The Impact of Social Sustainability Publicity on the Share Prices of Companies in the Textile and Apparel Industry

Author: Victoria Neher
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT

In the past two decades, the concept of social sustainability has become more important than ever. Consumers are demanding more sustainable and ethical products and services. Especially the textile and apparel industry is often accused of being socially irresponsible due to their outsourcing of their manufacturing into countries with lenient labour laws and regulations. Consequently, many companies are being publicly held liable for their irresponsible behaviour. Therefore, more and more companies are now promoting their corporate social responsibility to the public in form of Corporate Social Responsibility (CSR) reports. This is an incentive for the socially conscious public to invest in sustainable companies that share similar values and encourages ethical manufacturing. In this report six multi-national textile and apparel companies will be empirically analysed, to find out whether positive or negative publicity on their sustainability has an effect on their market value of their share.

Graduation Committee members:
A. Abhishta
W. van Heeswijk

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Social sustainability, textile and apparel industry, market value, abnormal stock returns

1. INTRODUCTION

Being sustainable means ensuring a liveable future for the generations to come. Sustainability has been a topic of high interest over the past years, especially due to developments such as global warming and lack of social equity. The United Nations defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own need" (United Nations Brundtland Commission, 1987, p.16). This awareness leads to an increase of customers that have shifted towards an expectation that industries should produce products and services in an eco-friendlier, sustainable, and socially responsible manner (Danciu, 2013) to counteract the depletion of the world´s natural resources. Furthermore, they are to a certain extent avoiding purchasing from companies which they regard as socially irresponsible or unethical (Zollo, Yoon, Rialti, and Ciappei, 2018). This behaviour of increasing societal interest in sustainability and ethical consumption is causing the attention of organisations to shift towards sustainable products and services (Zollo et al., 2018). According to Pirnea, Olaru, and Moisa (2011) companies are "becoming aware that a responsible behaviour leads to a long-lasting business success" (p. 38). As the concern regarding the sustainability of companies may impact the purchasing decisions of the consumers, it could also potentially impact the number of individuals that invest in a company and affect the market value, which is represented by its stock price.

Sustainability can be divided into three core dimensions - environmental, economic, and social - which are closely intertwined and connected (Pirnea et al., 2011). The focus of this research will further expand upon the social dimension of sustainability of companies. When a company practices social sustainability, it is being socially responsible. Several companies invest in being more socially responsible, for example to potentially better their public reputation or because they feel morally obliged to. For investors that are interested in the financial aspect but also have societal interests, investing in a socially sustainable company may be a good investment option. However, many companies in certain industries, especially the textile and apparel industry, have often come under scrutiny for their social irresponsibility due to their outsourcing of labour to countries with less strict labour laws and lower wages (Muthu, 2017).

Therefore, in this research, the share prices of six influential multi-national parent companies from the textile and apparel industry will be analysed. For every company one event will be closely examined. This is called an event study which is further explained in the literature review. For three of the companies, this event is the publication of a Corporate Social Responsibility (CSR) report, which companies use to promote their social sustainability actions and results. The analysis of the other three companies will use published articles by the media that highlight their lack of social responsibility. These events were deliberately chosen to distinguish between the impact of positive versus negative publicity, which will be further explained in the literature review. Ultimately, this empirical analysis will show whether a company´s publicity has a significant influence on share price of the firm.

This research will display the effect of publicity on the market value of the shares of a company, which demonstrates the impact of publicity on a part of their financial assets. This knowledge could help firms with deciding whether they should put more effort into being more socially sustainable and maintaining a certain degree of standards all through their supply chain.

2. RESEARCH QUESTION

Discovering the impact of publicity on the topic of social sustainability on a firms' share price leads to the main research question and the following sub research questions. The research questions are designed to function as a guideline throughout this paper. The aim of the paper is to answer the following questions in detail and to provide information on the effect of the event of publicity on the companies.

How does the publicity of social sustainability affect the market value of companies in the textile and apparel industry?

Furthermore, the four following sub research questions have been listed below and will be answered in the Literature Review (Section 3), Methodology (Section 4) and Analysis (Section 5). The last sub research question will be evaluated as part of the conclusion to gain insight into potential managerial decision making.

What is social sustainability in the context of the textile and apparel industry?

How can the event study's methodology be used to determine the impact of social sustainability?

How does publicity on social sustainability impact the share prices?

What managerial insights can be derived from the effect of publicity on the share price of the companies?

In light of the research questions, the following hypotheses have been formed and will be either verified or falsified.

H_0: There is no significant relationship between the publicity of social sustainability of companies in the textile and apparel industry and the market value of the shares of a company.

H_a: There is a significant relationship between the publicity of social sustainability of companies in the textile and apparel industry and the market value of the shares of a company.

To clarify: the null hypothesis proposes that no statistical significance exists, meaning that the events have no impact on the market value of the firm. In this quantitative research there are three companies with a positive sustainability image and three with a negative sustainability image. The literature review in Section 3 is dedicated to deepening the knowledge on the topic and to present related papers that have already been published by recognised scholars.

3. LITERATURE REVIEW

3.1 Definitions

As addressed in the introduction, The United Nations defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own need” (United Nations Brundtland Commission, 1987, p.16). This definition expertly captures the underlying problem of trade-offs when it comes to sustainability. Society should address the present environmental, economic, and social needs, without “trading off the capacity of future era to address their own issues” (Muthu, 2017, p. 59). For instance, there is a need to deal with current issues of the modern society, such as the degradation of the environment, however, economic growth is generally accompanied by environmental degradation, which on the other hand is necessary to support further needs such as to relieve humankind from poverty (Adams, 2006). Thereby, underlining the near impossibility and unlikelihood of not having trade-offs with the sustainability between present and future needs.

To clarify what these needs are and how they can be met, the United Nations implemented 17 Sustainable Development Goals in 2015 to help guide and ensure global well-being and sustainable development (Aksoy and Bayram, 2019). These goals are, amongst others, aimed at ending global poverty and hunger, ensuring healthy lives and wellbeing at all ages, battling climate change, promoting environmental protection and ensuring peaceful and inclusive societies (United Nations, 2015). A report of the International Union for Conservation of Nature (IUCN) has shown that the mainstream perception of sustainability is classified into three core dimensions: environmental, economic and social sustainability (Adams, 2006), with the latter having been given less priority and awareness compared to environmental and economic sustainability (Woodcraft, Bacon, Caistor-Arendar and Hackett, 2011, and Muthu, 2017). Therefore, for the purpose of this project I will be focusing solely on social sustainability.

3.2 Social Sustainability and Publicity

Social sustainability comprises dimensions such as “social value, livability, well-being value, group improvement, social capital, (…) human rights, work rights, place making, social obligation (and) social equity” (Muthu, 2017, p. 59). Social sustainability concerns itself with social issues such as social interactions and relations with and between people (Danciu, 2013) and to support the ability to “sustain a healthy community” (Muthu, 2017, p. 58). From a business perspective this implies that social sustainability is about a company’s interactions and relationships with its stakeholders (Pirnea, Olaru, and Moisa, 2011), such as employees, customers, suppliers, and communities. As the recognition that sustainability is needed in business has steadily increased in the last twenty years (Danciu, 2013), there is, now more than ever, a strategic importance of social responsibility when firms are faced with social problems (Pirnea et al., 2011). The idea implies that if there is a problem caused by socially irresponsible behaviour of a company, this company is seen as responsible for the problem and therefore must be held liable. That is why, it can be seen as a company’s social responsibility to act in a social sustainable way so that society overall will be able to benefit from it (Ed and Phil, 2013).

The focus of this research will be placed on the social sustainability of the textile, apparel, and clothing industry. In the past, there have been multiple problems with social sustainability in the textile and apparel industry (Muthu, 2017). For example, due to globalisation, many companies in this industry decide to outsource activities that are not core activities for the benefit of a competitive advantage (Dankbaar, 2007). Influential companies such as Nike have been accused of outsourcing their manual labour to foreign countries (Yusoof, Zuber, MNSR, Zamziba, and Toriry, 2017) and thereby benefiting from, and contributing to, the severe labour abuse. These companies are well-known and influential companies with a lot of media coverage and publicity. Especially countries, predominantly Asian countries, in which cheap workers and lenient labour laws and regulations are the norm, are favoured (Muthu, 2017). However, this behaviour poses a risk towards social sustainability. The manual workers in sweatshops work for long hours with forced overtime and for low wages (Muthu, 2017). These poor working conditions expose the workers to poverty, health risks and social inequality. Especially women and children suffer under these hard working environments as female workers are paid even less than their male counterparts. Muthu (2017) describes that the “social imperceptibility of womens’ paid work is utilized to legitimize paying them lower wages than men” (p. 69). Furthermore, any harassment endured is often not reported due to their fear of losing their jobs.

According to Ricci and Banterle (2020) “media coverage about societal issues has [...] been shown to be [...] influential on public awareness and in affecting individual behaviour” (p.2). Therefore, negative publicity could influence the public’s opinion on the companies. As the consumer expectations have shifted towards sustainable products and services (Zollo et al., 2018) publicity on companies in the textile and clothing industry being socially unsustainable or unethical could result in damaging consequences. However, the other way around, publicity on companies being socially sustainable may result in positive outcomes. This may be an incentive for companies to decide to publish social responsibility reports to promote their sustainability efforts to the public, which then motivates consumers to show more support towards the company, such as an increased loyalty, willingness to purchase their products and services or to invest into the company (Danciu, 2013, Zollo et al., 2018, and Jamal and Jamal, 2014).

In this research, the definition offered by Mariam-Webster dictionary will be used. Publicity is defined as an act to attract the interest of the public for either attention or support (Merriam-Webster, n.d.), which in the case of this research would correspond to CSR reports and media articles. Furthermore, Mariam-Webster defines publicity as the publishing of promotional material (Merriam-Webster, n.d.), which further justifies the usage of the word publicity for CSR reports. Therefore, the word publicity can be used for the CSR reports the companies themselves publish but also the articles that members of the media have released.

3.3 Past Studies about CSR and firm financial performance

The events in question are published reports, which include sustainability reports about the corporate social responsibility of a company and news articles. CSR reports are periodically published by companies to share their corporate social responsibility actions and results. There is no overarching definition of what CSR is, however Pirnea at al. (2011, p.38) identify CSR as “the actions undertaken by a company in order to promote the social interest before the purely economical one”. Furthermore, they state the companies should “willingly integrate social actions and environmental protection in their daily activities and stakeholders relationships” (Pirnea at al., 2011, p.38) to show the public that they are aware of the public’s concerns and support their interests. Implementing CSR includes supporting issues in the society such as "education, health, environment [and] raising living standards" (Jamal and Jamal, 2014, p.13).

In past studies, scholars have tried to find a correlation between a firm´s social responsibility and their performance. These studies, exploring the effect of CSR efforts, resulted in inconsistent outcomes (Iqbal, Ahmad, Basheer, and Nadeem, 2012, p. 108). This corresponds with Schrettle, Hinz, Scherrer-Rathje, and Friedli (2013, p.74), who note that past studies, investigating the connection between 'environmental efforts' and financial performance, have, mostly, been shown to have a positive relationship; yet studies on the connections between 'sustainability efforts' and 'consumers` willingness to pay' have not resulted in a positive relationship (Anstine, 2000). Iqbal et al. (2012) summarise the views of different theories on this topic. One viewpoint is that CSR efforts can be seen as an unnecessary cost which would lead to a competitive disadvantage, while other studies argue that CSR efforts may have the advantage of "obtaining better resources [...], higher quality employees [...], better marketing of products and services" (p. 108) and may open up some unexpected opportunities for the firm.

According to the results of Iqbal et al. (2012), who studied the corporate social performance of companies in different sectors in Pakistan, "CSR has significant negative correlation [...] with the market value of the share price of the company" (p.115). In Table 1 from Iqbal et al. (2012, p. 110) the results of past empirical studies, where the connection between CSR efforts and firm performance has be studied, have been summarised.

The authors of the studies used a variety of different methods to measure CSR and different measures of firm performance. For the measurement of CSR in these studies, the MSCI KLD 400 Social Index was used for six of the most recent studies. The KLD index is a stakeholder-weighted index which includes companies that have met certain social and environmental standards. The firm performance was most often assessed by using the accounting-based measures return on equity (ROE) or return on assets (ROA). Of these studies, 12 show a significantly positive impact between CSR and firm performance, five show neutral relationship, two a mixed relationship and one shows a significantly negative relationship.

Table 1 – Summary of Empirical Studies (Iqbal et al. 2012, p.110)

Authors	Sign	Measure of CSR	Measure of firm Performance
Bragdon and Marlin (1972)	(+)	CEP index	EPS growth, ROE, ROC
Bowman and Haire (1975)	(+)	Carroll's (1979) CSR construct and CEP index	ROE
Fogler and Nutt (1975)	neutral	CEP index	P/E ratio
Sturdivant and Ginter (1977)	(+)	Moskowitz reputation index	EPS growth
Alexander and Buchholz (1978)	(+)	Reputation ratings	Market return on security
Spicer (1978)	(+)	CEP index	ROE
Cochran and Wood (1984)	(+)	Moskowitz reputation index	Abnormal return
Aupperle et al., (1985)	(-)	Carroll's (1979) CSR construct	ROA
Conine and Madden (1987)	(+)	Erdos and Morgan's corporate	Perceptual/expectational survey measures
McGuire et al. (1988)	mixed	Fortune index	ROA, sales growth, asset Growth
Fombrun and Shanley (1990)	neutral	Charitable contributions, Fortune index	ROIC, market-to-book ratio
Teoh and Shiu (1990)	neutral	CSR disclosure	Institutional investors' survey questionnaire
Blackburn et al. (1994)	(+)	CEP index	ROA, abnormal return,
Waddock and Graves (1997)	(+)	KLD index	ROA, ROE, return on
Berman et al. (1999)	(+)	KLD index	ROA
Teoh et al. (1999)	neutral	Divestment from South	Abnormal return
McWilliams and Siegel (2000)	neutral	KLD index	ROA
Orlitzky et al. (2003)	mixed	KLD index	P/E ratio, ROE, ROA
Akpinar et al. (2008)	(+)	KLD index	Stock return, Tobin's Q
Lev et al. (2008)	(+)	Charitable contributions	Sales growth

3.4 Event Studies

This research will examine the effect of events, this is called an event study. MacKinley (1997) notes that an “event study measures the impact of a specific event on the value of a firm” by using data from the financial market (p.13). In this event study the impact of the publication of reports and articles, regarding a company´s social sustainability on the market value of their shares, will be measured. The analysis of this research will clarify whether there is any correlation between the events and a company’s stock prices.

Event studies “measure the effects of an economic event on the value of firms” (MacKinley, 1997, p.13). Therefore, the findings of an event study will result in the knowledge to better understand the cause of a potential effect on a specific event. MacKinley (1997) states that the primary task is to define the event and event period “over which the security prices of the firms involved in this event will be examined” (p.14). The event period one is interested in must at least include the date of the event and the date after. Most often the period of interest is increased to multiple days to effectively capture “the price effects of [the events] which occur after the stock market closes on the announcement day” (MacKinley, 1997, p.15). Therefore, the determined event period should be larger than the actual period one is interested in as this allows an analysis of the periods around the event. Furthermore, the estimation period has to be defined. The estimation period is typically the period preceding the event period. MacKinley (1997) states as an example in a study where daily data and the market model are used, that the parameters for the market model could be estimated over a period of 120 days before the event. To avoid that the event itself influences the estimates for the market model parameter, the event period itself should not be included into the estimation period.

To evaluate the impact of a specific event, determining the abnormal returns is essential as the approach of an event study is based on the premise that an impact of an event can be captured by the abnormal returns. To specify: a normal return is the expected return of a security over the event period if the event were not to take place. Therefore, to calculate the abnormal return one has to subtract the normal return from the actual return of a security. MacKinley (1997, p. 15) uses the equation:

[1] $$AR_{it} = R_{it} - E(R_{it}|X_t)$$

In Equation 1 the abnormal return of a company i over the event period t is AR_{it} , the actual return on the stock prices is represented R_{it} and the expected return is $E(R_{it}|X_t)$,with X_t being the “conditioning information for the normal return” (p.15) meaning if it were the case that the event would not have taken place. In this study X_t is the market return, thus making it a market model. MacKinley (1997) defines the market model as a model that works with the assumption that there is a “stable linear relation between the market return and the security return” (p. 15).

If the event study includes a multiple event period, the calculation of cumulative abnormal returns is needed. Equation 2 from MacKinley (1997, p. 21) shows how to compute cumulative abnormal returns.

[2] $$CAR_i(T1,T2) = \sum_{t=T1}^{T2} AR_{it}$$

The cumulative abnormal returns from T1 to T2 is CAR_i, which entails the sum of the abnormal returns. This is used in Section 5.2.

4. METHODOLOGY

To examine the effect of sustainability reports and published articles on the share price of the firms, this research will analyse the stock returns of the individual companies in the textile and apparel industry. This means that the stock prices before and after an event are going to be analysed to reveal a significant change or no significant change due to the publicity. The analysis will take one event per company into consideration. The methodology can be divided into two tasks: Data collection (4.1) and Analysis (4.2).

4.1 Data Collection

For this research three companies have been chosen that display a positive sustainability image and three that display a negative sustainability image. Firstly, the quantitative data, in form of stock prices, of the corresponding companies will be collected and afterwards it will be analysed. The selection criteria the companies in question have to follow is that the companies should be listed on the stock market in the United States and furthermore, the event dates for the reports and articles should be able to be identified with certainty.

For the collection of data, relevant publicity on social sustainability is to be included from the past 20 years. This is because the topic of sustainability “in business has increased in the last two decades” (Danciu, 2013). The data consists of CSR reports published by the firms Nike Inc., Gap Inc. and VF Corporation and media publicity addressing a social sustainable issue of the companies Nordstrom Inc., TJX Companies Inc. and PVH Corp. In Table 2 the sample companies are listed, including the date and type of their publicity. An important factor to note is that media publicity may not have the same reach as an official CSR report of a company. The CSR reports are published on the official websites of multi-national companies, therefore receiving global recognition.

The three companies below have gained a positive public social responsibility image through publishing CSR reports.

- Nike assembled their first comprehensive public review of their corporate responsibility practices in 2001 (Nike Inc., 2001b). The same year they established The Corporate Responsibility Committee of the Board of Directors in to review the company’s policies and activities so they can make clear recommendations concerning e.g. labour practices, sustainability initiatives and charitable activities. Nike states that their goals were, amongst others, to confirm that the workers know their rights and Nike’s standards and that the garment factories respect these rights and standards.

Table 2 – Sample Companies for this Study

Company	Date	Source	Type of publicity
Nike Inc.	15.10.2001	Nike Inc. (2001)	CSR Report (positive social responsibility image)
Gap Inc.	16.08.2007	Gap Inc. (2007)	CSR Report (positive social responsibility image)
VF Corp.	27.10.2014	VF Corporation. (2014)	CSR Report (positive social responsibility image)
Nordstrom Inc.	09.06.2017	Robertson, L. (2017)	Article (negative social responsibility image)
TJX Companies Inc.	13.06.2017	Woolhouse, M. (2017)	Article (negative social responsibility image)
PVH Corp.	16.04.2019	Woodyatt, A. (2019).	Article (negative social responsibility image

- Gap published their third Social Responsibility Report in 2007, which covered the fiscal years 2005 and 2006 (Gap, 2007). The report highlighted Gap´s commitment to social responsibility and their progress and goals for the coming years. Improvement has been made in the contracted garment factories, where Gap outsources some of their work to, where 61% out of all the factories the working conditions were rated either good or excellent. Furthermore, the report states that Gap is dedicated to improving working conditions in the garment factories they contract and ensure that they are obeying the standards of the company. Glenn Murphy, who was the CEO at the time, stated that doing business in a socially responsible matter is a fundamental part for Gap.

- VF Corporation, the parent company of Vans, The North Face, and The Timberland Company, released its first comprehensive global sustainability and responsibility report covering the years 2013 and 2014 (VF Corporation, 2014b). In the report VF Corporation's commitment to responsible business practices is explained. They state that two-thirds of their manufacturing facilities are contract suppliers. VF Corporation stated they govern their contract suppliers through strict guidelines and principles to promote matters such as fair wages and safe working environments that are free of discrimination.

Below are the details on published articles that have criticised three companies for their lack of social sustainability, therefore resulting in negative social responsibility image at the given time.

- According to an article published by goodonyou.eco (Robertson, 2017), which is a website that analyses information about brands to investigate whether they are ethical and sustainable, Nordstrom Inc. sources from countries where the risk of labour abuse is high. Furthermore, the article that was published in 2017 states that Nordstrom merely traces part of their supplier's supply chain which can lead to standards and guidelines not being followed in the parts that are not being observed.

- In 2017 The Boston Globe published an article titled "That $9.99 find at T.J. Maxx? It might raise questions about labour practices" (Woolhouse, 2017). The article states that the parent company of TJ. Maxx, TJX Companies Inc., relies on garments from overseas factories that have come under scrutiny for poor labour conditions. Furthermore, the discount retailer underpays the workers, not only overseas but also in the United States, where they often hire immigrant workers and pay them an illegally low wages while their work hours can stretch to 70 hours per week (Woolhouse, 2017).

- The multimedia news provider Reuters published an article in 2019 stating PVH Corp abuses labour rights of workers in Ethiopian supplier factories (Woodyatt, 2019). The article declares that according to the Workers Rights Consortium, the workers are forced to work overtime, which they do not get paid and lose pay for leaving their workstation to drink water. Furthermore, the article includes a study from the Wage Indicator Foundation that discovered the workers' pay was less than the living wage.

4.2 Analysis

The data will be analysed to find out if there is a change in the individual stock prices of the companies. The methodology of an event study is built around the assumption that the impact of the event can be captured by abnormal returns (MacKinley, 1997), which measure the abnormalities of the stock. To capture the abnormal returns an index of the market is needed. Furthermore, an estimation period and event period have to be set. For this study, the estimation period is 200 days, this is the period prior to the event itself, and the event period will be 15 days, as shown in Figure 1. The event period was chosen to be larger than the event itself to make sure the periods surrounding the event can be captured effectively. For the market rate value the index Standard and Poor's 500 (S&P 500) will be used as the index of the market, as this shows the average returns for the companies in the index. S&P 500 was chosen because the index is considered to be a good representation of the entire stock market. Furthermore, the index, composed of 500 large American companies spanning across a variety of industries, is often regarded as an indispensable benchmark index for the American stock market. The historical data on the stock prices will be collected through Yahoo Finance.

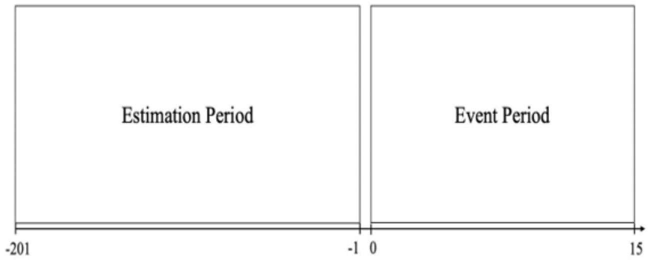

Figure 1 - Estimation and Event Period

The historical stock prices from the 200 days and the index values from S&P 500 will be used to calculate the rates of the market return and the rates of the stock return, named r_m and r_i respectively.

With rates of the market return and the rates of the stock return captured, the next step is to calculate the market model; as shown in Equation 3.

[3] $$r'_i = \beta * r_m + \alpha$$

In Equation 3, β and α are calculated as shown in Equation 4 and Equation 5. The slope and intercept are *xs* and *ys* respectively.

[4] $$\beta = \frac{\left(\left(mean(xs) * mean(ys)\right) - mean(xs * ys)\right)}{\left(\left(mean(xs) * mean(xs)\right) - mean(xs * xs)\right)}$$

[5] $$\alpha = mean(ys) - \beta * mean(xs)$$

Figure 2 shows and example of the market model for Nike Inc. with r_m and r_i in shown in purple, and the market model with r'_i and r_m in black.

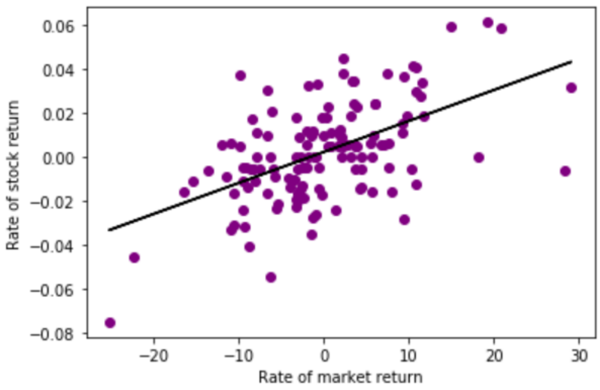

Figure 2 - Example of a Market Model of Nike Inc.

With β, α and therefore r'_i calculated, the abnormal return of the estimation period can be determined with the Equation 6, where r_i is the rates of the stock return, and AR_i represents the abnormal return of the stock price of the company *i*.

[6] $$AR_i = r_i - r'_i$$

As aforementioned, these are the abnormal returns that occurred in the estimation period, prior to the event. The abnormal returns of the event period are calculated with the Equations 7 and 8. In Equation 7, the market model for the event period (re'_i) is calculated with the use of β and α from Equation 4 and 5 and the market return in the event period re_m.

[7] $$re'_i = \beta * re_m + \alpha$$

[8] $$ARe_i = re_i - re'_i$$

The abnormal returns in the event period of the company *i*, represented by ARe_i, is then calculated using the rates of the stock return in the event period re_i and the market model $re_{i'}$.

5. ANALYSIS

In Section 5.1 the P-Values of the six textile and apparel companies will be analysed to determine whether the null hypothesis can be rejected or not. This will show whether there is a significant relationship between the publication of social sustainability and the firm´s share prices.

In Section 5.2 the analysis will be continued with the use of the abnormal returns for the estimation and the event period. In the Subsection 5.2.1 the means of the abnormal returns from both periods will be compared to establish whether there is a difference between the means of the abnormal returns before the event (in the estimation period) and in the event period. Furthermore, in Subsection 5.2.2 the means of the abnormal returns in the estimation period will be used to compare the two types of publicity (the positive and negative) to identify whether there is a significant difference between the groups.

5.1 P-Values

To statistically test the p-values the significance level of 5% is documented, which leaves us with a 95% confidence level. The significance level of 5% will be shortened to *s*=0.05. With the significance level set at 0.05 and using a two-tailed test, the critical values are -1.96 and 1.96, as shown in Figure 3.

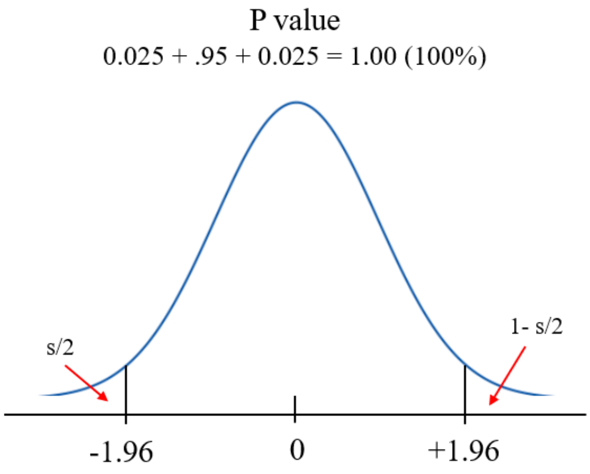

Figure 3 – Two-Tailed Test

The significance level of 0.05 indicates that there is only a 5% probability that the null hypothesis is not correct. If the p-values are smaller than 0.025 (*s/2*) or bigger than 0.975 (*1-s/2*) the null hypothesis is rejected, and the p-value is statistically significant. Furthermore, the lower the p-value is, the stronger the evidence indicates that the null hypothesis is false. However, if the p-values are bigger than or equal to the significance level up to 0.975 (Equation 9) and therefore do not lie in the critical region, then we do not reject the null hypothesis. In Table 3 the results of the analysis in form p-values are listed.

[9] $$\left(1-\frac{s}{2}\right) \geq p\,Value \geq \left(\frac{s}{2}\right)$$

Table 3 – p Value Results of the Analysis

Company	p-values
Nike Inc.	p = 0.912
Gap Inc.	p = 0.865
VF Corp.	p = 0.065
Nordstrom Inc.	p = 0.188
TJX Companies Inc.	p = 0.185
PVH Corp.	p = 0.915

The p-values of the companies are all are in between 0.025 and 0.975, and therefore do not lie in the critical region, indicating that we do not reject the null hypothesis. As a result, the p-values are not statistically significant. This suggests that there is no statistically significant relationship between the publicity of social sustainability, either positive or negative, and the market value of the shares of a company.

5.2 Comparing Means

To further analyse whether the publicity on the social sustainability of the companies affect the market value of the shares the means of the abnormal returns are compared. Firstly, the means of the estimation period and the event period will be compared in Subsection 5.2.1. In Subsection 5.2.2 the means of the positive publicity and the negative publicity will be compared.

5.2.1 Estimation Period and Event Period

To further examine whether there is a significant difference between the share prices before the event and after, the means of the abnormal returns for the estimation period and the event period will be analysed. In statistics the mean is the average value of the numbers in a given data set. The means of the abnormal returns for each company in the two periods can be calculated by summing up the values, thus giving us the cumulative abnormal returns (*CAR*) and dividing them by the number of values there are in the data set. Table 4 displays the company name, number of abnormal returns in the data set and the means of the abnormal returns in the estimation period, and Table 5 displays the means of the abnormal returns of the event period.

Table 4 – Means of the Abnormal Returns in the Estimation Period

Company	# of abnormal returns	Mean
Nike Inc.	134	1.0648E-18
Gap Inc.	137	4.8623E-17
VF Corp.	138	-5.0282E-20
Nordstrom Inc.	135	-2.0560E-19
TJX Companies Inc.	134	-1.2946E-19
PVH Corp.	135	-7.8384E-19

Table 5 – Means of the Abnormal Returns in the Event Period

Company	# of abnormal returns	Mean	Type of publicity
Nike Inc.	10	0.0007	+
Gap Inc.	11	-0.1907	+
VF Corp.	10	0.0046	+
Nordstrom Inc.	11	0.0100	-
TJX Companies Inc.	11	-0.0040	-
PVH Corp.	10	0.0007	-

The means of the abnormal returns in the estimation period are considerably smaller than the means of the abnormal returns in the event period. The means of the abnormal returns in the estimation period lie between -7.8384E-19 and 4.8623E-19, whereas the means of the abnormal returns in the event period lie between -0.1907 and 0.0100. A low means of the abnormal returns in the estimation period are to be anticipated as there was no influence of an event, thus the actual return is almost precisely the expected return. The discrepancy in means between the estimation and event period indicates the difference between the expected and the actual return of a security is bigger in the event period than in the estimation period, therefore showing a very slight effect on the publicity. However, it is important to note that the means of the abnormal returns in both the estimation and event period are so small that neither of them make a significant difference to the share price. For instance, the biggest mean from the two tables is from the company Gap Inc. in the event period. The mean of 0.0100 indicates a difference between the expected share price and the actual share price of only around 0.01 cent. As even the highest mean of the abnormal returns is still minuscule, it can be concluded that there is no significance difference between the publicity of social sustainability and the market value of the share. Therefore, the null hypothesis cannot be rejected.

5.2.2 Positive Publicity and Negative Publicity

The means of the abnormal returns in the event period of the positive publicity and negative publicity are shown in Table 5. The difference in the means will be examined to conclude there is a significant difference between the positive and negative publicity and the market value of the share. The averages of the means of the abnormal returns of the three firms with a positive publicity image, Nike Inc., Gap Inc., and VF Corp., and the negative publicity image firms Nordstrom Inc., TJX Companies Inc., and PVH Corp are listed in Table 6. The averages of both the positive and negative publicity are extremely small and the difference between the averages is only 0.0640. Therefore, it can be concluded that there is no significant difference between the impact of positive publicity and the impact of negative publicity of a firm's social sustainability on the market value of companies in the textile and apparel industry.

Table 6 – Averages of Positive and Negative Publicity Means

Type of publicity image	Mean
+	-0.0618
-	0.0022

6. CONCLUSION

The aim of this paper was to look at the social sustainability image within selected companies from the textile and apparel industry. The sample companies are Nike Inc., Gap Inc., VF Corporation., Nordstrom Inc., TJX Companies Inc. and PVH Corporation. The event analysis makes use of published CSR reports and media publications to analyse the impact of publicity on the market value of the shares of the firms. A total of five research questions were posed at the beginning of this paper with a quest to answer these in detail.

In this paper the null hypothesis – which states that there is no significant relationship between the publicity of social sustainability and the market value of companies in the textile and apparel industry – cannot be rejected. This means that the publicity, both positive inform of CSR reports and negative in form of media articles does not impact the market value of the sample companies.

As this paper shows that the sustainability image does not significantly impact the share prices this could lead to the assumption that the companies that act towards bettering their social sustainability are not doing so to reap possible positive effects from their financial assets, such as their share price, but to help ensure a higher standard of global well-being. Despite having no obligations to publish CSR reports managers continue to make this information publicly available. This is done to perhaps enhance their public image, to follow global trends in regard to sustainability or to display a high moral conscience. Managers can potentially use methods, such as publishing CSR reports, to enlighten the public on the sustainability actions and results of companies. Furthermore, donations and campaigns that support a good cause should be publicly advocated for by companies that have a lot of influence on the general public and a global reach. This may encourage the engagement of society in public matters that can be resolved through the help of as many individuals as possible.

7. LIMITATIONS

The limitations of this study concern the data collection. Firms typically publish their social responsibility reports every couple of years, and in between they continuously provide the public with updates on their sustainability efforts and new sustainable products. This means that there potentially could have been other public announcements in the estimation or event period that impacted the results captured. Furthermore, disclosing social responsibility information is voluntary for the firms, therefore there are no rules concerning what information they have to release nor are there any regulations on how to measure a firm's social responsibility correctly. Moreover, the stock data collected for this research ranges from the year 2001 to 2019. This could have an effect on the outcome as the stocks are gathered from different times. Other external influences could have impacted the stock prices thus impacting the results seen in this study.

Furthermore, it is important to note that there are other variables that are of importance to determine the market performance of a firm, which have to be acknowledged. In this study the market value of the shares was used as a measure of the market performance. Using a variety of variables to determine the market performance will likely lead to more precise results.

Lastly, the research sample is limited to the textile and apparel companies, so the results cannot be generalized for other industries. Furthermore, the sample companies are all from the U.S and therefore the results and analysis of different international firms may vary. Future research should compare a variety of sectors from different countries to ensure reliability and validity to present a detailed assessment of the impact of social sustainability.

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