

The Value Contribution of a Corporate Brand – Evidence from BAYER AG

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Stakeholder orientation is not the opposite of shareholder orientation but a prerequisite for it. The market value of a company depends on stakeholder behavior: Customers purchase and recommend, employees show commitment and motivation, investors provide equity and loans, politicians determine the extent of a firm's license to operate etc. Research has demonstrated that all these behavioral patterns are positively influenced by a company's reputation – an intangible asset which, according to surveys among top executives, for decades has been emphasized as one of the most substantial drivers of corporate success. This holds true especially in societies that critically question the legitimacy of companies. Firms are therefore well advised to professionally guard and manage their corporate reputation, with the corporate brand serving as a carrier for reputation and as an identifier for it at the same time.

The life science company Bayer has implemented a comprehensive corporate brand management following a tailor-made model depicting the impact of reputation drivers via stakeholder behavior on shareholder value. Using evidence from the German stock market proving a buy-and-hold abnormal return of 1.94% per year against the DAX index, we show that Bayer's reputation contributes some 28% to its market capitalization. Regression analyses furthermore reveal that one scale point improvement in reputation *ceteris paribus* results in 313 m€ EBITDA pre exceptionals increase.

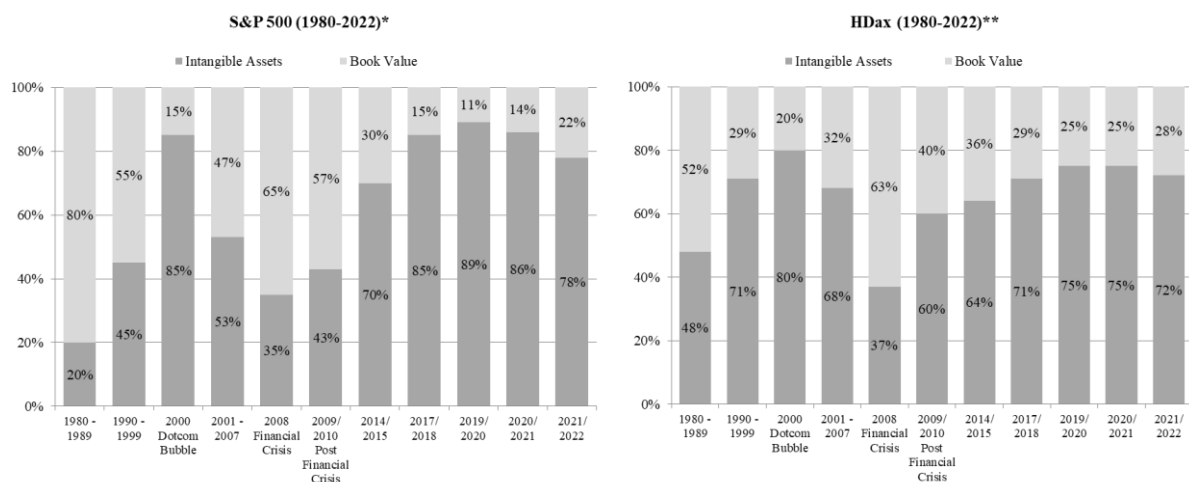
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1. Reputation as an Intangible Asset

A look at the market-to-book value ratio of S&P500 companies and of HDAX companies (Figure 1.1) reveals that a large part of a company's value is attributable to factors not apparent from the balance sheet - i.e., intangible assets.

A plethora of studies has investigated into intangible assets and comes up with dozens of explanations on what could hide behind the term *intangible asset*: Computer software, licenses, trademarks, patents, copyrights, import quotas, goodwill, trust, reputation, brand recognition, trade names, company logo, employees' skills, abilities, knowledge, and experience, just to name a few. What most of the papers forget to mention is that these constructs are not on the same level of hierarchy. We may argue that talented job seekers prefer to work for a company they trust, the more if they have the choice. Qualified employees then file patents, create strong brands and write computer software. Customers tend to be more loyal when they trust a company, and investors will be reluctant to provide equity or loans for firms they do not trust. Figure 1.1 suggests that investors grant companies a kind of leap of faith, which at the height of the internet hype was 80% and more. During the financial crisis, these percentages significantly dropped, as the financial crisis destroyed trust (Weber Shandwick, 2012). In the meantime, stock market valuation patterns have recovered, and investors' trust is close to all-time highs. Hence, it comes as no surprise that companies are keen on reaping the benefits from shareholders' and stakeholders' trust in them. But how do we manage trust? Without taking a deep dive at this point, we may emphasize that scholars and practitioners agree that corporate reputation is the central precursor of trust (Ebert, 2009). Correlations between trust and reputation items are close to perfect (Sarstedt et al., 2013), and therefore corporate reputation is one of the most important intangible resources of a company (Fombrun, 1996; Raithel & Scharf, 2011; Schwaiger, 2004).



*S&P 500 includes the 500 largest stock listed companies in the US

**HDAX contains stocks of 110 largest, publicly listed corporations in Germany (DAX, MDAX, TecDAX)

Sources: Ballow et al. 2004, Lev 2001, Lev 2003; Thomson Reuters Datastream

Figure 1.1: Market and book value of prime standard shares over time

The reason for the outstanding significance of corporate reputation is its impact on stakeholder behavior (see Schwaiger & Raithel 2014 for an overview).

Corporate reputation can serve as a kind of signal (Spence, 1973) to customers, containing indications of the value or quality of the purchase alternatives available for selection. In particular, reputation is important when the purchase decision also involves the formation of opinions about product characteristics that cannot be directly observed before the purchase and/or experienced during product use. In this situation, customers regularly draw on their own or others' experiences with other products from the manufacturer. These experiences and/or already well-known information are used by customers as a substitute for the evaluation of unknown product characteristics (Hawkins et al., 2004; Kirmani & Rao, 2000; Liu & Park, 2015) and condense to a reputation assessment which the customers transfer to the new products in lack of better options (Dawar & Parker, 1994; Klein & Dawar, 2004; Wernerfelt, 1988) – a phenomenon that can be observed especially when customers are suffering from information overload and seek to relieve themselves cognitively (Kroeber-Riel, 1987; Nitzsch, 2002).

With regard to customers, reputation is thus considered to serve as an instrument for risk reduction or reduction of purchase decision uncertainty (Barney, 1991; Dowling, 2001; Kotha et al., 2001) - mediated by the indirect or direct experiences with the company - and consequently (if well developed) to attract more customers (Eberl, 2006; Fuchs, 2009; Gardberg & Fombrun, 2002; Gotsi & Wilson, 2001; Groenland, 2002). Customers may experience a greater degree of congruence between expected and perceived performance. This, in turn, is synonymous with greater customer satisfaction (Aaker, 1991; Su et al., 2016) and may therefore be reflected in a price premium (greater willingness to pay on the part of customers) that a company with a good reputation can achieve for its products (Eberl & Schwaiger, 2008; Klein & Leffler, 1981; Milgrom & Roberts, 1988; Podolny, 1993). Ultimately, reputation also strengthens customer loyalty and triggers positive word-of-mouth (Andreassen & Lindestad, 1998; Barich & Kotler, 1991; de Leaniz & del Bosque Rodríguez, 2016; Fombrun & Van Riel, 1997; Groenland, 2002; Ruiz et al., 2014; Walsh et al., 2009).

Players on the capital market (not only equity investors but also debt investors) have to form an expectation about the possible returns and growth rates of a company based on available information which cannot claim to be complete or correct, despite progressive technological aids. Both institutional and private investors make their decisions in an environment of rapidly successive information - often more information than can presumably be processed (Nakra, 2000; Slovic, 1972), because on the capital market the number of stocks (or corporate bonds) and the amount of available information and news on these stocks is very large. This can lead them to using only a part of the available information for decision support (Höser, 1998; Wright, 1975). Corporate reputation is a very powerful signal to investors, as they believe that good investment alternatives can only come from "good" companies (Helm, 2007; Shefrin, 2001; Shefrin & Statman, 1995).

Investors' willingness to buy and hold shares is contingent on their reputation assessment of the respective company (Pfarrer et al., 2010; Schütz & Schwaiger, 2007). The approach of using a company's reputation as surrogate for fundamental data is suboptimal but not completely irrational, since there is a positive correlation between reputation and the financial performance of a company. This will be discussed in more detail below.

Employees are more intrinsically motivated to work for a reputable company (Anderson & Weitz, 1992; Argenti & Druckenmiller, 2004; Ganesan, 1994; Sharma & Prasad, 2018), which

results in lower contracting and monitoring costs (Roberts & Dowling, 2002). The employer's reputation plays a particularly important role for high potentials, i.e., highly educated specialists and academics (Grobe, 2003).

Schloderer et al. (2009) report a very high correlation of 0.77 between reputation and willingness to apply among students close to graduation, which translates into a salary mark-up reputation laggards have to pay compared to reputation champions (Schloderer, 2012).

In addition, companies with a fine reputation enjoy better conditions from suppliers and general advantages in negotiations along with a more favorable treatment by political stakeholders. This is indirectly confirmed by studies scrutinizing the so-called airbag function of corporate reputation. Pfister et al. (2020) and Cao et al. (2015) report a negative impact of reputation on cost of equity, indicating a lower corporate risk.

In a nutshell: Fostering a company's reputation results in increased shareholder value and is one of the best precautionary measures against the effects of crises in times of increasingly critical stakeholders (who can express their opinions uncontrolledly on social media at any time) and growing scandalization tendencies (Szwajca, 2018, ACE Group, 2013).

Given that a high reputation represents a strategic competitive advantage and can be classified as an effective means of crisis prevention, it is not surprising that corporate reputation has been a focal subject of research in scientific publications for around 40 years (e.g., Shapiro, 1982, 1983). But also practice is well aware of the desirable effects: "Trust is the beginning of everything" has been the advertising slogan of a well-known German bank in the 1990s. At least since that time companies have become actively involved in corporate reputation management, performed with the goal of increasing the trust stakeholders put into the respective company.

We will explain Bayer's approach of measuring and managing its reputation in section 2, before we move on to monetary consequences, the return-on-branding analyses in section 3, and end with concluding remarks (section 4).

2. Bayer's Global Brand Tracking

Bayer looks at its corporate brand as the carrier of Bayer's reputation. The corporate brand is the identifier stakeholders use to store and retrieve company-relevant information; it bundles the experiences stakeholders have made with the Bayer company.

Ultimately, stakeholder behavior is responsible for Bayer's financial success. We take this into consideration and use Bayer's financial performance as the focal outcome variable in our reputation management model (Figure 2.1) underlying the so-called Global Brand Tracking (GBT). Among the various financial key performance indicators, we concentrate on market value and EBITDA pre exceptionals, and we will discuss details on this choice in section 3.

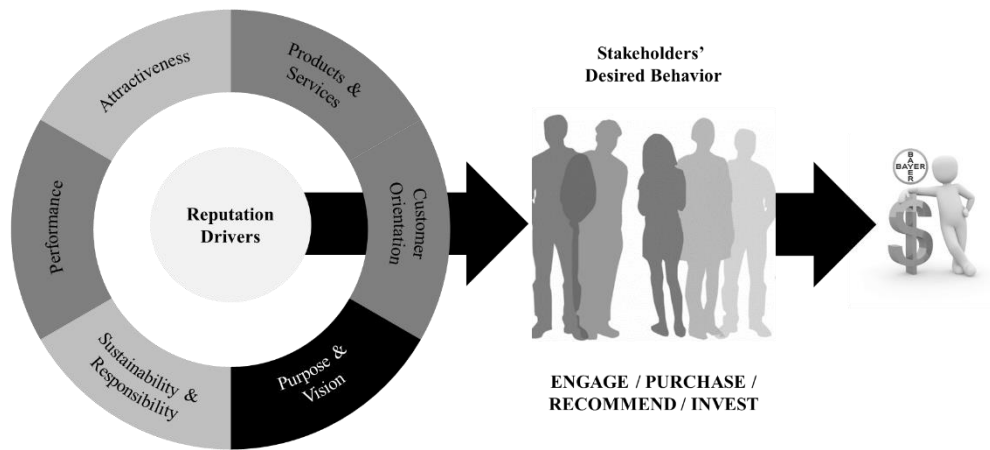


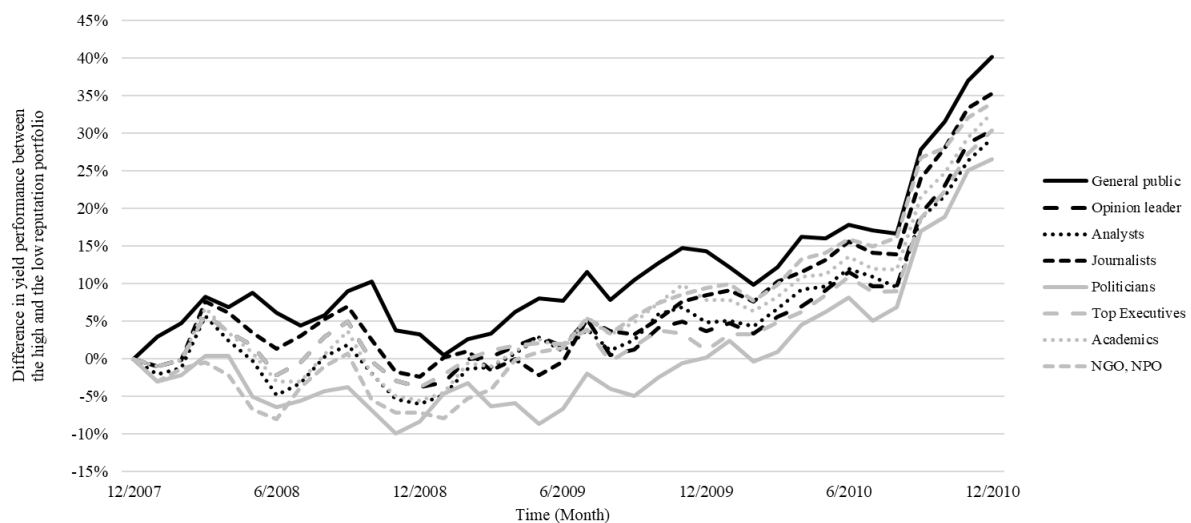
Figure 2.1: Bayer's Global Brand Tracking – the big picture

A positive contribution to a company's financial performance may follow specific patterns of stakeholder behavior: Ideally, stakeholders should be willing to say something positive about a company, to purchase a company's products and services, to recommend it, and to invest in it. In the GBT, we build an index from four variables (*In the future, if I had the opportunity, I would say something positive about the company; How likely is it that you would recommend the company to a friend or colleague?; I intend to use products/services from the company; If I had the opportunity, I would invest in the company*) and survey respondents' level of agreement on a five-point Likert scale. Target population for sampling in Bayer's top 20 countries is the "informed (or educated) public" (also: "informed consumers"), which the market research agency promises to reach by screening out respondents that do not fulfill at least one of the following criteria: educational level comparable to "Abitur" in Germany (e.g. A-Level in UK, Bachelor degree in the US etc.), gross annual income above certain thresholds (e.g. 30,000 Euro in Germany), or professional occupation in junior/middle/senior management, in administration, as qualified specialist, employee, or student.

Following vibrant discussions on the question which stakeholder group(s) to survey, we refer to Raithel et al. (2011) who investigated whether it matters which stakeholder group is considered with regard to their reputation perception. In 2007, 2008 and 2009, TNS Infratest not only surveyed the general public but also opinion leaders: Financial analysts, journalists, politicians, top executives, economists and representatives of non-governmental and non-profit organizations. Between 29 and 59 people per group were interviewed in person. Each respondent had to rate all companies from a set of some 30 firms (mostly the DAX30) that he or she was, at least by name, familiar with.

Figure 2.1 allows a comparison of those supposedly different target groups. The key question is which stakeholder group to survey, if we must assume a company enjoys different reputations in different audiences. Since there is no generally accepted answer to the question of which stakeholder group is the most important one, we define the diagnosticity of reputational judgments for the market value of a company as the relevant focal criterion. Following this approach, we let compete reputation portfolios against each other: The “high reputation” portfolio contains those companies ascribed an above-average reputation by the corresponding stakeholder groups while the “low reputation” portfolio consists of firms with below-average reputation.

Figure 2.2 reveals that, over the observation period of three years, the high reputation portfolio of the general public yields some 40% more return than the low reputation portfolio. This spread in performance between champions and laggards portfolio is lower in all other stakeholder groups. We take this as another piece of evidence for the wisdom of the crowd. Moreover, it can be seen that, regardless of the stakeholder group considered, the graphs develop synchronously. Simply speaking, reputation assessments by different stakeholder groups vary notably with respect to the level (the more formally educated respondents are, the more generous they are with competence and likeability ratings), but they are highly correlated between groups and therefore deviate less notably with respect to the structure, i.e. the reputation rankings. Hence, we see positive return differences between champions and laggards portfolio in all groups, ranging from 25% to 40%; however, we have to acknowledge that reputation assessments of the general public are most diagnostic for stock market performance.



Reputation Data:

Source: IMM Corporate Reputation Monitor©

Analyzed Waves: 2007-12, 2008-12, 2009-12

Companies: 27 to 30 DAX companies per wave

Respondents: Representative samples of general public respectively opinion leader segments in Germany

Stock Market Data:

Source: Thomson Reuters DATASTREAM

Period: 30.12.2007 - 30.12.2010

Dividends included

All shares are weighted based on market value (comparable results for an equal weighting of shares)

Figure 2.2: Development of reputation portfolios by stakeholder group

In addition, we would like to eliminate any endogeneity concerns: While critics may assume the general public attributes a high reputation to those companies that recently were or still are successful in the stock market, Raithel and Schwaiger (2015) winnowed out the so-called financial halo from reputation data and proved that “true reputation”, i.e., the part of reputation that cannot be explained by past financial performance, matters most.

As noted above, Bayer surveys the so-called “informed public” for their GBT. Therefore, this sample composition has to be seen as kind of a mixture between general public and opinion leader market – a characteristic that will turn out to be helpful, which we will explain in section 3.

Whereas choice of the population to sample from does not make a big difference, provided that large enough sample sizes can be obtained, it makes a difference how reputation is measured. Schwaiger (2004) came up with a conceptualization that splits reputation, as an attitudinal construct, into a cognitive component called competence and an affective component called likeability. The items used to measure the components and therefore reputation are displayed in Table 2.1.

Reputation Item	
Likeability 1	[company] is a company I can identify with better than with other companies
Likeability 2	[company] is a company I would regret more if it didn't exist anymore, than I would with other companies
Likeability 3	I regard [company] as a likeable company
Competence 1	[company] is a top competitor in its market
Competence 2	As far as I know [company] is recognized world-wide
Competence 3	I believe that [company] performs at a premium level

Table 2.1: Items used to measure corporate reputation (Schwaiger, 2004, p. 64)

Since 2005, renowned market research institutes – like TNS Infratest and Dialego - have surveyed respondents from different target groups administering these six items to them, and LMU’s Institute for Market-based Management has condensed them to create its IMM Corporate Reputation Monitor[®], a representation of blue-chip companies along their perceived likeability and competence values.

This approach has been tested by Sarstedt et al. (2013) and turned out to be superior with respect to convergence and criterion validity (Table 2.2). Among others, it has also been used for a capital market study confirming reputation’s impact on market value (Raithel & Schwaiger, 2015).

	AMAC	GMAC	RepTrak	CBR	Helm	Schwaiger
Convergence validity						
Reputation (overall)	52% **	52% **	57% **	61% *	59% **	62%
Criterion validity						
Customer Satisfaction	41% **	42% **	70% **	66% **	57% **	73%
Loyalty	38% **	39% **	66% **	63% **	56% **	71%
Trust	49% **	52% **	71% **	73% **	55% **	79% **
Commitment	34% **	37% **	45% **	41% **	38% **	50% *
Word-of-Mouth	36% **	38% **	65% **	63% **	57% **	70%

Table 2.2: Performance of reputation measurement approaches (Sarstedt et al., 2013)

Reputation measurement in Bayer’s GBT follows this approach, even if Bayer prefers to talk about corporate brand strength rather than about corporate reputation.

As we have seen in section 1, stakeholder behavior itself is driven by corporate reputation. Accordingly, we use the two components of corporate reputation (competence and likeability as operationalized in Table 2.1) as mediator and specify some 35 driver variables grouped into six driver constructs, namely PRODUCTS & SERVICES, CUSTOMER ORIENTATION, PURPOSE & VISION, SUSTAINABILITY & RESPONSIBILITY, PERFORMANCE, AND ATTRACTIVENESS (Figure 2.3). Driver items are formulated as statements, and the level of agreement is surveyed on five-point Likert scales again.

Respondents do not only evaluate Bayer along the exogenous and endogenous variables, but also a set of Bayer’s competitors that depends on the country under scrutiny. Parameterization is done by means of SMART-PLS (Ringle et al., 2022). The model explains stakeholder behavior very well – country specific variance explanation ranges from 65% to 78% in 2022, indicating an excellent model fit. In simple words for those not used to working with empirical studies: Stakeholder behavior can be viewed as a random variable that is dependent on a large number of influencing factors. When measured, the results will vary around an expected value. If we blind out all other influencers and, as shown above, only use corporate reputation to predict stakeholder behavior, we can already explain between two thirds and three quarters of this variation. 100% variance explanation would indicate a perfect forecasting ability. Given that stakeholder behavior depends on many aspects beyond a company’s control, the reported 65% to 78% are highly satisfying.

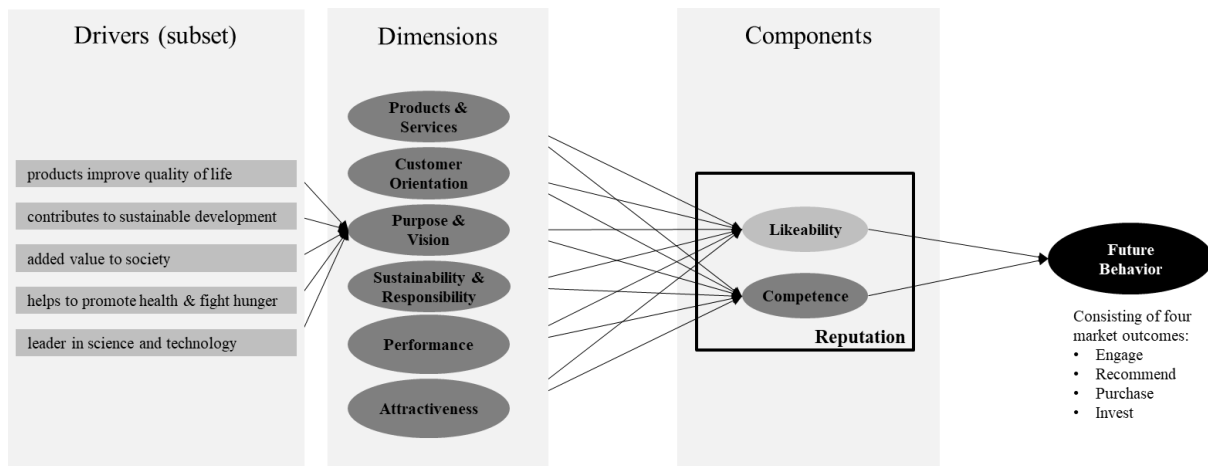


Figure 2.3: Bayer’s Global Brand Tracking – (some) details

Now that we know we can rely on the model, we look at the main results we derive from it. Most importantly, we get a ranking of driver items, sorted by impact on stakeholder behavior, and for each driver Bayer’s performance compared to the benchmark is calculated. This allows Bayer to identify which areas⁵ need to be strengthened in the perception of the target audience in order to manage stakeholder behavior in a desirable manner. The analysis’ results therefore serve as a strategic briefing for communication leads in the corresponding countries. The performance measures – Bayer’s score in relation to benchmarks - allow for the development of a gut feeling about the aspiration level.

However, improving stakeholder perception of the focal drivers is costly – either an improvement of strategies and actions is required (e.g., optimized services, provision of additional value to society) or communication measures aiming at better perception of given facts have to be launched. Hence, giving an answer to the question what the return on a better perceived corporate brand would be is crucial when fighting for budgets.

3. Return on Corporate Brand

3.1. The Corporate Brand's Halo Effect

In search of evidence for the effects a strong corporate brand has on financial performance, we start with a look at the effects it has on the perception of product brands – those items Bayer sells in the global market to earn a margin. We analyze spillover effects (also “halo effects”) between Bayer’s corporate brand and its various product brands (see Figure 3.1) across its three divisions and key markets.

First, we look at 13 product brands from two lines of business: *Consumer Health* and *Crop Science*. Controlling for product usage we find that the Bayer brand grants an average uplift of 74%, i.e., the percentage of top2-boxes (answers that indicate high levels of agreement) is relative 74% higher among those respondents (end-consumers for Consumer health, farmers for Crop Science) that know the product brand is offered by Bayer than among those respondents who do not know. We see clearly that this effect is owed to the brand strength, since uplifts turn out to be even stronger in the subpopulation of non-users of the respective products than among users.

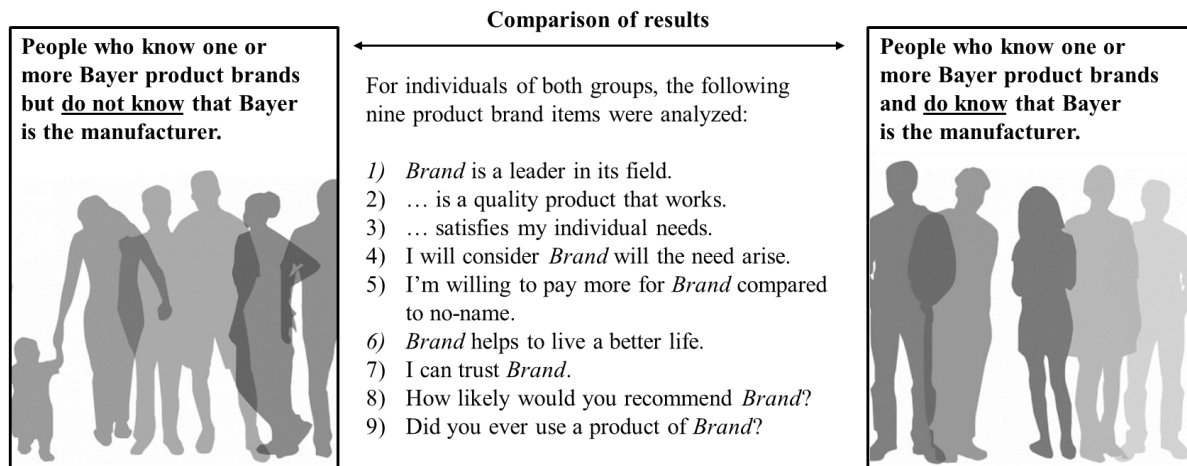


Figure 3.1: Spillover effects from Bayer’s corporate brand to product brands

Second, we have to find a different approach for Bayer’s third line of business (*Pharmaceuticals*), since the target group of healthcare professionals (HCP) is more literate and knowledgeable than the general public. Finding a sufficient number of HCPs that would not know a certain pharmaceutical product brand (like Xarelto®, Eylea® etc.) is offered by Bayer seems literally impossible. In order to address this issue, we developed two experimental designs to prove uplift effects in this line of business in principle, allowing us to extrapolate data from reputation studies to estimate an uplift percentage in the pharmaceutical sector.

The first experimental design was a simple choice task. Respondents were shown the usual description of an innovative active ingredient, containing information on indication, patient population, efficacy, safety, and dosage/administration before they were prompted from which manufacturer they would prefer this active ingredient to be offered.

The second experiment was a vignette study. Respondents were randomly assigned to one of six experimental groups and had to evaluate Bayer and two benchmark firms in terms of corporate reputation (null measurement). As a distraction task, respondents were prompted for overall acceptance of 18 companies from the pharmaceutical sector. As experimental treatment

participants had to read three (fabricated) press releases describing incidents related to the firm's output/services (incident 1), ethics/CSR (incident 2), and non-compliance (incident 3) that potentially tarnish reputation. Looking at the experiment as a whole, each incident was assigned to each of the three corporations. The setup reminds of a Latin Square and allows the calculation of the airbag effect, i.e., the ability of a corporate brand to mitigate the loss of reputation in case of a crisis.

Finally, a follow-up measurement of reputation was done.

Data analysis revealed that reputation assessments from the general public and from HCP are stable with regard to their structure, although there is a level shift that matches our observations from the last two decades: The better respondents are formally educated, the more generous they are with respect to reputation assessments.

Both experiments prove an in-principle uplift of the Bayer brand among HCP, allowing extrapolations from *Consumer Health* studies that render uplift percentages comparable to the ones described above in *Consumer Health* and *Crop Science*.

While the effects of corporate reputation on stakeholder behavior are well documented in literature (see section 1), the uplift studies described above tell us about the concrete effect size in the case of Bayer and provide additional justification for the Return-on-Branding calculations we explicate subsequently.

3.2. The Corporate Brand's Contribution to Market Value

As mentioned in section 2, professional market research agencies (TNS-Infratest [now KANTAR], Dialego) have been surveying the general public (and other stakeholder groups) since 2006 in order to assess the corporate reputation of DAX30/40 firms using the items from Table 2.1.

Raithel and Schwaiger (2015) merged those reputation data, available for the DAX30 firms in semi-annual waves from the end of 2005 to the end of 2012, with financial data from DATASTREAM and conducted a portfolio study (Carhart, 1997; Fama & French, 1993). While the article focuses on the distinction between so-called financial and non-financial reputation (that part of the empirically observed reputation that can / cannot be explained by past financial performance), buy-and-hold abnormal returns (BHAR) for the observable total reputation are disclosed as well, allowing us to use them for a rough approximation of the effects Bayer's reputation has on its market value. Testing high-score and low-score portfolios according to observed reputation results in a BHAR of 0.49% per month against appropriate benchmarks for those companies that score above average in reputation, while the entire DAX30 index outperforms those benchmarks in the observation period (12/2005 – 12/2011) by only 0.33% (Raithel & Schwaiger, 2015, p. 953). That translates into a 1.94% annual BHAR for the better half of DAX30 – or now DAX40 – companies with respect to corporate reputation, whereas the low-score portfolio underperforms the DAX index by the same magnitude.

That allows us to compare the actual Bayer share (BAY001) to a fictitious one in which we artificially set the reputation impact to zero.

Between 2006 and 2023 Bayer has ranked consistently among the better half of DAX30/40 firms (see Table 3.1). Hence, the mentioned BHAR can be attributed to the actual Bayer share

price (BAY001) every year. If we pick Bayer’s share price at XETRA closing on the first trading day in May every year and compare the actual share price development with a fictitious one representing Bayer’s performance without the reputation-based BHAR, the brand contribution per May 2023 amounts to 16.20 € or 28.32% of Bayer’s share price.

In other words, without its reputation advantage, Bayer shares would have been trading at 41.00 € instead of the actual 57.20 € on May 2nd, 2023. This calculation reflects the importance of Bayer’s reputation for its entire business in a long-term perspective, although it will not tell us anything about its impact on short term profits.

Year	Share (early May)	DAX30/40 Index	Return DAX	Bayer’s reputation above Ø?	Return Bayer	Ret. Bayer w/o Brand	Fictitious share price
2006	35.39€	6,051.29€		yes			
2007	49.91€	7,455.93€	23.21%	yes	41.05%	39.11%	49.23€
2008	53.77€	7,043.23€	-5.54%	yes	7.73%	5.79%	52.08€
2009	37.54€	4,902.45€	-30.39%	yes	-30.18%	-32.12%	35.35€
2010	46.42€	6,166.92€	25.79%	yes	23.64%	21.71%	43.03€
2011	57.21€	7,527.64€	22.06%	yes	23.23%	21.30%	52.19€
2012	52.34€	6,710.77€	-10.85%	yes	-8.50%	-10.44%	46.74€
2013	78.85€	7,961.71€	18.64%	yes	50.63%	48.69%	69.51€
2014	98.41€	9,556.02€	20.02%	yes	24.81%	22.88%	85.41€
2015	128.03€	11,619.85€	21.60%	yes	30.10%	28.16%	109.46€
2016	98.25€	10,123.27€	-12.88%	yes	-23.26%	-25.20%	81.88€
2017	109.19€	12,507.90€	23.56%	yes	11.13%	9.19%	89.41€
2018	98.04€	12,802.25€	2.35%	yes	-10.21%	-12.15%	78.54€
2019	61.57€	12,345.42€	-3.57%	yes	-37.20%	-39.13%	47.81€
2020	57.95€	10,466.80€	-15.22%	yes	-5.88%	-7.82%	44.07€
2021	53.57€	15,236.47€	45.57%	yes	-7.56%	-9.50%	39.89€
2022	60.18€	13,939.07€	-8.52%	yes	12.34%	10.40%	44.03€
2023	57.20€	15,726.94€	12.83%	yes	-4.95%	-6.89%	41.00€

Table 3.1: Bayer’s Return on Brand Calculations

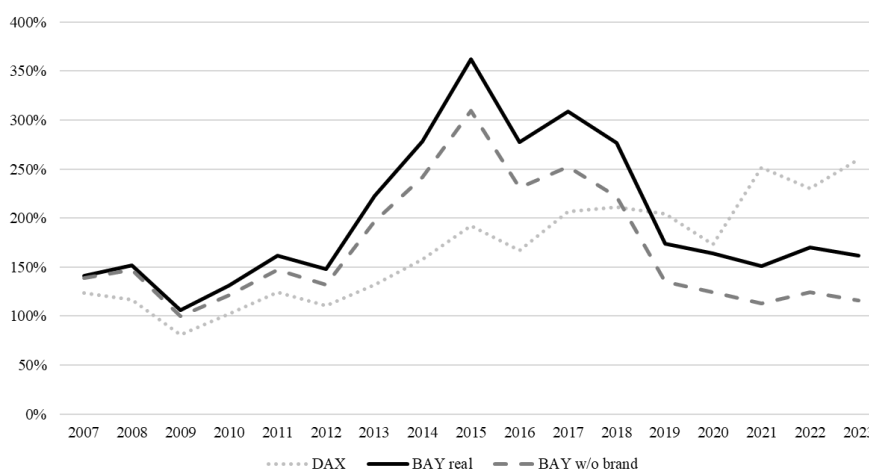


Figure 3.2: Bayer’s actual versus fictitious (without reputation BHAR) share price

3.3. The Corporate Brand's Contribution to EBITDA

To learn about the link between reputation, as measured in the GBT, and profit, we refer to regression analysis. Between 2005 and 2011 we compiled an extensive dataset consisting of reputation assessments given by a multitude of stakeholder groups and financial key performance indicators for DAX30 companies. We investigated the linear relation between changes in reputation and changes in net income. Such a delta regression, in which we control for several influencing variables, appeared to be a robust procedure. For the analysis described subsequently, reputation values were available for some 50 blue-chip companies – among them almost all DAX30 firms - for the general public and the so-called opinion leader market.

As we argued in section 2, the general public's reputation assessment is most diagnostic for share price developments, although structural differences between the surveyed target groups seem negligible (Figure 2.2). However, when looking at the link between reputation and profit figures, best model fit was achieved when looking at the opinion leader market. The composition of stakeholder groups from the opinion leader market is similar to the *informed public* sample underlying Bayer's GBT, so we did not see compelling arguments that would prevent us from transferring the results to the Bayer case – the more as we still have Bayer reputation assessments from the general public via the IMM Corporate Reputation Monitor[®] and can compare results from different stakeholder groups.

For the analysis described subsequently, computer assisted personal interviews were conducted by former TNS-Infratest on our behalf among an average of 49 salaried business journalists, 35 politicians, 54 analysts, 32 top executives, 43 economists and 55 representatives of non-governmental (NGO) and non-profit (NPO) organizations. The respondents evaluated all of the companies they were familiar with at least by name.

Company-specific data, most importantly profit figures, was taken from the DATASTREAM database, a product of the Thompson Financial Group.

In general, it is difficult to calculate the impact of reputational changes on profit, because, even if the accounting rules are strictly adhered to, the determination of profit leaves room for maneuver that can be used differently by the decision-makers depending on their interests. We need to keep this in mind when using DATASTREAM's *Net Income* (Table 3.2) as endogenous variable.

Revenue
Sales Revenue
Operating Expenses
- Cost of goods sold
- SG&A expenses
- Depreciation and amortization
- Other expenses
= Total operating expenses
Operating Income
+ Non-operating income
Earnings before Interest and Taxes (EBIT)
- / + Net Interest expense/income
Earnings before income taxes
- Income Taxes
Net Income

Table 3.2: Definition of Net Income in the DATASTREAM database

Another important variable taken from the DATASTREAM database is *Total Assets* (reported in '000). This variable is necessary to control for size effects in the subsequent analysis (Berrone & Gomez-Mejia, 2009). Total assets are defined differently for different industries (see Table 3.3).

Industry	Total Assets
Banks	Sum of cash and due from banks, total investments, net loans, customer liability on acceptances (if included in total assets), investment in unconsolidated subsidiaries, real estate assets, net property, plant and equipment and other assets.
Insurance Companies	Sum of cash, total investments, premium balance receivables, investments in unconsolidated subsidiaries, net property, plant and equipment and other assets.
Other Financial Service Providers	Sum of cash and equivalents, receivables, securities inventory, custody securities, total investments, net loans, net property, plant and equipment, investments in unconsolidated subsidiaries and other assets.
All other firms	Sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.

Table 3.3: Definition of Total Assets in the DATASTREAM database

The aim of the following analysis is to forecast how a change in reputation affects net income. The change in reputation is the cause of the change in financial performance, measured in terms of net income. This relationship has already been confirmed in various empirical studies (see e.g., Eberl & Schwaiger, 2005 for a theoretical underpinning).

In our regression function net income serves as dependent and reputation as independent variable. Moreover, control variables (Eberl & Schwaiger, 2005; Roberts & Dowling, 2002) are integrated: Total assets let us control for company size-specific effects (Schwalbach, 2000), wave dummies for time-specific effects. The latter are necessary because it must be assumed that certain economic constellations prevailed at any point in time that influenced all companies equally and therefore cannot be attributed to the direct relationship between reputation and net income. For example, the economic crisis of 2007-2009 affected all companies, regardless of how their reputation changed. The annual effects are estimated in comparison to 2011, the final year in our observation period.

In comparable studies examining the relationship between intangible assets - such as reputation - and corporate success, return on assets serves as an additional control variable (Jacobson & Mizik, 2009; Roberts & Dowling, 2002). The return on assets, which is often used as an indicator of management efficiency, is calculated as the quotient between net income and total assets. However, it is already clear from this definition that including return on assets is not feasible, since the net income would be on both sides of the equation in that case. Moreover, some studies integrate market-to-book ratio to control for the share of intangible assets (Eberl & Schwaiger, 2005). However, market-to-book ratio turned out to be statistically insignificant in our calculations and was therefore excluded from the model.

In order to determine the specific, incremental effects of a change in reputation, a model with intercept term is used, as it alleviates the meaningful interpretation of goodness-of-fit measure (in particular R^2). Furthermore, differences are used to determine the function for reputation and financial performance (i.e., the value of the previous year is subtracted from the value of

the current year) in order to be able to determine directly what effect a change in reputation has on the change in net income.

Before we start with the regression analysis, we look at a mere descriptive graphical analysis (Figure 3.3). We see that a negative change in reputation in the opinion leader market is accompanied by a negative change in net income. In each case, the average values for net income across all DAX30 companies were taken into account. It can be seen that a negative change in reputation is also accompanied by a higher average negative change (right bar) in net income than a positive change in reputation (left bar).

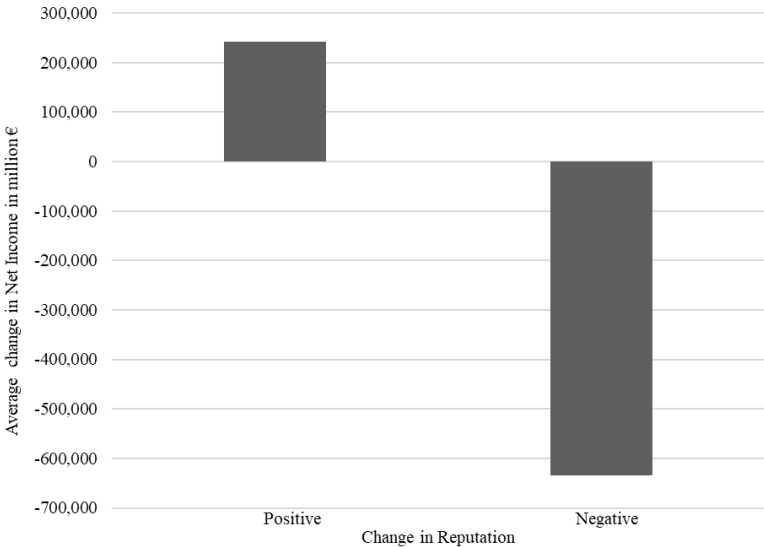


Figure 3.3: Change in reputation versus change in net income among DAX30 companies (2007 – 2011)

Results of the regression estimation described are shown in Table 3.4. It can be seen that the change in reputation in the opinion leader market has a significant positive influence on the change in net income.

The point estimate of the regression coefficient is 374,551 million €. This means that for a change in reputation of one scale point, the net profit in the entire population of DAX30 companies changes by 374,551 million €, and with a probability of 95% it ranges between 146,311 million and 602,791 million €.

To determine the expected change in profit using our regression results, the unstandardized regression coefficient (374,551,104) is related to the determined change in reputation of one scale point to the average total assets of the DAX 30 companies (at the time of the analysis 170,794,502,000 €) to obtain a factor for the size adjustment. This results in a correction factor of $0.0022 = 2.2\%$. This means that a change in reputation in the opinion leader market, measured according to the rule shown above (Table 2.1), by one scale point causes an expected change in net income by 2.2% of a company’s totals assets.

Dependent Variable	Change in Net Income						
	Regression coefficient	Standardized regression coefficient	Standard error	T-value	p-value	Lower confidence limit	Upper confidence limit
Independent Variable	β	β					
Constant	171,687	-	462,488	0.371	0.711	-745,548	1,088,922
Change in Reputation (Opinion Leader Market)	374,551,104	0.263	115,082,972	3.225	0.002	146,311,172	602,791,036
Change in Total Assets	-0.009	-0.324	0.002	-3.974	0.000	-0.014	-0.005
Wave 7 12/2008	-2,329,647	-0.338	655,889	-3.552	0.001	-3,630,448	-1,028,847
Wave 9 12/2009	-217,325	-0.031	693,097	-0.314	0.754	-1,591,920	1,157,271
Wave 11 12/2010	925,837	0.136	647,003	1.431	0.115	-357,342	2,209,016
Model Goodness of fit							
F-Statistics	11.743 (0,000)***						
R ²	0.363						
Adjusted R ²	0.332						
Error level: * p < 10%, ** p < 5% *** p < 1%.							

Table 3.4: Regression results

The model is significant, but the adjusted R² is only 0.332. Thus, the entire model can explain only 33.2% of the variance of the change in net income. However, in view of the numerous variables influencing net income, it is not realistic to hope for higher variance explanations.

Again, we take a pragmatic approach and use the calculated 2.2% of total assets as an estimator for the changes in profit. In order to compensate accounting specific particularities as good as possible, we take EBITDA pre exceptionals as a more appropriate profit measure than net income. And we account for the uncertainty of our estimate by reporting the 95% confidence interval, ranging from 0.9% to 3.5 % per scale point in reputation change as evidenced by current year changes in the GBT. In the case of Bayer, reputation improvement by one scale point will contribute an expected 313 million € EBITDA pre exceptionals to next year's income statement, with 95% confidence limits at 122 and 504 million €.

For benchmark companies, we rely on reputation changes measured by the IMM Corporate Reputation Monitor[©] which surveys reputation using the same items, however, based on responses of a sample representative for the German population rather than on responses from the opinion leader market. We feel able to tolerate this impreciseness, the more as the correlation of reputation assessments between opinion leaders and the general public is very high. As already mentioned, there is a shift in reputation levels: More formally educated people are more inclined to grant better competence and likeability assessments than the general public, but the structure of reputation assessments is highly similar.

Figure 3.4 gives an overview of the effects of one scale point change in reputation for some benchmark companies.

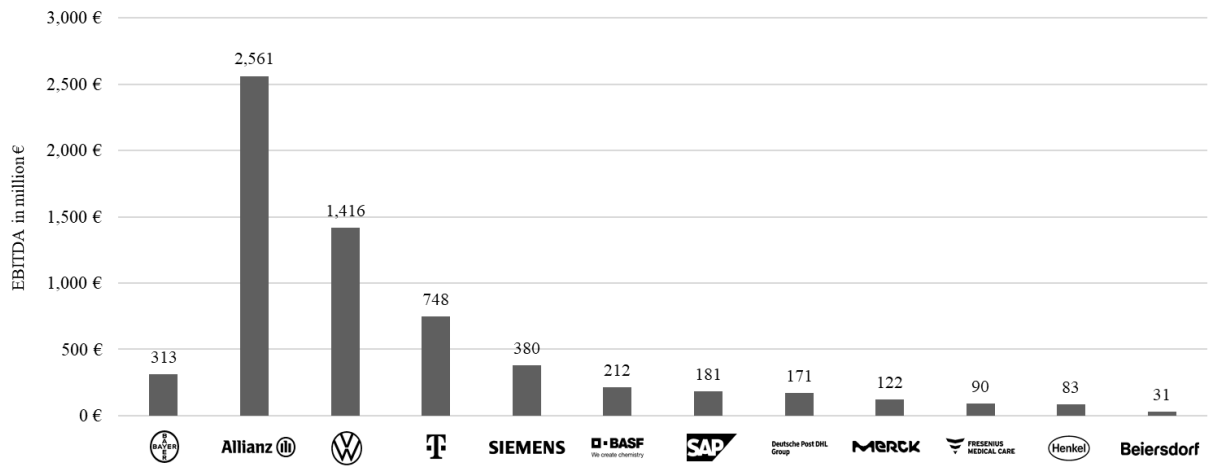


Figure 3.4: Expected impact of one scale point change in reputation 2022 on EBITDA in million € pre exceptionals 2023

4. Discussion

The explanations in chapters 2 and 3 have shown how Bayer measures the perception of its corporate brand in various countries, what effects can be expected on stakeholder behavior, and how the impact of the corporate brand on Bayer's financial results is assessed.

Of course, it is immediately apparent that even complex models can represent reality only incompletely. In practical applications, compromises have to be made because a perfect solution would not be achievable or come at prohibitively high cost. With our approach, we follow the motto "Better be vaguely right than precisely wrong". To calculate the value contribution of reputation to Bayer's share price, we use abnormal returns determined in a capital market study, which the portfolio with the companies of above-average reputation showed. Hence, if Bayer ranks in the upper half of the DAX40 companies, we attribute an excess return of 1.94% per year to its share price development. One could certainly critically object that it makes a difference whether a company ranks at the top of the DAX40 or just around place 20. This aspect is valid, and we could easily address it by means of extrapolation. However, we consider this approach to be only apparently accurate, and we refrain from it, the more as we obtain a reasonably reliable estimator for the contribution to the market value of the company even without this extrapolation.

How we calculate the contribution of reputation changes to profit can also be discussed critically: Firstly, the periods of data collection on which the calculation is based, already lie more than a decade in the past, and they relate only to the German market. Since the survey of reputation ratings among the special target groups of the opinion leader market can only be carried out promisingly with the aid of (computer assisted) personal interviews, the data collection incurs high costs. From a business perspective, therefore, the question must be asked whether the gain in precision can justify the considerable additional costs. This is even more true as these target groups would need to be monitored consistently and, to overcome the problem of geographical bias, at least in all important markets. However, a look at the results from many past market studies reveals that Germany is one of the most difficult markets for Bayer. German stakeholders tend to see Bayer (like the other players in its lines of business) more critical than stakeholders in most other countries. Therefore, we feel we are following a conservative approach when relying on data from Germany. As the reputation notion of Bayer is higher in most other countries scrutinized, the effects on stakeholder behavior and, in turn, on financial performance in reality should be even higher than in our calculations.

Last not least and based on discussions with decision-makers from controlling, the final precision is not the decisive factor; rather, finance and accounting functions want to be convinced with a well-founded model and comprehensible calculations that corporate communications has taken reasonable efforts to document the value contribution of the corporate brand, which serves as a carrier for reputation. Reasonable in this sense refers to taking into account commercial principles, i.e., contrasting the cost of information with the value of that information.

With our work at the marketing-finance-interface, we are making a contribution to the valuation of intangible assets that is accepted at Bayer. We have made all assumptions transparent and take account of uncertainties within the bounds of statistical possibilities by showing confidence limits.

In any case, the approaches presented provide support in the competition for tight budgets, which - like all other departments - corporate communications and branding at Bayer also has to face.

Notes

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⁵ We follow the principle “Create facts, drive perception”. The research design brings to light stakeholder attitudes that are based on stakeholders’ subjective perceptions rather than on objective facts. If these attitudes are not sufficiently pronounced, deficient facts or distorted perceptions may be the decisive reason.

References

- Aaker, D. A. (1991). *Managing brand equity: capitalizing on the value of a brand name*. Free Press.
- ACE Group (2013) *Reputation at risk*. Retrieved June 01, 2023, from <https://www.yumpu.com/en/document/read/51716579/reputation-at-risk-ace-group>
- Anderson, E., & Weitz, B. (1992). The Use of Pledges to build and Sustain Commitment in Distribution Channels. *Journal of Marketing Research*, 29(1), 18-34.
- Andreassen, T.W., & Lindestad, B. (1998). Customer loyalty and complex services. *International Journal of Service Industry Management*, 9(1), 7-23.
- Argenti, P. A., & Druckenmiller, B. (2004). Reputation and the Corporate Brand. *Corporate Reputation Review*, 6(4), 368-374. <https://doi.org/10.1057/palgrave.crr.1540005>
- Ballow, J., Burgman, R., Roos, G., & Molnar, M. (2004). *A New Paradigm for Managing Shareholder Value*. Accenture Institute for High Performance Business. Retrieved June 01, 2023, from https://www.researchgate.net/publication/274387586_A_New_Paradigm_for_Managing_Shareholder_value
- Barich, H., & Kotler, P. (1991). A Framework for Marketing Image Management. *Sloan Management Review*, 32(2), 94-104.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 1231-1241.
- Berrone, P., & Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal*, 52, 103-126. <https://doi.org/10.5465/amj.2009.36461950>
- Cao, Y., Myers, J. N., Myers, L. A., & Omer, T. C. (2015). Company Reputation and the Cost of Equity Capital. *Review of Accounting Studies*, 20(1), 42–81. <http://dx.doi.org/10.1007/s11142-014-9292-9>
- Carhart, M. M. (1997). On Persistence in Mutual Fund Performance. *Journal of Finance*, 52(1), 57-82
- Dawar, N. & Parker, P. (1994). Marketing universals: Consumers' use of brand name, price, physical appearance, and retailer. *Journal of Marketing*, 58(2), 81-95.
- De Leaniz, P. M. G., & del Bosque Rodríguez, I. R. (2016). Corporate image and reputation as drivers of customer loyalty. *Corporate Reputation Review*, 19, 166-178. <https://doi.org/10.1057/crr.2016.2>
- Dowling, G. R. (2001). *Creating corporate reputations: identity, image, and performance*. Oxford University Press.
- Eberl, M. (2006). *Reputation und Kundenverhalten*. Gabler Verlag. <https://doi.org/10.1007/978-3-8350-9314-0>
- Eberl, M. & Schwaiger, M. (2005). Corporate Reputation: Disentangling the Effects on Financial Performance. *European Journal of Marketing*, 39(7/8), 838-854. <https://doi.org/10.1108/03090560510601798>
- Eberl, M. & Schwaiger, M. (2008). Die Bedeutung der Unternehmensreputation für die Zahlungsbereitschaft von Privatkunden. *Kredit und Kapital*, 41(3), 355. <https://doi.org/10.3790/kuk.41.3.355>
- Ebert, T. A. E. (2009). *Trust as the Key to Loyalty in Business-to-Consumer Exchanges: Trust Building Measures in the Banking Industry*. Gabler Verlag. <https://doi.org/10.1007/978-3-8349-8307-7>
- Fama, E. F. & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3-56.
- Fombrun, C. & Van Riel, C. (1997). The Reputational Landscape. *Corporate Reputation Review*, 1(1/2), 5-13.
- Fombrun, C. J. (1996). *Reputation: Realizing Value from the Corporate Image*. Harvard Business School Press Books.
- Fuchs, S. (2009). *Unternehmensreputation und Markenstärke*. Gabler Verlag. <https://doi.org/10.1007/978-3-8349-9421-9>
- Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *Journal of Marketing*, 58(2), 1-18.
- Gardberg, N. A. & Fombrun, C. J. (2002). The Global Reputation Quotient Project: First Steps towards a Cross-Nationally Valid Measure of Corporate Reputation. *Corporate Reputation Review*, 4(4), 303-307.

- Gotsi, M. & Wilson, A. M. (2001). Corporate Reputation: Seeking a Definition. *Corporate Communications: An International Journal*, 6(1), 24-30. <https://doi.org/10.1108/13563280110381189>
- Grobe, E. (2003). Corporate Attractiveness: Eine Analyse der Wahrnehmung von Unternehmensmarken aus der Sicht von High Potentials. *HHL-Arbeitspapier* (Vol. 50) Handelshochschule Leipzig.
- Groenland, E. A. G. (2002). Qualitative Research to Validate the RQ-Dimensions. *Corporate Reputation Review*, 4(4), 308-317. <https://doi.org/10.1057/palgrave.crr.1540152>
- Hawkins, D. I., Best, R. J., & Coney, K. A. (Eds.) (2004). *Consumer Behavior: Building Marketing Strategy*. (9th ed., Vol. 2). McGraw-Hill Irwin Boston.
- Helm, S. (2007). The Role of Corporate Reputation in Determining Investor Satisfaction and Loyalty. *Corporate Reputation Review*, 10(1), 22-37. <https://doi.org/10.1057/palgrave.crr.1550036>
- Höser, H. (1998). *Kontextabhängige Präferenzen*. Peter Lang Verlag.
- Jacobson, R., & Mizik, N. (2009). Assessing the value-relevance of customer satisfaction. Retrieved May 30, 2023 from <https://dx.doi.org/10.2139/ssrn.990783>
- Kirmani, A., & Rao, A. R. (2000). No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality. *Journal of Marketing*, 64(2), 66-79. <https://doi.org/10.1509/jmkg.64.2.66.18000>
- Klein, B., & Leffler, K. B. (1981). The Role of Market Forces in Assuring Contractual Performance. *Journal of Political Economy*, 89(4), 615-641.
- Klein, J., & Dawar, N. (2004). Corporate social responsibility and consumers' attributions and brand evaluations in a product-harm crisis. *International Journal of Research in Marketing*, 21(3), 203. <https://doi.org/10.1016/j.ijresmar.2003.12.003>
- Kotha, S., Rajgopal, S., & Rindova, V. (2001). Reputation Building and Performance: An Empirical Analysis of the Top-50 Pure Internet Firms. *European Management Journal*, 19(6), 571-586. [https://doi.org/10.1016/S0263-2373\(01\)00083-4](https://doi.org/10.1016/S0263-2373(01)00083-4)
- Kroeber-Riel, W. (1987). Weniger Informationsüberlastung durch Bildkommunikation. Zur Verwendung von Bildern in kommerziellen Kommunikationssystemen. *Wirtschaftswissenschaftliches Studium*, 16(10), 485-489.
- Lev, B. (2001). *Intangibles: Management, Measurement, and Reporting*. Brookings Institution Press.
- Lev, B. (2003). Remarks on the Measurement, Valuation, and Reporting of Intangible Assets. *Economic Policy Review*, 9(3), 17-22.
- Liu, Z., & Park, S. (2015). What makes a useful online review? Implication for travel product websites. *Tourism Management*, 47, 140-151. <https://doi.org/10.1016/j.tourman.2014.09.020>
- Milgrom, P., & Roberts, J. (1988). Communication and Inventory as Substitutes in Organizing Production. *Scandinavian Journal of Economics*, 90(3), 275-289.
- Nakra, P. (2000). Corporate Reputation Management: "CRM" with a Strategic Twist? *Public Relations Quarterly*, 45(2), 35-42.
- Nitzsch, R. V. (2002). *Entscheidungslehre: wie Menschen entscheiden und wie sie entscheiden sollten*. Schäffer-Poeschel Verlag.
- Pfarrer, M. D., Pollock, T. G., & Rindova, V. P. (2010). A Tale of Two Assets: The Effects of Firm Reputation and Celebrity on Earnings Surprises and Investors' Reactions. *Academy of Management Journal*, 53(5), 1131-1152.
- Pfister, B., Schwaiger, M., & Morath, T. (2020): Corporate Reputation and the Future Cost of Equity. *Business Research*, 13, 343-384. <https://doi.org/10.1007/s40685-019-0092-8>
- Podolny, J. M. (1993). A Status-based Model of Market Competition. *American Journal of Sociology*, 98(4), 829-872.
- Raithel, S. & Scharf, S. (2011). Market-based Assets—die Trumpfkarte für das Reporting. *Marketing Review St Gallen*, 28(3), 54-59. <https://doi.org/10.1007/s11621-011-0037-x>
- Raithel, S., & Schwaiger, M. (2015). The Effects of Corporate Reputation Perceptions of the General Public on Shareholder Value, *Strategic Management Journal*, 36(6), 945-956. <https://doi.org/10.1002/smj.2248>

- Raithel, S., Schwaiger, M., & Zimmermann, L. (2011). *Predicting stock market performance: Exploring the differential role of stakeholder groups' perceptions of corporate reputation*. 15th International Conference on Corporate Reputation, Brand, Identity and Competitiveness, New Orleans, USA.
- Ringle, C. M., Wende, S., & Becker, J-M (2022). *SmartPLS 4*. Oststeinbek: SmartPLS. Retrieved June 01, 2023, from <https://www.smartpls.com>
- Roberts, P. W., & Dowling, G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, 23(12), 1077–1094.
- Ruiz, B., Esteban, Á., & Gutiérrez, S. (2014). Determinants of reputation of leading Spanish financial institutions among their customers in a context of economic crisis. *BRQ Business Research Quarterly*, 17(4), 259-278. <https://doi.org/10.1016/j.brq.2014.04.002>
- Sarstedt, M., Wilczynski, P., & Melewar, T. C. (2013). Measuring reputation in global markets—A comparison of reputation measures' convergent and criterion validities. *Journal of World Business*, 48(3), 329-339. <http://dx.doi.org/10.1016/j.jwb.2012.07.017>
- Schloderer, M. (2012). *Ausgewählte Beiträge zur marktorientierten Unternehmensführung*. [Unpublished Dissertation]. Ludwig-Maximilians-Universität München.
- Schloderer, M. P., Raithel, S., Wilczynski, P., & Schwaiger, M. (2009). *Corporate Reputation in the Recruiting Market - Effects on the Willingness to Apply and on Salary Premiums*. 5th International Colloquium - Academy of Marketing: War for Talent, Brand, Identity and Corporate Reputation SIG, Cambridge, UK.
- Schütz, T., & Schwaiger, M. (2007). Der Einfluss der Unternehmensreputation auf Entscheidungen privater Anleger. *Kredit und Kapital*, 40(2), 189-223. <https://doi.org/10.3790/ccm.40.2.189>
- Schwaiger, M. (2004). Components and parameters of corporate reputation – An empirical study. *Schmalenbach Business Review*, 56(1), 46-71. <https://doi.org/10.1007/BF03396685>
- Schwaiger, M. & Raithel, S. (2014). Reputation und Unternehmenserfolg. *Journal für Betriebswirtschaft / Management Review Quarterly*, 64(4), 225-259. <https://doi.org/10.1007/s11301-014-0106-8>
- Schwalbach, J. (2000). Image, Reputation und Unternehmenswert. In Baerns, B. & Raupp, J. (Eds.), *Information und Kommunikation in Europa*. *Forschung und Praxis*, 285-195.
- Shapiro, C. (1982). Consumer information, product quality, and seller reputation. *Bell Journal of Economics*, 13(1), 20-35.
- Shapiro, C. (1983). Premiums for High Quality Products as Returns to Reputations. *Quarterly Journal of Economics*, 98(4), 659-679.
- Sharma, R., & Prasad, A. (2018). Employer brand and its unexplored impact on intent to join. *International Journal of Organizational Analysis*, 26(3), 536-566. <https://doi.org/10.1108/IJOA-11-2017-1280>
- Shefrin, H. (2001). *Behavioral finance*. Edward Elgar.
- Shefrin, H., & Statman, M. (1995). Making Sense of Beta, Size, and Book-to-Market. *Journal of Portfolio Management*, 21(2), 26-34.
- Slovic, P. (1972). Psychological Study of Human Judgment: Implications for Investment Decision Making. *Journal of Finance*, 27(4), 779-799.
- Spence, M. (1973). Job Market Signaling. *Quarterly Journal of Economics*, 87(3), 355-374.
- Su, L., Swanson, S. R., Chinchanchokchai, S., Hsu, M. K., & Chen, X. (2016). Reputation and intentions: The role of satisfaction, identification, and commitment. *Journal of Business Research*, 69(9), 3261-3269. <https://doi.org/10.1016/j.jbusres.2016.02.023>
- Szwajca, D. (2018). Dilemmas of reputation risk management: Theoretical study. *Corporate Reputation Review*, 21(4), 165-178
- Walsh, G., Mitchell, V.W., Jackson, P. R., & Beatty S. E. (2009). Examining the Antecedents and Consequences of Corporate Reputation: A Customer Perspective. *British Journal of Management*, 20(2), 187-203. <https://doi.org/10.1111/j.1467-8551.2007.00557.x>
- Weber Shandwick (2012). *The Company Behind the Brand: In Reputation We Trust*. Retrieved May 30, 2023, from http://www.webershandwick.com/uploads/news/files/CEO_Spotlight_ExecSummary.pdf

- Wernerfelt, B. (1988). Umbrella branding as a signal of new product quality: an example of signalling by posting a bond. *RAND Journal of Economics*, 19(3), 458-466.
- Wright, P. (1975). Consumer Choice Strategies: Simplifying Vs. Optimizing. *Journal of Marketing Research*, 12(1), 60-67.