrajudicial solutions
Source: author's elaboration

Although the benefits brought by the extrajudicial solution are potential and numerous, as highlighted in the figure 1, today there is still widespread uncertainty as to whether it is convenient to refer disputes to arbitration rather than judicial litigation (Veasey 2015)and it is often possible to encounter legal systems that still limit the use of arbitration to specific conflicts (De Groot 2015). Therefore, this is the motivation that confirms the usefulness of this work. For several years international practice has increased the use of arbitration for the resolution of corporate disputes (Queen Mary University and PwC 2006) not only from a "contractual" but also from an "institutional" point of view, given the important advantages it brings in terms of *confidentiality*, *flexibility*, *resolution time* and *cost-effectiveness*.
With regard to our subject, two of the above-mentioned aspects emerge in particular: the "confidentiality" (Yu 2011) and the "cost-effectiveness" of the practice (Agarval 2016; Mylovanov and Zapechelnyuk 2013; Drahozal and Hylton 2003).

3. Research Methodology

3.1 Choice of sample and reason for choice

A population of 428 Italian unlisted joint-stock companies was used to carry out the analysis. Although a logical continuity with what was reported in the previous paragraph should have led to choose listed companies as target population, as they can be identified more easily[1] and as it would have been more immediate also the feedback on the stock trend. Nevertheless, due to their "public relevance", the sensitivity of the information requested and the number of companies which agreed to the interview or replied to the questionnaire was not sufficient to obtain a suitable population to carry out the analysis. It was therefore deemed appropriate to proceed with the sampling of "unlisted" joint-stock companies, which are in any case considered suitable since they are subject to the consideration and important judgement of their stakeholders and, therefore, to the reputational risk better defined above.

[1] According to Borsa Italiana at the end of December 2019 there were only 357 companies listed on the Italian Stock Exchange: 242 companies on the MTA market (of which 74 STAR), 2 on MIV and 113 on AIM Italia.
[2] According to the surveys carried out with reference to the census of companies divided by legal nature, sectors,

3.2 Methodology of data collection

The data relate to a population of companies that responded to an interview and stated that they had at least one experience of litigation with regard to the directors' liability for faults towards the company, creditors, individual shareholders or third parties. The interview therefore focused on the correlation between potential reputational risks in companies which, despite having had an internal dispute, have benefited from the arbitration clause and those which have made a liability action against the directors found guilty.

3.3 Descriptive statistics on sample size and variables considered

For the purpose of the analysis, companies in the manufacturing, trade and construction sectors were identified and evaluated. The choice has been defined as follows because together these three sectors make up a population of more than 53% of the total number of joint-stock companies in Italy of 29,585[2]:

- Other: 46.24%
- Manufacturing: 32.25%
- Trade:15.81%
- Construction: 5.70%

In addition, companies in these sectors are more likely to have a board of directors who can exercise control or significant influence over decisions taken in areas such as logistics, real estate or professional activities. Finally, two dichotomous variables identified with X and Y were set for the study. The first variable relates to an arbitration clause which, in the event of its presence, allows the dispute to be referred to arbitration or civil mediation, while in its absence it leads to an action of liability against the directors. The second one, on the other hand, divides the whole sample between companies that have experienced reputational problems and those that have been exempt.

3.4 Data Analysis

3.4.1 The effectiveness of statistical indicators in obtaining timely information

As already specified above, the objective of the analysis is to show the effectiveness in entering into an arbitration clause that solves internally the various problems of business management, avoiding legal action, and the benefits arising at the reputational level. In order to bring empirical evidence to this thesis, it was first chosen to analyze the correlation between the two variables and then focus attention on two indicators such as "relative risk" and "odds ratio" to determine whether there is a greater probability of having reputational problems in the presence or absence of the clause.

3.4.2 Correlation study

The most immediate method to study the correlation between two variables is surely the *chi-square* test, whose calculation can be summarized in the formula:

$$\chi^2 = \sum_{i=1}^{k} \frac{(observedfrequency_i - expectedfrequency_i)^2}{expectedfrequency}$$

This indicator can vary from 0 to + ∞ and is given by the ratio between the sum of the square of the differences between the observed and the theoretical expected frequencies in a condition of total independence between the two variables in analysis and the theoretical frequencies themselves. In the presence of this condition, the values of the theoretical frequencies coincide with those of the observed frequencies giving rise to a *chi-square* equal to 0. The totality of the companies observed in the study is therefore divided into the following subgroups, named with a clockwise letter for the calculations that we will see later.

[2] According to the surveys carried out with reference to the census of companies divided by legal nature, sectors, employees, gender, category and age of employees of Area StudiLegacoop (2017) based on Istat data.

Table1. Double-entry tableof observed frequencies. Absolute number, percentage weight and nomenclature of each cell out of the grand total

X \ Y	**No reputational criticality**	**Particular reputational criticalities**	**Total**
Arbitration clause	188 (43.9 %) *[A]*	20 (4.7 %) *[B]*	208 (48.6 %) *[A+B]*
Liability Action	142 (33.2 %) *[C]*	78 (18.2 %) *[D]*	220 (51.4 %) *[C+D]*
Total	330 (77.1 %) *[A+C]*	98 (22.9 %) *[B+D]*	428 (100 %) *[A+B+C+D]*

Analyzing the marginal frequencies of the two variables (table 1), on the one hand it is possible to note that the companies without reputational problems represent more than ¾ of the entire sample, on the other hand there is a substantial balance between the companies that have stipulated the clause and those who have opted for liability action. Instead, with regard to the frequencies in each cell in the case of total independence, we will have the following expected values and the respective contingencies, given by the difference between the observed and expected frequencies.

Table2. Double-entry table of expected frequencies. Absolute number and calculation of contingencies

X \ Y	**No reputational criticality**	**Particular reputational criticalities**	**Total**
Arbitration clause	160.37 (+ 27.63)	47.63 (- 27.63)	208
Liability Action	169.63 (- 27.63)	50.37 (+ 27.63)	220
Total	330	98	428

Analyzing the contingencies (table 2), it is possible to see that there is a situation of attraction for the two couples “Arbitration clause – No reputational criticality”, “Liability Action – Particular reputational criticalities” which seems to suggest how the choice for the clause leads to a lower risk of having reputational criticalities while the legal procedure can lead to particular reputational problems for the company. At this point, by comparing the two tables, it is possible to calculate the value of χ^2:

$$\chi^2 = \frac{(188-160.37)^2}{160.37} + \frac{(142-169.63)^2}{169.63} + \frac{(20-47.63)^2}{47.63} + \frac{(78-50.37)^2}{50.37} = 4.76 + 4.50 + 16.02 + 15.15 = 40.43$$

The chi-square value of 40.43, however, risks remaining a number that does not give particular indications if it is not chosen or if it is not normalized or alternatively compared with its theoretical equivalent. The normalization serves to understand when the dependence between the two variables is strong since it acts on the numerosity of the sample and of the categories of each variable bringing the value of the indicator to vary in an interval between 0 and 1, where in correspondence of the minimum value there is stochastic independence while with a unit value of the indicator a situation of functional dependence between the two variables is described. The passage from χ^2 to χ^2_{norm} can be summarized in the formula:

$$\frac{\chi^2}{N * min\{rows - 1, columns - 1\}}$$

And with the data at our disposal, putting N equal to 428 (sample number) and the minimum between rows and columns equal to 2, the value will go from 40.43 to 0.09 outlining a low connection between the variables, even if not negligible.

The χ^2 test instead allows us to understand, through a comparison between the observed χ^2 and a theoretical one, if the discrepancies between observed and expected frequencies are minimal and due only to a random component or

if there is an effective correlation between the two variables such as to reject the null hypothesis (called H_o) at a predetermined significant α level where the independence between the two variables is assumed.
To make the comparison it is not sufficient to set a specific α but it is also necessary to determine the degrees of freedom given by the minimum between the rows and columns of the table subtracted 1. In our case, therefore, we can show how there is only one degree of freedom since both variables are dichotomous (only two modes) and we can choose the three values of α most used in the statistical literature.

Table3.χ^2theoreticalwith 1degree of freedom for α = 0.10; α = 0.05; α = 0.01

	α = 0.10	**α = 0.05**	**α = 0.01**
1 degreeoffreedom	$\chi^2_{\text{theoretical}}$= 2.70	$\chi^2_{\text{theoretical}}$ = 3.84	$\chi^2_{\text{theoretical}}$ = 6.62

The value of χ^2 observed is much higher than the theoretical consideration for each value of α and leads to a net rejection of the null hypothesis, demonstrating once again how the choice of the arbitration clause can reduce the company's reputational criticalities (table 3).

3.4.3 Study of Relative Risk and Confidence Interval

The calculation of "relative risk" (RR) and its confidence interval is one of the most widely used indicators to indicate the number of times a given event occurs in one group compared to another. It is often used to determine the relationship between the incidence of a specific disease in those exposed and those not exposed to the same risk factor. In the context of biostatistics, for example, this indicator is particularly functional if wewould study whether, in a group of smokers, the development of lung cancer is proportionally more present than in a second group of non-smoking units. Although the analysis of this study concerns legal and economic fields, it is possible to use with due care the same indicator where the exposed are represented by the companies that have entered into the arbitration clause, the non-exposed are those who act through action of responsibility and the event in question is the absence of reputational criticalities, "disease" that a company would be happy to contract.
The relative risk value varies from 0 to +∞ with the unit term of the indicator specifying the two different situations: if it is less than 1, there is an inverse association, i.e. the probability of developing the event is lower for those exposed to the risk factor, while if it is greater than 1, there is a greater probability for those exposed to the event. The general formula for the calculation of relative risk is given by:

$$\text{RR}= \frac{A/_{(A+B)}}{C/_{(C+D)}}$$

that with the data present in Tab. 1 results:

$$\text{RR}= \frac{188/_{(188+20)}}{142/_{(142+78)}} = \frac{188/_{208}}{142/_{220}} = \frac{0.904}{0.645} = 1.402$$

The higher value of the unit suggests a rather strong direct association and confirms what has been demonstrated in the previous chapters: a company that enters into the arbitration clause has a probability of not having reputational problems about 1.4 times higher than its counterpart acting through liability action. However, since this indicator is only an estimate of the "true" relative risk, a 95% or 99% confidence interval must be calculated, depending on the margin of error we are willing to tolerate, in order to establish the protective effect of the clause with greater consistency. Only if the lower limit is higher than the unit can we assert that the choice to adopt the clause is really effective. For the construction of the confidence interval, it is necessary to calculate by the following formula the "standard error" (SE) of our sample based on the natural logarithm of relative risk.

$SE(\ln RR) = \sqrt{\frac{1}{A} - \frac{1}{(A+B)} + \frac{1}{C} - \frac{1}{(C+D)}}$ that with the data at our disposal will result:

$$SE(\ln RR) = \sqrt{\frac{1}{188} - \frac{1}{208} + \frac{1}{142} - \frac{1}{220}} = \sqrt{0.0053 - 0.0048 + 0.007 - 0.0045} = \sqrt{0.003} = 0.055$$

At this point, using the following formula, it is possible to calculate the lower and upper limits of the confidence interval at 95% (α=0.05) and 99% (α=0.01).

$$\text{IC } (1-\alpha)\% : \text{Exp}(\ln(RR) \pm Z_{1-\alpha} * \sqrt{\text{Standard Error } (\ln RR)}$$

With the data available, it is possible to obtain the following limits for the first interval:

$$\text{Lower Limit (IC 95\%): } \text{Exp}(\ln(1.40) - 1.96 * 0.055) = \text{Exp}(0.337 - 0.108) = \text{Exp}(0.229) = 1.257$$
$$\text{Upper Limit (IC 95\%): } \text{Exp}(\ln(1.40) + 1.96 * 0.055) = \text{Exp}(0.337 + 0.108) = \text{Exp}(0.455) = 1.576$$

The lower limit and of course the upper limit are higher than the unit, confirming that with a margin of error of 5% it is possible to validate the effectiveness of the arbitration clause. Deciding to tolerate a smaller margin of error and consequently a more consolidated confirmation, it is easy to calculate the two thresholds for the second range.

$$\text{Lower Limit (IC 99\%): } \operatorname{Exp}(\ln(1.40) - 2.58 * 0.055) = \operatorname{Exp}(0.337 - 0.142) = \operatorname{Exp}(0.195) = 1.215$$
$$\text{Upper Limit (IC 99\%): } \operatorname{Exp}(\ln(1.40) + 2.58 * 0.055) = \operatorname{Exp}(0.337 + 0.142) = \operatorname{Exp}(0.479) = 1.614$$

Again, the effectiveness of the clause is confirmed because although the lower limit has come close to the unit value, due to the reduction in the required margin of error, it is still well above 1. At this point, before moving on to the calculation of the "odds ratio", a graphic representation (chart 1) of what has been analysed in the chapter can be particularly useful, in order to summarize the most significant evidence, given by the different size of the two confidence intervals and the deviation of both from the unit value.

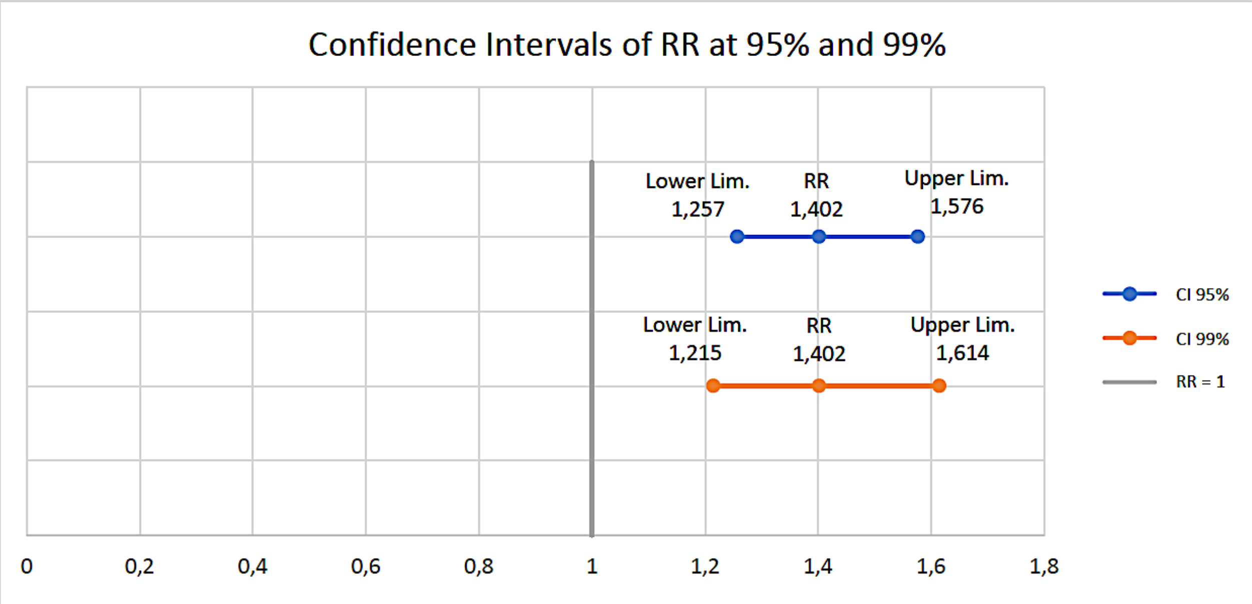

Chart 1.95% and 99% confidence interval for relative risk (RR). RR threshold line set at 1

3.4.4 Study of the Odds Ratio and Confidence Interval

In order to obtain satisfying results, the type of analysis cannot be only the prospective one as considered in the previous paragraph with an initial subdivision of the reference sample between exposed and unexposed and then an observation over a period of time of the number of exposed adopting the event of our interest. In fact, always adopting an approach typically used in biostatistics the alternative to this choice is given by a retrospective study in which first the cases (those who have contracted the disease) and controls (those who have not been affected) are selected and then how many of the cases and controls have been exposed to the presumed cause. Since this study goes beyond the biomedical field, it is particularly interesting to see whether the use of a retrospective study leads to the same conclusions as a prospective study and confirms the effectiveness of the arbitration clause as an alternative to liability action. The method to be used for the measurement of association in a retrospective study is the calculation of the so-called "odds ratio" (OR).

In order to understand this measure, it is necessary to introduce the concept of "odds".

This term represents the ratio between the number of times the event occurs and the number of times the event does not occur. The interpretation of the odds ratio value and the range of values within which it can vary are absolutely identical to those of relative risk. In fact, if the odd ratio is between 0 and 1 there is a negative association, while a ratio greater than 1 indicates the existence of a positive association (the factor can cause the event),with an increasingly strong association to deviate from the unit value. Consequently, the difference between relative risk and odds ratio is that the latter is not a true measure of risk because it refers to the probability of having already experienced the event, while the term "risk" implies the idea of an event that will occur in the future. For consistency and greater simplicity in understanding, we can therefore follow the same path as before in the section on Relative Risk, with an estimate of the odds ratio and the relative conference intervals at 95% and 99%.

The general formula for the calculation of the odds ratio is given by: OR= $\frac{A/C}{B/D}$that with data ofthe Tab. 1 results:

$$\text{OR}= \frac{188/142}{20/78} = \frac{1.324}{0.256} = 5.171$$

The value testifies a strong positive association and provides a further confirmation to what has been previously demonstrated: the probability of not having had reputational problems is more than 5 times higher among the companies that have stipulated the clause. Although the estimate of the OR is very far from the unit value, it is possible to proceed for this indicator with the calculation of the 95% or 99% confidence interval, depending on the margin of error that we are willing to tolerate.Only if the lower limit assumes a value higher than 1, the protective effect of the clause can be confirmed. For the construction of the confidence interval, it is necessary to calculate the "standard error" (SE) of the sample using a slightly different formula from that seen for relative risk (RR), however, based on the natural logarithm of the OR.

$SE(\ln OR) = \sqrt{\frac{1}{A}+\frac{1}{B}+\frac{1}{C}+\frac{1}{D}}$ that in our case will be:

$$SE(\ln OR) = \sqrt{\frac{1}{188}+\frac{1}{20}+\frac{1}{142}+\frac{1}{78}} = \sqrt{0.0053+0.05+0.007+0.0128} = \sqrt{0.0751} = 0.274$$

Now it is possible to calculate the lower and upper limits of the confidence range at 95% (α=0.05) and 99% (α=0.01).

$$\text{IC } (1-\alpha)\% : \text{Exp}(\ln(OR) \pm Z_{1-\alpha} * \sqrt{\text{Standard Error } (\ln OR)}$$

With the data available, the limits for the first interval will be:

Lower Limit (IC 95%): $\text{Exp } (\ln(5.171) - 1.96 * 0.274) = \text{Exp } (1.643 - 0.538) = \text{Exp } (1.107) = 3.026$
Upper Limit (IC 95%): $\text{Exp } (\ln(5.171) + 1.96 * 0.274) = \text{Exp } (1.643 + 0.538) = \text{Exp } (2.181) = 8.855$

Both limits are well above the unit, confirming that with a 5% margin of error we can validate the effectiveness of the arbitration clause. Deciding to tolerate a smaller margin of error and consequently a more consolidated confirmation, the thresholds for the second range can be calculated.

Lower Limit (IC 99%): $\text{Exp}(\ln(5.171) - 2.58 * 0.274) = \text{Exp}(1.643 - 0.707) = \text{Exp}(0.938) = 2.554$
Upper Limit (IC 99%): $\text{Exp}(\ln(5.171) + 2.58 * 0.274) = \text{Exp}(1.643 + 0.707) = \text{Exp}(2.350) = 10.486$

Again, the effectiveness of the clause is confirmed because although the lower limit has come close to the unit value, it is still significantly higher than 1.

Before concluding, as before, a useful graphic representation (chart 2) summarizes the most significant evidence previously calculated, given both by the different size of the two confidence intervals and by the deviation of both from the OR threshold value. Moreover, it is interesting to see how for the odds ratio both the confidence intervals not only move away from the unit value much more clearly than their counterparts shown in the previous paragraph but are much wider.

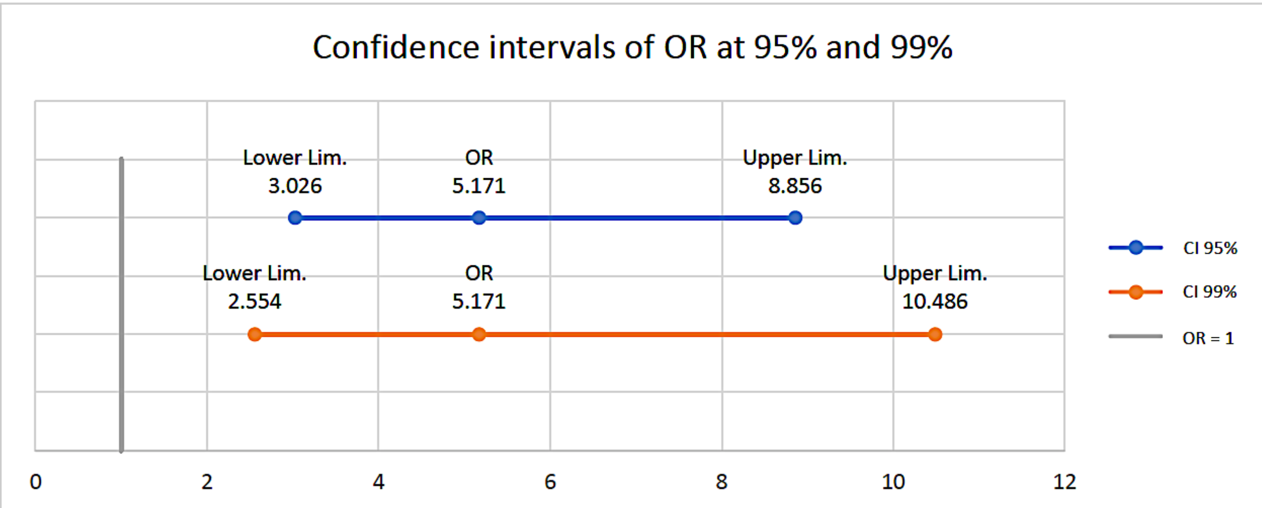

Chart2. 95% and 99% confidence interval for the Odds Ratio (OR). OR threshold line set at 1

3.5 Empirical evidence obtained from the statistical analysis

All the studies carried out in the previous chapters arrive at a common understanding of the effectiveness of the

arbitration clause. In fact, first of all the chi-square test shows a correlation between the two variables such that it is impossible to accept the null hypothesis of stochastic independence and to assert that the contingencies between the observed and theoretical frequencies are completely attributable to a random component.
Moreover, both by carrying out a prospective study using relative risk as a reference indicator and by opting for a retrospective study analyzing the value of the odds ratio, it is clear that both indicators deviate from the unit value even with a minimum margin of error, testifying to the strong significance of the independent variable in question, namely a marked increase in the probability of not having reputational problems in case of inclusion of the clause.

Conclusions

Studies on Corporate Governance have made significant progress over time, trying to understand the evolutionary trend of companies. Given the importance they have at a global economic level, an in-depth analysis is required of the relationships that bind the various internal bodies but also and above all of the repercussions that the decisions taken by managers have not only on shareholders but also on the company. Managers and the board of directors in general have enormous decision-making powers from which derive many responsibilities. It is on the basis of these considerations that corporate law and corporate governance studies have attempted to develop legislation capable of regulating the different roles but also the possible repercussions for the decisions taken. This is the case with the *business judgement rule*, which presents a considerable variety of interpretations in the international context without finding a well-defined place. It is precisely this heterogeneity, in some cases wrapped up in a halo of discretion, that must make the injured parties taking part in corporate governance reflect on the potential alternative to a liability action.
In this sense, discretion makes it more difficult to assess when an investment or decision has been appropriate in the circumstances. Because of this “uncertainty”, the injured parties are often not only at risk of having their claims rejected in court, but they are also at even greater risk of seeing the sacrifices made over the years for a deterioration in the reputation of the company of which they are part or with which they have multiple interests in common. Through the analysis of the reference literature and the empirical evidence gathered, this work demonstrates how much the use of the arbitration clause may be preferable when drafting the statute, always if provided for by the legal system. Reputational risk is now a crucial issue that is widely interconnected with the countless dimensions in which a company operates. The advantage of maintaining the company’s reputation for the continuation of the business is certainly preferable to the desire to obtain satisfaction through a liability action. As analysed in this work, even a single business criticality that triggers a liability action at the same time can produce a “chain reaction” in the relationship with stakeholders, often leading to irreparable consequences. Therefore, in view of the indecision still existing around the adoption of the arbitration clause for institutional disputes, it is believed that work such as the one presented here could contribute to the development of new legal formulations aimed at enabling its adoption in a simpler way.

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