



UHASSELT

KNOWLEDGE IN ACTION

Faculteit Bedrijfseconomische Wetenschappen

master handelsingenieur

Masterthesis

Business students' expectations related to sustainability in business

Alexander Van de Velde

Scriptie ingediend tot het behalen van de graad van master handelsingenieur, afstudeerrichting operationeel management en logistiek

PROMOTOR :

Prof. dr. Tom KUPPENS

BEGELEIDER :

Mevrouw Lise JANSSENS



UHASSELT

KNOWLEDGE IN ACTION

www.uhasselt.be
Universiteit Hasselt
Campus Hasselt:
Martelarenlaan 42 | 3500 Hasselt
Campus Diepenbeek:
Agoralaan Gebouw D | 3590 Diepenbeek

2019

2020



Faculteit Bedrijfseconomische Wetenschappen

master handelsingenieur

Masterthesis

Business students' expectations related to sustainability in business

Alexander Van de Velde

Scriptie ingediend tot het behalen van de graad van master handelsingenieur, afstudeerrichting operationeel management en logistiek

PROMOTOR :

Prof. dr. Tom KUPPENS

BEGELEIDER :

Mevrouw Lise JANSSENS

This master thesis was written during the COVID-19 crisis in 2020. This global health crisis might have had an impact on the (writing) process, the research activities and the research results that are at the basis of this thesis.

PREFACE

Much alike the sustainability gap described in the article, after 6 years in corporate life I'd found myself facing an 'educational gap': while I always realized it was better to complete my 2-year master in Business Engineering, combining it with a job proved to be too challenging at the time to the point where I never got to finish it.

Today, with writing this article I'm proud to share I've closed my personal 'educational gap'. At the same time, I truly hope this article can also contribute in closing the sustainability gap and ultimately get us towards a more sustainable future.

I would like to conclude by thanking the following people, without their contribution the outcome of this research would have looked entirely different:

- my partner Melanie, who managed to motivate me to take up my study after years, who permanently shaped me for the better and who stood by me in this journey from start to finish, through better and worse
- my father-in-law Georges, who with his expertise and experience in the matter was always willing to share his insights and constructive feedback
- my mentor Lise and promotor Tom, for their guidance along the way
- my mother, father, sister and grandparents, for their unconditional and everlasting support to and belief in me
- my colleagues Nele, Claude and Jonas, for allowing flexibility in my work when it was needed and helping out whenever they could

ABSTRACT

The sustainability gap poses a major challenge to the basis of our existence and that of future generations and refers to the discrepancy between what's known on how to achieve sustainability and how society is currently practising it. This research focuses on one of many aspects that could improve sustainable development integration with today's society: sustainable development education of business students. For the implementation of sustainable management in business life, a commitment is needed specifically from future managers and leaders who will actively shape tomorrow's social and economic environment. However, research suggests business students take sustainability less into account than students from other disciplines. Andersson (2016) identified three different roles of a business person, implying a business person is either to adapt to, add or create ethical values. In short, 'adapting to' means a business person will maximize profit and follow legal and customer demands, even though the laws and demands might not be ethical; 'adding' implies a business person will add ethical values but coming from someone else; while 'creating' assumes a business person will use its business as a facilitator towards a more sustainable future. Business education that promotes the role of business as (1) 'adapting to' shapes students to be unequipped to handle uncertain and complex sustainability issues, as (2) 'adding' leaves students 'ill-equipped' and as (3) 'creating' will yield students that are better equipped.

The purpose of this article is to investigate what's currently living in the minds of business students based on the three roles of a responsible business person towards sustainability as articulated by Andersson (2016). Subsequently, the second goal is to investigate if based on the results of this research these three roles indeed can be found. In-depth literature review and interviews allowed for the creation of a survey to identify business students' expectations related to sustainability in business. Based on the survey among 139 business students, factor and cluster analysis were conducted to investigate if different groups can be identified between business students based on the resulting factors. Finally, the results were linked to Andersson's theoretical framework of the three roles.

As first step a summarizing table was distilled, displaying the characteristics and the different values corresponding to the three roles. Based on the table and interviews, 54 statements were constructed to create the online survey using a 5-point Likert scale. The results pointed out that business students seem to identify themselves most with the 'creating' role, to a lesser extent with the 'adding' role depending on the characteristic being looked at, and not at all with the 'adapting to' role. The second goal of the study was to assess if three different groups – or roles – in fact exist among business students. First, a factor analysis was done to reveal if – and how many – unique dimensions (so-called factors) exist that can measure the roles of businesses to sustainability. Seven factors were withheld: (1) businesses should play a pro-active role towards sustainability, (2) there should be scope for personal feelings/convictions when making business decisions, (3) consumers play an important role and hold the key towards a more sustainable future, (4) companies should exist to improve society and not to make profit, (5) financial indicators dictate to work for sustainability or not, (6) external incentives are needed to move towards a more sustainable future and (7) companies should not but could include sustainability principles. Using the identified factors, a cluster analysis was done to look for groups of respondents that share the same mindset towards the seven pillars, resulting in four clusters (or segments) with each a specific mindset on businesses towards

sustainability. The "Inclusive realists" (16%) believe businesses should play a pro-active role towards sustainability. Respondents within this cluster do not believe we should rely on consumers to lead the way however do think external incentives are needed to get towards a more sustainable future. Personal feelings should be allowed when making business decisions. Decisions are led by financial indicators, but companies should leave space for including sustainability principles. The "Consumer-minded believers" (28%) think businesses should play a pro-active role but are indifferent to include personal feelings when making decisions. This group strongly believes an important role lies with the consumers and external incentives are needed to move to a more sustainable future. They reject financial indicators as base for decisions and believe companies should exist to improve society (more than making profit) and are required to include sustainability principles. The "Pessimistic radicals" (29%) are convinced society cannot rely on consumers nor can companies on financial indicators. They also reject the idea of external incentives (thus believe in internal conviction) and do not allow for personal feelings to come into play when making business decisions. They do however think that businesses' main purpose is to improve society and not to make profit. The "Financial opportunists" (27%) do not think companies should play a pro-active role towards sustainability neither do they exist to improve society (but rather to make profit). This segment does not allow personal feelings to come into play but highly favors financial indicators when making business decisions. They leave space for including sustainability principles but do not support external incentives for it. The segmentation study pointed out that there is no one apparent single "business student". Can evidence be found to support the model of three roles of the responsible business person? Clearly, the segmentation study of this research pinpoints not three but four groups among business students. However, it is possible to position the four clusters to the three roles. While the "Consumer-minded believers" and the "Pessimistic radicals" tend to align more with the 'creating' role, the "Financial opportunists" show a tendency more towards the 'adapting to' role. The "Inclusive realists" finally, seem to not allow to position them strongly to any of the three roles, as they show overlap with all roles.

This research shows the complexity of approaching the concepts 'business student' and 'sustainability'. While keeping in mind the potential impact of self-selection bias, the results of this study seem to reject the idea of the 'self-centered' business student. On the contrary, based on the descriptive results business students align most with the 'creating' role, to a lesser extent with the 'adding' role but not at all with the 'adapting to' role. On the one hand, it can be argued to be a surprising result, given the bottom-line focus in economics education and the reviewed literature for this article. On the other hand, as with 'sustainability', the segmentation study shows that 'business student' is a complex and multi-dimensional concept. Many subtle differences exist among business students on the seven identified pillars. Each group represents a different mindset – a different discourse – towards businesses and sustainability. Simply said, the single stereotyped business student does not exist (and thus no single role in the mindset exists).

This article could contribute in creating understanding of economics students' perspective on responsible businesses and sustainability, ultimately allowing to improve and better prepare tomorrow's leaders and decision makers. There is first the need of understanding business students' mindset towards sustainability and how responsible businesses ought to act. This understanding should eventually lead to ways to increase the degree of business students' involvement and the

awareness of business students of their pivotal role in society to take care of the environment and to act as a responsible member of society.

The survey for this research has been developed with careful attention, yet some limitations do need mentioning. The data was collected by online distribution leaving space for only capturing responses from students that feel affect (positive or negative) with "businesses" and "sustainability". Similarly, the call for interviewees on the topics 'businesses' and 'sustainability' leaves space for finding biased candidates. Finally, both the interviews and the survey were done in English which was not the native language of the respondents.

The developed tool could be optimized by content validation and used in support of future research regarding formal and informal learning in relation to the different roles. More specifically, it could be used in research to determine how the roles of a responsible business person come about (e.g. formal versus informal learning). Additionally, it would be interesting to take the same yet mandatory survey with an appointed subset of business students and compare results to eliminate any bias. Another use of the tool could be to investigate whether links between the level of sustainable development integration with education and the roles in the minds of students exist. Further research could also focus on if differences exist from bachelor to master, to identify impact of the education on the mindset of the students. Overall, the tool could contribute to our general understanding of sustainability education and how to improve it. The conclusion of this article implies there is no single ideal type of sustainability education for *all* business students. Taking it a step further, what does this mean if we want to facilitate moments of dislocation in education (Andersson, 2016)? In order to facilitate these moments, can the same educational approach be applied to the different roles or segments? Should the "Financial opportunist" be taught – or their discourse challenged – in a similar fashion as the "Pessimistic radical"? Or a student from the 'creating' role versus the 'adapting to' role? Future research is needed to answer these questions. The complexity of both sustainability and business students call for more attention in the curricula of business students. This could be done by for example focusing on group discussions on the seven defined pillars, whereby students would inevitably be confronted with other's perspective, hereby facilitating moments of dislocation. Alternatively, sustainability education could answer the diversity between business students in its approach by focusing on a more independent learning or on developing critical capabilities. Ultimately, the goal is to better prepare students to deal with the complex and uncertain sustainability issues they will face in life, issues that do not have pre-defined set of solutions or guided principles.

TABLE OF CONTENTS

PREFACE	I
ABSTRACT	II
TABLE OF CONTENTS.....	V
INTRODUCTION	1
The Responsible Business Person: adapting to, adding and creating ethical values	3
METHODOLOGY	6
RESULTS	9
Creation of the survey	9
Descriptive statistics	10
Three roles in the mindsets of business students.....	11
DISCUSSION.....	14
CONCLUSION	16
REFERENCES.....	18
APPENDICES	21
Appendix 1 – Semi-structured Interview Guidebook.....	22
Appendix 2 – Interview coding results	26
Appendix 3 – List statements & descriptive statistics.....	27
Appendix 4 – List responses per statement (%)	32
Appendix 5 – Rotated component matrix	33
Appendix 6 – Cluster analysis ANOVA.....	36

INTRODUCTION

It is acknowledged that meeting the world's growing needs through the traditional ways of production and consumption is simply put unrealistic (Srivatsav, 2018). Interesting enough, this situation is not the result of societal unawareness. On the contrary, calls for action to change our way of living towards a more sustainable world is omnipresent in academic literature and numerous initiatives can be found almost everywhere around us (Seele, 2016). Shevchenko et al. (2016) confirmed there is clear discrepancy between what's known on how to achieve sustainability and how society is currently practising it. The contrast between the awareness of the need for transformation towards sustainability and the lack of actions to meet these needs, is often referred to as 'the sustainability gap' (Seele, 2016). According to Seele & Lock (2017), this gap poses a major challenge to the basis of our existence and that of future generations, due to the overconsumption of natural resources and all its consequences (e.g. deforestation). Differently said, there is a need for fundamental change in today's production and consumption models (Srivatsav, 2018). To achieve this fundamental change, the United Nations defined the Sustainable Development Goals (United Nations, 2015) through which the participating countries committed to make our planet livable for future generations within 15 years (Seele & Lock, 2017). For a society to develop, the Rio Declaration on Environment and Development stated the Sustainable Development Goals to be the only rational way (Antrim, 2019). Global involvement of governments, NGOs and businesses, does indeed lean towards accepting sustainable development as a guiding principle (Drexhage & Murphy, 2010).

This research focuses on one of many aspects that could, or better, should improve sustainable development integration with today's society: education for sustainable development. The Brundtland report and the presentations of the Rio-1992 Conference questioned the educational systems and their approach towards sustainability (United Nations, 1992; WCED, 1987). Both emphasized education should contribute to a sustainable society. Ever since, attention to sustainability in higher education has risen (Shrivastava, 2010). Together with the increased attention towards sustainability in education, the terms "education for sustainability" and "education for sustainable development" have become more prominent and research on these topics has increased substantially (Figueiró & Raufflet, 2015; Shrivastava, 2010; Sterling, 2010; Wang et al., 2013). Education can play a pivotal role in enabling societal change through a continuous process of educating next generation leaders and citizens (Faham et al., 2017). Creating, rethinking and revising educational programs towards sustainability should be a priority for present and future communities (Okreglicka, 2018). Furthermore, education for sustainable development should take place from preschool to university and should integrate the sustainability principles, knowledge, skills and values (Faham et al., 2017). Rieckmann (2012) agreed and underlined the necessity for universities to integrate education for sustainable development into the curricula, allowing future professionals to overcome the challenges of sustainable development in their careers. Okreglicka (2018) joins the fray by stating that programs of education for sustainable development should reflect the need for sustainable solutions in nature and human life. The challenges are many and range from food security, climate change, water and non-renewable energy management, health, to social inequality and many more. These challenges clearly show the need for integration of sustainable development into higher education (Verhulst & Lambrechts, 2015).

This study zooms in on one particular group of students, namely business students. The reason for focusing on business students is, as this section will point out, the relevance of sustainable development for society during the next one to five decades to this specific group of students. So why business students? Above all others, business students are being shaped to be future managers, decision makers and policy makers. They are most likely to end up in positions in corporate life that can steer companies towards a more sustainable future (Okreglicka, 2018). Therefore, the importance of sustainable development integration in management education cannot be neglected (Ceulemans et al., 2011). For the implementation of sustainable management in business life, a commitment to sustainability is needed specifically from future managers and leaders who will actively shape tomorrow's social and economic environment (Okreglicka, 2018). Business students have the enormous potential to ensure that sustainability will take place by impacting the development of future products and services (Cullen, 2017).

Sustainable management education should offer a framework for today's business students - and thus tomorrow's leaders (Okreglicka et al., 2017). Business students need to be educated on topics like sustainable development and corporate social responsibility, enabling them to go and apply these concepts to business strategy, corporate finance or marketing among many others (Stubbs & Cocklin, 2008). Responsible management education should encourage the development of conceptual skills and managerial aptitude of students (Rawal, 2013). However, research suggests economics students take sustainability less into account than students from other disciplines: Ferraro, Pfeffer, & Sutton (2005) described an increasing amount of evidence that by studying economics, students adopt a more self-interested behavior, a behavior which is in fact stimulated by business education itself. Carter & Irons (1991) for instance, found that economics students tend to keep more resources for themselves than others while playing an ultimatum game. Furthermore, Cadsby & Maynes (1998) showed through an experiment that business students, more than for example nurse students, move toward an inefficient free-riding equilibrium. The evidence doesn't stop here. Pfeffer (2005) pointed out there is clear evidence that economics, business school training and business school environments themselves can have detrimental effects on student's values and behavior. These findings seem to be in line with other observations found in literature. Kolb, Fröhlich, & Schmidpeter (2017) observed that traditional management education has forged many of the world's industrial leaders, creating output that is now clearly perceived as unsustainable. Mitroff & Swanson (2004) stated that business schools overly promote a 'profit-first' mentality, which encourages student to minimize attention to businesses' concern for employees or the natural environment. Miller (1999) appeared to agree and concluded that it is in fact economics education and its assumptions on self-interest that changes a student's conceptions of appropriate behavior, leading to a more self-interested one. Ferraro et al. (2005) seemed to confirm that business education affects students, as it emphasizes pervasiveness and desirability of self-interested behavior, leading to more selfish behavior of the student himself. However, it needs to be pointed out that not all authors of the reviewed articles for this specific matter unanimously agreed. Although most agree on the impact business education has on students' view on self-interest and sustainability, a study by Neubaum et al. (2009) seems to take an opposite stand. Remarkably, the study found no evidence to suggest business education has a negative impact on a student's personal moral philosophies. On the contrary, according to the study senior business students are more likely to believe that social and

environmental performance should be included in a business' assessment. These students also find that the more attractive employers are in fact those scoring high on social and environmental performance. The study by Neubaum et al. (2009) contradicts entirely with the prior discussed literature.

It appears most research related to sustainability and management education focuses on the providers of education (e.g. teaching, educational material) rather than the recipients (Cullen, 2017). As a result, the number of tools available to measure the actual learning outcomes of such education is close to none (Ceulemans et al., 2011). Therefore, refocusing attention on how students actually engage with the concept of sustainability in business education is required (Cullen, 2017). This article focuses on sustainability education and the purpose of this research is to investigate what's currently living in the minds of business students based on the three roles of a responsible business person towards sustainability as articulated by Andersson (2016). The article aims to understand what the roles are that students identify themselves with. Subsequently, the second goal of this study is to investigate if based on the results of this research these three roles indeed can be found. This article could contribute in creating understanding of economics students' perspective on responsible businesses and sustainability, ultimately allowing to improve and better prepare tomorrow's leaders and decision makers. Differently said, there is first the need of understanding business students' mindset towards sustainability and how responsible businesses ought to act. This understanding should eventually lead to ways to increase the degree of business students' involvement and the awareness of business students of their pivotal role in society to take care of the environment and to act as a responsible member of society (Okřęglicka, 2018). It needs to be mentioned that the terms 'business students', 'economics students' or 'management students', although not the same, are being used interchangeably in this article. In general, 'business students' refers to students following any type of education related to economics, management or business. The same applies to the terms 'business education', 'management education' or 'economics education'.

The Responsible Business Person: adapting to, adding and creating ethical values

Andersson (2016) focuses on the role of a business person in relation to taking responsibility for sustainability. Her research 'The Responsible Business Person' will serve as framework for this study and the following section will mostly be based on her research. Andersson (2016) describes discourse as a common understanding of and view on the world. A discourse determines how business is understood, what responsibility and sustainability means and how education can support. Different discourses hold a different set of assumptions. This consequently implies different takes on how economies work, what good education ought to be and what the expectations are from a responsible business person. In other words, the role of a responsible business person depends on the assumptions of how society is or should be. *Environmental discourses* can be described as different ways of understanding the environment. Different environmental discourse will find different answers as to what an environmental problem is, what can be done about it and by whom. A discourse is important because it will provide and limit the approach to business decisions. In this way, it has a productive function as it shapes the perception of feasible solutions to environmental and social problems. As example, a free market discourse will imply that less state interference will yield the best results. In this light, the implications of 'doing business' is determined by socially constructed rules. Taking business decisions is not simply a matter of resource scarcity and making profit. Making

enough profit versus maximum profit, distributing profit between employees and owners or outsourcing to low-cost but highly polluting areas illustrate the wide range of possible business decisions. For a business person to be aware of this variety requires breaking through the predetermined set of assumptions (or discourse). This break-through is facilitated by so-called dislocation. Moments of dislocation occur when a person's discourse is being challenged by events that it cannot explain. In these moments, the subject cannot rely on its discourse and finds itself confused about next steps. The subject is *dislocated* and is forced to step out of its discourse. In order to move away from the "dislocatory" moment, the subject needs to take on different perspectives. The subject needs to fall back on reason, feelings and identity in order to decide. Through the moment of dislocation, the subject becomes aware of the multiple perspectives (or discourses), which in turn allow the subject to take distance from what was previously perceived as single truth. Education plays an important role as it should facilitate moments of dislocation in order to create awareness of different takes on doing business sustainably.

Andersson (2016) identified three different roles of a business person, implying a business person is either to adapt to, add or create ethical values. The first role, adapting to ethical values, means a business person will maximize profit and follow legal and customer demands, even though the laws and demands might not be ethical. Businesses taking on the 'adapting to' role are profit-oriented businesses. The 'adapting to' role assumes that a business person is only expected to be ethical if law requires it or if consumers demand it. The triggers for acting ethical and sustainable are external to the business (e.g. legislation or consumers) and thus take away the responsibility to take moral and environmentally friendly initiatives. The driving force behind the business person is self-interest and does not allow personal feelings to come into play when making decisions. Simply put, when financial indicators are pointing into one direction, it is the direction to take regardless of personal feelings (cfr. dislocation). The second role, adding ethical values, means a business person will add ethical values coming from someone else. Businesses taking on the 'adding' role are social-oriented businesses. The business person will go beyond what is required by law and include sustainability principles. The business person could for example make demands on subcontractors to be sustainable. Like the 'adapting to' role, the triggers of the 'adding' role for acting sustainably and ethically are external to the business, e.g. customers asking for sustainable products. It is in this light the adding role follows the logic of conscious consumers. The adding role allows scope for personal feelings however taking moral responsibility is not a requirement. The third role, creating ethical values, implies that a business person will use its business as a facilitator to make change towards a more sustainable future. Businesses taking on a 'creating' role are radical-oriented businesses. The business person's motive when making business decisions is not limited to profit only, on the contrary. The trigger for taking ethical and sustainable business decisions lies within the person and is thus internal to the business. The creating role follows the logic of stakeholder's interest which implies being open and responsible to the different interests of all stakeholders and having own values and beliefs about sustainability when making decisions. The creating role requires the business person to consider personal feelings when dealing with sustainability issues, which allow to be sensitive to and inclusive of diverging interests. The fact whether the trigger lies internal or external to the business is an important one. For example, when a business person decides to purchase locally or give to charity because the consumer expects so, it is in fact a replication of the

view of the moral customer. Differently said, the business person is going beyond what is legally required however, is adding as opposed to creating ethical values. The three roles are mutually exclusive meaning a business person can only assume one role at a time. The adapting role does not allow for pro-active decisions and merely follows law while the adding and creating roles see the law as coming short. On the other hand, the adapting and adding role consider consumer's demand as guiding principle, while the creating role could consider the consumer as not being ethical or sustainable enough. The three roles also imply differences in how to deal with personal feelings when making business decisions regarding sustainability issues. Sustainability issues are often complex and uncertain and therefore pre-defined solutions or guiding principles are often lacking. The reason of presenting the three roles is to allow critical reflection on the role of a business person. A business person cannot rely on law and regulations nor on principles or guidelines set by others. Dealing with sustainability issues while taking business decisions requires being open and sensitive to other's needs. Andersson (2016) therefore concludes that business education that promotes the role of business as (1) 'adapting to ethical values' – meaning to only follow law, maximize profit and meet consumers' demands although these might not be sustainable (enough) – shapes students to be unequipped to handle uncertain and complex sustainability issues. The students will not have the required toolset available to address the sustainability issues they will face. Business education that promotes the role of business as (2) 'adding ethical values', motivates students to take a step beyond what's is minimally required by law or legislation. The step 'beyond' translates into addressing consumers' demand and adopting pre-defined guiding principles from others. The risk, however, is that consumers might not be well informed enough or do not demand sustainable products. Likewise, in complex and uncertain sustainability issues, pre-defined guiding principles might simply not be available (yet). Assuming the adding role for businesses in education might thus leave students ill-equipped to deal with sustainability issues, as the tools they have been provided might only work in specific circumstances: well-informed and moral acting consumers combined with the availability of pre-defined guiding principles. Finally, business education defining the role of business as (3) 'creating ethical values', will yield students that are better equipped to deal with sustainability issues. By stimulating students to involve different perspectives as well as personal feelings when making business decisions, education will allow students to be responsive to other's needs and be prepared to ensure a sustainable future when facing issues where no guiding principles have been predefined.

This article intends to answer the question "With what role – as defined by Pernilla Andersson in 'The Responsible Business Person – a given business student identifies himself? The study answers this question by using an ad hoc developed survey as instrument. Next, the research intends to confirm the hypothesis that indeed 3 groups of students exist, each with a different role for businesses towards sustainability.

METHODOLOGY

The research started in September 2019 and was logically organized following next steps: (1) in-depth literature review to develop insights into the matter, (2) interviews of a small sample of the target population, transcribed and coded to ultimately get a better grasp on the relevant vocabulary, (3) creation of an instrument based on literature review and interviews to address the article's research question, (4) testing of the developed tool to determine if the questionnaire is unambiguously understood, (5) rolling out the online questionnaire to the target population to validate the instrument, (6) analyzing the survey results to identify the mindset of business students, (7) applying factor and cluster analysis on the survey results to investigate if different groups can be identified between business students, (8) linking the results of the analysis to the theoretical framework of the three roles as defined by Andersson and finally, (9) concluding the article while hinting at future research opportunities. Although provided in sequence, it needs to be mentioned the process of writing the article has been more of an iterative nature rather than a sequential one. The PHD thesis 'The Responsible Business Person – Studies of Business Education for Sustainability' by Pernilla Andersson, together with the four underlying articles, functioned as core of the research. A first part in writing the article consisted of a study of the available literature on the article's topic. Following approach was applied: an electronic journal and book database search of Harzing's Publish or Perish, using the keywords 'education for sustainable development', 'mindset students sustainability', 'responsible management education student', 'role sustainability integration business education', 'students roles sustainability', 'sustainability integration education' and 'sustainability gap education responsible business person'. Next, the search results were ranked on relevance to the article's topic in order to pinpoint the most important pieces of literature. The selection was then searched for, mainly via Google Scholar. The main goal of the literature study was to establish a deeper understanding of the article's topic that in turn would allow to create a tool with strong theoretical grounding. After the literature review, interviews were taken from a sample of the target population. The sampling method used was convenience sampling. In order to find the interviewees, different channels were used. As first attempt, posts were placed on the Facebook pages of the various study years of the University of Antwerp, Ghent University, Hasselt University, Catholic University of Leuven and the Free University of Brussels-VUB. This approach only returned two candidates, both from Ghent University. As second attempt, the student chairmen of every business education and study year of Hasselt University were approached. In parallel, the Hasselt University administration was asked to send out a mass email to all students enrolled in any business education at Hasselt University. This attempt returned seven students willing to participate in the interviews. As last attempt, a personal contact at Ghent University was approached and he was able to refer three business students from that university of which only one student followed up, totaling ten interviewees: Hasselt University (7) and Ghent University (3). The interviewees were students from the range of first bachelor year up until the final master year. Before the start of each interview, the students were informed that the interview would be confidential, anonymous and take between 20 and 30 minutes. The students could refuse to answer questions and stop at any time. As topic of the interview, only 'businesses' and 'sustainability' had been shared, to not influence the students prior to the interview. The interviews were not taken in person but via an online application called 'Zoom', which allowed for easy recording and removed the time and effort burden of physically meeting up. An interview guidebook had been created to facilitate the semi-structured interviews (Appendix 1).

Next, the audio recordings were transcribed and documents were imported into NVivo – a qualitative data analysis software facilitating content coding. NVivo was particularly useful as it supports classifying and structuring data while maintaining links to the actual content and context. Using NVivo, consistencies were looked for between wording and the different roles, to ultimately use these wordings in the final instrument. The results of coding the interviews can be found in Appendix 2. Both the literature review and coded interview data served as fundament for the creation of the survey. As first step in developing the tool, a summarizing table had been distilled reflecting the differences in characteristics between the different roles (Andersson, 2016). Next, a series of statements were constructed based on the table in combination with the insights from literature review and input from the interviews. Writing such statements should be approached cautiously. While creating the statements delicate attention had been given to the phrasing. The statements were created in such a way to ask for respondent's opinion on how things *should* be rather than how things *are*. The reason for formulating the statements in this manner is that the research explores students' mindset on the responsible business person and how these students are most likely to act when finding themselves in corporate positions, as opposed to the student's opinion on how business people are acting today. To ensure participants carefully read and considered each statement, a mix of positive and negative statements were used. To avoid confusion of the respondents, response categories have been grouped and kept in the same order.

For the data collection, an online questionnaire using a 5-point Likert scale has been chosen as preferred method. Similar research investigating attitudes or opinions indicated the Likert scale to be the most commonly used and widely accepted (Saunders et al., 2009). One of the advantages using the Likert scale is that it is familiar to and easily understood by the respondents (McLeod, 2014). Another is that it allows for large-scale data collection as the data can be easily processed, making it suitable to the quantitative nature of this research (Bryman & Bell, 2007). A neutral response option was included and described as 'Neither agree nor disagree' rather than 'Don't know' as it has been stated to be less threatening for a participant to admit (Bryman & Bell, 2007). Unlike with interviews, an advantage of questionnaires is that less sensitivity and skills to execute are required, and in turn it makes the research less susceptible to be influenced by the researcher (Saunders et al., 2009). A disadvantage, however, is that the online questionnaire does not leave opportunity for the respondents nor the researcher to dig deeper into certain questions. Even more, the researcher will have one chance only to collect the data. Another driver for choosing the online questionnaire, was a simple one from a researcher's point of view: online questionnaires are free and can be largely automated, freeing up resources to be allocated elsewhere. After creating the table and finetuning the questionnaire, the online survey had been tested on three people. The purpose of testing the questionnaire was to further improve and to gather insights in the questionnaire's validity and reliability. It also provided information on the length of completing the questionnaire and if according to the tester some meaningful items were missing. The online survey took place in March 2020 at Hasselt University and Ghent University. The administration of the respective universities was asked to send out an email communication with a link to the survey to all students enrolled in business studies. Qualtrics software was used to conduct the online questionnaire. To limit (yet not exclude) any bias or prejudices, the students were only told the survey's topic was on businesses and sustainability. In total 141 questionnaires were collected, of

which 2 had to be dismissed due to incomplete data. The 139 respondents represented a mixed group of bachelor and master students from both universities: 24% of the students were enrolled in the first bachelor year, 21% in the second, 24% in the third and 31% were enrolled in their master's. Next, a segmentation study was conducted, consisting of a (1) factor analysis – Principal Component Analysis extraction method (PCA) followed by a Varimax with Kaiser Normalization rotation method – to group the statements into explaining factors and a (2) cluster analysis – combination of an hierarchal cluster analysis using Ward's method with a non-hierarchal K-means cluster analysis – enabling to identity groups of respondents and link these groups to the identified factors.

RESULTS

This section provides a detailed description of the creation and the outcomes of the survey, including both descriptive statistics and the results of the segmentation study.

Creation of the survey

The literature review brought to light very limited to no means currently exist to identify the role of a business person as articulated by Andersson. Most likely, the main reason is due to the recentness of Andersson's publication on the roles. Therefore, a summarizing table was distilled, displaying the characteristics and the different values corresponding to the three roles (Table 1). Based on the table, statements were constructed while incorporating the coding output from the interviews. To illustrate, the characteristic "Purpose company" has three different values for each role. Three statements were created for the first role that point towards its value, which is "Profit oriented", e.g. *"Companies should focus on earnings. If they have ways of producing that aren't necessarily great for the environment but are way cheaper, they should do it"*. Three more statements were drafted for the 'adding' role that point towards "Social oriented" and three more for the 'creating' role, pointing towards "Radical oriented". In case a characteristic had the same value for two roles, not six but three statements were created. To illustrate, both the 'adding' as the 'creating' role consider legislation coming short while the 'adapting to' role considers legislation to be sufficient. Three statements were created confirming legislation to be sufficient, (only) three more confirming the opposite. One statement based on the characteristic 'demands of consumers' and the 'adapting to ethical values' was: *"A company should answer customer's demand, both for sustainable and not sustainable products"*. The idea is that if a respondent is to strongly agree with the above-mentioned statement, it would be an indicator of the respondent to lean more towards the first role: adapting to ethical values. In turn, disagreement with the statement would indicate the mindset of the respondent is moving away from this role. In total 54 statements were drafted; a complete list can be found in Appendix 3.

	ADAPTING TO (1)	ADDING (2)	CREATING (3)
PURPOSE COMPANY	Profit-oriented	Social-oriented	Radical-oriented
LEGISLATION	Sufficient	Insufficient	Insufficient
DEMANDS OF CONSUMERS	Sufficient	Sufficient	Insufficient
MORAL RESPONSIBILITY	Not required unless by law/consumers	Not required unless by law/consumers but possible	Internal moral responsibility of business person required
TRIGGER ACTING SUSTAINABLE	External	External	Internal
PERSONAL FEELINGS	No space for personal feelings	Space for personal feelings but not required	Personal feelings required
LOGIC	Logic of self-interest: by financial indicators	Logic of conscious consumers: by (conscious) consumers	Logic of stakeholders' interest: by business person

Table 1. Characteristics of the three roles of a responsible business person.

Descriptive statistics

The 54 statements were used in an online survey using a 5-point Likert scale to try and understand the mindset of business students on businesses towards sustainability. As to the purpose of the company, business students show a social-oriented focus (adding role) – meaning companies should focus on both maximizing profit and including sustainability principles – while leaning towards the ‘creating’ role. Business students clearly require internal moral responsibility for sustainability from the companies and not only from consumers or authorities. This aligns with the ‘creating’ role. The results on the role of legislation indicate students take on the ‘adding’ and ‘creating’ role, stating legislation to be insufficient. Remarkably though, most of the students agreed or strongly agreed (total of 83%) with the statement *“Environmental challenges should be solved by legal requirements, which in turn will stimulate companies to be more sustainable”*. This appears to highlight a difference in who business students take responsible for sustainability issues on the one hand and how to get to a more sustainable future on the other. Business students see the demands of consumers coming short (creating role), however results differ strongly when a trade-off decision must be made between profit and sustainability. For business students the trigger to act sustainably should be internal to the business which corresponds to the ‘creating’ role. Like the role of legislation however, there appears to be a contradiction as 68% of the student agreed or strongly agreed with the statement *“For companies to act sustainable, external incentives from governments and consumers are needed”*. Business students leave space for personal feelings in business decisions but don’t see them as required, which corresponds to the ‘adding’ role, yet these results are less outspoken compared to the previously discussed characteristics. Finally, business students take on the ‘creating’ role, following the logic of stakeholder’s interest by being sensitive to the needs of others. Overall, the online questionnaire results point out that business students seem to identify themselves most with the ‘creating’ role, to a lesser extent with the ‘adding’ role depending on the characteristic being looked at, and not at all with the ‘adapting to’ role. This result could be considered rather surprising given the preceding literature review. A subset of the most prominent statements leading to the results of this section is depicted in Table 2 below. A detailed overview of the descriptive statistics of the statements and the corresponding roles can be found in Appendix 3. The list of the percentage responses per statement can be found in Appendix 4.

Statement	Role	N	Min	Max	Mean	Std. Dev.
Purpose of a company - As a company, making profit is important but including sustainability is as well.	2	139	2	5	4.56	0.638
Purpose of a company - Promoting sustainability should be a business' driving force.	3	139	1	5	4.23	0.792
Moral responsibility - A business should think about sustainability and cannot assume laws and consumers will lead the way.	3	139	1	5	4.04	0.892
Role of consumers - A company should pro-actively try to improve society and not wait for consumers to demand it.	3	139	2	5	4.33	0.736
Role of consumers - Managers should not wait for conscious consumers to act sustainable.	3	139	2	5	4.31	0.741

Role of consumers - A company should answer customer's demand, even when customers ask for unsustainable products.	1, 2	139	1	5	2.75	1.029
Role of consumers - A company should stop producing non-sustainable products, even when there is a consumer's demand for it.	3	139	1	5	3.19	1.107
Role of legislation - A company should pro-actively try to improve society and not wait for legislation to catch up.	2, 3	139	2	5	4.38	0.696
Triggers - The main driver to act sustainable should come from within the company, not because consumers have started asking for it.	3	139	1	5	3.92	0.885
Personal feelings - A manager could include personal/ethical consideration when deciding to move production to a low-cost country.	2	139	1	5	3.88	0.897
Logic & business decisions - A business should take into account all stakeholders and try to improve the society as a whole.	3	139	1	5	4.26	0.685

Table 2. Subset most prominent statements with descriptive statistics.

Three roles in the mindsets of business students

The second goal of the study was to assess if three different groups – or roles – in fact exist among business students. First, a factor analysis was done to reveal if – and how many – unique dimensions (so-called factors) exist that can measure the roles of businesses to sustainability. Literature states different criteria exist to determine the number of factors: (1) the number of factors for which the eigenvalues are greater than 1 – which resulted in fifteen factors, (2) setting a minimum of 60% total variance explained by the numbers of factors – which resulted in twelve factors, and finally (3) using a predetermined number of factors found adequate by the researcher – for which the optimal number was fixed at seven (Hair et al., 2014). Seven factors were withheld to keep the outcome suitable for interpretation in function of the subsequent cluster analysis. For interpreting the factors, items with factor loadings smaller than 0.5 were disregarded (Hair et al., 2014). The condition that a sample must have more observations than variables with an absolute minimum of 50 was met. The Bartlett's test of sphericity indicated that correlations exist among variables (sig. < 0.05) and the overall KME Measure of Sampling Adequacy was 0.772, exceeding the minimum of 0.500 (Hair et al., 2014). Seven unique pillars have been identified in the mindset of business students: (1) businesses should play a pro-active role towards sustainability, (2) there should be scope for personal feelings/convictions when making business decisions, (3) consumers play an important role and hold the key towards a more sustainable future, (4) companies should exist to improve society and not to make profit, (5) financial indicators dictate to work for sustainability or not, (6) external incentives are needed to move towards a more sustainable future and (7) companies should not but could include sustainability principles. Appendix 5 presents the final rotated component matrix. Using the identified factors, a cluster analysis was done to look for groups of respondents that share the same mindset towards the seven pillars. To test for statistical significance, Analysis of Variance (ANOVA) was used (Appendix 6). The cluster analysis formed four clusters (or segments), shown in Figure 1.

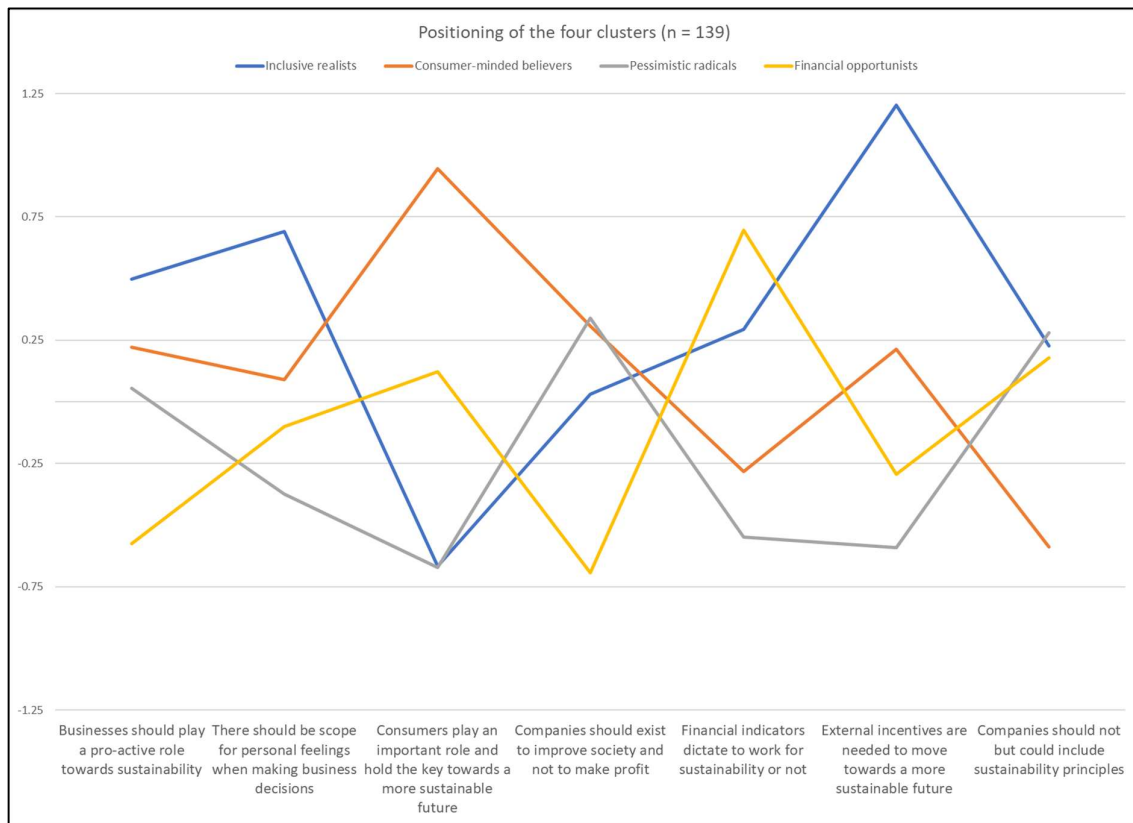


Figure 1. Positioning of the four clusters (n = 139).

The four clusters show significant differences between them towards the seven factors. The first cluster (16%) believes businesses should play a pro-active role towards sustainability. Respondents within this cluster do not believe we should rely on consumers to lead the way however do think external incentives are needed to get towards a more sustainable future. Personal feelings should be allowed when making business decisions. Decisions are led by financial indicators, but companies should leave space for including sustainability principles. This cluster can be labeled as the “Inclusive realists”. The second cluster (28%) thinks businesses should play a pro-active role but is indifferent to include personal feelings when making decisions. This group strongly believes an important role lies with the consumers and external incentives are needed to move to a more sustainable future. They reject financial indicators as base for decisions and believe companies should exist to improve society (more than making profit) and are required to include sustainability principles. This group will be labeled as the “Consumer-minded believers”. The third cluster (29%) is convinced society cannot rely on consumers nor can companies on financial indicators. They also reject the idea of external incentives (thus believe in internal conviction) and do not allow for personal feelings to come into play when making business decisions. They do however think that businesses’ main purpose is to improve society and not to make profit. Therefore, this group will be labeled as the “Pessimistic radicals”. The fourth cluster (27%) does not think companies should play a pro-active role towards sustainability neither do they exist to improve society (but rather to make profit). This segment does not allow personal feelings to come into play but highly favors financial indicators when making business decisions. They leave space for including sustainability principles but do not support external

incentives for it. This group will be labeled as “Financial opportunists”. The cluster member distribution is shown in Table 3.

Numbers of Cases in each Cluster			%
Cluster	Inclusive realists	22	16%
	Consumer-minded believers	39	28%
	Pessimistic radicals	40	29%
	Financial opportunists	38	27%
Valid		139	100%
Missing		0	0%

Table 3. Cluster membership distribution.

DISCUSSION

The segmentation study pointed out that there is no one apparent single “business student”. The group of business students displayed four different clusters with each a specific mindset on businesses towards sustainability. Can evidence be found to support the model of three roles of the responsible business person? Clearly, the segmentation study of this research pinpoints not three but four groups among business students. However, it is possible to make links between the four clusters and the three roles. Figure 2 shows the positioning of the four clusters based on the most distinguishing factors in relation to the three roles.

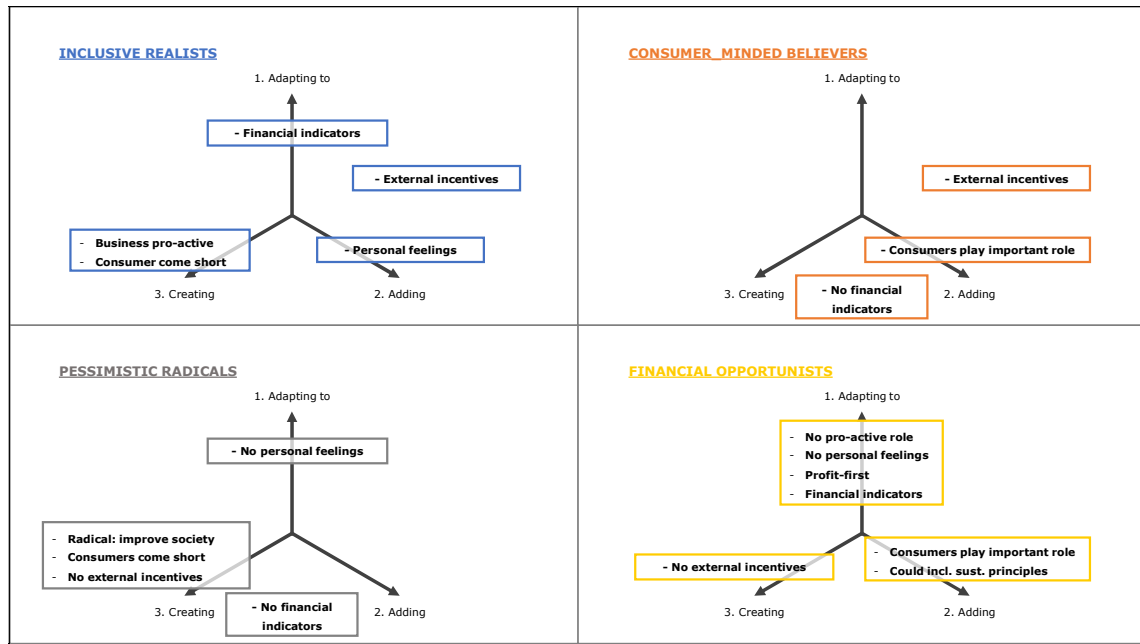


Figure 2. Positioning of the four clusters based on the most distinguishing factors in relation to the three roles.

The “Inclusive realists” show some overlap with the ‘adapting to’ role as they believe financial indicators dictate to work for sustainability. They also believe personal feelings should be allowed when making business decisions (adding). This segment thinks external incentives are needed, placing it with both the ‘adapting to’ and ‘adding role’. They match with the ‘creating’ role as they believe businesses should play a pro-active role towards sustainability and consumers come short.

The “Consumer-minded believers” seem to adhere more to the ‘creating’ role: they believe businesses should play a pro-active role towards sustainability, companies are required to include sustainability principles and companies exist to improve society (and not to make profit). They do however acknowledge consumers can play an important role (adding) and believe external incentives are needed (adapting & adding).

Of all four groups, the “Pessimistic radicals” are the closest to the ‘creating’ role: companies exist to improve society based on internal convictions, consumers come short when it comes to sustainability and no external incentives are needed to move towards a more sustainable future. They don’t believe financial indicators dictate to work for sustainability (creating and adding) nor do they allow personal feelings to come into play (adapting to).

Finally, the “Financial opportunists” appear to align most with the ‘adapting to’ role: business should not play a pro-active role towards sustainability, personal feelings are not allowed, companies don’t exist to improve society (but to make profit) and financial indicators dictate to work for sustainability. They do agree that consumers can play an important role, and companies can include sustainability principles (adding). Lastly, they touch the ‘creating’ role by agreeing that no external incentives are needed.

CONCLUSION

This research shows the complexity of approaching the concepts 'business student' and 'sustainability'. While keeping in mind the potential impact of self-selection bias, the results of this study seem to reject the idea of the 'self-centered' business student. On the contrary, based on the descriptive results business students align most with the 'creating' role, to a lesser extent with the 'adding' role but not at all with the 'adapting to' role. On the one hand, it can be argued to be a surprising result, given the bottom-line focus in economics education (Ng & Burke, 2010) and the reviewed literature for this article. On the other hand, as with 'sustainability', the segmentation study showed that 'business student' is a complex and multi-dimensional concept. The results of the segmentation study reveal many subtle differences among business students on the seven identified pillars. Each group represents a different mindset – a different discourse – towards businesses and sustainability. Simply said, the single stereotyped business student does not exist (and thus no single role in the mindset exists). In this sense, this research goes against the reviewed literature approaching 'business students' as being one entity (Ferraro et al., 2005; Miller, 1999; Mitroff & Swanson, 2004).

The survey for this research has been developed with careful attention, yet some limitations do need mentioning. The data was collected by online distribution leaving space for only capturing responses from students that feel affect (positive or negative) with "businesses" and "sustainability". Similarly, the call for interviewees on the topics 'businesses' and 'sustainability' leaves space for finding biased candidates. Finally, both the interviews and the survey were done in English which was not the native language of the respondents.

The developed tool could be optimized by content validation and used in support of future research regarding formal and informal learning in relation to the different roles. More specifically, it could be used in research to determine how the roles of a responsible business person come about (e.g. formal versus informal learning). Additionally, it would be interesting to take the same yet mandatory survey with an appointed subset of business students and compare results to eliminate any bias. Another use of the tool could be to investigate whether links between the level of sustainable development integration with education and the roles in the minds of students exist. Further research could also focus on if differences exist from bachelor to master, to identify impact of the education on the mindset of the students. Overall, the tool could contribute to our general understanding of sustainability education and how to improve it. The conclusion of this article implies there is no single ideal type of sustainability education for *all* business students. Taking it a step further, what does this mean if we want to facilitate moments of dislocation in education (Andersson, 2016)? In order to facilitate these moments, can the same educational approach be applied to the different roles or segments? Should the "Financial opportunist" be taught – or their discourse challenged – in a similar fashion as the "Pessimistic radical"? Or a student from the 'creating' role versus the 'adapting to' role? Future research is needed to answer these questions. The complexity of both sustainability and business students call for more attention in the curricula of business students. This could be done by for example focusing on group discussions on the seven defined pillars, whereby students would inevitably be confronted with other's perspective, hereby facilitating moments of dislocation. Alternatively, sustainability education could answer the diversity between business students in its approach by focusing on a more independent learning or on developing critical capabilities

(Lambrechts et al., 2018). Ultimately, the goal is to better prepare students to deal with the complex and uncertain sustainability issues they will face in life, issues that do not have pre-defined set of solutions or guided principles (Andersson, 2016).

REFERENCES

- Andersson, P. (2016). *The Responsible Business Person: Studies of business education for sustainability* [PhD Thesis]. Södertörns högskola.
- Antrim, L. N. (2019). The United Nations Conference on Environment and Development. In A. E. Goodman (Ed.), *The Diplomatic Record 1992-1993* (1st ed., pp. 189–210). Routledge. <https://doi.org/10.4324/9780429310089-10>
- Bryman, A., & Bell, E. (2007). *Business Research Methods*. Oxford University Press.
- Cadsby, C. B., & Maynes, E. (1998). Choosing between a socially efficient and free-riding equilibrium: Nurses versus economics and business students. *Journal of Economic Behavior & Organization*, 37(2), 183–192.
- Carter, J. R., & Irons, M. D. (1991). Are economists different, and if so, why? *Journal of Economic Perspectives*, 5(2), 171–177.
- Ceulemans, K., De Prins, M., Cappuyns, V., & De Coninck, W. (2011). Integration of sustainable development in higher education's curricula of applied economics: Large-scale assessments, integration strategies and barriers. *Journal of Management & Organization*, 17(5), 621–640.
- Cullen, J. G. (2017). Educating business students about sustainability: A bibliometric review of current trends and research needs. *Journal of Business Ethics*, 145(2), 429–439.
- Drexhage, J., & Murphy, D. (2010). *Sustainable development: From Brundtland to Rio 2012. Background paper prepared for consideration by the High Level Panel on Global Sustainability at its first meeting 19 September 2010*.
- Faham, E., Rezvanfar, A., Movahed Mohammadi, S. H., & Rajabi Nohooji, M. (2017). Using system dynamics to develop education for sustainable development in higher education with the emphasis on the sustainability competencies of students. *Technological Forecasting and Social Change*, 123, 307–326. <https://doi.org/10.1016/j.techfore.2016.03.023>
- Ferraro, F., Pfeffer, J., & Sutton, R. I. (2005). Economics language and assumptions: How theories can become self-fulfilling. *Academy of Management Review*, 30(1), 8–24.
- Figueiró, P. S., & Raufflet, E. (2015). Sustainability in higher education: A systematic review with focus on management education. *Journal of Cleaner Production*, 106, 22–33. <https://doi.org/10.1016/j.jclepro.2015.04.118>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multi Variate Data Analysis* (Seventh). Pearson Education Limited.
- Kolb, M., Fröhlich, L., & Schmidpeter, R. (2017). Implementing sustainability as the new normal: Responsible management education – From a private business school's perspective. *The International Journal of Management Education*, 15(2), 280–292. <https://doi.org/10.1016/j.ijme.2017.03.009>
- Lambrechts, W., Ghijsen, P. W. Th., Jacques, A., Walravens, H., Van Liedekerke, L., & Van Petegem, P. (2018). Sustainability segmentation of business students: Toward self-regulated development of critical and interpretational competences in a post-truth era. *Journal of Cleaner Production*, 202, 561–570. <https://doi.org/10.1016/j.jclepro.2018.07.303>
- McLeod. (2014). *Attitudes and Behavior | Simply Psychology*. <https://www.simplypsychology.org/attitudes.html>

- Miller, D. T. (1999). The norm of self-interest. *American Psychologist*, 54(12), 1053.
- Mitroff, I., & Swanson, D. L. (2004). An open letter to the deans and faculties of American business schools: A call for action. *Academy of Management News*, 35(2), 7.
- Neubaum, D. O., Pagell, M., Drexler Jr, J. A., Mckee-Ryan, F. M., & Larson, E. (2009). Business education and its relationship to student personal moral philosophies and attitudes toward profits: An empirical response to critics. *Academy of Management Learning & Education*, 8(1), 9–24.
- Ng, E. S., & Burke, R. J. (2010). Predictor of business student's attitudes towards sustainable practice. *J. Bus. Ethics* 95, 603–615.
- Okřęglicka, M. (2018). Commitment to the Sustainability of Students within a Responsible Management Education. *European Journal of Sustainable Development*, 7(4), 243–252.
- Okřęglicka, M., Havierniková, K., Mynarzová, M., & Lemańska-Majdzik, A. (2017). Entrepreneurial intention creation of students in Poland, Slovakia and Czechia. *Polish Journal of Management Studies*, 15.
- Pfeffer, J. (2005). Why do bad management theories persist? A comment on Ghoshal. *Academy of Management Learning & Education*, 4(1), 96–100.
- Rawal, D. M. (2013). Reorienting Management Education for Sustainable Prosperity. *Review of Management*, 3(1/2), 21.
- Rieckmann, M. (2012). Future-oriented higher education: Which key competencies should be fostered through university teaching and learning? *Futures*, 44(2), 127–135.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Methoden En Technieken Van Onderzoek* (4th ed.). Pearson Benelux B.V.
- Seele, P. (2016). Envisioning the digital sustainability panopticon: A thought experiment of how big data may help advancing sustainability in the digital age. *Sustainability Science*, 11. <https://doi.org/10.1007/s11625-016-0381-5>
- Seele, P., & Lock, I. (2017). The game-changing potential of digitalization for sustainability: Possibilities, perils, and pathways. *Sustainability Science*, 12(2), 183–185. <https://doi.org/10.1007/s11625-017-0426-4>
- Shevchenko, A., Lévesque, M., & Pagell, M. (2016). Why Firms Delay Reaching True Sustainability. *Journal of Management Studies*, 53, n/a-n/a. <https://doi.org/10.1111/joms.12199>
- Shrivastava, P. (2010). Pedagogy of passion for sustainability. *Academy of Management Learning & Education*, 9(3), 443–455.
- Srivatsav, N. N., Henry Le Fleming, and Naveen. (2018, January 8). *Digital Technology and Sustainability: Positive Mutual Reinforcement*. Strategy+business. <https://www.strategy-business.com/article/Digital-Technology-and-Sustainability-Positive-Mutual-Reinforcement?gko=7ce3e>
- Sterling, S. (2010). *Sustainability education: Perspectives and practice across higher education*. Taylor & Francis.
- Stubbs, W., & Cocklin, C. (2008). Teaching sustainability to business students: Shifting mindsets. *International Journal of Sustainability in Higher Education*, 9(3), 206–221.
- United Nations. (1992). *The Rio Declaration on Environment and Development*.
- United Nations. (2015). *Sustainable Development Goals*. UNDP. <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

- Verhulst, E., & Lambrechts, W. (2015). Fostering the incorporation of sustainable development in higher education. Lessons learned from a change management perspective. *Journal of Cleaner Production*, *106*, 189–204.
- Wang, Y., Wang, R., Shi, H., Huisingh, D., Hansson, L., & Hong, J. (2013). Special issue: Green universities and environmental higher education for sustainable development in China and other emerging countries. *Journal of Cleaner Production*, *61*, 1–138.
- WCED. (1987). *Our common future*. New York: Oxford University Press.

APPENDICES

- Appendix 1 – Semi-structured Interview Guidebook
- Appendix 2 – Interview coding results
- Appendix 3 – List statements & descriptive statistics
- Appendix 4 – List responses per statement (%)
- Appendix 5 – Rotated component matrix
- Appendix 6 – Cluster analysis ANOVA

Appendix 1 – Semi-structured Interview Guidebook

Title: Interview # _

Date:

Time:

Interviewer: Alexander Van de Velde

Interviewee (name, study & year, university):

INTRODUCTION

About me:

- Alexander Van de Velde – master student HI at @UHasselt

About the interview:

- semi-structured interview for master thesis
- topic related to business & sustainability
- primary goal is to learn how you see things the way you see them
 - more like a conversation with a focus on your experience, your opinion and what you think or feel about the topics covered
 - no right or wrong answers

Inform interviewee of

- confidentiality & anonymity
- right not to answer a question if they do not wish to
- right to stop the interview at any time without jeopardy

Get verbal consent to participate & for audio recording

QUESTIONS

1. Could you briefly tell a bit about yourself?
2. Are you familiar with the concept sustainability?
 - a. What does sustainability mean to you?
 - b. If you had to give a definition of sustainability, what would it be?
3. Who do you feel is responsible for sustainability in society?
 - a. Why do you think those?
 - b. How are they responsible?
 - c. How does it manifest?
 - d. Could you think of any others that are responsible?
4. What could be done differently today to move towards a more sustainable future?
 - a. Who could play a role in this change?
 - b. How could they play a role?
 - c. Do you think we are on the right 'path'?

- i. Why?
 - ii. What is done well?
 - iii. What could be better?
- 5. What is according to you the purpose of a company... why do companies exist?
- 6. Some companies claim to work for sustainability, could you describe how these companies are trying to do so?
 - a. Why would companies promote sustainability?
- 7. What is the role of company when it comes to sustainability?
 - a. Why do companies have this role?
 - b. What would you expect from a company when it comes to sustainability?
 - c. How are companies trying to tackle sustainability challenges?
- 8. What is the difference between a profit oriented and social oriented business according to you? Ask if can be combined...
 - a. How could you tell when a company is profit oriented?
 - b. How could you tell when a company is social oriented?
- 9. What do you understand by moral responsibility of a company?
 - a. Why do companies have this responsibility?
 - b. How does it show?
- 10. What is the role of consumers when it comes to sustainability?
 - a. Why do consumers have this role?
 - b. What would you expect from consumers when it comes to sustainability?
- 11. Could you describe how consumers have a part in sustainable production?
 - a. Why do they have a part in this?
- 12. What is the role of legislation when it comes to sustainability?
 - a. How does this play a role?
 - b. Why?
- 13. When making business decisions, how do personal feelings come into play?
 - a. Why would you involve personal feelings when making decisions?
 - b. How would it show?
- 14. According to you, what is a sustainable business? When is a company sustainable?
 - a. Why are these criteria important?
 - b. How could companies be more sustainable?
- 15. Did you have any courses related to sustainability? If yes, do you think they are useful?
- 16. More than ever, sustainability is in the forefront of our lives and in education, do you think this will have an impact on businesses in the future?
- 17. I will ask a few questions related to a framework, which describes 3 roles related to responsible businesses. Afterwards I will describe in short, the 3 roles and ask you with what role you identify yourself the most with (if any)
 - a. Purpose
 - i. Would you include sustainability principles in your company and how?
 - ii. Is it important to you your future company values these principles?
 - b. Legislation
 - i. How do you think laws can help getting towards a more sustainable future?

- ii. Are the current laws enough?
 - iii. Do you believe companies should wait for laws before acting sustainably?
 - iv. If yes/no, why?
 - c. Consumers
 - i. Could you tell me about you as a conscious consumer towards the environment? For example, do you take into account ethical considerations when purchasing goods?
 - d. Moral responsibility
 - i. In what way are companies responsible for the environment? Are there any other parties responsible besides companies? Which?
 - e. Trigger
 - i. Do you believe the trigger to act sustainably lies external to the company, for example by having laws, or do you believe that the businesspeople should have internal triggers, for example because of personal conviction? Why?
 - f. Personal feelings
 - i. A manager decided not to start a certain project. The project could have been very profitable but also meant disruption of a natural habitat of local animals and the manager happened to be an animal friend. What do you think of this?
 - ii. Do you agree? Why/why not?
 - g. Driver
 - i. As manager, would you approve a project with a positive impact on society, although the company's profit margin would be lower? Why?
18. I will explain the 3 roles related to a 'responsible businessperson':
- Adapting to ethical values:
 - Profit maximization, only follow consumers & legislation demand even if unethical
 - No moral responsibility unless required by external parties
 - Lead by financial indicators without interference of personal feelings or emotions
 - Adding ethical values:
 - Profit maximization but including sustainability principles
 - Social oriented but guided by consumers
 - Limited involvement of personal feelings
 - Creating ethical values:
 - Focus on changing society more than profit
 - Radical oriented, consumers and laws come short
 - Driven by internal motivation of businessperson, always including personal feelings
- a. Can you tell me with what role you identify yourself the most (if any)?
 - b. Why that role?

CLOSING

Concluding statement

Thank the respondent

Inform them of what will happen after the interview:

transcribing – coding – instrument improvement – survey – reporting

Provide contact information (email & phone)

Appendix 2 – Interview coding results

Nodes

Name	Files	References
Consumers	7	12
Government	8	23
Logic consumer	10	16
Logic self interest	6	9
Logic stakeholders	7	10
Moral responsibility	9	25
Personal feelings	8	14
Profit oriented	9	13
Radical Oriented	6	13
Social oriented	10	24
Sustainability	9	9
Trigger	9	24

Appendix 3 – List statements & descriptive statistics

	Role	N	Min	Max	Mean	Std. Dev.
Purpose of a company - Companies should focus on earnings. If they have ways of producing that aren't necessarily great for the environment but are way cheaper, they should do it.	1	139	1	5	1.88	.928
Purpose of a company - A business takes responsibility for sustainability by maximizing profit.	1	139	1	5	2.73	1.027
Purpose of a company - The purpose of a company should be to make profit through providing services and products demanded by the customer.	1	139	2	5	4.11	.688
Purpose of a company - A business should mainly think about making profit but while doing so, try to be sustainable.	2	139	1	5	3.83	1.090
Purpose of a company - As a company, making profit is important but including sustainability is as well.	2	139	2	5	4.56	.638
Purpose of a company - A business should, apart from making profit, also have a purpose to promote sustainability.	2	139	2	5	4.45	.683
Purpose of a company - Promoting sustainability should be a business' driving force.	3	139	1	5	4.23	.792
Purpose of a company - Not profit but improving the world should be a business' driver.	3	139	1	5	3.25	1.064
Purpose of a company - The purpose of a company is to improve society and should put profit on the background.	3	139	1	5	3.24	1.114
Moral responsibility - To cut costs, a company could move it environmentally hazardous production to countries with weak legislation.	1	139	1	4	1.68	.853
Moral responsibility - It's up to consumers and laws to demand for more sustainability, not the companies.	1	139	1	5	2.40	.968

Moral responsibility - The moral responsibility for being sustainable mostly lays with authorities and consumers, not with companies.	1	139	1	5	2.53	1.002
Moral responsibility - With left-over budget, a company could consider promoting sustainability however it should not be required.	2	139	1	5	3.78	.948
Moral responsibility - A company should not but can take environmentally friendly initiatives.	2	139	1	5	3.60	1.101
Moral responsibility - Promoting sustainability initiatives is sufficient as a company's contribution towards a sustainable future.	2	139	1	5	3.39	1.080
Moral responsibility - Businesses have the most influence on the environment and they, more than others, should lead the way to a more sustainable feature.	3	139	2	5	4.15	.779
Moral responsibility - A business should think about sustainability and cannot assume laws and consumers will lead the way.	3	139	1	5	4.04	.892
Moral responsibility - It's the moral responsibility of a company to not pollute or use plastics, even if there are no laws in place forbidding it.	3	139	2	5	4.28	.762
Role of legislation - Environmental challenges should be solved by legal requirements, which in turn will stimulate companies to be more sustainable.	1	139	2	5	3.96	.669
Role of legislation - A business should only take responsibility for the environment if there are laws protecting the environment.	1	139	1	5	1.76	.977
Role of legislation - Companies should care for the environment but the possibility to take the first initiative for this caring lie with authorities.	1	139	1	5	2.83	1.060
Role of legislation - A company should pro-actively try to improve society and not wait for legislation to catch up.	2, 3	139	2	5	4.38	.696
Role of legislation - A manager should not wait for legislation to engage in sustainable projects.	2, 3	139	2	5	4.36	.761

Role of legislation - Although it's allowed by the law, as CEO I would stop selling polluting products.	2, 3	139	1	5	3.86	1.051
Role of consumers - A company should answer customer's demand, even when customers ask for unsustainable products.	1, 2	139	1	5	2.75	1.029
Role of consumers - A business should only take responsibility for the environment if consumers demand environmentally friendly products.	1, 2	139	1	5	1.79	.855
Role of consumers - Companies should care for the environment but the possibility to take the first initiative for this caring lies with consumers.	1, 2	139	1	5	2.34	.989
Role of consumers - A company should pro-actively try to improve society and not wait for consumers to demand it.	3	139	2	5	4.33	.736
Role of consumers - A company should stop producing non-sustainable products, even when there is a consumer's demand for it.	3	139	1	5	3.19	1.107
Role of consumers - Managers should not wait for conscious consumers to act sustainable.	3	139	2	5	4.31	.741
Triggers - For companies to act sustainable, external incentives from governments and consumers are needed.	1, 2	139	1	5	3.63	1.057
Triggers - If consumers don't ask for sustainable products, it does not make sense for a company to offer these.	1, 2	139	1	5	2.17	1.173
Triggers - Companies should care for the environment but the possibility to take the first initiative for this caring is external to the business.	1, 2	139	1	5	2.669	1.0172
Triggers - The main driver to act sustainable should come from within the company, not because consumers have started asking for it.	3	139	1	5	3.92	.885
Triggers - Companies should care for the environment and the possibility to take the first initiative for this caring is internal to the business.	3	139	1	5	3.91	.842

Triggers - A company should give to charity because of internal convictions, even when it would remain unknown to the public.	3	139	1	5	3.47	1.052
Personal feelings - Working for a company with a negative impact on society, should never cause personal conflict.	1	139	1	5	2.58	1.049
Personal feelings - When making business decisions, a manager should be rational and put its personal feelings aside.	1	139	1	5	3.05	1.157
Personal feelings - Deciding to move production to a low-cost country is a rational decision and should not be affected by personal convictions.	1	139	1	5	2.38	1.017
Personal feelings - When making business decisions, a manager should sometimes allow personal feelings to take part.	2	139	1	5	3.46	1.023
Personal feelings - A manager could include personal/ethical consideration when deciding to move production to a low-cost country.	2	139	1	5	3.88	.897
Personal feelings - From time to time, involvement of personal feelings, should be taking into account when making business decisions.	2	139	1	5	3.60	.998
Personal feelings - Besides being rational, a manager needs to include moral beliefs in order to make a right decision.	3	139	1	5	4.23	.783
Personal feelings - When making business decisions, a manager should always allow personal feelings to come into play.	3	139	1	5	2.83	1.007
Personal feelings - A manager should always include personal/ethical consideration when deciding to move production to a low-cost country.	3	139	1	5	3.40	1.075
Logic & business decisions - A company should use financial indicators to assess whether a business ought to work for sustainability.	1	139	1	5	3.04	.977
Logic & business decisions - If engaging in a sustainable project decreases profit margins, a company should refrain from doing so.	1	139	1	5	2.65	.931

Logic & business decisions - Only if working for sustainability results in profit for the company, a manager should consider it.	1	139	1	5	2.47	1.188
Logic & business decisions - Consumers dictate whether a business should offer sustainable products or not.	2	139	1	5	2.52	1.169
Logic & business decisions - A company should act sustainable because it's looks good in the eye of the consumer.	2	139	1	5	2.96	1.212
Logic & business decisions - A company should use the consumers' guidance to assess whether a business ought to work for sustainability.	2	139	1	5	3.10	.988
Logic & business decisions - A company should not rely on financial indicators and consumers to decide to work for sustainability.	3	139	1	5	3.35	1.096
Logic & business decisions - A business should take into account all stakeholders and try to improve the society as a whole.	3	139	1	5	4.26	.685
Logic & business decisions - A company should work for sustainability by being sensitive to the diverging interests of others.	3	139	2	5	3.52	.774
Valid N (listwise)		139				

Appendix 4 – List responses per statement (%)

Number	Statement	Strongly & Somewhat disagree	Neither	Strongly & Somewhat agree	Role
C1_3	Purpose - Companies should focus on earnings. If they have ways of producing that aren't necessarily great for the environment, it's fine.	82%	9%	9%	1
C1_4	Purpose - A business takes responsibility for sustainability by maximizing profit.	41%	33%	26%	1
C1_6	Purpose - The purpose of a company should be to make profit through providing services and products demanded by the customer.	3%	10%	87%	1
C1_5	Purpose - A business should mainly think about making profit but while doing so, try to be sustainable.	17%	11%	72%	2
C1_7	Purpose - As a company, making profit is important but including sustainability is as well.	1%	4%	95%	2
C1_8	Purpose - A business should, apart from making profit, also have a purpose to promote sustainability.	2%	4%	94%	2
C1_1	Purpose - The purpose of a company is to improve society and should put profit on the background.	32%	19%	50%	3
C1_2	Purpose - Promoting sustainability should be a business' driving force.	5%	5%	90%	3
C1_9	Purpose - Not profit but improving the world should be a business' driver.	26%	31%	43%	3
C2_2	Moral- To cut costs, a company could move it environmentally hazardous production to countries with weak legislation.	85%	10%	5%	1
C2_3	Moral- It's up to consumers and laws to demand for more sustainability, not the companies.	60%	27%	13%	1
C2_6	Moral- The moral responsibility for being sustainable mostly lays with authorities and consumers, not with companies.	59%	21%	20%	1
C2_9	Moral- Promoting sustainability initiatives is sufficient as a company's contribution towards a sustainable future.	24%	21%	55%	2
C2_5	Moral- A company should not but can take environmentally friendly initiatives.	21%	19%	60%	2
C2_1	Moral- With left-over budget, a company could consider promoting sustainability however it should not be required.	12%	17%	71%	2
C2_7	Moral- Businesses have the most influence on the environment and they, more than others, should lead the way to a more sustainable world.	4%	11%	85%	3
C2_4	Moral- It's the moral responsibility of a company to not pollute or use plastics, even if there are no laws in place forbidding it.	4%	8%	88%	3
C2_8	Moral- A business should think about sustainability and cannot assume laws and consumers will lead the way.	6%	18%	76%	3
C3_1	Legislation- Environmental challenges should be solved by legal requirements, which in turn will stimulate companies to be more sustainable.	4%	14%	83%	1
C3_5	Legislation- A business should only take responsibility for the environment if there are laws protecting the environment.	83%	8%	9%	1
C3_6	Legislation- Companies should care for the environment but the possibility to take the first initiative for this caring lies with the government.	45%	29%	27%	1
C3_2	Legislation- A company should pro-actively try to improve society and not wait for legislation to catch up.	2%	6%	92%	2,3
C3_3	Legislation- A manager should not wait for legislation to engage in sustainable projects.	4%	6%	90%	2,3
C3_4	Legislation- Although it's allowed by the law, as CEO I would stop selling polluting products.	13%	17%	70%	2,3
C4_2	Consumers- A company should answer customer's demand, even when customers ask for unsustainable products.	44%	29%	27%	1,2
C4_5	Consumers- A business should only take responsibility for the environment if consumers demand environmentally friendly products.	88%	6%	5%	1,2
C4_6	Consumers- Companies should care for the environment but the possibility to take the first initiative for this caring lies with the government.	64%	22%	14%	1,2
C4_3	Consumers- A company should pro-actively try to improve society and not wait for consumers to demand it.	4%	5%	91%	3
C4_4	Consumers- Managers should not wait for conscious consumers to act sustainable.	3%	8%	89%	3
C4_1	Consumers- A company should stop producing non-sustainable products, even when there is a consumer's demand for it.	31%	24%	45%	3
C5_1	Trigger - For companies to act sustainable, external incentives from governments and consumers are needed.	17%	16%	68%	1,2
C5_3	Trigger - If consumers don't ask for sustainable products, it does not make sense for a company to offer these.	73%	9%	18%	1,2
C5_4	Trigger - Companies should care for the environment but the possibility to take the first initiative for this caring is external.	47%	34%	19%	1,2
C5_2	Trigger - Companies should care for the environment and the possibility to take the first initiative for this caring is internal.	7%	17%	76%	3
C5_5	Trigger - The main driver to act sustainable should come from within the company, not because consumers have started acting sustainably.	6%	19%	74%	3
C5_6	Trigger - A company should give to charity because of internal convictions, even when it would remain unknown to the public.	17%	28%	55%	3
C6_2	Personal feelings - Working for a company with a negative impact on society, should never cause personal conflict.	52%	29%	19%	1
C6_9	Personal feelings - When making business decisions, a manager should be rational and put its personal feelings aside.	40%	21%	40%	1
C6_4	Personal feelings - Deciding to move production to a low-cost country is a rational decision and should not be affected by personal feelings.	60%	26%	14%	1
C6_5	Personal feelings - When making business decisions, a manager should sometimes allow personal feelings to take part.	19%	20%	61%	2
C6_6	Personal feelings - A manager could include personal/ethical consideration when deciding to move production to a low-cost country.	9%	14%	77%	2
C6_7	Personal feelings - From time to time, involvement of personal feelings, should be taking into account when making business decisions.	14%	19%	67%	2
C6_3	Personal feelings - When making business decisions, a manager should always allow personal feelings to come into play.	38%	33%	29%	3
C6_1	Personal feelings - Besides being rational, a manager needs to include moral beliefs in order to make a right decision.	4%	9%	88%	3
C6_8	Personal feelings - A manager should always include personal/ethical consideration when deciding to move production to a low-cost country.	22%	25%	53%	3
C7_9	Logic- A company should use financial indicators to assess whether a business ought to work for sustainability.	33%	29%	38%	1
C7_4	Logic- If engaging in a sustainable project decreases profit margins, a company should refrain from doing so.	47%	34%	19%	1
C7_5	Logic- Only if working for sustainability results in profit for the company, a manager should consider it.	63%	14%	23%	1
C7_2	Logic- A company should act sustainable because it's looks good in the eye of the consumer.	39%	21%	40%	2
C7_3	Logic- A company should use the consumers' guidance to assess whether a business ought to work for sustainability.	29%	35%	37%	2
C7_8	Logic- Consumers dictate whether a business should offer sustainable products or not.	58%	14%	27%	2
C7_6	Logic- A company should not rely on financial indicators and consumers to decide to work for sustainability.	29%	20%	51%	3
C7_1	Logic- A business should take into account all stakeholders and try to improve the society as a whole.	1%	7%	91%	3
C7_7	Logic- A company should work for sustainability by being sensitive to the diverging interests of others.	9%	40%	52%	3

Appendix 5 – Rotated component matrix

Rotated Component Matrix ^a									
Statement	Component								
	1. Businesses should play a pro-active role towards sustainability	2. There should be scope for personal feelings/convictions when making business decisions	3. Consumers play an important role and hold the key towards a more sustainable future	4. Companies should exist to improve society and not to make profit	5. Financial indicators dictate to work for sustainability or not	6. External incentives are needed to move towards a more sustainable future	7. Companies should not but could include sustainability principles		
Role of consumers - Managers should not wait for conscious consumers to act sustainable.	0.731	0.184	-0.203	0.023	-0.078	-0.049			-0.088
Role of legislation - A company should pro-actively try to improve society and not wait for legislation to catch up.	0.714	0.054	-0.157	0.229	-0.143	-0.042			-0.106
Triggers - Companies should care for the environment and the possibility to take the first initiative for this caring is internal to the business.	0.655	0.078	-0.104	0.003	0.056	0.084			0.058
Role of legislation - A manager should not wait for legislation to engage in sustainable projects.	0.641	0.166	-0.101	0.146	-0.175	-0.117			-0.074
Role of consumers - A company should pro-actively try to improve society and not wait for consumers to demand it.	0.634	0.189	-0.212	0.110	-0.194	-0.018			-0.027
Triggers - The main driver to act sustainable should come from within the company, not because consumers have started asking for it.	0.556	0.036	-0.113	0.343	0.066	0.076			0.110
Moral responsibility - Businesses have the most influence on the environment and they, more than others, should lead the way to a more sustainable feature.	0.544	0.002	-0.069	0.062	-0.389	-0.064			0.053
Logic & business decisions - A company should not rely on financial indicators and consumers to decide to work for sustainability.	0.511	0.143	-0.114	0.236	-0.131	-0.194			-0.093
Triggers - Companies should care for the environment but the possibility to take the first initiative for this caring is external to the business.	-0.466	0.029	0.402	-0.099	0.189	0.160			0.048
Moral responsibility - It's the moral responsibility of a company to not pollute or use plastics, even if there are no laws in place forbidding it.	0.459	0.017	-0.075	0.218	-0.172	0.111			-0.157
Personal feelings - When making business decisions, a manager should sometimes allow personal feelings to take part.	0.041	0.830	0.007	-0.062	0.050	0.036			-0.050
Personal feelings - From time to time, involvement of personal feelings, should be taking into account when making business decisions.	0.042	0.742	-0.006	0.197	-0.115	0.061			0.239
Personal feelings - When making business decisions, a manager should always allow personal feelings to come into play.	-0.001	0.695	-0.105	-0.072	0.219	0.042			-0.252
Personal feelings - When making business decisions, a manager should be rational and put its personal feelings aside.	-0.035	-0.669	0.246	-0.180	0.100	0.230			0.083
Personal feelings - A manager could include personal/ethical consideration when deciding to move production to a low-cost country.	0.293	0.598	-0.026	0.032	-0.208	0.023			0.230
Personal feelings - A manager should always include personal/ethical consideration when deciding to move production to a low-cost country.	0.204	0.591	-0.238	0.080	-0.233	0.070			-0.067
Personal feelings - Deciding to move production to a low-cost country is a rational decision and should not be affected by personal convictions.	0.025	-0.580	0.345	-0.235	0.172	0.033			-0.048
Logic & business decisions - A company should work for sustainability by being sensitive to the diverging interests of others.	0.291	0.455	0.283	-0.005	0.067	0.001			-0.130
Personal feelings - Besides being rational, a manager needs to include moral beliefs in order to make a right decision.	0.217	0.444	-0.021	0.212	-0.181	0.148			0.227

Role of consumers - A business should only take responsibility for the environment if consumers demand environmentally friendly products.	-0.302	-0.236	0.642	0.111	0.290	0.018	0.008
Logic & business decisions - Consumers dictate whether a business should offer sustainable products or not.	-0.261	0.023	0.627	-0.060	0.037	0.051	-0.086
Role of consumers - Companies should care for the environment but the possibility to take the first initiative for this caring lies with consumers.	-0.422	-0.064	0.502	0.112	0.141	0.222	0.007
Triggers - If consumers don't ask for sustainable products, it does not make sense for a company to offer these.	-0.392	-0.050	0.502	-0.097	0.168	-0.123	-0.205
Logic & business decisions - A company should act sustainable because it's looks good in the eye of the consumer.	0.194	-0.119	0.472	-0.280	-0.010	0.031	0.161
Role of legislation - A business should only take responsibility for the environment if there are laws protecting the environment.	-0.206	-0.233	0.454	0.015	0.332	0.173	0.053
Logic & business decisions - A company should use the consumers' guidance to assess whether a business ought to work for sustainability.	-0.178	-0.135	0.439	-0.102	0.030	-0.029	0.306
Role of legislation - Companies should care for the environment but the possibility to take the first initiative for this caring lies with authorities.	-0.377	-0.012	0.410	-0.104	-0.052	0.348	-0.075
Logic & business decisions - A company should use financial indicators to assess whether a business ought to work for sustainability.	-0.275	-0.044	0.399	-0.256	0.227	0.208	0.235
Moral responsibility - To cut costs, a company could move it environmentally hazardous production to countries with weak legislation.	-0.177	-0.126	0.391	-0.099	0.365	-0.024	0.092
Purpose of a company - The purpose of a company is to improve society and should put profit on the background.	0.164	0.100	-0.012	0.719	-0.095	-0.191	0.015
Purpose of a company - Not profit but improving the world should be a business' driver.	0.100	0.193	0.039	0.694	-0.082	-0.169	-0.031
Role of legislation - Although it's allowed by the law, as CEO I would stop selling polluting products.	0.203	0.242	-0.301	0.569	-0.039	0.096	-0.110
Role of consumers - A company should stop producing non-sustainable products, even when there is a consumer's demand for it.	0.301	0.134	-0.300	0.518	0.077	0.315	-0.261
Purpose of a company - Promoting sustainability should be a business' driving force.	0.270	-0.091	-0.010	0.481	-0.203	0.037	-0.127
Role of consumers - A company should answer customer's demand, even when customers ask for unsustainable products.	-0.284	-0.032	0.377	-0.405	0.058	-0.164	0.251
Purpose of a company - Companies should focus on earnings. If they have ways of producing that aren't necessarily great for the environment but are way cheaper, they should do it.	-0.272	-0.231	0.309	-0.372	0.327	-0.040	0.200
Logic & business decisions - Only if working for sustainability results in profit for the company, a manager should consider it.	-0.164	-0.134	0.202	-0.087	0.595	0.086	0.083

Purpose of a company - A business should, apart from making profit, also have a purpose to promote sustainability.	0.137	-0.056	-0.064	0.221	-0.581	0.282	0.047
Moral responsibility - A business should think about sustainability and cannot assume laws and consumers will lead the way.	0.460	0.008	-0.086	0.266	-0.538	-0.163	0.154
Logic & business decisions - If engaging in a sustainable project decreases profit margins, a company should refrain from doing so.	-0.214	-0.166	0.178	-0.241	0.497	0.105	0.071
Purpose of a company - A business takes responsibility for sustainability by maximizing profit.	-0.001	-0.142	0.235	-0.004	0.408	0.330	0.036
Moral responsibility - Promoting sustainability initiatives is sufficient as a company's contribution towards a sustainable future.	0.060	-0.037	0.003	0.312	0.394	-0.108	0.346
Triggers - For companies to act sustainable, external incentives from governments and consumers are needed.	-0.102	-0.021	0.037	0.064	0.059	0.614	0.325
Role of legislation - Environmental challenges should be solved by legal requirements, which in turn will stimulate companies to be more sustainable.	0.064	0.143	-0.075	-0.129	-0.039	0.606	-0.060
Moral responsibility - It's up to consumers and laws to demand for more sustainability, not the companies.	-0.256	0.067	0.343	-0.138	0.104	0.494	-0.062
Purpose of a company - As a company, making profit is important but including sustainability is as well.	0.083	-0.028	0.054	-0.157	-0.449	0.452	0.062
Moral responsibility - The moral responsibility for being sustainable mostly lays with authorities and consumers, not with companies.	-0.365	-0.107	0.285	0.099	0.002	0.385	0.150
Moral responsibility - A company should not but can take environmentally friendly initiatives.	-0.071	-0.033	-0.048	-0.130	0.206	0.178	0.663
Moral responsibility - With left-over budget, a company could consider promoting sustainability however it should not be required.	-0.016	0.113	0.028	-0.037	-0.153	-0.095	0.633
Purpose of a company - A business should mainly think about making profit but while doing so, try to be sustainable.	-0.123	0.093	0.046	-0.447	0.112	0.205	0.478
Purpose of a company - The purpose of a company should be to make profit through providing services and products demanded by the customer.	0.020	-0.133	0.213	-0.318	0.074	0.204	0.454
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 13 iterations.							

Appendix 6 – Cluster analysis ANOVA

ANOVA						
	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Businesses should play a pro-active role towards sustainability	6.668	3	0.874	135	7.629	0.000
There should be scope for personal feelings when making business decisions	5.616	3	0.897	135	6.258	0.001
Consumers play an important role and hold the key towards a more sustainable future	21.053	3	0.554	135	37.977	0.000
Companies should exist to improve society and not to make profit	8.836	3	0.826	135	10.700	0.000
Financial indicators dictate to work for sustainability or not	11.803	3	0.760	135	15.532	0.000
External incentives are needed to move towards a more sustainable future	16.913	3	0.646	135	26.167	0.000
Companies should not but could include sustainability principles	6.307	3	0.882	135	7.150	0.000