The Relevance of Materiality in Sustainability Reporting of Universities

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STATUTORY DECLARATION

I hereby declare that the thesis submitted is my own unaided work, that I have not used other than the sources indicated, and that all direct and indirect sources are acknowledged as references.

This printed thesis is identical with the electronic version submitted.

Linz, November 2017

Klara Pretsch
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List of abbreviations
CERES..................................................................Coalition for Environmentally Responsible Economies
e.g. ............................................................................................................................for example
ext.............................................................................................................................external
FASBI........................................................................Financial Accounting Standards Board Interpretations
GASU..................................................................................Graphical Assessment of Sustainability in Universities
GRI..........................................................................................Global Reporting Initiatives
int............................................................................................................................internal
JKU......................................................................................Johannes Kepler University
No.............................................................................................................................number
p.............................................................................................................................page
pp............................................................................................................................per pro
STARS......................................................................Sustainability Tracking, Assessment & Rating System
THE..................................................................................Times Higher Education
UGB..........................................................................................Unternehmensgesetzbuch
Vol............................................................................................................................Volume
w. Y...............................................................................................................................without Year
Abstract – English

Within the last two decades, the numbers of sustainability reports disclosed by the biggest 250 companies in the world increased as well as reports disclosed by universities. Most of these institutions used the Global Reporting Initiative (GRI) framework.

Due to this ongoing increase, the numbers slightly dropped in the last few years. One reason might be the added materiality aspect that increases the complexity of sustainability reports.

The materiality aspect is the core element of this thesis. Nearly no literature considers the materiality aspects; if they do it is mainly about definitions and the coverage rate of disclosed indicators. Thus stakeholder orientation that should overlap with the meaning of materiality is neglected and results in the research questions and research design.

Through a qualitative content analysis of 33 international sustainability reports of universities, which includes the materiality aspect, it is possible to gain the knowledge which aspects are rated as material by internal and external stakeholders and furthermore a quantitative correlation analysis is possible. This correlation analysis answers, if the materiality aspects are considered in the sustainability reports and if they are linked to the coverage rates. Despite one exception no linkage is found, what means that the sample of universities discloses material aspects, but they do not focus on them, they are part of the general coverage rate. Therefore it can be said that the universities are not stakeholder oriented although it is meaningful if one understand the meaning of materiality and proves the stakeholder theory which is considered as theoretical background. Beside the material aspects it is possible to show the percentage of reported material aspects and gives the hint that stakeholder orientation and focus on their aspects, rated as material is important.

Based on these results combined with limitations, two items should be considered in further research. Namely, sustainability reports should become comparable through unified standards or general audits as for financial reports and to ask, if the universities really live the material aspects and not only report them without focusing them in their reports.
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Abstract – German


Dieser Aspekt der Wesentlichkeit ist Kernthema in dieser Forschungsarbeit. Innerhalb der Literatur gibt es zwar Erwähnungen und Definitionen der Wesentlichkeit, aber keine genauere Betrachtung. Die Nachhaltigkeitsberichte beinhalten hauptsächlich die Abdeckungsraten der Indikatoren aber ohne Hinblick auf Stakeholder Orientierung, welche stark mit dem Aspekt der Wesentlichkeit zusammenhängen sollte. Daraus resultieren die Forschungsfragen und das Forschungsdesign.


Basierend auf diesen Erkenntnissen kombiniert mit möglichen Limitationen, ergeben sich zwei Hauptpunkte für zukünftige Forschungstätigkeiten – die Berichte vergleichbarer zu machen, im Sinne von einheitlichen Richtlinien oder Audits von Jahresabschlüssen und, zu hinterfragen, ob die Universitäten die wesentlichen Merkmale auch wirklich leben oder nur berichten, wenn diese nicht speziell fokussiert werden.
1. Research problem and current state of the art in the field of Sustainability Reporting research

In 2005, 52% of the 250 biggest companies worldwide have reported about non-financial issues. Three years later in 2008, already 79% reported on non-financial issues separately to their financial reports\(^1\) and in 2015, 93% of the 250 biggest companies worldwide have reported about their sustainability. About 60% of them used the Global Reporting Initiative (GRI) framework.\(^2\) In addition to this high percentage this increase is noticeable in all geographical regions which means this phenomenon of sustainability reporting is not regional but global.\(^3\) There are more reasons. One of the main causes for the increasing percentage is that more and more organizations implement certain environmental initiatives against the problem with social issues.\(^4\)

Although the GRI framework is the most used reporting framework the usage rate dropped slightly during the last few years. A possible reason could be the extended version GRI 4 including the materiality aspect that makes the framework more complex.\(^5\) Beside these 250 biggest companies, universities started to disclose sustainability reports as well, because one of the biggest challenges in the 21\(^{st}\) century is sustainable development. According to this some universities have established indicators for reporting about environmental, economic and social aspects of sustainability.\(^6\) These are also indicators considered in the Global Reporting Initiative (GRI) framework.

Additionally to the frameworks GRI 3 and GRI 3.1 the general Standards of GRI 4 got extended with materiality aspects which are considered in the standard indicators G17-G23\(^7\)\(^8\). Materiality means that not all the impacts for the environment are reported, only those who are prioritized considering the natural environment and the relevance for internal and external stakeholders.\(^9\) That includes only aspects, which are seen important for stakeholders and the university itself are implemented and described in the report. In best case each report has a materiality matrix to see what aspect is more important than others or if the aspect is more related to internal or external stakeholders.

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\(^1\) Cp. Skouloudis, A./ Evangelinos, K./Kourmousis, F. (2009), p. 2  
\(^2\) Cp. KPMG, (2015), pp. 28-46  
\(^7\) Cp. Global Reporting Initiative (a), (2013), p. 1  
\(^8\) Cp. Global Reporting Initiative (b), (2013), p. 1  
The online database of GRI shows the progress of sustainability reporting within the last years (Table 1). Based on the available online-data of global reporting sustainability database\textsuperscript{10} you can see that sustainability reporting of universities, in general and according to GRI 4 guidelines, is in an early stage. However, the amount of reports is increasing\textsuperscript{11} due to raising importance in non-profit environments and this amount of reports can give an insight in used indicators as well as in the stakeholder orientation of universities.\textsuperscript{12}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{Development of disclosed GRI G4 Reports}
\end{figure}

Although the number of sustainability reports is increasing this does not mean that the quality is increasing with the same percentage.\textsuperscript{13} To sum up, this shows the importance of sustainability reporting of universities and that an evaluation of reports in the GRI database might be useful and give some important insights. The Institute of Management Accounting at the Johannes Kepler University (JKU) has already evaluated the total coverage compliance rate of the reported universities including the indicators G24-G27 “Stakeholder Engagement” which were disclosed within the GRI 4 guidelines and the research question are based on stakeholder orientation and the materiality aspects.

\textsuperscript{10} Cp. Global Reporting Initiative, (2016)


2. **Purpose and research questions**

As there is limited literature on the latest developments of sustainability reporting\(^{14}\) and nearly no literature consists on the materiality aspect, if they do, it is giving definitions and no deeper research in that area. Most of the researches include the coverage rates of provided indicators by the frameworks without considering the results in detail terms of stakeholder orientation. Furthermore no literature that contains a linkage between stakeholder orientation and materiality was found. As materiality is related to internal and external stakeholders it is an interesting area of research how these aspects are correlated to the stakeholder orientation. These two categories should correlate anyhow, because they have overlapping scopes.

The aim of this thesis is to get a good overview of sustainability reporting, possible different frameworks for different institutions, especially universities and the development of this issue in recent years. An additional aim is to construct a fundamental theoretical background based on the stakeholder theory, legitimacy theory and impression management for the empirical part and research questions. One specific point regarding all issues mentioned above is the added view on materiality aspects in the GRI G4 guidelines. Material aspects are those aspects that are stakeholder oriented. Means, the research gap consists on the fact that there exist no data of the linkage between identified important aspects for stakeholders and the aspects that are covered in the sustainability reports. Because if an institution is stakeholder oriented it should mainly focus on and report about those aspects that are identified as relevant for internal and external stakeholders. Hence the research questions are the following:

1. What do internal and external stakeholders regard as material?
2. Is there a correlation between the total coverage rates of material indicators and the evaluated relevance of identified material aspects?
3. How are the material aspects covered by the G4 reports?

The answers to this research questions should give the insight what aspects are identified as material and if the material aspects are reported and linked to the coverage rates. Because normally if something is seen as material it should be the main focus and therefore should be covered in the reports as well. Additionally the empirical part should give an overview what material aspects in general are reported within the sample and how they are rated, especially concerning to the materiality aspects and what the conclusion will be.

3. Research Design

According to Mayring (2015)\textsuperscript{15} the research method starts with a qualitative content analysis of existing sustainability reports from the GRI-Database\textsuperscript{16}. Dated with April, 15\textsuperscript{th} 2017 the sample includes 33 universities which have reported along the GRI 4 guidelines.

The first step is to create a materiality matrix, if there is none included in the report. Therefore the content is analyzed considering internal and external groups of interests for getting material aspects and how important those aspects are. For the ongoing research process this importance is divided into three categories – low, middle and high – for each perspective. Secondly these aspects will be subsumed in material dimensions and further in four material sub categories. Each category has different material dimensions, self-created or related to the indicators of the GRI Index\textsuperscript{17} because many of the reports will show similar pictures of materiality. Finally these four material sub categories with their material dimensions will be inserted into SPSS that a quantitative analysis about the correlation between the materiality and total coverage rate can be done. Through the inserted data in SPSS a descriptive analysis is possible, including the possibility to get a big view over all material aspects from these 33 universities.

At the beginning the concept of sustainability reporting will be explained what its aims are and how this occurs for universities. Based on a definition and the history of sustainability reporting the principle of voluntary disclosures will be explained. As there exist more than one concept how to create sustainability reports the Global Reporting Initiative (GRI) will be explained as example for voluntary disclosures and how they can be created. As between the different versions of the GRI the materiality aspect was added, this aspect will be defined and as the material aspects are the focus of the empirical part of this thesis the link for doing the research and interpreting the results is given. This interpretation needs to be proven by its theoretical background. This background is based on three different concepts or theories which can be linked together. First, there will be a general explanation of the stakeholder theory and in a second step stakeholders at university are going to be explained. Then the legitimacy theory will be explained due to the reason that each material aspect and dimension needs to be legitimated.

Afterwards there will be an explanation why the material aspects and dimensions are legitimate for universities. The last point in the theoretical background will be the impression management.

\textsuperscript{15} Cp. Mayring, P. (2015), pp. 54-97
\textsuperscript{17} Cp. Global Reporting Initiative (a), (2015), pp. 18-61
because each disclosure does not matter if mandatory or voluntary, is an impression for organizations and humans outside the company, here of the university. Before describing the sample of research and the methodology how the research happened the three concepts will be linked together and what this can mean for the results. The operationalization is described how the sample was conducted. Afterwards the results will be presented and interpreted. With the results the research questions can be answered and a conclusion with a view on the gained knowledge based on the theoretical background can be done. Finally the results and combined information will be discussed and what the limitations and conclusions are of this thesis.

4. Sustainability reporting

There are several reasons why companies or institutions create a sustainability report. Within the last years the numbers of sustainability reports in general provided any kind of information related to the aim of sustainability accounting. Some of the bullet points mentioned in Kolk can be related to the point of view that companies use sustainability reporting to position themselves and to enhance their opinion what is important and why. Therefore the justification of existence for individual institutions through disclosing environmental and social information is given. Traditional reports of companies do not contain non-financial performances or information, the main part of such reports are the mandatory accounting standards like balance-sheet, profit and loss statement and notes to the financial statements. As this financial reports increase their complexity the intention to provide more detailed information to stakeholders or shareholders was to create an additional voluntary disclosure containing non-financial aspects about sustainability, especially societal and ecological issues with its interdependencies, and thus raise the transparency. This combination of non-financial and financial aspects in one report is called integrated reporting. It seems that GRI is a support for integrated reporting, because it completes the already existing financial reports with its indicators for sustainability reporting on organizations’ environmental operations. Social and environmental disclosures always encompassed mandato-

ry and voluntary disclosures\textsuperscript{25} because a voluntary disclosure without any mandatory disclosure was hard to create.

That an institution act responsible compared to its environment and therefore creates a sustainability report in a long-term run a financial foundation is necessary. Furthermore organizations that are engaged in non-financial reporting and hence in integrated reporting are performing the same as or even better than their competitors with just a financial report\textsuperscript{26}, because non-financial information give an insight in strategically directions with a focus on stakeholders’ demands\textsuperscript{27}. Furthermore if a company’s social performance is bad it is also hurt financially\textsuperscript{28}. This shows the importance of non-financial reporting. This might be a reason why the European Parliament has already voted for mandatory non-financial disclosures, but just for companies with more than 500 employees, means that this does not include universities\textsuperscript{29}.

Although it is difficult to say anything is important or getting better insights in an institutions’ performance only based on the sustainability report\textsuperscript{30}, the focus of this thesis will be on non-financial reporting especially on sustainability reporting combined with a view on using this type of reporting for universities. The concept of sustainability reporting is still not that well established as financial reporting but some organizations prefer to be one step ahead considering social pressure and therefore create an advantage over their competitors\textsuperscript{31}. Additionally to the advantage over competitors, another reason why corporations are doing non-financial reporting is the promotion of stakeholder-promotions beside the perceived environmental visibility of the company\textsuperscript{32}.

4.1. History

Although non-financial reporting is known for years, companies started to embed this into their operational practices at the beginning of the year 2000\textsuperscript{33}. Despite embedding non-financial reporting in 2000 the attention on sustainability reports and sustainability accounting gained atten-
tion in the early 1990s.\textsuperscript{34} Until that year most of the companies just added a few pages to their financial reports to disclose something as their social and environmental report.\textsuperscript{35} The first disclosures relying on social and environmental impacts were published in the 1970s.\textsuperscript{36} Despite that fact the first report that was disclosed as a sustainability report was in the end of the 1990s\textsuperscript{37} almost at the same time that the GRI framework was founded. Furthermore some institutions in the trade section included labor, human rights and environmental standards in their agreements in the 1990s. They asked for a social label to certify these standards considering their products, but they were denounced before they got attention.\textsuperscript{38}

In 2004 there hardly existed standardized principles for sustainability reports, although GRIs’ second version was already established.\textsuperscript{39} The problem before the GRI 4 guideline was that they were not applicable for all organizations of any size or sector.\textsuperscript{40} Until the establishment of the GRI 4 guidelines it was difficult to do an audit of sustainability reports. The assignments varied a lot and were not completed or comparable to other sustainability reports.\textsuperscript{41} Applicability of general principles were necessary due to increased environmental reporting and that the given information were not enough to give an entire picture of the organizations’ environmental management.\textsuperscript{42}

\section*{4.2. Definition}

Although there is no widely accepted definition of sustainability reporting\textsuperscript{43}, but through examining the GRI guidelines based on its history and different articles sustainability reporting can be defined as following: the goal of sustainability reports is “to include information concerning the three dimensions of an organization’s economic development, social cohesion and environmental impact through a wide array of indicators”.\textsuperscript{44} This gives an insight about the complexity of sustainability reporting and a shaped scope at the same time.\textsuperscript{45} Before giving a definition of sustainability reporting it is important to mention that sustainability in general includes the three ele-

\textsuperscript{34} Cp. Lamberton, G. (2005), p. 7
\textsuperscript{40} Cp. Global Reporting Initiative (b), (2015), p. 3
\textsuperscript{41} Cp. Kolk, J. E. M. (2004), p. 60
\textsuperscript{44} Cp. Jenkins, H./Yakovleva, N. (2004), p. 271
\textsuperscript{45} Cp. Lamberton, G. (2005), pp. 10-11, pp. 18-19
ments: environment, economic and social. These three elements are included in the GRI framework.

Supplementary, sustainability reporting is defined as  

“the practice of measuring, disclosing, and being accountable to internal and external stakeholders ... towards the goal of sustainable development ... including both positive and negative contributions.”

This includes that humans are strongly related to sustainability reporting either they are directly linked to their natural environment or if they act in institutions that affect the environment or are affected by the environment. Additionally to that definition, Starik & Kanashiro (2013) think that sustainability-related actions and decisions should be defined, implemented and evaluated as well as considering environmental and socioeconomic basements. Within these actions, everybody's needs should be recognized.

4.3. Voluntary disclosures

Mandatory disclosures are based in Austria in the written paragraphs § 16 of the Universitätsgesetz from the year 2002 as well as in § 16 (1), 3rd book and its 1st chapter of the Unternehmensgesetzbuch (UGB). § 16 of the Universitätsgesetz 2002 says that each university has to do internal accounting and disclosures combined with the 3rd book of UGB. However there is no paragraph that requires non-financial reporting. This means as sustainability reporting is non-financial reporting, it is not mandatory for organizations to report about this additional information. Therefore sustainability reporting can be seen as a voluntary disclosure.

Although universities are not mandatory to disclose non-financial reports, there are different businesses with different sizes, ownership and customers – therefore stakeholders too – disclosures that have different requirements. One main reason why organizations disclose additional voluntary information is that some stakeholders may have an adverse reaction about organizations’ performance and therefore disclose environmental information. It might seem different,

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51 Cp. Universitätsgesetz (2002), § 16  
52 Cp. Unternehmensgesetzbuch, §16  
but voluntary disclosures are based on the concept of financial disclosures.\textsuperscript{55} This could be the reason why GRI is modelled along financial reporting systems and therefore able to reduce uncertainty for stakeholders and increase legitimacy.\textsuperscript{56}

Therefore voluntary disclosures can also be about financial aspects due to the fact that can give additional information for a true state of affairs of an organization.\textsuperscript{57} The first time that voluntary disclosures occurred was in the 1960s because these additional voluntary disclosures helped to recognize larger negative earnings that would not be recognized without the additional disclosure, which are determined by the structure of ownership of the company.\textsuperscript{58} This shows that voluntary disclosures should not only disclose positive news, they should disclose negative aspects too\textsuperscript{59}, particularly it is proved that organizations with better performance have a higher rate of reports.\textsuperscript{60} Thus voluntary disclosure can influence the information of financial reports, reasoned through including negative aspects as well.\textsuperscript{61} Lower managerial ownership means that the voluntary disclosures increase. Thus this means if the proportion of outside ownership raises the amount of voluntary disclosures do too.\textsuperscript{62} However one problem might be that if organizations do not contain important information in their financial and non-financial reports, stakeholders are faced with uncertainty about the nature of the disclosed information.\textsuperscript{63}

An interesting point of view is that larger companies have greater disclosures and therefore different requirements on voluntary or mandatory disclosures. Thus voluntary disclosure frameworks should also consider industrial differences.\textsuperscript{64} Most notably organizations do only report about their environmental issues just for informing their stakeholders.\textsuperscript{65}

\textbf{4.3.1. Frameworks}

Although the frameworks for non-financial reports are not that well established there are already different possibilities. According to Eccles & Saltzman (2011) the GRI G3 guidelines are a good opportunity to start sustainability reporting. Even before the G4 guideline was established in

\begin{flushleft}
\textsuperscript{55} Cp. Guidry, R. P./Patten, D. M. (2012), p. 82  
\textsuperscript{56} Cp. Brown, H. S. et al. (2009), p. 571  
\textsuperscript{60} Cp. Lang, M. H./Lundholm, R. J. (2000), p. 640  
\textsuperscript{63} Cp. Guidry, R. P./Patten, D. M. (2012), p. 82  
\textsuperscript{65} Cp. Guidry, R. P./Patten, D. M. (2012), p. 84
\end{flushleft}
2013, 1,400 companies have used this framework for non-financial reporting.\(^66\) The GRI framework is one of the most popular and used reporting standard due to its raised number and popularity within the last ten years.\(^67\) Before the GRI G4 guideline was established there was no possibility for general environmental information disclosure. Therefore organizations decided on their own what and how much to disclose in accordance to their preferred stakeholders.\(^68\) If organizations decide to improve their non-financial reporting and accept new accounting standards, quality of the reports will be improved.\(^69\) That quality is proved through the standards of the different frameworks and they need to be followed.\(^70\) One requirement for answering the research questions is to define the word “materiality” and its meaning. This will give the movement of environmental reporting to stand alone non-financial reporting, like sustainability reports.\(^71\)

Beside the GRI framework that is going to be explained in the chapter afterwards two other sustainability frameworks will be described shortly. There are two to mention which already tried to include the educational sector in the framework.

Firstly, the Graphical Assessment of Sustainability in Universities (GASU) framework is shortly described. This framework consists on an earlier edition of the GRI framework\(^72\) which means that this framework does not include the materiality aspect and is not applicable for this thesis. Despite that, the aim of this framework is to make the indicators of the GRI framework visible and extend them with an additional educational dimension.\(^73\) This results in better comparisons and benchmarking between universities as the educational dimension is considered. Of course this graphical representation of the reported indicators valued through the coverage rate in the reports should reflect the real performance of the university.\(^74\)

Secondly, the Sustainability Tracking, Assessment and Rating System (STARS) is a framework only designed for universities supporting them to track and measure their sustainability progress. Similar to the GRI framework STARS also consists on categories – academics, engagement, operations, planning and administration and a bonus category innovation and leadership. As you may guess these categories have credits, comparable with indicators in the GRI framework, and

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\(^{73}\) Cp. Lozano, R. (2010), p. 68  
these credits mainly focus on the university, curriculum, food and dining etc. just to mention a few.\textsuperscript{75} It is a good opportunity to take this framework for reporting, but the impression of this framework is that is does not really take the environment beside the university ground in its focus, including stakeholders, or society that is important for surviving in todays’ economy. Thus the GRI is the chosen framework used as basement within this thesis.

4.3.2. Global Reporting Initiative (GRI)

The reporting principles of Global Reporting Initiative G4 says that these principles helps
\textit{“to achieve transparency in sustainability reporting and therefore should be applied by all organizations when preparing a sustainability report”}.\textsuperscript{76}

In own words this should mean that if all reports are created following this principles, they should be transparent and applicable for all organizations without any limitations concerning sizes of organizations and sectors.

Based on the website of Global Reporting Initiative Database, the most important points of GRIs’ history look like the following.\textsuperscript{77}

1997  GRI was founded in Boston, USA to ensure that companies are following the CERES (Coalition for Environmentally Responsible Economies) Principles and investors were the main target for these kinds of report
1998  the scope was broadened to include beside environmental issues, social, economic and governance issues too
2000  first version of the GRI guidelines were established for comprehensive sustainability reporting
2001  GRI became an own independent non-profit institution
2002  GRI relocated from USA to Amsterdam, The Netherlands and launched the second version of GRI guidelines
2006  steadily growing demand for GRI guidelines made it necessary to introduce G3
2011  guideline G3.1 was established as an update and completion of G3 and the GRI Database was launched to upload all sustainability reports
2013  G4 guideline was introduced as the first guideline for every organization of any size or sector without limitations
2015  Introduction of certificate to gain accreditation due to the usage of GRI G4 guidelines
2017  GRI exists for 20 years

\textsuperscript{75} Cp. Association for the Advancement of Sustainability in Higher Education, (2017), pp. 10-19
\textsuperscript{76} Global Reporting Initiative (a), (2015), p. 8
\textsuperscript{77} Cp. Global Reporting Initiative, (2017), GRI’S History
Summing up and based on this history, GRI can be seen as

“a voluntary set of guidelines for reporting on the economic, environmental and social aspects of an organizations’ activities.”

Thus the usage of GRI is reasoned to its broad scope and including the three most important categories for sustainability reporting – economic, environmental and social indicators. Furthermore GRI is based on the initiative “Coalition for Environmentally Responsible Economies” and has its roots in the US. CERES’ prior aim is the improvement of environmental performance and accountability of US companies. Further this means the GRI framework got its core assumption of CERES and this means it is designed by a third party and not a specific sector and should be considered in each geographical region. This can be the reason why GRI became the global leader regarding voluntary disclosures in 2002. Though, the most important fact is that GRI helps organizations to disclose information that are important for different managers and stakeholders to achieve a useful overview of the organizations’ actions.

According to Kolk (2004) GRI is seen as a multi-stakeholder effort to develop reporting guidelines. As there exists different possibilities for non-financial reporting the main goal of GRI is to find one reporting system useable for everyone through broadening the already well established reporting system Financial Accounting Standards Board Interpretations (FASBI) and therefore GRI is a well-known and often used framework for non-financial reporting. It helps to measure, verify and communicate sustainability reporting related information, but it is a tough question if an organization should use this framework or one of the others that exists. Such a framework is needed for raising transparency and accountability of institutions, especially for different stakeholders. Thus making these frameworks more effective and a guideline how to implement them adequately within an organization is a challenge for each.

Though the main goal of GRI is to find one reporting system usable for everyone it is a challenge because sustainability reporting is, as defined above, a three dimensional concept and therefore requires many indicators to cover all aspects. These should be included in wide array of indicators mentioned in the GRI guidelines. The main issue is that the GRI guidelines are established

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84 Cp. Brown, H. S. et al. (2009), pp. 571, 577
through a broad multi-stakeholder process.\textsuperscript{88} This means that these guidelines link stakeholder orientation with sustainability reporting and increase their exchange rate.\textsuperscript{89}

As a critical aspect the GRI guidelines are seen as too generic without enough linkage to the stakeholders’ needs.\textsuperscript{90} Despite that issue the GRI guidelines are still one of the most used sustainability reporting guidelines worldwide.\textsuperscript{91} Another reason why the GRI guidelines are the most used framework is that the indicators are detailed, prescriptive and competent.\textsuperscript{92} Evidence for this assumption gives the article of Hussey D., Kirsop P & Meissen R. (2001) where the most comprehensive sustainability reports were created along the GRI guidelines. Highlighting, these companies reported even more on environmental aspects than on economic and social aspects.\textsuperscript{93}

4.3.2.1. Materiality

In general, an organization can disclose whatever it wants to as long as the statement seems to be true and consists of basic information.\textsuperscript{94} However, materiality is needed. Nearly no literature consists on the materiality aspect; if they do it is just about a definition and no deeper research in that area. Probably a reason might be that it is hard to identify the required level of detail and degree of precision for defining only material aspects.\textsuperscript{95} Despite that fact materiality is considered as core element for some auditors, because implementing materiality aspects in sustainability reports would improve the comparability.\textsuperscript{96} Currently the problem is that reports are not comparable within a report, between different years and especially not comparable within different institutions or even sectors.\textsuperscript{97}

Materiality means not all the impacts for the environment are reported, only the prioritized. This means any group or individual can suffer from those impacts or they have impacts on the organization.\textsuperscript{98} Thus materiality’s definition is that it

"is a central element in sustainability reporting ...and aims to distinguish relevant and the most important information from insignificant, immaterial information".\textsuperscript{99}

\begin{thebibliography}{99}
\bibitem{88} Cp. Ceulemans, K. et al. (2015), p. 129
\bibitem{90} Cp. Hahn, R./Kühnen, M. (2013), p. 15
\bibitem{92} Cp. Ceulemans, K. et al. (2015), p. 129
\bibitem{95} Cp. Lamberton, G. (2005), p. 14
\bibitem{98} Cp. Freeman, R. E./Mcvea, J. F. (2001), p. 6
\bibitem{99} Puroila, J. et al. (2016), p. 2
\end{thebibliography}
This means in own words that only information’ which are considered as the most relevant for different stakeholders are disclosed in the sustainability reports and therefore helps to reduce unimportant information that the identified stakeholders do not need for their interest. Although it exist the meaning that voluntary disclosures of sustainability reports are primarily made to reduce the information asymmetry between an organization and its stakeholders only materiality helps to diminish information asymmetries between organizations and stakeholders that only the value-relevant information is provided for outside parties.

In the end it is still questionable if organizations have really internalized all the things they include in their reports, especially the material aspects which make it happen that only the most important information are disclosed. A possible explanation is given in the G4 sustainability reporting guidelines – implementation manual (2015) where all important indicators that should be contained in a sustainability report are divided in general standard disclosures and specific standard disclosures. Within these guidelines materiality is seen as a general standard disclosure and therefore should be considered in any sustainability report and can be divided in internal and external material aspects – described in the indicators G4-20 and G4-21.

The reason why materiality is that important for sustainability reports, in general and for universities, is that one main goal of the disclosures is to give the stakeholders an idea about the efforts and progresses they do for the environmental, economic and social dimensions. Thus these efforts and progresses should reflect the issues stakeholders have concerning the institution. This means materiality should be stakeholder oriented and through that the sustainability reports remain legitimated and therefore results in the theoretical background for materiality in sustainability reports – stakeholder theory, legitimacy theory and impression management. Further details what these three theories are and why they fit together with materiality and sustainability reports is described in the chapter “Theoretical background” and in the “Discussion”.

4.4. Universities and sustainability reporting

As already mentioned most of the organizations worldwide have to do financial disclosures due to law, it is the same with universities. In Austria this is written in § 16 of the Universitätsgesetz

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from the year 2002 as well as in § 16 (1), 3rd book and its 1st chapter of the Unternehmensgesetzbuch (UGB). § 16 of the Universitätsgesetz 2002 says that each university has to do internal accounting and disclosures combined with the 3rd book of UGB. The mandatory financial reports need to be disclosed on each April 30th after the prior period, which is the normal calendar.\textsuperscript{106} The 3rd book of UGB just mention formal guidelines how the reports should look like and which principles should be considered that the reports are understandable and comparable.\textsuperscript{107} Within the paragraphs no need for non-financial disclosures is mentioned. Therefore one reason for doing sustainability reports is that they are considered as voluntary disclosures as described above and are not mandatory. Furthermore non-financial information is useful for several investors, shareholders and stakeholders, because then they know better about a universities’ performance and direction they would like to go and can help to achieve longer-term goals.\textsuperscript{108}

As in the future sustainable resource management will get more and more important, the focus of this thesis will be that universities should start, if they have not so far, to disclose voluntary reports about sustainability additionally to the mandatory mostly financial reports. The reports under review refer to the GRI framework. Of course there exist more than that one voluntary disclosure framework, but this one is chosen and the decision for using which standard should be done by management in combination with the stakeholders of an organization due to the fact that this voluntary disclosures should mainly be addressed to them. If the management has considered the stakeholders’ view it is still not sure that the chosen standard is the best choose considering the standards, because managers can hardly reflect all stakeholders’ issues in only one scope.\textsuperscript{109}

The point is that universities play an important role in todays’ society due to the fact that they are responsible for the education of future employees and leaders. Thus they differ from “normal” organizations because their core activities are education, research, community outreach and operations. On account of this these are the aspects that should be disclosed in the sustainability reports.\textsuperscript{110} There is the core assumption that the main focus of universities’ activities are upon education and this is for achieving lifelong learning to make people wiser after giving them a fundamental basic education. Giving basic education to children and continuing in adults’ age is

\begin{footnotesize}
\begin{enumerate}
\item Cited: Universitätsgesetz (2002), § 16
\item Cited: Unternehmensgesetzbuch, §16
\item Cited: Camilleri, M. A. (2015), p. 218
\item Cited: Ceulemans, K. et al. (2015), p. 133
\end{enumerate}
\end{footnotesize}
still not common around the world. Therefore deeper education at universities also contributes to achieve sustainable development.\textsuperscript{111,112}

The educational sector, especially universities, drags behind all the other sectors considering the implementation of sustainability reports.\textsuperscript{113} According to Lamberton (2005) a sustainability report should be disclosed every three years, although the required data, based on the law, need to be collected each year.\textsuperscript{114} It is questionable if the combination of that two arguments are meaningful and the list in the appendix of reports disclosed by the 33 universities gives a different view and maybe that is the reason why only non-governmental organizations and public authorities are recognized for scientific papers.\textsuperscript{115} Furthermore it can be said that annual reports are seen as an important basement for social and environmental information.\textsuperscript{116}

Therefore one of the main objectives for creating sustainability reports of universities should be that each university or institutions communicate their impacts on social and environmental issues as well as their responsible activities to their stakeholders.\textsuperscript{117} Therefore it would be meaningful to disclose sustainability reports regularly and maintain these disclosures in constant periods of time. This reduces the negative view on voluntary disclosures.\textsuperscript{118}

5. Theoretical background

5.1. Stakeholder theory

As the materiality aspect considers the natural environment as well as internal and external stakeholders the stakeholder theory is one of the main theoretical backgrounds for this thesis and at the same time most frequently used approach.\textsuperscript{119} Another reason that the stakeholder theory is one of the main theoretical backgrounds is that a main goal of sustainability reporting is to meet stakeholders’ expectations\textsuperscript{120} and to manage the relationships to these stakeholders.\textsuperscript{121} Therefore

\begin{itemize}
  \item \textsuperscript{111} Cp. van Weenen, H. (2000), p. 21
  \item \textsuperscript{112} Cp. UNESCO (1997), pp. 118-127
  \item \textsuperscript{113} Cp. Ceulemans, K. et al. (2015), p. 138
  \item \textsuperscript{114} Cp. Lamberton (2005): Sustainability accounting a brief history and conceptual framework (S. 24)
  \item \textsuperscript{115} Cp. Ceulemans, K. et al. (2015), p. 127
  \item \textsuperscript{116} Cp. Jenkins, H./Yakovleva, N. (2004), p. 273
  \item \textsuperscript{117} Cp. Camilleri, M. A. (2015), p. 213
  \item \textsuperscript{118} Cp. Lang, M. H./Lundholm, R. J. (2000), p. 653
  \item \textsuperscript{119} Cp. Hörisch, J. et al. (2014), p. 328
  \item \textsuperscript{120} Cp. Junior, R. M. et al. (2014), p. 5
  \item \textsuperscript{121} Cp. Hörisch, J. et al. (2014), p. 330
\end{itemize}
stakeholder theory is kind of competing with the financial part – value maximization – as the organizational behavior might orient along stakeholders.\textsuperscript{122}

The term “stakeholder” was first mentioned in the 1960s that managers have to understand all concerns of shareholders and should actively explore their relationships. Later the approach of this theory emerged in the 1980s as managers needed a framework for handling uncertainty with environmental changes and turbulences\textsuperscript{123} and management theories at that time showed lack of complexity.\textsuperscript{124} It is defined by Freeman (1984) as following: stakeholders are

“any group or individual who is affected by or can affect the achievement of an organization’s objectives.”\textsuperscript{125}

This is one of the broadest definitions\textsuperscript{126} and generally means in own words that a stakeholder can be every person or institution that is influenced by an organizations’ activity or that the activities of every person or institution can influence the organization. One important issue is that these influences can be both, negative or positive for each party. This is the so called normative stakeholder theory.\textsuperscript{127} According with all influences, all value created aspects and businesses have to be included.\textsuperscript{128} In a certain way the organization is also responsible for its stakeholders because they also can get lost. If someone is not sure someone is a stakeholder or not, they need to have two attributes – a claim and capability to influence an organization combined with legitimacy and power as core attributes.\textsuperscript{129}

The focus of this theory should be on managing so called stakeholder relationships, that means to know which group of interest is involved in certain activities and what their impact can be or how they can be affected. It does not matter what field of interest, they can be numerous.\textsuperscript{130} It is difficult to describe a company without considering all dependent stakeholders and so the importance of this theory is justified.\textsuperscript{131} Possible stakeholders can include all individuals or groups who can substantially affect the institution.\textsuperscript{132}

\begin{thebibliography}{99}
\bibitem{124} Cp. Hörisch, J. et al. (2014), p. 333
\bibitem{125} Freeman, R. E. (1984) p. 5
\bibitem{127} Cp. Hörisch, J. et al. (2014), pp. 329-330
\bibitem{130} Cp. Hörisch, J. et al. (2014), pp. 330-335
\bibitem{131} Cp. Freeman & McVea (2001), p. 6
\end{thebibliography}
The group of interest can be internal, e.g. employees or management, or external, e.g. communities, shareholders or customers.\textsuperscript{133} Whether the group of interest is internal or external, every group is a part of the alliance including explicit or implicit contracts an organization is based on.\textsuperscript{134} Additionally different stakeholders use the given information differently according to their interests and audiences.\textsuperscript{135}

For better understanding of the stakeholder theory it is necessary to define if stakeholders are affected by or can affect the institution.\textsuperscript{136} This means in practice that all stakeholders require combined with the meaning of sustainability reporting, transparent and equalized information including the performance of the three dimensions – economic, social and environmental – in order to reach the goal of sustainability.\textsuperscript{137} Therefore the importance of communicating with stakeholders and its orientation as well as with partnerships is reasoned.\textsuperscript{138} Therefore one question is not answered, how far the sustainability reporting is initialized within a company and that can be seen a little bit through the established GRI G4 guideline.

Normally each stakeholder should be considered equally for ensuring long-term success of a company\textsuperscript{139} but for sure this is not possible. It is a challenge for the management to identify which stakeholders are the most important and actually involved in the core business of an organization.\textsuperscript{140} Therefore stakeholder management is a never ending task of balancing altering needs and circumstances in today’s fast changing time based in the various relationships.\textsuperscript{141} Stakeholders’ interests can vary from issue to issue and really fast within a short period of time strongly depending on the degrees they are concerned with the actions of an organization.\textsuperscript{142} Summing up all the stakeholders have different interests and demands that are in conflict to others.\textsuperscript{143} Not to forget that these demands and interests include ethical and moral aspects too.\textsuperscript{144} Thus they have to find channels how they can interact simultaneously with several stakeholders and based on that interaction they need to develop different programs, policies and strategies that satisfy their identified and different stakeholders.\textsuperscript{145} If they have found a channel to interact sim-

\textsuperscript{133} Cp. Freeman, R. E./Mcvea, J. F. (2001), pp., 12-23
\textsuperscript{136} Cp. Finch, N. (2005), p. 4
\textsuperscript{137} Cp. Lamberton, G. (2005), p. 15
\textsuperscript{139} Cp. Freeman, R. E./Mcvea, J. F. (2001), p. 8
\textsuperscript{140} Cp. Hörisch, J. et al. (2014), p. 330
\textsuperscript{141} Cp. Freeman, R. E./Mcvea, J. F. (2001), p. 10
\textsuperscript{144} Cp. Phillips, R./Freeman, R. E./Wicks, A. C. (2003), p. 480
\textsuperscript{145} Cp. Freeman, R. E. et al. (2006), p. 7
ultaneously with their stakeholders the list is still not completed, because stakeholders are never easily identified.\textsuperscript{146} Governmental restrictions can be applied as possible limitations for stakeholders.\textsuperscript{147} If the restriction prohibits some specific actions of an organization, every stakeholder that has an interest in this action needs not to be considered.

If a stakeholder is seen as more relevant and important than others managers will do their best to fulfil their needs and might alter the processes and strategies they have created. Through the channel they have developed it might be that the number of relevant stakeholders is fixed and alter just a little. Despite of that fact it can be that some stakeholders are even more important than others and these stakeholders mainly have three attributes – power, legitimacy and urgency.\textsuperscript{148} Legitimacy is described in the next chapter. These three attributes has to be considered by the management if stakeholders have a claim about an organizations’ action. It depends on how the power of a stakeholder on the organization is, how the issues are legitimated between stakeholders and the organization and how urgent the claim of a stakeholder is. A manager will recognize these attributes and if a stakeholder shows high power, high urgency and the claim is legitimated as well; the manager should pay attention to this stakeholder first when thinking about a change. Each of these three attributes can also appear without the others.\textsuperscript{149} This shows that managers can consider stakeholders when they decide important strategic actions\textsuperscript{150}, however, this does not mean that they have to do so – it is just an orientation and reasoned recommendation.

5.1.1. Stakeholder theory and universities
What this theory means for universities and which stakeholders a university can have is described in this part of the thesis. The focus of this thesis is on sustainability reporting and this is already defined above. Now the thing is how to apply stakeholder theory for universities with the focus on sustainability reporting. One possibility is to consider the nature as an own stakeholder or organizations, people who works with interpretations of nature development to ensure the sustainability aspect.\textsuperscript{151} Education may help to rise students’ awareness to the sustainability aspect and therefore also to a higher awareness of possible stakeholders. Just higher efforts teaching that values to students is necessary and will end in a long-term result, as it is an essential step

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The example of education shows that stakeholders’ interests are not only based on wealth maximization because the focus is on teaching and through its contents that students gain sustainable awareness.

Relating to universities internal and external stakeholders are shown in figure 1, based on Ceulemans et al. (2015) and Rasche & Esser (2006).

This figure shows possible stakeholders of a university.

As stakeholders of companies expect greater disclosure and transparency in reports this would be really important for universities’ stakeholders was well, because then they know what the concerns of universities are and may help them to reach and fulfill settled goals.

5.2. Legitimacy theory

It might be that some of these stakeholders are also able to legitimate some aspects due to their importance. Therefore in addition to the stakeholder theory the legitimacy theory is the second basement for this thesis due to the fact that the indicators and important aspects need to be legit-

Figure 1: Internal and external stakeholders of universities

Each stakeholder group has an own part. Within the small circle are the internal stakeholders together with the organization, the university. There is always an interaction between the university itself and its internal stakeholders shown through the arrows. It is the same with external stakeholders which are shown on the bigger circle. They are also in an ongoing interaction with the university.

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imated. Legitimacy is required that an organizations’ environment can be fully understand.\textsuperscript{158} In that case this means legitimacy is based on pragmatic assessments of stakeholders’ relations which mean the perception of stakeholders concerning the actions of an organization fit some socially constructed system of norms, definitions or values.\textsuperscript{159} So it is important that aspects are not only legitimated through organizational structures, but also through social environments which consists on different stakeholders, organizations etc.\textsuperscript{160} Beside, this means the intention of stakeholder theory is that this concept describe the reason for existence of an organization.\textsuperscript{161}

Just existing as a business company it not enough, it is important to include ethical and political issues as well.\textsuperscript{162} The so called separation thesis deems that it is possible to separate ethics or society from the core business of an organization.\textsuperscript{163} This is not congruent with the following definition by Suchman (1995) of legitimacy:

\textit{“legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.”}\textsuperscript{164}

In own words this means that all actions of an organization are for sure desirable, but also proper and appropriate in combination with social norms, beliefs and definitions which means that this actions need to be moral or ethical correct, or actions are seen as law although they are not written down. This results in general social norms and formal laws.\textsuperscript{165} All organizations need a fundamental amount of actors that support them.\textsuperscript{166} Therefore legitimated stakeholders that fulfil these aspects are the ones that really count for the organization.\textsuperscript{167} This can also be interpreted within the definition of Mitchell, Agle and Wood (1997):

\textit{”legitimacy is a desirable social good, … something larger and more shared than a mere self-perception, and … defined and negotiated differently at various levels of social organization.”}\textsuperscript{168}

This would mean that legitimated issues, actions, or results are seen different by various stakeholders and on different levels that receive the results. For example if an organization invest millions in a new business-building with the newest state of technology to reduce emissions and

\begin{thebibliography}{100}
\bibitem{159} Cp. Suchman, M. C. (1995), pp. 571-574
\bibitem{161} Cp. Freeman, R. E./Mcvea, J. F. (2001), p. 6
\bibitem{163} Cp. Freeman, R. E. et al. (2006), p. 4
\bibitem{164} Suchman, M. C. (1995), p. 574
\bibitem{168} Mitchell, R. K. et al. (1997), p. 867
\end{thebibliography}
further costs considering the environment. Some employees might see the good investment for a sustainable construction and improved working conditions and others only the high sum of invested money and that people have to work in temporary, maybe bad conditioned, bureaus or the ongoing noise for months, even years. Managers of other organizations might recognize the position of this organization within the market and that they have to improve too if they are competitors. You can see, one action and its claims can be legitimated through different points of use and is concerned to all possible (social) organizations. Therefore it is indispensable that all organizations are confronted with attaining, maintaining and defending their legitimacy. However, it is even more important that understandable organizations are more legitimated than desired actions of organizations and that legitimacy can be proved through the absence and presence of questioning specific actions of an organization.

Further, legitimacy is important because it shows that through interaction between social and institutional counterpart claims might evolve and they should be considered in stakeholder management. As non-financial reporting, sustainability reporting needs be legitimated in contrast to financial reporting which has institutional legitimacy that is often linked to the survival of an organization. Such voluntary disclosures like sustainability reporting is can be seen as an additional mechanism to organizations’ legitimacy and thus necessary for ongoing relationships between organizations and their stakeholders. A lack of these relationships can harm the legitimacy.

Finally it should be noticed that legitimacy is changing over time due to the fact that legitimacy is a process strongly linked to stakeholders and stakeholders are also altering pretty fast. This means that the legitimated actions of an organization are no longer legitimated within a certain period of time due to changes in the environment and there stakeholders, their issues and ethical views as well.
5.2.1. Legitimacy theory and universities

As each type of stakeholder or organization makes its own contribution to legitimacy\(^{177}\), it is clear that this also looks different for universities. Interesting is also the fact that an institutions and stakeholders can also manipulate legitimacy in order to gain support\(^{178}\) and thus can have consequences for organizations, in this case universities, because these effects can decides if social and economic exchange are legitimated or not.\(^{179}\)

If stakeholders of universities, e.g. students-to-be, evaluate some universities considering specific criteria, like the teacher-students proportion, they observe the sources of a university and create their own assumption if the university is legitimated or not. In detail, this means if a student-to-be wants small classes with one teacher for 30 students, private universities or smaller universities with more small classes are legitimated in their view compared to big universities where you are lucky to get a spot in a class with up to 700 students and the relationship between teachers and students is not that close as in small classes.

5.3. Impression management

As most of the existing literature of legitimacy theory and stakeholder theory is based upon companies and businesses without any educational references impression management is used as the third basement for this thesis, because the reputation of educational institutions is in my opinion even more important than it is for companies.

Impression management is mostly linked to individuals’ perception and behaviors and not to organizations’ appearance. The phenomenon of impression management has broad implications on behaviors and was firstly focused in the 1980s,\(^{180}\) just a few years after the first disclosures relying on social and environmental impacts were published.\(^{181}\) This phenomenon involves creating or maintaining a new or desired image of one and can be seen as a strategical (long-term) or tactical (short-term) part. Furthermore these actions can be assertive or defensive. Based on Tedeschi & Melburg (1984) in Bolino, Long and Turnley (2016)\(^{182}\) four combinations of impression management are possible – tactical-assertive, tactical-defensive, strategic-defensive and

strategic-assertive. Mostly used is the short-term tactic “tactical-assertive”, this includes ingrati-
ation and self-promotion. Therefore impression management can be defined as:

“the attempt to control images that are projected in real or imagined social interac-
tions ... and reserved the term self-presentation for instances in which ... images are self-relevant”\textsuperscript{183}

In own words, this means that impression management has the focus on the appearance of an
institution or individual within their environment, how they are seen by others, and how they can
influence and alter this appearance through their actions. If this appearance is relevant for an
individual or organization on its own then it is called self-presentation.

Voluntary disclosures, like sustainability reports are more used as a tool of impression manage-
ment to reduce pressures from stakeholders have on organizations.\textsuperscript{184} This would mean that or-
ganization just disclosure information which they see as material and the rest is considered in
their impression management.

Combined with the motivation to reach a specific goal the discrepancy between desired and cur-
cent image is the original reason for actions.\textsuperscript{185} Anyone wants to be seen or perceived negatively,
neither an individual nor an organization, and therefore impression management could be used to
avoid undesired, negative images and improve positive ones. For doing so self-monitoring of an
organization is needed,\textsuperscript{186} because without the insight why someone has a negative or undesired
perception improvement towards the settled goal is almost impossible. Therefore it can be said
that impression of an organization is managed by a third party\textsuperscript{187}, not the individual in an organi-
zation or the organization itself, another organization or stakeholders that are relevant for the
organization.

Impression management consists of two processes – impression motivation and impression con-
struction. Once people within an organization are motivated to control how they are perceived
and seen by others because they want to improve the perception. However, motivation is not the
only thing that is needed for altering an impression. They need to have the force to create or just
change the behavior to influence others’ impressions.\textsuperscript{188}

\textsuperscript{183} Schlenker, B. R. (1980), p. 6
\textsuperscript{184} Cp. Guidry, R. P./Patten, D. M. (2012), p 82
Therefore the motivation for impression management consists of three interrelated factors – the relevance of impressions, the value of desired outcomes and the discrepancy between desired and current image.\textsuperscript{189} As soon as they begin to act and change impressions it is the process of impression construction. These two processes are hardly to distinguish, thus seen as one.\textsuperscript{190}

Furthermore this can be seen as an impression management strategy and individuals use them to gain certain attributions from their assessors. Although individuals can help to gain wanted attributions from assessors it is needed to distinguish if it is really impression management or just a good organizational citizenship\textsuperscript{191} where individuals in an organization act like the image of the organization is more important than the self-image. If these factors exist individuals are more motivated to raise ones’ self-impression or an organization. Another reason why impression management is a theoretical background for sustainability reporting is that with the disclosures they create an impression of important non-market influences which are considered in the mandatory financial disclosures.\textsuperscript{192}

5.3.1. Impression management and universities

Considering impression management there is nearly no difference between universities and individuals. The scope is different – individuals are one person and universities have many more and a hierarchy from students’ level up to the universities’ president. Normally each university follows a strategy and this strategy is often based on the situation and reputation a university wants to reach in the end. This means the impression of a university concerning their reputation from alumni is an important point for reaching strategical goals. For example, if a university wants to give the impressions that they are international oriented and have high level education as well as a raising reputation to get more students and thus more financial support from the government or public institutions they need to vary their behavior and appearance.

If no one can recognize that the university hosts many international students and has different international programs the image of the university is not an international one. As it is seen by the announcement of JKU that their Global Business program is one of the best worldwide, rated by the financial times at the beginning of October 2017\textsuperscript{193}, an international image emerges. That this

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{189} Cp.: Leary, M. R./Kowalski, R. M. (1990), pp. 38-39
\item \textsuperscript{190} Cp.: Leary, M. R./Kowalski, R. M. (1990), p. 43
\item \textsuperscript{191} Cp.: Bolino, M. C./Turnley, W. H. (1999), p. 204
\item \textsuperscript{192} Cp.: Brammer, S./Pavelin, S. (2008), p. 123
\item \textsuperscript{193} Cp.: Johannes Kepler Universität, (2017), Campus News online on Oct. 5th, 2017
\end{enumerate}
\end{footnotesize}
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international image occurs students and employees of the university itself have to behave in such a way that it is recognizable.

Universities’ sustainability reports might be used to gain reputation through disclosing their most important issues and thus maybe get more financial support from several stakeholders.\(^{194}\)

5.4. Combination of these three theories

Beside, figure 2 shows how the three mentioned above are linked together. Number one to three are the three theories – stakeholder theory (1), legitimacy theory (2) and impression management (3). Therefore altogether four different linkages are possible. These four linkages are explained below starting with the linkage between stakeholder theory and legitimacy theory (4), followed by legitimacy theory combined with impression management (5). Then the linkage between impression management and stakeholder theory (6) is explained and finally the linkage between all three theories (7). Of course the best case as theoretical background is when all three concepts are linked together and recognizable in the reports and results.

5.4.1. Stakeholder Theory and Legitimacy Theory

It can be said that an organizations’ legitimacy is determined by its stakeholders because there is the interdependent relation between both of them,\(^{195}\) they cannot exist without the other counterpart. Both sides need to continue their action that legitimacy is sustained.\(^{196}\)

Based on the definitions given above the combination of stakeholder theory and legitimacy theory would mean the following as a theoretical background for the voluntary disclosures: the background for sustainability reporting and the disclosure consist of stakeholders’ interest and legitimated perception. Beside the other two combinations below, this is the second most useable background for reports, right next to the combination of all three.

For example if a university is doing sustainability reports possible stakeholders can be the companies that employ alumni or students and the product of the university is the technical faculty.

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The university is already legitimated through law and companies have the perception that the university is legitimated through appropriate knowledge alumni gained during their studies, which implies the action of a university, and also add some value to the companies when they get well educated employees. From a students’ perspective the university might be legitimated through their offer of different studies on the technical faculty. They think that one specific study that is shared to them fulfil their desired wish to gain more knowledge. Vice versa the university is stakeholder oriented because they act like that the students gain the knowledge they want to in an appropriate way and therefore also provide well educated alumni to external companies.

5.4.2. Legitimacy Theory and Impression Management
The combination of legitimacy theory and impression management does not really give a good background for sustainability reports. Although this critical view it is possible to reason this combination. As long as the generalized perception of legitimacy theory and the given image of the impression management overlap there should be no problems.

Again, explained through an example considering universities with its technical faculty. The impression of the university can be that the technical faculty is on the best technical standard with many research labs, international well known researchers as teachers, good job offers after graduating, one of the only studies in that country and low students-teacher-ratio. This might be a good image for students and companies, but this linkage is without stakeholders. So these characteristics can be seen as proper and appropriate assumption within a socially constructed system, namely the technical faculty of the university, with values and beliefs – the students-teacher-ratio, good job offers after graduating and up to date technical standards. This means the image given by the university is congruent with the legitimated perception by these given actions.

However, as mentioned in the beginning non-financial information gives an insight in strategically directions with a focus on stakeholders’ demands. Therefore these two concepts without stakeholder orientation are not applicable to be seen as a possible theoretical background for sustainability reports of universities.

5.4.3. Impression Management and Stakeholder Theory
The last combination that consists of two concepts is between impression management and stakeholder theory. The main difference between these two concepts is that impression manage-
ment gives an image of the organization and stakeholders could have the same perception of this image or do not like it and therefore are not interested anymore in the organization or not that much. This means that normally the image should be based on the stakeholder orientation of an organization.

Back to the example of the technical faculty this means that the given image of the university is that they have a low student-teacher-ratio, well-furnished labs for research, good job offers after graduating and up to date technical standards. This might fit perfect for stakeholders that are companies who employ the graduated students after their study, because then these young adults are well educated, innovative and on the current state of research or even further. However a problem can be that the students have many job offers and can decide which one they want and some specific companies, maybe settled in a rural area, have problems to get these alumni. Therefore they would not be interested anymore or not that much in the university and alter their focus on getting well educated people from the region. If the stakeholders are the students the image of the university might fit perfectly but maybe they see the problem within the up to date labs because they want to get practical knowledge and not every company is on that standard or they do not want to get into the research area after graduating. And there is still the uncertainty that the given image of the university is not linked to the current states of actions.

This combination is better than the previous one because there the stakeholder theory is considered again as a part of theoretical background. It is still not a good combination because legitimacy is as mentioned above strongly linked to stakeholders wherefore the combination with stakeholder theory is justified.

5.4.4. Stakeholder Theory, Legitimacy Theory and Impression Management

In general it can be said that organizations disclose sustainability reports to reduce information asymmetry considering their stakeholders. Additionally they enhance their legitimacy within social and political areas and at the same time they produce the image that they are concerned about their environment.\(^{197}\) Furthermore these three concepts fits perfect as theoretical background, because voluntary reporting that has its focus on stakeholders’ perception has the aim to manage public impression of organizations, which means the image of each university or company, and through that to maintain legitimacy of the organization.\(^{198}\)

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With own words this mean that a stakeholder oriented organization knows what the interests and
demands of its stakeholders are and can create and manage the image given by the organization
as appearance. Then the combined stakeholders’ interests are visible for everyone that is inter-
ested in the organization. Furthermore stakeholders’ interest is legitimated through the percep-
tion of the actions and therefore also linked to the image. All in one sentence – the organization
is legitimated through its operations; these operations are based on stakeholders’ demands and
interests which are strongly linked to strategical directions and the image is perceived by stake-
holders and oriented on their demands that the organization remain in their position and be legit-
imated.

This means for universities that for example the technical faculty: the image of the technical fac-
ulty is that they do not have that many students especially only a few women who study technic,
good studying conditions with a low student-teacher-ratio, high tech laboratories and good job
perspectives after graduation. Stakeholders are students and for them the technical faculty fulfils
all wanted desires, especially concerning low student-teacher-ratio and good job perspectives
and it seems that the actions of universities considering their education are appropriate. If stu-
dents as stakeholders do not like the thing that technical studies might not be finished within the
proposed amount of semesters, they can say that the perception and therefore the university is
still legitimated, but they do not like the image and thus do not start their study at that faculty. A
possible reaction of the university can be that they reduce the number of difficult exams that the
students are satisfied again and their perception is the same with the new image and therefore the
university remains legitimated, but other stakeholders are not that satisfied anymore, like com-
panies. Another possibility is that they consider companies’ needs and do not alter their studies
and image, but then it might be that they have not an increasing number of technical students.

As you can see, all three concepts are well connected and are interdependent with each other – if
one changes, the other two have to change too, it cannot remain the same. Especially with our
fast changing world this imply a great challenge.

5.4.5. Linkage between all three concepts and sustainability reporting of universities

So how can these three concepts be seen as theoretical background for sustainability reporting of
universities. As mentioned in chapter 4.4 “Universities and sustainability reporting” – the main
objective of sustainability reporting is that each university or institution communicates their im-
pacts on social and environmental issues, as well as their responsible activities to their stakeholders.

First, as they report their activities for their internal and external stakeholders the linkage to the stakeholder theory is proved. Second, through the sustainability report they disclose a specific kind of image of the university. Sustainability reports do not only include information about waste, recycling, emission etc. of universities, they also report on social aspects, e.g. equal remuneration of men and women or occupation health and safety that gains more and more importance in nowadays society. If these types of information are reported in the sustainability reports of universities and the stakeholders are highly interested in that area they get a described image of the university through this disclosure. In real it can be that the universities report the G4-LA 6 aspect (G4 guideline, category “Social”, indicator “Labor practices and decent work”, aspect No. 6 “Occupational Health and Safety”). This aspect reports about lost days and absentee rate if employees are sick or injured. So if the rate is low, costs are low and the image is a good one that the organization looks after their employees and if stakeholders are interested in this aspect, e.g. potential candidates for new occupation positions, this gives a good view about the university and therefore is legitimated, especially if the reported aspects are important for the stakeholders. Then they remain legitimated.

Summing up – sustainability reporting is an action that is done by universities, through which they are legitimated. These actions are based on stakeholders’ demands and interests, here e.g. how high the absentee rate or lost days are and therefore how well-being and healthy the employees are combined with lower costs. Of course statistics has to be done in the form of duration of absenteeism, if an accident happened at work or if employees are sick. So if the stakeholders perceive the image through sustainability reports that the absent rate is low, employees at university are healthy and the costs are not that high through absenteeism they can think about additional support for expanding the research field and accept additional employees, which can be stakeholders too. This means that this action of disclosing a sustainability report can be a strategic action as well; hence they can improve the state of the art through further actions to improve the results that are important issues for employees’ well-being. Not to forget, through stakeholder orientation the universities can change their focus of report concerning what to mention and what kind of impression they want to give to which group of stakeholders.

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6. Sample description

The sample for answering the research questions include 33 universities listed in the GRI database. These 33 universities have reported within the GRI 4 guideline and uploaded their report until April 15th, 2017. Below the sample is described more detailed concerning countries of origin, number of students, ownership of the universities and if the university is ranked or not. In general and combined with some historical facts the reporting period varies from 2013 to 2016.

6.1. Countries

As the sustainability report of universities is a voluntary disclosure there are differences in the numbers of universities within the continents that reported their sustainability. Figure 3 beside gives a short overview which continent has the most of reporting universities.

This figure shows that most of the reporting universities, more than one third, are from Southern America. The second most reporting universities are in Europe and Asia with each continent having eight reporting universities. So almost 25% of the research sample are from this continents. Northern America and Australia are not that well represented in the sample. Only two universities of each continent have reported within the GRI 4 guidelines so far although these two are big countries.

6.2. Number of students

All 33 universities have summed up approximately 1,5 million students. The smallest university has 1.400 students and the biggest university has almost 442,000 students. This shows a wide range within this sample. Therefore the sample is divided into two categories – big universities with up to 19,000 students and small universities with more than 19,000 students. Through these two categories 48,5% are small universities and 51,5% are big universities. You can see the difference between the biggest university and the limit for big universities is much broader than
within the category for small universities. Due to the fact that there are only two universities with more than 330.000 students and the rest with a maximum of 67.000 the chosen limitation of 19.000 for dividing into small and big universities is legit.

Organizations that are bigger are meant to fulfil the requirements of disclosures better than organizations with lower numbers and therefore influence the quality of an organizations’ sustainability report. This means the quality of the universities’ sustainability reports which have more students should have a better quality of their reports.

6.3. Ownership

Considering the ownership of universities we can distinguish between public and private universities. Public ownership means that the university is funded by the government and state-owned, e.g. the Johannes Kepler University in Linz is such a public university. Approximately 40 % of the universities in the sample are public universities. The other 60 % are private universities. This means these universities are not funded by the government or not only, they have private sponsors like institutions or companies. Another point that distinguishes private and public universities is that private universities have higher fees which students have to pay for studying at that university and most times a limited amount of university places for students. However, that can also be on public universities like for the studies of psychology or medicine in Austria.

Based on the literature, ownership can give a lot of pressure on voluntary disclosure because the more stakeholders a university has the more material information should be disclosed. This means if a private university gets sponsoring from private persons or companies, for sure they want to know what is done with their money and what the contributions to the environments and students are. It is the same with internal stakeholders of private universities, e.g. students who have to pay high fees for studying for sure want know what happens with their fees and have specific demands like a low teacher-student-rate or better studying conditions.

If the university is a public university, for sure the government wants to know how the supporting money is spent and what the strategy of the university is and where it will be within the up-

coming years. Compared with private universities, students from public universities might not be that interested what happens with their low fees of studying, but they can recognize pretty fast what is going on if a university quickly change its strategic direction and this does not overlap with their interests.

6.4. Ranking

Almost 64% of these 33 universities are not ranked and 36% are ranked. This means 12 universities show up in the “World Universities Ranking” provided by Times Higher Education (THE). THE is a performance monitoring and benchmarking platform and help universities to improve themselves.\(^{203}\) This institution was founded in 2004 and shows the best universities in the world and includes 980 institutions. Things which are considered in the ratings are e.g. the proportion of international students or the staff-to-student ratio.\(^{204}\) So if a university wants to improve itself and get in the ranking, this list gives a good overview on what aspects the best universities divided by country, region or subject are focused. As a result universities can take this information to benchmark within chosen aspects and force their strategy in a specific way. The other 21 universities are not ranked in this list which means according to THE they are not considered within the 980 institutions.

A possible point what can be considered for such a ranking is the following example: considering the ranking, the amount of publications and research papers are an indicator for better or lower ranking. This imply a certain view on the image of an university and therefore can be linked to the impression management as it is described above – the more papers a university has published the better the ranking.

7. Methodology

7.1. Data

Before describing how the data are operationalized and presenting the results the process how the sample is constructed. According to Mayring (2015) Figure 4 shows how the data were generated.\(^{205}\)

\(^{204}\) Cp. Times Higher Education – World University Rankings, (2016), About
First of all the sample has been fixed. In total, 33 universities from all over the world have reported along the GRI 4 framework on April 15th, 2017. Since then a few more reports have been published, but for doing the calculations all numbers and whole content consist on these 33 universities. Through these reports it was possible to find out how many indicators of each of the three categories of the GRI framework – economic, environmental, society – were reported and the calculation of a coverage rate was possible. This coverage rate shows how many per cent of each category are reported in the sustainability reports of the universities.

Additionally to the frameworks GRI 3 and GRI 3.1 the general Standards of GRI 4 got extended with materiality aspects which are considered in the standard indicators G17-G23.\textsuperscript{206,207} Considering the research question – if these materiality aspects are disclosed in the sustainability reports – the three categories including their indicators were the defined material subcategories for doing the qualitative content analysis, especially if there was no materiality matrix.

As the definitions of material subcategories were made and the reports were read the next step was to give the reports a structure in the content for finding the material aspects. One mentionable point is that beside the three material subcategories many material aspects considering education, personnel development, internships etc. were contained in the reports. Therefore it was indispensable to create an additional material subcategory for these material aspects.

The last step before the quantitative analysis for proofing if the material aspects are disclosed in the reports, gained material aspects from the content analysis were subsumed to the material dimensions (indicators) of the GRI 4 specific standards and categories as well. This has shown once more that an additional material subcategory for educational aspects is needed. The gained material aspects were subsumed in these material subcategories with its fitting material dimensions but for the beginning just if they exist or not without a rating because being objective was already hard to fulfill.

\footnotesize{\textsuperscript{206} Cp. Global Reporting Initiative (a), (2013), p.1  
\textsuperscript{207} Cp. Global Reporting Initiative (b), (2013), p.1}
Finally, the last step before doing the quantitative analysis was to quantify the gained data for inserting them into SPSS. When there was a materiality matrix it was easy to define the importance of material aspects before subsuming them in the material dimensions and material subcategories. It was even harder when there was no matrix. Then the importance was based on the content analysis combined with subjective interpretation of the content. However in the end three levels of importance – low, middle and high – were able to be related to each material aspect. Just a few were not possible to become subsumed anyhow. Further explanation about these last aspects will be in another paragraph.

The next step was to insert the data into SPSS for doing the calculation about the correlation between the coverage rate and the reported material aspects with its rated importance. Due to the fact that the coverage rates exist only from the categories mentioned in the GRI framework the correlations were calculated for these three material subcategories and the operationalization for the fourth category, as mentioned above about educational things, will be explained in the next chapter.

7.2. Operationalization

Previously it is explained how the data is put together and now a further description how the data is going to be operationalized.

The most difficult part was to find a consistent rating for the material aspects, how important they are, because there is no unified guideline for the reports. This can be one reason why there exists no deeper research yet. Gathering consistent data that is comparable within a sector is difficult as well as from all operations208 combined with indicators that fit every institutions or company in a sector because every institution has its own priority. Due to the fact that some reports have a matrix with ratings and some just write down the most important material aspects the operationalization is based on the matrix of ETH Zurich209. This matrix gives a really good overview of all relevant material aspects and how they are rated – from low, over middle to high. Therefore the found material aspects as mentioned before were rated with 1 – low, 2 – middle or 3 – high. For calculations every material aspect needed a rating. Hence if the material aspect was not mentioned in the report anyhow it is rated with 0 – no value.

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208 Kolk, J. E. M. (2004), p. 54
Before inserting the value into SPSS it is necessary if the material aspect is present in the report of each university or not. For that reason 0 means “no, not present” and 1 is “yes, present”. This means each material aspect that is not mentioned in the report is inserted with 0 and rated with 0 “no value” at the same time. If the material aspect is present, it is rated with 1, 2 or 3 as mentioned above. The following material subcategories are part of the evaluation. Number one to three, economic, environmental and social are the same as in the GRI guidelines and the fourth is a self-created material subcategory due to the found material aspects in the reports.

### 7.2.1. Material subcategory No. 1: Economic

According to the GRI 4 framework this material subcategory consists of four material dimensions. As a result of the qualitative content analyzes most material aspects are about financial management, organizational management and economic performance. Just a few mentioned market presence or indirect economic impacts. Therefore the subsumption of the material aspects to one material dimension “economic performance” was made really fast. Another reason for subsuming these different aspects to one material subcategory was that the material aspects were similar and material dimensions with only a few material aspects are not enough significant for further calculations. If there were more than one the average of the rating was counted.

### 7.2.2. Material subcategory No. 2: Environmental

Normally this material subcategory consists on more than four material dimensions – twelve. As most of the universities reported about water use, energy use, waste management, emission and biodiversity itself the decision was made to subsume material aspects like energy, water and materials to the material dimension “resources”. That means all things a university needs for existing and operating including the efficient und sustainable usage. On the other hand things that a university produces considering the environment like “waste and recycling” is an own material dimension, because many universities reported waste management and emission. However, “emission” is worth an own material dimension, because of the fact that there is no real relation to waste and recycling. As well as the material dimension “biodiversity”, there was no possibility for a linkage to another material dimension. Mentioned in the material subcategory above, some universities reported about some material aspects more than others and if there were not enough they were not considered for further calculations. As you can see this material subcategory is based on everything concerning the environment, things a university needs to operate and products that are produced through operation like waste, emission etc.

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210 Global Reporting Initiative (b), (2015), p. 22
7.2.3. Material subcategory No. 3: Social
This subcategory is not only in the GRI framework the biggest one, it is the same within this thesis. Nearly all universities reported at least about one of the material aspects within this material subcategory. It was easy to define how to subsume the material aspects to material dimensions, because almost everyone is named like the aspects in the framework. For that reason this subcategory is oriented on the original framework without many exceptions. One exception is that concerning the material dimension “labor” internships and working experience are also included, because these two material aspects are kind of common for the educational sector. Just a few material aspects were not able to be subsumed in this material subcategory. Within this material subcategory the average of the material aspects was taken as well for rating the material dimensions for calculating. Due to the many material aspects within the framework, following the objectivity was easier in this category than in the others.

7.2.4. Material subcategory No. 4: Education/Research
Due to the qualitative analysis of the reports many material aspects considering the educational sector were mentioned. As far as the topic of this thesis consists material relevance of universities this was expected. For that reason it was worth to create an own material subcategory for these reports which include material aspects like personal development, teaching performance and evaluation, faculty and staff engagement, quality of students life, sustainable campus development, etc. just to mention a few. As you can see the space is broad and therefore the decision for six additional material dimensions in the material subcategory “Education/Research” was made. These six material dimensions are – “campus life”, including the quality of students’ life, student friendly environment or sustainable campus environment; “student mobility”, including student internationalization, continuity relationship with graduates and integration or educational opportunities; “education/teaching” considering everything about teaching development, personnel or talent development, learning by doing, educational environment, teaching performance and evaluation, innovation and transfer of knowledge, etc.; “research” is everything including as the name shows research and management, technology infrastructure; “student diversity” that means different admission profiles and “student engagement” that means students and staff engage in voluntary activities.
As you can see from this enumeration these aspects do not fit within the other material subcategories. Because of that this material subcategory was created especially for the educational sector, here for universities.
7.2.5. Other aspects

Of course there are still some material aspects left that do not fit into any material subcategory and creating an own additional material subcategory or material dimension would not be useful considering the significance level of the results. Most of them are equivalent to the material subcategories “Economic” and “Education/Research” including procurement and appearance of institution and education outside of the university or organization. The transportation aspect is the second most material aspect that is mentioned, but does not fit in the material subcategories defined in this thesis. The last material aspects that are mentioned are food and sustainability in general. As the reports are sustainability reports the aspect sustainability is a material aspect that would fit in each material subcategory. Therefore it is not considered in detail, not to influence the results.

Based on this subsumption of the material aspects to the material dimensions and material subcategories additional to the described operationalization of the data the evaluation of the found and inserted data regarding the coverage rates and correlations can be done. Due to the rating, from low to high, and if the material aspects within the material dimensions are mentioned or not, the preconditions for doing the evaluations and calculations in SPSS are given. Duller (2006)\textsuperscript{211} is the theoretical basement for interpreting the results. This means if the correlation coefficient is $> 0$ and $\leq 0.3$ there is a small correlation, if the coefficient is $> 0.3$ and $\leq 0.7$ it is a middle correlation and if the coefficient is $> 0.7$ and $< 1$ there is a high linkage. If the coefficient is 1 there is a total correlation between the two variables. In which direction the correlation is, is defined by the sign, if it is a positive or negative correlation.

7.3. Results

7.3.1. Frequencies and overview of the standard and additional material subcategories

First of all an overview about the four material subcategories including the self-created category “Education/Research”, especially for the educational sector, in that case for universities.

Figure 5 shows the frequency of material subcategory “Economic”. As described above this material subcategory includes only one material dimension and 25 universities report this. If they report about that dimension it is rated as important in an internal and external view. Approxi-

mately 75% of all universities report about the material dimension economic performance and half of all universities see the economic performance as a high important material dimension.

The sixth figure is about the material subcategory “Environmental” and is based on four material dimensions with its material aspects. Waste and recycling is the most reported material dimension in this material subcategory and also the one in which most of the universities see this material dimension as highly important. It is almost the same scenery with the material dimension of resources. There is no difference between the external and internal importance. Although this material subcategory is seen as very important and is originally linked to sustainability the material dimension emission is less reported. On an average 50% of the universities report about this material subcategory, but hardly about the material dimension of biodiversity. If the material dimension is reported it is not seen as important as waste and recycling, resources and emission. A mentionable point is that if the material dimension is seen as highly important it is mostly in the external view. It is similar to the internal view but a slight difference is noticeable.
In figure 7, the material subcategory “Social” is shown. This subcategory is the second most reported considering all 33 universities. At least 66% of all universities report about one of the four material dimensions of this category. Each material dimension is in the internal view more important considering the material importance than in the external view, which means it is the other way round to the category environmental. So it can be said that the material subcategory “Environmental” focus more on the environment of universities and the material subcategory “Social” more on the internal material aspects of universities. The material dimension labor is with 85% the most reported one within all four material subcategories and 33 universities. This shows the importance of all material aspects subsumed in this material dimension for universities with its internal and external stakeholders.

Finally figure 8 shows the frequencies of the self-created material subcategory “Education/Research” with its six material dimensions. Although the percentage of each reported material dimension is not as high as in the other material subcategories it can be said that this subcategory is really useful for the educational sector. At least two material dimensions are reported with approximately 50%, namely education and teaching as well as research, and if they are mentioned in the sustainability reports 75% rate them as high concerning the materiality. The other four material dimensions are not as well mentioned as the others but it is worth to consider them because approximately 15% of all universities mention them in their sustainability reports as material dimensions.
To complete the already described material subcategories, figure 9 gives an overview how many per cent of the universities have not reported about the material subcategories. The highest percentage is in the subcategory “Education/Research”. A reason for that appearance might be that this material subcategory is self-created and due to the research process influenced by a high subjectivity without clear guidelines which material aspects should be considered how and subsumed within which material dimension. On the other hand the material subcategory “Social” shows beside the subcategory “Economic”, with just one material dimension, the lowest percentage of non-reporting. As described in the point operationalization, this material subcategory is based on the material aspects and material dimensions given in the GRI framework and this is really detailed. Additionally many universities report about that subcategory through the amount of material aspects and these material aspects are equal to the aspects in the framework. Therefore the reported material aspects can be subsumed in material dimensions really good and explain the low percentage with no value.
Summing up the material subcategory “Social” is the most reported subcategory over all 33 universities including the most reported material dimension with 85 %, namely labor. Furthermore it is interesting that the reported material dimensions of “Environmental” are more focused on the external stakeholders in contrast to the material dimensions of "Social”. These material dimensions are more focused on internal stakeholders. Therefore it can be said that due to the name of the material subcategory there is a specific link to the direction of the stakeholder view. Although the environmental and social material subcategories are preferred in the sustainability reports of universities, still 75 % per cent report about the economic performance and half of them rate this material dimension as high. Finally the material subcategory “Education/Research” is worth adding it to the other three material subcategories because two material dimensions are already mentioned in 50 % of the whole sample and the last four material dimensions are mentioned with an average of 15 %.

7.4. Correlations analysis between material dimensions and coverage rates

As the rating has an ordinal characteristic and the coverage rate consists on a nominal characteristic and to see if there is a significant correlation between material dimensions and coverage rates a correlation analysis due to Spearman was made. For each correlation analysis the significance level in the already analyzed p-value is at 0.05.
First the result of the correlation analysis concerning the material subcategory “Economic” will be shown. Then all results of the analysis concerning the material dimensions of the material subcategory “Environmental” and thirdly all results of the correlation analysis concerning the material dimensions of the material subcategory “Social” are given. There is no analysis considering the self-created material subcategory “Education/Research” due to the fact that there are no indicators in the GRI 4 framework for these material dimensions and therefore for calculating a coverage rate.

7.4.1. Material subcategory No. 1: Economic
Correlation Economic Performance and intern materiality evaluation of economic performance

- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension economic performance has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension economic performance has an influence on the coverage of the reported indicators of this category.

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Table 2: Correlation economic performance intern

The P-value is 0,217 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The intern evaluation on importance of the material dimension has no influence on the coverage of reporting.

Correlation Economic performance and extern materiality evaluation of economic performance

- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension economic performance has no influence on the coverage of the reported indicators of this category.
H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension economic performance has an influence on the coverage of the reported indicators of this category.

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Table 3: Correlation economic performance extern

The P-value is 0,5 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The extern evaluation importance of the material dimension has no influence on the coverage of reporting.

7.4.2. Material subcategory No. 2: Environmental

Correlation resources and intern material evaluation of resources

H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension resources has no influence on the coverage of the reported indicators of this category.

H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension resources has an influence on the coverage of the reported indicators of this category.

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Table 4: Correlation resources intern

The P-value is 0,518 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The internal evaluation on the importance of the material dimension has no influence on the coverage of reporting.
Correlation resources and extern materiality evaluation of resources

- **H0**: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension resources has no influence on the coverage of the reported indicators of this category.
- **H1**: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension resources has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho R</th>
<th>CR_Resources_R Korrelationskoeffizient</th>
<th>MAresourcesextern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000</td>
<td>.155</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td>.</td>
<td>.389</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 5: Correlation resources extern

The P-value is 0,389 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The external evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation waste/recycling and intern materiality evaluation of waste/recycling

- **H0**: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension waste/recycling has no influence on the coverage of the reported indicators of this category.
- **H1**: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension waste/recycling has an influence on the coverage of the reported indicators of this category.
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The P-value is 0.279 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The internal evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation waste/recycling and extern materiality evaluation of waste/recycling

- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension waste/recycling has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension waste/recycling has an influence on the coverage of the reported indicators of this category.

The P-value is 0.446 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The external evaluation on the importance of the material dimension has no influence on the coverage of reporting.
- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension emission has no influence on the coverage of the reported indicators of this category.

- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension emission has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Emission_R Korrelationskoeffizient</th>
<th>MA_emission_intern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CR_Emission_R</td>
<td>.157</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 8: Correlation emission intern

The P-value is 0,157 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The internal evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation emission and extern materiality evaluation of emission

- H0: There is no correlation between the two groups. The external evaluation on the importance of the identified material dimension emission has no influence on the coverage of the reported indicators of this category.

- H1: There is a correlation between the two groups. The external evaluation on the importance of the identified material dimension emission has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Emission_R Korrelationskoeffizient</th>
<th>MA_emission_extern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CR_Emission_R</td>
<td>.170</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 9: Correlation emission extern

The P-value is 0,170 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The external evaluation on the importance of the material dimension has no influence on the coverage of reporting.
Correlation biodiversity and intern materiality evaluation of biodiversity

- **H0**: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension biodiversity has no influence on the coverage of the reported indicators of this category.
- **H1**: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension biodiversity has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Biodiversity_R</th>
<th>MA_biodiversity_intern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-seitig)</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 10: Correlation biodiversity intern

The P-value is 0,031 and is under the significance level therefore the null hypothesis can be refused and the H1 hypothesis can be confirmed. There is a correlation between the groups. The internal material evaluation on the importance of the material dimension has an influence on the coverage of reporting.

The correlation coefficient is 0,375. This means a low positive correlation, if the intern material evaluation of the topic of biodiversity is high the coverage rate of the indicators of biodiversity are also high.

Correlation biodiversity and extern materiality evaluation of biodiversity

- **H0**: There is no correlation between the two groups. The external evaluation on the importance of the identified material dimension biodiversity has no influence on the coverage of the reported indicators of this category.
- **H1**: There is a correlation between the two groups. The external evaluation on the importance of the identified material dimension biodiversity has an influence on the coverage of the reported indicators of this category.
The Relevance of Materiality in Sustainability Reporting of Universities

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Table 11: Correlation biodiversity extern

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Biodiversity_R</th>
<th>MA_biodiversity_extern</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR_Biodiversity_R</td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td>.</td>
<td>,035</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

The P-value is 0,035 and is under the significance level therefore the null hypothesis can be refused and the H1 hypothesis can be confirmed. There is a correlation between the groups. The external materiality evaluation on the importance of the material dimension has an influence on the coverage of reporting.

The correlation coefficient is 0,368. This means a low positive correlation, if the external materiality evaluation of the topic of biodiversity is high the coverage rate of the indicators of biodiversity are also high.

7.4.3. Material subcategory No. 3: Social

Correlation employment/diversity and intern materiality evaluation of labor

- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension labor has no influence on the coverage of the reported indicators of the category employment/diversity.
- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension labor has an influence on the coverage of the reported indicators of the category employment/diversity.

Table 12: Correlation labor intern

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Employment_Diversity_R</th>
<th>MA_labor_intern</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR_Employment_Diversity_R</td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td>.</td>
<td>,607</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>
The P-value is 0.607 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The intern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation employment/diversity and extern materiality evaluation of labor

- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension labor has no influence on the coverage of the reported indicators of the category employment/diversity.

- H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension labor has an influence on the coverage of the reported indicators of the category employment/diversity.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>CR_Employment_</th>
<th>Korrelationskoeffizient</th>
<th>MA_laborExtern</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR_Employment_</td>
<td>Diversity_R</td>
<td>1.000</td>
<td>.047</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td></td>
<td>.796</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

Table 13: Correlation labor extern

The P-value is 0.796 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The extern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation human rights and intern materiality evaluation of human rights

- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension human rights has no influence on the coverage of the reported indicators of this category.

- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension human rights has an influence on the coverage of the reported indicators of this category.
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51

HRCR_R MA_humanrights_intern

Spearman-Rho | HRCR_R | Korrelationskoeffizient | 1,000 | .084
| Sig. (2-seitig) | . | .643
| N | 33 | 33

Table 14: Correlation human rights intern

The P-value is 0,643 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The intern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation human rights and extern materiality evaluation of human rights

- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension human rights has no influence on the coverage of the reported indicators of this category.

- H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension human rights has an influence on the coverage of the reported indicators of this category.

| Spearman-Rho | HRCR_R | Korrelationskoeffizient | 1,000 | .096
| Sig. (2-seitig) | . | .597
| N | 33 | 33

Table 15: Correlation human rights extern

The P-value is 0,597 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The extern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation society and intern materiality evaluation of society

- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension society has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension society has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th></th>
<th>SOCR_R</th>
<th>MAsociety_intern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman-Rho</td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td>.</td>
<td>.403</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 16: Correlation society intern

The P-value is 0,403 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The intern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation society and extern materiality evaluation of society
- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension society has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension society has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th></th>
<th>SOCR_R</th>
<th>MA_societyExtern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman-Rho</td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td>Sig. (2-seitig)</td>
<td>.</td>
<td>.783</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 17: Correlation society extern

The P-value is 0,783 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The extern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation product responsibility and intern materiality evaluation of product responsibility
- H0: There is no correlation between the two groups. The intern evaluation on the importance of the identified material dimension product responsibility has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The intern evaluation on the importance of the identified material dimension product responsibility has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>PRCR_R</th>
<th>MA_product_responsibility_intern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-seitig)</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 18: Correlation product responsibility intern

The P-value is 0.277 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The intern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Correlation product responsibility and extern materiality evaluation of product responsibility
- H0: There is no correlation between the two groups. The extern evaluation on the importance of the identified material dimension product responsibility has no influence on the coverage of the reported indicators of this category.
- H1: There is a correlation between the two groups. The extern evaluation on the importance of the identified material dimension product responsibility has an influence on the coverage of the reported indicators of this category.

<table>
<thead>
<tr>
<th>Spearman-Rho</th>
<th>PRCR_R</th>
<th>MA_product_responsibilityExtern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Korrelationskoeffizient</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-seitig)</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 19: Correlation product responsibility extern
The P-value is 0.328 and is over the significance level therefore the null hypothesis can be confirmed. There is no correlation between the groups. The extern evaluation on the importance of the material dimension has no influence on the coverage of reporting.

Summing up it can be said that there exists only one correlation, namely considering biodiversity. This means that biodiversity is the only material dimension that its importance of materiality evaluation has an influence on the coverage rate of material aspects in the sustainability reports. For example if the percentage of high leveled

8. Conclusion

Before discussing the results in detail the research questions are answered.

8.1. Research question No. 1

The first research question was what internal and external stakeholders regard as material.

The table below gives a summarized overview of the identified material aspects subsumed in dimensions and categories. This is a changed and expanded version of the GRI 4 framework\textsuperscript{212}. Some categories have normally more than the given material indicators, but through the operationalization process the three already existing material categories “Economic”, “Environmental” and “Society” were expanded with the self-created material category “Education/Research”. Furthermore the material indicators were shortened or created and finally the 15 material indicators divided in the four material categories were fixed. This overview shows that the economic part seems not as important as the environmental, societal and educational part for universities.

\begin{table}[
\begin{tabular}{|l|l|l|l|}
\hline
Material & Economic & Environmental & Society & Education/Research \\
Subcategory & & & & \\
\hline
Material & economic & resources & labor & campus life \\
dimensions & performance & waste/recycling & human rights & student mobility \\
 & emission & society & product & education/teaching \\
 & biodiversity & responsibility & research & \\
\hline
\end{tabular}
\end{table}

Table 20: Overview material subcategories and dimensions

\textsuperscript{212} Cp. Global Reporting Initiative (b), (2015), p. 22
As demonstrated in the part of results, each material indicator was rated by external and internal stakeholder as important. How important external and internal rated the different material indicators are shown through answering research question number three.

8.2. Research question No. 2

The second research question was if there is a correlation between the total coverage rate of material indicators and the evaluated relevance of identified material aspects.

The overview of correlations in the appendix shows that there are no correlations between the total coverage rate of stakeholder and materiality aspects, except one material dimension, namely biodiversity. The P-value of this material dimension is smaller than 0,05. As there is just one correlation between the total coverage rate of stakeholder orientation and a material dimension it means that all 33 universities do not consider their stakeholders’ needs as material to focus their reports on these needs, except the material dimension biodiversity. Therefore it can be said that the sustainability reports are not meaningful as they do not specify the stakeholders’ issues in their sustainability reports as material.213 It would be interesting how this looks like considering the self-created material subcategory “Education/Research”, but as this category is not included in the GRI framework, no coverage rate could be calculated.

Additionally, this result is questionable due the fact that biodiversity is hardly reported. This was the same case in research done by Lozano (2010).214 As shown in figure 6, the material dimension is the one with the lowest report rate in the material subcategory “Social”. Only six universities have seen this dimension as material, hardly 20 % of all universities of the sample. Despite the fact that the half of the reported dimension is rated as high it is questionable if this result can be seen as significant, because within the three material subcategories that are normally reported in sustainability reports, this is the dimension with the lowest reported rate with almost 20 %. The next one is the material dimension emission, that is reported from 37 % of all universities. Thus I would say that in a sum the result says more about the image of these universities and not if they are stakeholder oriented considering their reported material dimensions.

The advantage of a stakeholder oriented university is that its sustainable behavior might lead to economic growth and social cohesion and therefore a stakeholder oriented university, especially considered with its material aspects would help universities a lot to improve their teaching, quality of education through more possibilities considering the teaching materials, etc. However, in that research that is not proved. On the other hand it can be said that the universities in this sample are already stakeholder oriented, but they do not consider the stakeholders’ needs in the reports. This means, the coverage rate is calculated over all indicators provided by the G4 guideline and through stakeholder orientation the universities identified aspects that are seen as material and important for internal and external stakeholders. Indeed the identified material aspects are included in the coverage rate in general and are not specifically mentioned within all reports, except biodiversity, but this material dimension is hardly reported within the sample.

8.3. Research question No. 3

The third research question was how the identified material aspects are covered by the G4 reports.

Figure 10 gives an overview of the weighted average ratings of the four material subcategories. This means that although no material dimension was fully reported by all 33 universities rates of the disclosed material subcategories are rated as the following.

From the reported rates the self-created material sub-category “Education/Research” shows the highest percentage with the rating of dimension “high”. Almost 70 % of the reported rates are considered as highly important for universities.

The second position where the reported material dimensions were seen as highly important is the material subcategory “Social” with almost 65 %. On the third and fourth place are the other two material subcategories “Environmental” and “Economic” with almost the same percentage of highly important reported material dimensions with approximately 61 %.

This would imply that the most reported material aspects are subsumed in the self-created material subcategory “Education/Research”, but that is de facto not the real truth. Figure 11 below shows that this subcategory is the one that has the highest percentage of non-reported material aspects. Further details on this category, which material aspects are reported the most are de-

---

scribed above, but the most reported material dimension in this material subcategory are education/teaching and research with an average reporting rate of 50% of the given sample.

Although the material subcategory “Social” has not the highest reporting rate with 73 %, this material subcategory includes the most reported material dimension. 85 % of all universities reported about the material dimension labor and is therefore the highest percentage within all 15 material dimensions.

The material subcategory “Environmental” is exactly the opposite thing of “Education/Research”. In figure 11 this material subcategory has the third place of four considering the importance of reported material aspects. However, despite the fact that “Education/Research” has shown the highest percentage and the lowest reported rate of material aspects, the material subcategory “Environmental” has not such a big difference between these two assumption.

![Figure 10: Weighted average rating](image_url)
Figure 11: Percentage of reported material aspects

Although almost 60% of the universities did not report about that material subcategory the two material dimensions resources and waste/recycling are reported with an average of 56%.

Finally the material subcategory “Economic” shows with almost 76% the highest rate of reported material dimensions. However, this material subcategory has the lowest percentage of highly important reported material dimensions. Additionally it can be said that this material subcategory consists of only one material dimension compared to “Environmental” and “Social” with each four material dimensions and “Education/Research” with six material dimensions. Thus the only two things that can be compared regarding reported material aspects are the two material subcategories “Environmental” and “Social”. This comparison shows that if the material dimensions are reported almost the same percentage rate them as highly important, but the percentage of reported material aspects of the material category “Environmental” is 30% lower than of the material category “Social”.

Additionally to that general overview figure 12 shows the average of highly important rated material dimension. If the dimensions were reported as highly important this figure shows if this was considered as internal or external highly important.
Generally it can be said that if the material dimensions were reported as highly important the percentage of internal importance was in each material subcategory higher than the external percentage. Especially the self-created material subcategory shows a high internal importance of the reported material dimensions. This can be explained through the focus of the material dimensions on actions within the university – education/teaching, research, campus life.

Summing up it can be said that the self-created material subcategory was not that strongly reported as the others were, but if it was reported most of the material dimensions were seen as highly important and figure 10 shows the lowest percentage of low important reported material dimensions within this material subcategory compared to the others. The reason that many universities do not report about this material subcategory is that this category is basically not included in the GRI guidelines. Regarding the reported material dimensions only the two material subcategories “Social” and “Environmental” can be compared with each other.

However, if material aspects were reported as highly important the percentage of internal importance was even higher than for external importance. This is especially noticeable within the self-created material subcategory “Education/Research” because the focus of this category is more on internal issues than on external. Thus it can be said that the additional category is meaningful for the education sector to gain the ability for comparing the different institutions within this sector. Furthermore it would be possible to set arrangements if they are not as much reported as they should be. Linked to the first research question and the result that there is no correlation...
between stakeholder orientation and reported material aspects this detailed description of the results shows that the image of university is kind of well-established concerning the two material subcategories “Economic” and “Social” because they are the most reported. However, the assumed image is more internal than external as figure 12 shows.

As a result of this given conclusion there emerges a challenge that might hinder the comparability of sustainability reports of universities. The difference in reporting might be due to significant differences across the sample which includes universities from all over the world with different cultures and mentalities. Although the GRI framework is a standardized framework it is hard to consider all main issues of every culture. This would be an additional variable that could be considered in an ongoing research.

9. Discussion

Based on the used literature it is noticeable that sustainability reports raised within the last years, especially in the educational sector concerning universities. Therefore it was necessary to do some research on this phenomenon. Starting with the history in the 1970s and the definition of sustainability reporting combined with an extensive description of voluntary disclosures, which is sustainability reporting, and the additional aspect of materiality which is included in the last version of the GRI guidelines established in the year 2013 to use this framework for all organizations where size and sector does not matter. Therefore to examine a theoretical background that this research is built on was necessary.

Three concepts are regarded as essential for sustainability reports of universities – the stakeholder theory which is strongly linked to legitimacy theory and these two combined with the phenomenon of impression management. Based on this theoretical background and the gained results the following points should be considered.

9.1. Limitations

One of the biggest challenges facing the empirical part was the point with subjectivity according to subsuming the data in material dimensions it is also proved that the finding of social indicators means non-financial numbers are harder to quantify. As non-financial reporting mainly consist on qualitative data and for doing different analysis quantitative data are needed it was hard to maintain objectivity concerning the subsumption, because if you start you have an idea how to create the subcategories and then add some more aspects. But as soon as a new aspect appears that does not fit into any of these existing dimensions you have to rearrange everything again and therefore objectivity is not proved in my opinion. To ensure objectivity it would be better that one person get the prescribed material dimensions with its explanations and the sustainability reports and this person should try to understand why some aspects are subsumed together or not. This would mean a high amount of time but would be good to ensure the results given by the correlations.

Another limitation was the language. The figure beside shows five different languages that were used within the chosen sample of sustainability reports of universities. Almost the half all 33 reports are disclosed in English. The rest are written in Chinese, Italian, Portuguese and Spanish. English is a language that nearly everyone is able to speak or read even on a low level and especially on universities. So if one knows only English and the mother tongue it is hard to get all information that are included in reports disclosed in Spanish or with Chinese characters. The best thing for the 27 %, 12 %, 9 % and 3 % of the disclosed reports would be a native speaker with knowledge in the research field to read the reports in the appropriate way and get enough and detailed information for doing deeper research. Thus native speakers with a fundamental knowledge in sustainability reports would be the best partners for reading, interpreting and gaining the wanted data for meaningful results.


Figure 13: Language of reports

- Chinese: 12%
- English: 48%
- Italian: 3%
- Portuguese: 9%
- Spanish: 27%

Total 100%
If you think about the amount how many universities exist all over the world, Austria has at least 21 universities without the “Fachhochschulen” – means 64 % of the sample could be covered by sustainability reports of Austrian universities, the sample is not that representative as it can be. A reason can be that the guideline is not that well known for applying in the educational sector and that there does not really exist specific supplements within this guideline as it would be needed for educational and maybe non-profit organizations.

The last limitation is the current state of the disclosed sustainability reports. As listed in the appendix the sample includes reports from 2013 until 2016 and only a few of them reported twice or even three times in a row. For financial reports it is mandatory to disclose reports every year and you can see the development, things where you have to improve or decrease and the comparison between two years and within a specific sector is easier. In the case of this sample the data are compared over different years and within one or three years many things might have changed at several universities. Therefore up-to-date reports within same years would be a good basement, combined with a language everyone is able to understand, for additional quality and more detailed results in doing research in this field of science.

### 9.2. Implications

Additional to these limitations the following point would be reasonable. Although all the analyzed reports are based on the GRI 4 guideline including the materiality aspects they look different, have or have no matrix and many aspects or just a view, it is questionable how the universities produced their sustainability reports. Thijssens et al. (2016) gives an idea – they developed a typology of sustainability reporting – how this process can be done and standardized and thus become more objective and better quality. This is visible through the four different reporting types and result in this journal means that users of the reports and raters cannot distinguish between these four types and no standardized pattern of the GRI application can be found. However, this means that the reports look like the same in the end and there should be no difference. As a result the interpretation and comparability of the reports from different universities will increase and a better quantitative content analysis for getting deeper insights would be feasible. Additionally to the questions “Why to disclose a sustainability report and what to disclose?” the question “How to create sustainability reports?” helps to create sustainable development and

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sustainable thinking.\textsuperscript{219} Furthermore these questions can help not to forget the ongoing interactions with their stakeholders. Due to the fact that they can alter really fast, interactions and communication with them can always be improved.\textsuperscript{220}

As shown in the part of the material subcategory “Education/Research” this specific material subcategory for the educational sector is meaningful and gives a better insight in sustainability reports, because some of common complaints are that the represented reports are not detailed enough or not situation-specific.\textsuperscript{221} As mentioned above they differ from “normal” organizations because their core activities are education, research, community outreach and operations. On account of this these are the material aspects that should be disclosed in the sustainability reports.\textsuperscript{222} Some material aspects concerning these core activities are reported in the chosen sample and subsumed in the self-created material subcategory. Additionally GRI wants stakeholders to give them feedback and so encourage them to develop the guidelines.\textsuperscript{223} This would be an option to reach a fourth material subcategory only for the educational sector.

Furthermore impression management based on gender role theory implies that the behavior of men and women are different\textsuperscript{224}. Therefore it can be said this would be the same with different universities in a country or in different cultures. So if universities, in that case teachers and employees, manage that students get a better awareness of forming impressions across different cultures and give them the ability to encourage themselves in the organizations’ impression, benefits for the university would be the result.\textsuperscript{225} It is just questionable if this would be reasonable considering the sample for researches.

Two articles were published about ranking of universities. The first one in February of this year criticized the ranking of universities. Because the focus of the rankings and of course the strategy of universities might not be the same. Thus measuring and the usage of these rankings are questionable.\textsuperscript{226} It compares all universities over the world through specific identified criteria, e.g. published papers. How many papers are published does not necessarily mean that the university has bad education reputation, worse alumni etc., therefore these kinds of criteria are not needed in further research if the universities are ranked or not.

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{219} Cp. van Weenen, H. (2000), pp. 30-33
\item \textsuperscript{220} Cp. Freeman, R. E. et al. (2006), p. 9
\item \textsuperscript{221} Cp. Brown, H. S. et al. (2009), p. 576
\item \textsuperscript{222} Cp. Ceulemans, K. et al. (2015), p. 133
\item \textsuperscript{223} Cp. Hedberg, C/von Malmborg, F. (2003), p. 156
\item \textsuperscript{224} Cp. Bolino, M. et al. (2016), p. 389
\item \textsuperscript{225} Cp. Bolino, M. et al. (2016), p. 398
\item \textsuperscript{226} Cp. science.ORF.at, (2017), Ferenci I. – Wie sinnvoll sind Uni-Rankings?
\end{enumerate}
\end{footnotesize}
On the other side rankings give an impression about universities and maybe stakeholders might change their opinion if the university drops in the list. The second article is about the ranking of Austrian universities, that many of them dropped in the world wide ranking and that the surroundings of universities might influence the performance and impression.\textsuperscript{227} Thus it would be a further point for research what kinds of circumstances might influence the ranking including the impression of a university and hence how the impression, stakeholders’ needs and sustainability reports are dependent from that circumstances.

Finally, as shown by the calculated results and overviews what aspects are seen as material by internal and external stakeholders and what level of relevance they have for them it definitely would be sensible to include them in the sustainability reports. Especially as the correlation analysis shows that there is no linkage between coverage rates of material indicators and the evaluated relevance of identified material aspects as it should be if an institution is stakeholder oriented and wants to raise a significant image beside stakeholders. Creating a materiality matrix and describing the recognized relevance of material aspects is a first step towards implementing the relevance of stakeholders’ issues in the reports, but the focus on them should increase, particularly if the relevance is identified as high. How this can be increased is described in the part below “Recommendations for practice”.

9.3. Recommendations for practice

As table 1 shows the first sustainability report of a university was disclosed in 2001 and started a stronger increase in 2009/2010. In 2016 altogether 180 reports were disclosed through the online database of GRI\textsuperscript{228} and should be up to 300 until 2022.\textsuperscript{229} This looks not that much, but is a good aim within six years as the annual amount of disclosures declined in the past few years. Although this gives an insight how much the sustainability reports may increase within the next years and that some countries increased disclosure requirements for better comparability\textsuperscript{230} the number is still very low compared to other sectors or industries. A reason for that might be that creating sustainability reports is easier for them and the already suggested mandatory sustainability reports could help to increase numbers too.

\textsuperscript{227} Cp. science.ORF.at, (2017), APA – Heimische Unis fallen zurück
\textsuperscript{228} Cp. Global Reporting Initiative (2016)
For introducing mandatory sustainability reports the first step would be to implement and use the provided tools and information given through the stakeholder orientation and resulting in material aspects defined by stakeholders. So far the sustainability reports mainly disclose coverage rates and as many indicators as possible, for sure only those who seems to be legitimized, but they should focus more on the issues which are relevant for their stakeholders. One way how this can be done is to ask the stakeholders in interviews or do a quantitative data collection, if their most relevant material aspects are reported. If they are not the institution should find a strategic way how to change this to the view that their most relevant material aspects are recognized. Thus it is really important to use the gained knowledge and data to change something and not to remain in the same situation and same concept as before. Namely, if institutions recognize their stakeholders’ needs, take that information and implement that in their sustainability reports stakeholder orientation is lived, combined with that the institution remain legitimated and the image of the institution for different stakeholder increase in a positive manner that they really live the proposed values. Of course it is easy to say, but if an institution starts a project within a small area with a few specified relevant stakeholders it might be possible to implement the relevance of material aspects in their sustainability reports, focus on them, gain experience about what and how to do and what not to, and afterwards spread this body of acquired knowledge through a rollout over the whole institution.

9.4. Further research

Kolk (2004) mentioned that approximately one third of audience asks for procedures and policies concerning the existence of such sustainability reports and not if they really live the sustainable reports they have disclosed.\textsuperscript{231} Considering this aspect one should do deeper research if universities really live the reported material aspects or if this is only disclosed to impress the audience as we have seen on the results given by this research within this thesis. This is reasoned by the fact that an organization has to show to all of its stakeholders that the core purpose and therefore material aspects are alive in practice.\textsuperscript{232}

Furthermore, if a sustainability report is implemented a critical issue is about the audit of this reports. So far, only a few organizations provide additional external and independent assurance

\textsuperscript{232} Cp. Freeman, R. E. et al. (2006), p. 7
for their stakeholders to confirm credibility.\textsuperscript{233} So far only a few initiatives include auditing mechanisms. The GRI framework should be one of these and able to disclose audited information to affected stakeholders.\textsuperscript{234} I am not sure about that, because the sustainability reports were not comparable or even looked the same way to be sure all stakeholders get the information they want or need to. Maybe the reason is that the main focus was on material aspects in this thesis and the self-created material subcategory is not considered in the GRI framework. This might be a possibility for further research to prove that. Otherwise no independent third party for reviewing the sustainability reports as there is for financial reports exists.\textsuperscript{235} This would lead to additional quality and comparability of these reports. So far and thanks to GRIs’ indicators and progress, a little comparison of sustainability developments in organizations is possible\textsuperscript{236}, but still has enough space for improvement. For auditing sustainability reports, clear performance targets need to be defined as well beside the process how a report should be created.\textsuperscript{237} However, already a few organizations used specific practices e. g. specialists’ or stakeholders’ review to assure their sustainability reports. These specific practices are hardly considered in current literature and have no standardized methodology to do the assurance and this might lead to uncertainties. Nonetheless these two practices are used by mainly Asian countries, which mean almost 25\% of the research sample. For the other countries it is not regulated yet how to assure sustainability reports,\textsuperscript{238} although assurance of sustainability reports is a key quality element.\textsuperscript{239} It is also proved that the sustainability reports vary more within sectors than within organizations\textsuperscript{240} which mean that the sustainability reports of each university normally should be comparable. If there is a lack of comparability there are difficulties to reveal systemic relations\textsuperscript{241} like it was noticeable doing the empirical part. An idea would be that there should be something similar to the “big four” of financial reporting that comparability is proved and the processes how a non-financial sustainability report has to look like should be fixed. I know this imply that non-financial should be mandatory and not voluntary and in my opinion this would not be such a bad idea. Then there exists additional legitimacy and although the implementation would need a lot of time it is proved that normally voluntary disclosures go through the same auditing process as mandatory financial reports do, because a consistently structure to do so for voluntary disclosure

\textsuperscript{238} Cp. Junior, R. M. et al. (2014), pp. 7-10
\textsuperscript{239} Cp. Ceulemans, K. et al. (2015), p. 135
does not really exist yet.\textsuperscript{242} The more voluntary disclosures exist the better is the quality of information, especially if the numbers of quantitative disclosures increase, and stakeholders will get better insights in organizations’ environmental operations.\textsuperscript{243} One study shows that one of the most important criteria is that independent environmental audit results are necessary.\textsuperscript{244}

In the year 2000 they have not find any link between audit quality and voluntary sustainability reports.\textsuperscript{245} And if there is a recognized quality of the reports, they are varying.\textsuperscript{246} Thus I would say the idea to make sustainability reports mandatory in specific sectors and for specific organizations this can give an insight if this would help to improve the audit and therefore comparability of sustainability reports or not.

Beside the necessity of audits for comparing the different sustainability reports, additional interviews, if the collection of the data about the relevant stakeholders’ needs is implemented and lived by the organization is of particular importance. As soon as this is done once can create an own framework only for the educational sector with specific supplements for primary school, secondary modern school or university, just to mention some examples. A general framework for the whole educational sector would be the upmost target, but to have specific supplements like the self-created material category “Education/Research” would be a good start to build up the rest of the framework. GASU already tried to be that one framework especially for this sector with an additional educational dimension\textsuperscript{247}, but it is based on GRI. This could be an idea to alter an existing framework, however in the end an own framework only for universities would be the supreme target. Combined with that framework only for this sector the issue with low quality and how to audit these reports to compare the institution can be solved.

9.5. Value and originality

In a nutshell the value and gained insight in this field of research is that the existing literature mainly consists on coverage rates of indicators disclosed in the sustainability reports. Additionally this thesis implemented the materiality. So far materiality was mainly defined in the literature and not taken under deeper research until now. This thesis focused on the materiality aspects, how they can be identified and subsumed to implement them in the existing tool of sustainability

\begin{footnotesize}
\textsuperscript{244} Cp. Jenkins, H./Yakovleva, N. (2004), p. 275
\textsuperscript{247} Cp. Lozano, R. (2010), p. 68
\end{footnotesize}
reports and stakeholder orientation. It was possible to show that not all aspects and indicators mentioned in existing frameworks, here the GRI G4 guideline, are seen as material by external and internal stakeholders. Some universities have already created a matrix to see what topics are the most relevant for their stakeholders, but they did not really continued working with this matrix, which is possible to see in the calculated correlation analysis. Furthermore it is proved that the sustainability reporting is also possible in the non-profit sector, although it might be useful to have specific supplements in order to fulfil the requirements and create a stakeholder oriented and legitimated view of an institution summarized in the tool of sustainability reports.

10. Appendix

10.1. List of analyzed reports

<table>
<thead>
<tr>
<th>No</th>
<th>Country</th>
<th>University</th>
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<td>Year</td>
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### 10.2. Overview of correlations analysis

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<td>emission</td>
<td>bio-diversity</td>
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<td>0,607 0,796</td>
<td>HRCR_R</td>
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Klara Pretsch


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