



NAVIGATING UM'S SUSTAINABLE ACTORS NETWORK

A SOCIAL NETWORK ANALYSIS ON THE ROLE OF THE
UNIVERSITY IN ACHIEVING THE SDGs.

By Joel Beuerle, i6137219 and Lucia Moreira, i6126761

MaRBLe Undergraduate Research, UGR3001

Supervisor: Serdar Turkeli

Word Count: 5009

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Abstract

There are several models that propose how a university can work on the Sustainable Development Goals (SDGs). We looked at these models and, using Social Network Analysis, modelled the network of sustainability actors in the city of Maastricht. By calculating selected network metrics, we helped shine light on who the most influential actors are and what the role of the university is in reaching the SDGs. At the end we present a list of recommendations to the university and civil society actors to work towards the SDGs more effectively and to make use of the network as a collaborating platform for actors in the city of Maastricht.

Keywords:

Sustainable Development Goals; Maastricht University; Role of University; Social Network Analysis

Definitions:

UN = United Nations

SDG = Sustainable Development Goal

SNA = Social Network Analysis

UM = Maastricht University

I. Introduction

University commitment to the Sustainable Development Goals (SDGs) has become increasingly important in the past years (USDN, 2018). This is partly because the SDGs are a tool that accurately present society's most pressing challenges, but also because the SDGs provide its user with targets and indicators to effectively include the goals in policy and strategy documents. This year, Maastricht University has recognized the importance of the SDGs and decided to work with them to help achieve a select group of goals (Maastricht University, 2018). The university has chosen four goals to work towards, however, its role in achieving these is not clearly defined (Fischer & Wetering, 2018).

Hence, this paper will answer the following research questions: (1) What is the role of Maastricht University in achieving the SDGs? (2) How can social network analysis (SNA) support collaboration across sustainability actors from Maastricht University? The respective hypotheses for these two questions are as follows: (1) Following the idea of a civic university and a mission driven university, UM should connect their excellence in education and research back into society. The role of the university is to fuse these two entities of academia and society to effectively solve societal issues, such as the SDGs. (2) SNA will be an effective tool to pinpoint the degree of influence of different stakeholders, the flow of information, and potential communication gaps that need to be solved in order to collectively work towards the achievement of the SDGs.

This paper will make use of SNA to provide a comprehensive view of the role of UM and all sustainability actors of Maastricht towards the achievement of the SDGs. Accordingly, this research intends to contribute to the body of knowledge of sustainability and the role of tertiary education in this field, as exemplified by UM. The research is relevant to UM, as the university intends to improve their place in the ranking for sustainable universities, requiring organizational change and SDG measurement and reporting (Fischer & Wetering, 2018).

Moreover, the research is also relevant on the individual level, as the network can provide easy access to information and facilitate communication, helping decrease the knowledge deficit, and establishing a platform for knowledge sharing. Stakeholders can, thus, place themselves in the map and see their current and potential connections.

The following research paper will first provide a literature review on the SDGs, the role of tertiary education, and SNA. Secondly, it will provide a detailed explanation of the methodology to then present the results and a discussion section including limitations of the study and recommendations for future research. Lastly, the paper will provide a brief conclusion with the most relevant findings and an answer to the research questions.

II. Literature Review

The SDGs are a set of 17 goals set forth by the United Nations (2015), which attempt to solve many contemporary societal challenges. There are elaborate descriptions of each goal, as well as targets and indicators that provide its users with a clear guideline to foster peace and prosperity among people and nature. The SDGs are, in some regards, an improvement upon the Millennium Development Goals (MDGs), which were the previous set of goals that were heavily criticized for their top down approach (Huchzemeyer, 2011; United Nations, 2015). Many of these problems have been solved with the SDGs, as the UN included relevant stakeholders and expertise from civil society, the scientific community as well as the multiple UN system, in the process of creation (United Nations, 2013).

Nowadays, the SDGs play an important role in many sectors, with their implementation ranging from small business to higher education institutes such as Maastricht University (Fischer & Wetering, 2018; Hoek, 2018). There are many other universities, within The Netherlands and in other countries, that have implemented the SDGs in their planning, operations, and even made it a core part of their syllabus (University of Groningen, 2018; USDN, 2018). The implementation of the SDGs within universities shows that there is a

widespread realisation that the academy has a responsibility in working towards the goals, but it still seems to be somewhat unclear, what the role of the university is, in working towards the SDGs? There are two models proposed that help answer this question.

Goddard, Hazelkorn, Kempton, and Vallance (2016) propose a model for universities that focuses on solving societal issues by integrating society into the academy. According to the authors, the two entities should not be separated by boundaries, as they would be in an ‘un-civic’ university, that separates the academy from society. Instead there should be a soft boundary between society and the academy, which provides an enabling environment for actors in society, as can be seen in Figure 1. Research and Education, the core pillars of any university, are thus combined with societal engagement for *transformative, responsive, demand-led action* (Goddard et al., 2016, p. 6). However, Goddard et al. (2016) also stress that the civic university will only be successful if it constantly adapts its institutional structures to societal challenges, using indicators for contemporary societal challenges, such as the SDGs (Goddard, 2018).

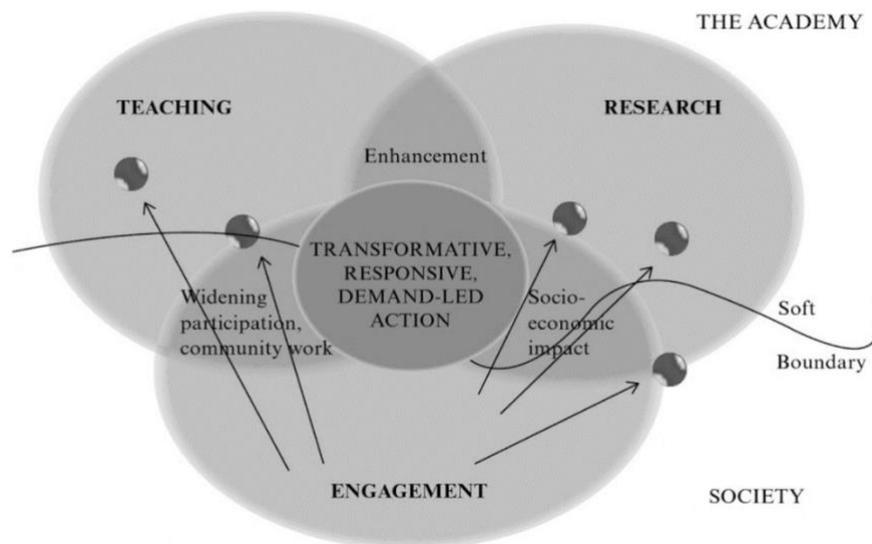


Figure 1.2 The ‘civic’ university

Figure 1: Civic university model as seen in Goddard et al. (2016).

Bregenholt (2018) proposes a similar model with his notion of the *mission-driven university*. He claims that universities need to focus on big global challenges, again mentioning

the SDGs as a reference point to those. In the model, the mission-driven university should ensure industrial translation capabilities, by working together with industry partners and creating an environment where research experts from the industry can collaborate with world-class university researchers. The mission-driven university would combine the capabilities of university, such as applied research or the ability to wait, with certain industry core-competency's such as manufacturing and marketing solutions.

These two models show how universities should act to solve societal challenges like the SDGs, through the use of interdisciplinary integration. As Maastricht University has created a plan to try to achieve four SDGs, we will briefly review this plan. In the Sustainability Vision published by the university we can see that UM wants to stimulate the implementation and realization of the SDGs in their Education and Research (Fischer & Wetering, 2018). Fischer and Wetering (2018), state that the university will focus on the following SDGs, seemingly listed by priority: *Quality Education* (SDG 4); *Good Health and Wellbeing* (SDG 3); *Peace, Justice and Strong Institutions* (SDG 16); as well as *Climate Action* (SDG 13). Besides these SDGs, the university also mentions the World University Network goals, which seem to have served as an inspiration to use the previously mentioned four SDGs, as the content of the goals are essentially the same (Fischer & Wetering, 2018).

Social Network Analysis (SNA) is a social science technique used to explain social phenomena and their structural and relational features concerning the actors involved in the network (Wonodi, et al., 2012). There are several key words for SNA, such as motivations, distribution and degree of influence, network boundaries, among others. These concepts are all important to understand the effect that they ultimately have on policy process and decision-making (Wonodi, et al., 2012). SNA is also useful in identifying information exchange and who is included or excluded in the process (Wonodi, et al., 2012).

In more general terms, a network is represented as a set of *nodes* connected by edges (Kunz, Kastle & Moran, 2017). Nodes typically represent individuals and the edges correspond to relationships (trust, knowledge, collaboration) between nodes (Kunz, Kastle & Moran, 2017). The advantage of social network analysis is that visualization facilitates improved understanding of how communication takes place. The network software Kumu will also facilitate this visualization to make it available to all relevant actors and access all necessary information to facilitate contact between each other.

The method of SNA entails three main steps: defining network boundaries, reducing interviewer bias, and sampling (Wonodi, et al., 2012). Firstly, defining network boundaries is useful to pinpoint all influential or relevant actors for the research taking place. Once a boundary or boundaries have been established, the researcher can narrow down its view and start working on the knowledge sources and sampling. Secondly, reducing interviewer bias is important to obtain objective and useful results. Knowledge sources for a network can consist of email chains, meeting minutes, self-reported ties via surveys, face to face interviews, among many others (Kunz, Kastle & Moran, 2017). Lastly, the most commonly used sampling for networks is snowball sampling, as used by Wonodi, et al. (2012). Snowball sampling consists of having research participants recruit more research participants themselves, already creating a sort of growing network between each other. Having explained the basics of SNA, this paper will elaborate on the three steps and their application in this particular research in the methodology section.

III. Methodological Approach

a. Data Collection

As explained above, the first step in building a social network is to define the network boundaries. In this case, there were two established boundaries: Maastricht University and the

city of Maastricht. The boundary of Maastricht University spans into organizations or sustainable actors that have a direct relationship with the university, meaning they belong to a certain faculty or are run by students. The boundary of the city spans into actors that belong more to the local scene of the city as a whole, such as the municipality. Being a dynamic network, it is noticeably difficult to completely separate these two groups. The sampling of the study will focus on reaching out to the first group. It is expected, however, that some of the outer boundary actors will be placed on the map, since they will be mentioned as connections by the inner boundary actors.

The second step is reducing interviewer bias. For this research, the chosen knowledge source was self-reported ties via surveys for the purpose of conciseness and objectivity. A survey aligns with the style of questions that the research needs, as the questions only require very brief and specific answers. Interviewer bias was reduced by sending out a neutral and brief survey to the actors. The necessary information to build the network can be narrowed down into contact names, strength of relationship, knowledge of the SDGs, active involvement with the SDGs, and rating of university involvement (see Appendix I for the complete survey). Thus, by asking the same targeted questions to each actor, interviewer bias was reduced.

Once the boundaries and the form of data collection have been established, the process requires a selection of the sampling method so as to decide who to send out the survey to and who is expected to be reached by it.

b. Sampling

The third step is the sampling, which in this case, following Wonodi et al. (2012) is snowball sampling. Snowball sampling works in rounds, by first reaching out to a limited number of people, and asking these people for their own connections. In this way, by reaching out to one sustainable actor and asking said actor to give out, for instance, five connections, the network

already grows by six actors in total, all of which will be contacted and asked the same question, allowing for the continuous growth of the network.

c. Data Analysis

Coding and data analysis, in this paper, had the aim of recognizing patterns between actors in the network, especially to see potential connections to the university which should facilitate work between these actors. This recognition of patterns was achieved through the use of thematic analysis of long answer questions. A coding frame (see Appendix 2), using the description of the actor, was created to identify the type of actors in the network.

For the quantitative data, the social network analysis provided data on four network metrics: degree, weighted degree, betweenness, and influence on the whole network.

For clarification, *degree* is a metric that is derived from counting the connections a node has to other nodes, a very basic social network analysis tool. To add some complexity to the analysis the calculation for the degree was weighted to increase its value when a node had more connections with a higher strength of collaboration. This added complexity should help distinguish highly connected actors from highly connected workers that have a bigger impact on the network. Another metric, *betweenness*, was calculated to identify any mediators or *information bridges* that may be present in the network. This is interesting to look at as it may help identify bottlenecks, which sometimes slow down the flow of information. Lastly, to calculate the influence on the network, *eigenvector centrality* was used, a measure that analyses a nodes influence on the whole network, by seeing how well connected a node is to other highly connected nodes.

IV. Results

a. Description of Study Sample

As mentioned in the methodology, a snowball sampling was carried out for the purpose of this research. Fourteen responses were obtained from a variety of stakeholders, ranging from university organizations to other local actors of the city. Each of the respondents provided five more actors, resulting in a network of 43 actors and 83 connections.

b. Network Composition

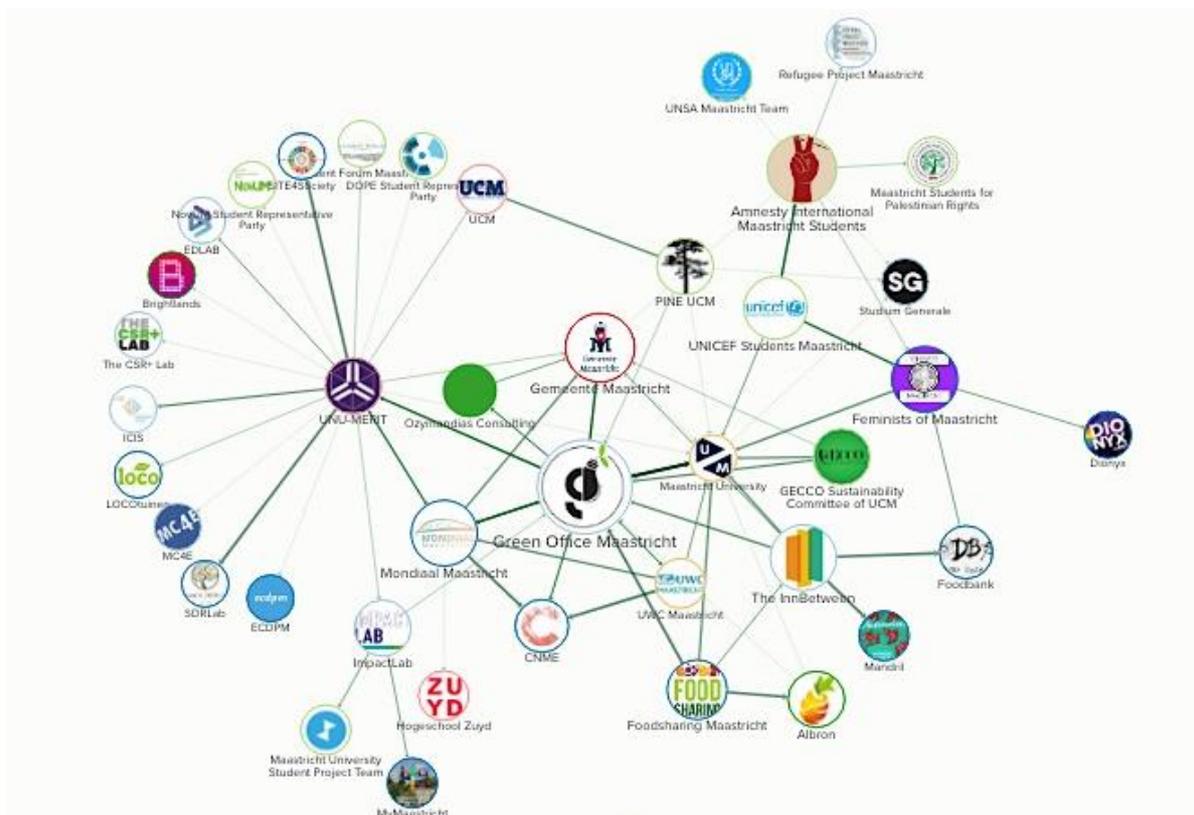


Figure 2 Shows the full view of the stakeholder network.

Figure 2 shows the final version of the network with all sustainability actors collected as of the end of this research. The thickness of the connections represents strength of collaboration, which was rated from zero to five in the survey, zero being non-existent and five being very strong. Of these actors, ten are UM Organizations, fourteen are organizations across the city,

ten are student associations, four are companies, four are universities, one is a governmental organization, and one is an educational institute. Figure 3 provides a more comprehensive view of the distribution of the different types of stakeholders. The node size is also representative of their degree of influence, a measurement that will be presented later on in more detail.

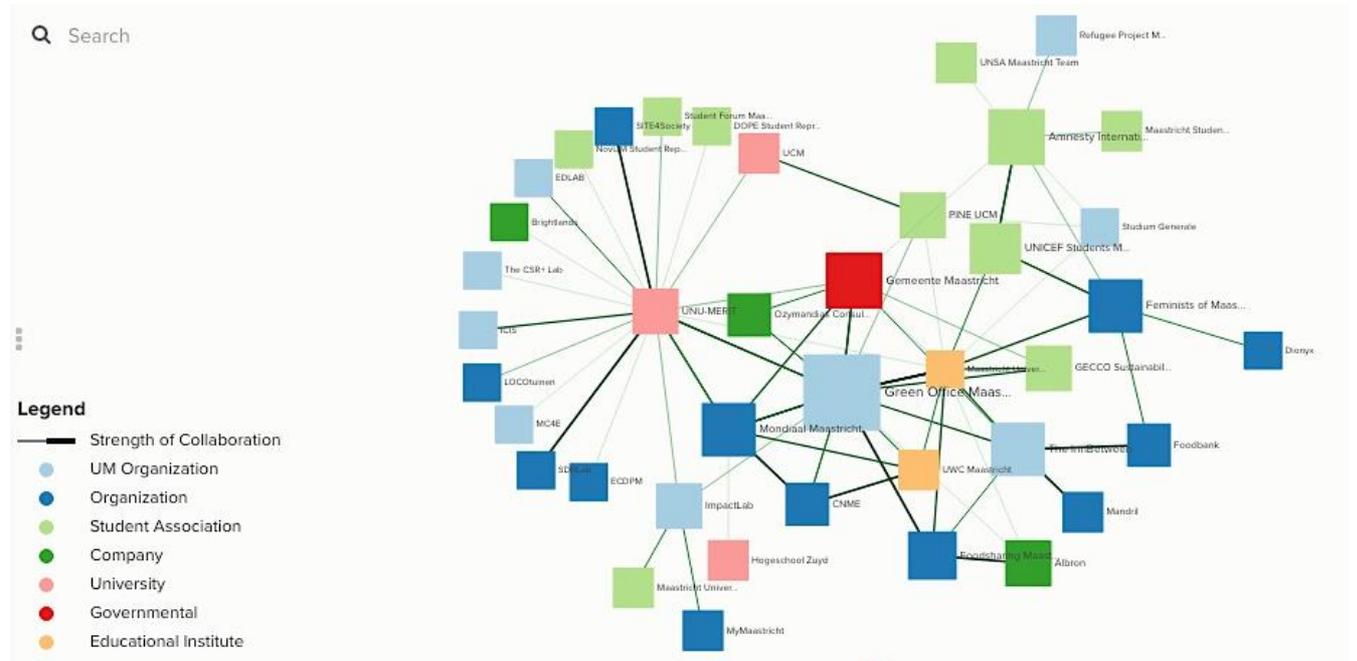


Figure 3 Provides a visual representation of the different type of stakeholders in the network.

Many of these organizations have various ‘tags’ or interests that align, such as: sustainability, research, innovation, student involvement, charity, recreation, awareness, among many others. These tags were created based on the organization’s descriptions of their missions (see coding frame on appendix III). Tags are useful in the network as a form of clustering actors according to their fields of interests, and as support for connections between actors. As a result, another view of the network was created, especially designed for students, to browse the map according to their own personal interests. The students can choose multiple interests from a list of 36 tags, facilitating their access to specific organizations that work on something they would like to get involved with.

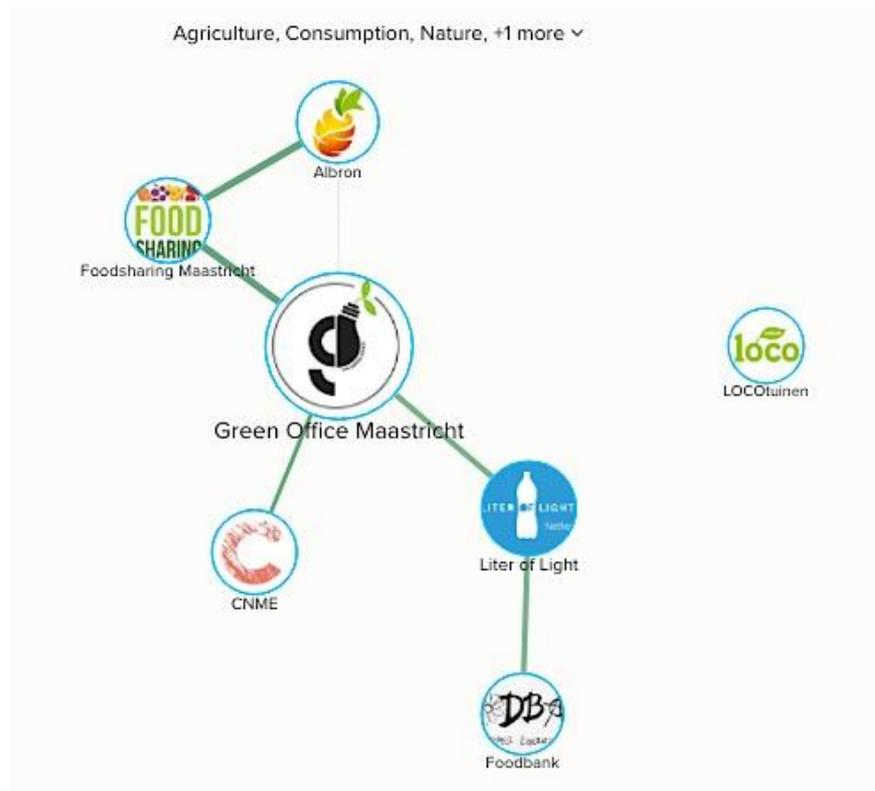


Figure 4 Shows an example of a network with the following tags: Agriculture, consumption, nature, and waste, as can be seen from the drop down menu at the top of the figure.

A third view of the stakeholder map was created where actors can browse the network according to SDGs. In this way, organizations can directly search for other organizations that are working on the same SDGs than them, facilitating knowledge on the other organizations along with their contact details to encourage collaboration across actors. Figure 5 shows an example of a network with SDG 17: Partnerships for the Goals.

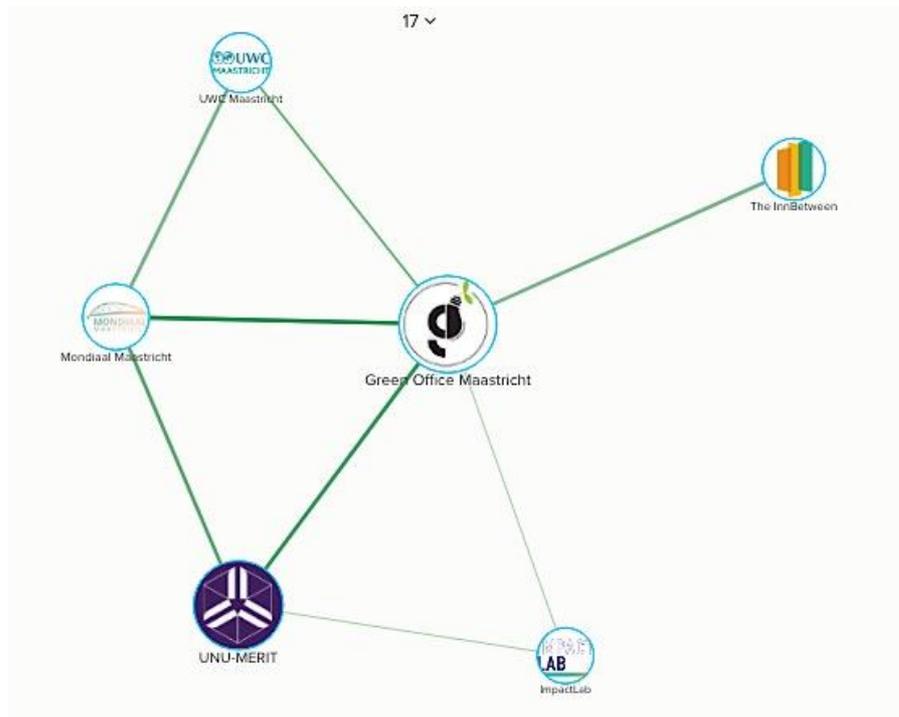


Figure 5 Is an example of the SDG view of the map using SDG 17

c. SNA Metrics

Besides the visualization of the network, statistical analysis also helps identify key stakeholders and their importance. In the following section four calculations will be used to identify a nodes normal degree centrality as well as degree centrality weighted by *Strength of Collaboration*; betweenness centrality of a node and a nodes influence on the whole network, as described in the methodology.

Calculations

Stakeholder	Degree	Weighted Degree	Betweenness	Eigenvector	UM involvement
Green Office	24	84	0.300	0.142	5
UNU-MERIT	20	49	0.518	0.076	3
UM	14	42	0.179	0.089	5
UWC	6	19	0.001	0.067	2
UNICEF	6	20	0.025	0.018	3
Liter of Light	7	16	0.108	0.032	1
FoM	6	19	0.016	0.016	4

Foodsharing	4	17	0.031	0.031	3
InnBetween	7	27	0.039	0.039	3
PINE UCM	3	7	0.025	0.025	3
AIMS	7	16	0.013	0.013	1
GECCO	3	10	0.031	0.031	0
Mondiaal	9	33	0.080	0.080	3
Impact Lab	4	10	0.092	0.023	3

Table 1: Calculations of different metrics for sustainability actors that partook in the survey.

In Table 1, the results of calculations of organizations that answered the survey can be seen. For degree centrality, notable outliers are the Green Office and UNU-MERIT. Smaller organizations such as PINE UCM and GECCO have very few connections, resulting in degree centrality of three. However, when degree centrality is weighted based on *Strength of Collaboration* between actors, the first anomaly that can be detected is that the Green Office distinguishes itself more from UNU-MERIT. Other notable increases when including this metric are The InnBetween and Mondiaal Maastricht, which both moved up comparably more than other organizations.

The results for betweenness showed that UNU-MERIT seemed to be a more significant mediator for communication and collaboration than the Green Office. Amnesty International Maastricht seemed to have a bigger role as a mediator among the smaller organizations. Other noteworthy observations are the sudden decrease of Mondiaal Maastricht, this is likely as it is mainly connected to highly influential actors.

Lastly, looking at the eigenvector centrality calculations the Green Office once again sets itself apart from other organizations as the most influential organization. Mondiaal Maastricht is the third most influential actor in the whole network, closely followed again by UNU-MERIT.

V. Discussion

a. Network Significance

The role of the university in achieving the SDGs is to fuse society with the academic excellence in research and education of the university. One way this can be achieved is by creating a functioning network of actors with multiple backgrounds. As a result of the research much was discovered regarding influential actors, sub networks or communities, and the role of Maastricht University. This section will present the main findings by discussing the statistical results, the communities identified, as well as the role of Maastricht University in reaching the SDGs.

The main findings of this study were (1) the identification of the most influential actors in the sustainability actor network; (2) discovering how UM is connected to society; (3) how strong the degree of collaboration is between actors; and (4) the discovery of a lack of certain actors, especially when looking at actors that work on the four SDGs the university chose.

Firstly, the statistical analysis of the network uncovered a lot regarding the centrality of certain actors. The Green Office was one of the actors that almost always reached top results in the calculations, which could have been expected as the Green Office was established to be a central hub around work on sustainability at the university. This highly connectedness could be seen in the degree centrality calculation but was only supported further when that calculation was weighted to include the variable *Strength of Collaboration*.

The Green Office may have scored first on many of the calculations, but this does not make other actors less valuable. Clearly, UNU-MERIT is also a very important actor in the Maastricht sustainability network, as they are highly connected and can serve as a bridge between the central network and smaller actors, a role similar to the Green Office. This central network can be called the implementation core, which includes the key stakeholders that are

working on sustainability. If anyone would want to work on sustainability in Maastricht, they would want to reach this implementation core, to effectively join the sustainability efforts.

UNU-MERIT scored the highest on betweenness, which, when looking at the network, can be explained by all its outward connections. Assuming that the actors connected to UNU-MERIT that are located on the periphery are not further connected, UNU-MERIT mediates a big part of the knowledge flow in the network. While the connections between most of the actors on UNU-MERITs periphery are weaker than, say, the implementation core, there is still a lot of communication which may cause bottlenecks and thus also knowledge gaps in the rest of the network.

The eigenvector centrality analysis of the network gave a lot of insight into the most influential actors in the Maastricht Network. The Green Office is the most influential actor based on this calculation, closely followed by UM and UNU-MERIT. One notable discovery regarding these results is that the top three actors are all UM organizations. This plays into the role of the University, as mentioned in the background, which should aim to connect society and the academy for effective solutions to societal problems. Without effective connections the actors cannot work on solutions together, which may make the results less fitting. However, the connection itself is not the only relevant factor, the strength of collaboration and type of actor also play a significant role in the university's responsibility.

Strength of collaboration is important but does not need to be worried about in this network. The implementation core with all the influential actors is well connected with a strong degree of collaboration among the actors. However, the type of actor is also important, and this is where one may come across the pitfalls of the network. The implementation core of the network contains several diverse types of actors (see Fig. 2), ranging from government, to organizations and UM organizations. Unfortunately, the amount of companies that are permanently working together with the university is rather low. As mentioned by Bregenholt

(2018), the collaboration with industry partners is essential in universities to work on societal challenges.

When realigning the network to filter out all the actors that do not work on the four SDGs chosen by the University (see Fig. 6), not a single company is present in the network. The only actors present are UM organizations. Other than the lack of diversity among the actors, the network is densely connected, with satisfactory to good strength of collaboration between actors. When calculating eigenvector centrality for this sub-network, the Green Office is, again, the most influential actor. Indicating that, with proper collaboration with the university, it could be the leading actor in coordinating the work on the four SDGs chosen by the University.

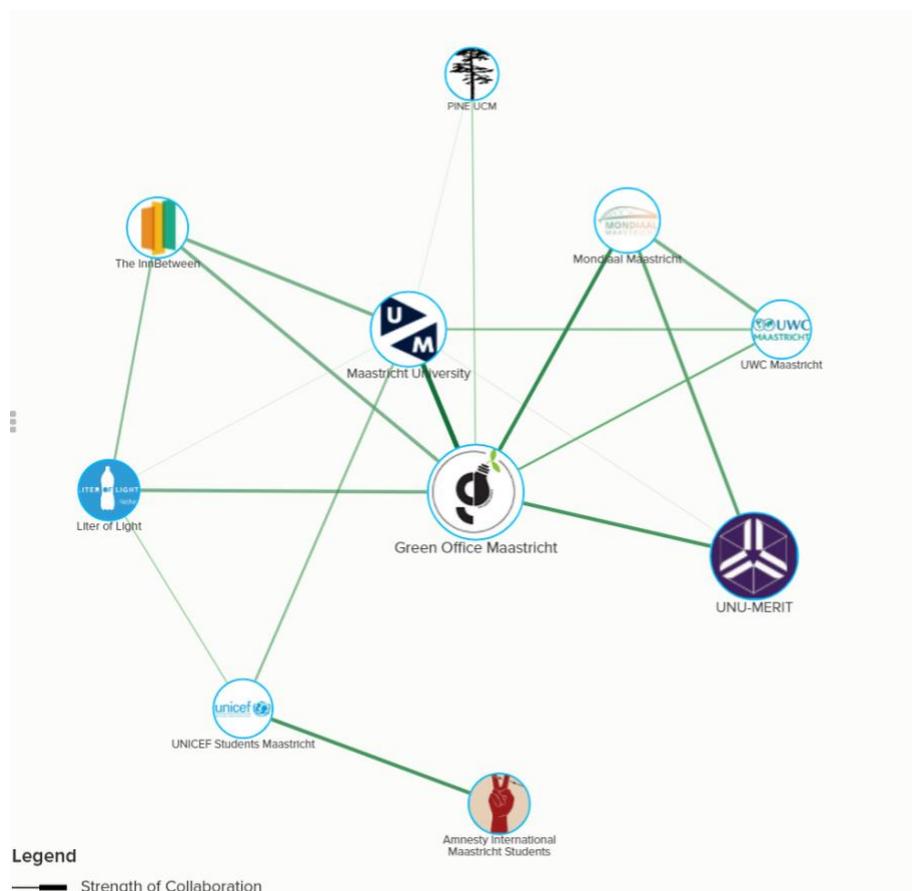


Figure 6: Network of SDG stakeholders working on SDG 3, 4, 13, or 16

b. Limitations

Due to time constraints, the research yielded a small sample size, which cannot warrant a totally accurate interpretation of the data, as it may not be representative of the entire sustainability scene of both Maastricht University and Maastricht as a whole. Nonetheless, the number of survey respondents was enough to create a relatively big network due to the snowball sampling. A possible recommendation to overcome this limitation would be to expand the data collection period for more time, encouraging more organizations to answer the survey, as they can now have a look at what the final outcome would look like.

Moreover, it is important to clarify that some questions, such as the strength of collaboration, and the active involvement towards specific SDGs were answered based on the perception that the representative of the organization has on these issues. Thus, the simplicity of the SDGs can become a difficulty when assessing whether an organization is really active towards the achievement of them, as sometimes organizations select the SDGs that match the actions that they have already been carrying out, and not the other way around. In addition, strength of collaboration was meant to be more of a subjective measurement, where a relatively known scale of 0 (non-existent) to 5 (very strong) was used, but such a measurement still relies on perception and it can vary from actor to actor. A possible solution to these limitations could be further specification and clarification in the survey.

A limitation that relates both to time constraints and the chosen method of data collection is that of not being able to conduct interviews. Face to face interviews would have been useful to obtain more qualitative data and perform a qualitative analysis of such data to have more insight into the workings of organizations, and also reduce the limitation of perception on active involvement of SDGs. If giving continuation to the project, the survey could contain a question on whether or not the respondent is interested in also contributing to the research with a face to face interview.

Another limitation that can be encountered when dealing with a network and snowball sampling can be the presence of gaps. Respondents were asked to provide the name of organizations that they collaborate with, along with the perceived strength of collaboration. However, it is possible that respondents did not give the full list of organizations that they collaborate with. Additionally, some of the actors that were mentioned in this question by other respondents, and were thus requested to answer the survey, did not provide an answer to it. This lack of responses limited the presence of mutual connections on the network and the further growth of it. By not obtaining responses from every mentioned organization that is present in the network, network density can be underestimated, which could distort the network position of some actors and change their current degree of influence (Wonodi et al., 2012).

Furthermore, the snowballing sampling assumes there will be at least one connection between nodes, which can result in an exclusion of relevant actors, such as companies, that may not yet be collaborating with other organizations, but are still working towards the SDGs. These limitations can be easily solved by providing continuation of the data gathering phase, and asking respondents to further elaborate on their collaboration with other organizations.

It is important to mention that one of the research conductors works as community coordinator for the Green Office, which could be considered a form of bias on the research. Nonetheless, his position as community coordinator was also highly useful, and almost essential, to be able to reach as many actors in such a short period of time.

Lastly, some difficulties were encountered with the software Kumu. The network layout cannot be totally fixated in one position, resulting in overlapping of some elements whenever the website is refreshed. The software also eliminated the possibility of adjusting the length of the connections, so the strength of collaboration was represented by the width and color of said connections. Overall, the network was easy to use when using a datasheet to insert all the data, and it proved a very useful tool for this project.

VI. Suggestions for Further Research

There are several recommendations that can be made after having identified the main findings. These recommendations are aimed towards Maastricht University, for better results when working on societal challenges, such as the ones that UM chose from the SDGs. A general recommendation for all actors would be to revise the content of the SDGs, study their sub-targets, and attempt to align their work with some or at least one of the sub-targets of a SDG. The following recommendations are not mentioned in a specific order, as they are all regarded as important.

It is encouraged to provide continuation to the existing network by periodically requesting organizations around the city to answer the improved version of the survey. It is possible to provide access to the dataset where all data for the building of the network on Kumu is stored. The current network provides information on the current person in charge, which is a piece of information that requires constant revision, as there is such a high turnover rate of administrative members of organizations. In addition, most of the organizations that did not provide an answer to the survey do not have specification as of which SDGs they are working towards achieving. As the response from UNU-MERIT was received late, their peripheries are not fully connected to the rest of the network. Thus, it would be highly useful to contact such organizations to expand such parts of the network.

Another suggestion for further research is to delve deeper into the intra-network of UM's sustainability department. For the sake of clarity in this network, the node of Maastricht University encompassed the university as a whole and their involvement in sustainability. Nonetheless, UM has separate departments, such as Sustainability Taskforce, Green Impact, Rootability, The Green Office, etc., which would be a very interesting network on its own, and could also be added to the existing network as an 'implementation or decision-making core'.

The SNA showed the strongest connection to society would be via the Green Office and UNU-MERIT, according to their high rate of betweenness. It is recommended to further grow the network by including more companies (industry). An initial step would be to add companies working with UM through a think tank, even if they are only temporary relationships. However, the ideal focus, on the long-term, would be on establishing permanent relationships so that they can be added to the network. For more effective work regarding working towards the SDGs, UM should further expand going beyond university boundaries, while reflecting it in the growth of the network.

VII. Conclusion

Following the idea of the civic university (Goddard, et al., 2016), where research and engagement are combined with societal engagement to result in transformative, responsive, demand-led actions to solve societal issues, such as the SDG. Moreover, following Bregenholt's (2018) idea of the mission-driven university, university capabilities should be combined with industry capabilities to work on global challenges. UM could strengthen its role by incorporating such models into their sustainability vision.

By providing a platform that facilitates and encourages collaboration, the expectation is that the network can make working towards the SDGs a joint effort. In this way, performing a SNA was indeed an effective tool that recognized the most connected actors, the best mediators, and the most influential actors. Furthermore, the visualization of the network did yield certain communication gaps that can be solved through increased collaboration. Thus, UM can strive to improve their position in the ranking for sustainable universities by using the network as a baseline for the rest of the suggestions for further research.

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IX. Appendix I: Survey

Stakeholder Mapping of Sustainable Actors of Maastricht University

Start of Block: Default Question Block

Q2 This survey is part of a MaRBLe Project conducted by Joel Beuerle and Lucia Moreira regarding the role of the University in meeting the Sustainable Development Goals (SDGs). The project aims at constructing an interactive stakeholder network that individuals can access to find relevant sustainable actors of Maastricht University. The goal of the network is to facilitate communication and collaboration by providing basic contact information so that organizations can potentially work together in the achievement of specific SDGs.

End of Block: Default Question Block

Start of Block: Use of the SDGs

Q7 What is the name of your organisation?

Q8 Is your organisation familiar with the Sustainable Development Goals (SDGs)?

- Yes (1)
- No (2)

Q9 If yes, towards the achievement of which SDGs is your organisation actively working on?

- SDG 1: No poverty (1)
- SDG 2: Zero Hunger (2)
- SDG 3: Good Health and Well-Being (3)
- SDG 4: Quality Education (4)
- SDG 5: Gender Equality (5)
- SDG 6: Clean Water and Sanitation (6)
- SDG 7: Affordable and Clean Energy (7)
- SDG 8: Decent Work and Economic Growth (8)
- SDG 9: Industry, Innovation and Infrastructure (9)
- SDG 10: Reduced Inequality (10)
- SDG 11: Sustainable Cities and Communities (11)
- SDG 12: Responsible Consumption and Production (12)
- SDG 13: Climate Action (13)
- SDG 14: Life Below Water (14)
- SDG 15: Life on Land (15)
- SDG 16: Peace, Justice and Strong Institutions (16)
- SDG 17: Partnerships to achieve the Goals (17)

Q10 Can you provide brief evidence of your work or achievement per selected SDG?

End of Block: Use of the SDGs

Start of Block: Collaboration across Actors

Q11

This section will consist of an assessment of relationship strength across sustainable actors. Strength of relationship = the frequency and intensity with which you work together with other actors on sustainability issues.

Q14 Would you consider communication across sustainable actors of Maastricht University to be:

	Non-existent 0 (1)	1 (2)	2 (3)	3 (4)	4 (5)	Very strong 5 (6)
Communication (1)	<input type="radio"/>					

Q17 Would you consider collaboration across sustainable actors of Maastricht University to be:

	Non-existent 0 (1)	1 (2)	2 (3)	3 (4)	4 (5)	Very strong 5 (6)
Collaboration (1)	<input type="radio"/>					

Q18 Does your organization collaborate with other sustainable actors of Maastricht University?

- Yes (1)
- No (2)

Q20 If yes, list the sustainable actors rating the strength of your relationship on a 0 to 5 scale (non-existent to very strong).

Example: Green Office (4); Maastricht University (4); Gemeente Maastricht (2)

Q21 How do you consider Maastricht University's involvement in your work?

	Non-existent 0 (1)	1 (2)	2 (3)	3 (4)	4 (5)	Very strong 5 (6)
UMs involvement (1)	<input type="radio"/>					

End of Block: Collaboration across Actors

X. Appendix II: Green Office Project Proposal

Motivation:

As can be seen in our paper, we identified the role of the university and as the biggest sustainability actor at Maastricht University, we thought that this project would be perfect to be continued at the Green Office Maastricht.

Description of the Project/Initiative/Organization:

1. What is your projects purpose?

Creating a platform that brings sustainability actors together to effectively work on the SDGs.

2. What goals are the goals you are working towards? What will the future state of your project look like?

Several of Maastricht's sustainability actors will be working together on sustainability issues and raise awareness about the SDGs.

3. Define your targets. When is your project complete?

The completion of the project is ideally in 2030 with the achievement of the SDGs.

4. What is your action plan? What do you do and how will your project operate?

We suggest working together with Mondiaal Maastricht to create this platform, for effective maintenance of the platform.

5. Do you have any partners or potential partners?

Mondiaal Maastricht

6. What potential issues could you see arising with the project?

There could be limited interest in such a platform for bigger actors. This may be solved as the platform grows and they realise its impact.

How can you see UMGO being of aid to your project/initiative/organization?

As one of the most influential actors in the Maastricht Sustainability Scene, the Green Office could help reaching out to the right type of people and get them involved in joining a platform to work on the SDGs.

As the Green Office also has the ability to recruit volunteers a team of volunteers could be set up to maintain the Network that serves as a foundation for the platform.

How does the Green Office Maastricht benefit from this collaboration?

By mapping the network and constantly updating it, the Green Office has the opportunity to expand its network and make itself present during research, but also during presentation of the network, as the Green Office is one of the central actors.

Having a more interconnected network, due to a centralized platform, can make Green Office efforts significantly easier.

XI. Appendix III: Thematic Analysis

Organization	Description	Themes	Tags (Codes)	Frequency
CNME	CNME stands for Center for Ne...	Organizations that educate people to live in harmony with the environment	Agriculture	2
LOCotuinien	LOCotuinien is a self-harvestin...			
Green Office Maastricht	The Green Office is a student-d...	Organizations that work on expanding people's knowledge on a specific topic	Awareness	7
Feminists of Maastricht	Feminists of Maastricht is a gre...			
Foodsharing Maastricht	Foodsharing Maastricht is a gre...			
Amnesty International Maa...	Amnesty International Maastric...			
GECCO Sustainability Con...	GECCO is your Universalis St...			
Mondiaal Maastricht	Mondiaal Maastricht is a hands...			
ICIS	The International Centre for In...			
Albron	Albron is an independent Dutc...	Food Service Company	Catering	1
UNICEF Students Maastric...	The Unicef Studentteam Maas...	Organizations that financially contribute to social causes	Charity	3
Amnesty International Maa...	Amnesty International Maastric...			
Liter of Light	Liter of Light Netherlands aim...	Organizations that work with children	Children	1
UNICEF Students Maastric...	The Unicef Studentteam Maas...			
ImpactLab	ImpactLab is Maastricht Unive...	Organizations that provide consultancy	Consulting	5
Ozymandias Consulting	N/A			
The CSR+ Lab	The CSR Lab stands out becaus...			
Brightlands	Brightlands is the brand name...			
Maastricht Student Consul...	MSC is a student-run initiative...			
Foodsharing Maastricht	Foodsharing Maastricht is a gre...	Organizations that offer consumption of goods, particularly food	Consumption	3
Foodbank	The Foodbank is a non-profit i...			
Albron	Albron is an independent Dutc...	Organizations that work for the community based on their own customs and ideas	Culture	4
Mandril	The Mandril Culture and Polit...			
Studium Generale	With the lectures, lecture serie...			
CNME	CNME stands for Center for Ne...			
LOCotuinien	LOCotuinien is a self-harvestin...			
Dionyx	DIONYX is an open-minded, l...	Organizations that encourage openness and diversity	Diversity	1
PINE UCM	Pluralism in Economics Maast...	Organizations that work on the field of economics	Economics	1
Maastricht University	Maastricht University (UM) is	Educational Institutions	Education	7
Studium Generale	With the lectures, lecture serie...			
UCM	University College Maastricht			
UNU-MERIT	The United Nations University			
Hogeschool Zuyd	Zuyd offers a wide range of stu...			
UWC Maastricht	The United World College Ma...			
ICIS	The International Centre for In...			
ImpactLab	r with the Student Project Team...	Organizations that support entrepreneurship	Entrepreneurship	4
SITE4Society	cleaner environment and their...			
MC4E	aastricht University inspires, e...			
Brightlands	ersity Medical Center+, Zuyd U...			
Feminists of Maastricht	ive rights, violence against wor...	Organizations that focus on feminism	Feminism	1

Organization	Description	Themes	Tags (Codes)	Frequency
The InnBetween	The InnBetween is an open stu	Organizations that are related to food	Food	5
Foodsharing Maastricht	Foodsharing Maastricht is a gra			
Foodbank	The Foodbank is a non-profit i			
Albron	Albron is an independent Dute			
LOCotuinien	LOCotuinien is a self-harvestin			
UNICEF Students Maastricht	The Unicef Studentteam Maas	Organizations that do fundraising	Fundraising	2
Liter of Light	Liter of Light Netherlands aims	Organizations related to gender	Gender	2
Feminists of Maastricht	Feminists of Maastricht is a gra			
Dionyx	DIONYX is an open-minded, I			
Gemeente Maastricht	Gemeente is the Dutch word fo	Governmental Organizations/About City Logistics	Governmental	2
MyMaastricht	My Maastricht is an initiative #	Organizations that promote inclusion	Inclusion	1
Dionyx	DIONYX is an open-minded, I			
Maastricht University	Maastricht University (UM) is	Organizations that work on innovation	Innovation	8
UNU-MERIT	The United Nations University			
ImpactLab	ImpactLab is Maastricht Unive			
EDLAB	Through the UM-wide implem			
The CSR+ Lab	The CSR Lab stands out becaus			
SDRLab	The Sustainable Development I			
SITE4Society	Science, Innovation, Technolo			
Brightlands	Brightlands is the brand name			
Studium Generale	With the lectures, lecture series	Organizations that offer educational activities	Lectures	1
Gemeente Maastricht	Gemeente is the Dutch word fo	Organizations that deal with legal matters	Legal	1
Dionyx	DIONYX is an open-minded, I	Organizations that support the LGBTQ+ community	LGBTQ+	1
Feminists of Maastricht	Feminists of Maastricht is a gra	Organizations that engage in social movements	Movement	4
Foodsharing Maastricht	Foodsharing Maastricht is a gra			
Maastricht Students for Palestine	Maastricht Students for Palesti			
Amnesty International Maastricht	Amnesty International Maastric			
CNME	CNME stands for Center for Na	Organizations that work with nature	Nature	2
LOCotuinien	LOCotuinien is a self-harvestin	Organizations that host recreational activities	Recreation	5
The InnBetween	The InnBetween is an open stu			
Mandril	The Mandril Culture and Polit			
Refugee Project Maastricht	RPM is a volunteer run commu			
GECCO Sustainability Center	GECCO is your Universalis St			
Love Foundation	Love Foundation is an open net			
Feminists of Maastricht	Feminists of Maastricht is a gra	Organizations involved in policy-	Policy	8
Foodsharing Maastricht	Foodsharing Maastricht is a gra			
Maastricht Students for Palestine	Maastricht Students for Palesti			
Amnesty International Maastricht	Amnesty International Maastric			

Organization	Description	Themes	Tags (Codes)	Frequency			
UNU-MERIT	The United Nations University	making	Policy	8			
SITE4Society	Science, Innovation, Technolo						
MC4E	The Maastricht Centre for Entr						
ECDPM	The European Centre for Deve						
The InnBetween	The InnBetween is an open stu	Organizations related to freedom of religion	Religion	1			
Green Office Maastricht	The Green Office is a student-c	Organizations that carry out research	Research	12			
Maastricht University	Maastricht University (UM) is						
Studium Generale	With the lectures, lecture serie						
UNU-MERIT	The United Nations University						
Hogeschool Zuyd	Zuyd offers a wide range of stu						
Maastricht University Stud	The Student Project Team (SP						
EDLAB	Through the UM-wide implem						
ICIS	The International Centre for In						
Student Forum Maastricht	Student Forum Maastricht is an						
The CSR+ Lab	The CSR Lab stands out becau						
SDRLab	The Sustainable Development						
SITE4Society	Science, Innovation, Technolo						
UNICEF Students Maastric	The Unicef Studentteam Maas				Organizations that work towards a social cause	Social Cause	4
Mandril	The Mandril Culture and Polit						
Maastricht Students for Pal	Maastricht Students for Palesti						
Amnesty International Maa	Amnesty International Maastric						
Maastricht University Stud	more student-oriented. The SP	Organizations where students can get involved	Student Involvement	10			
UWC Maastricht	herlands. The school was estab						
EDLAB	the education process. EDLAB						
Student Forum Maastricht	where interested students can ex						
The CSR+ Lab	ch and technology and innovati						
NovUM Student Represent	Maastricht University with men						
DOPE Student Representat	DOPE has always strived to ac						
SITE4Society	cleaner environment and their						
MC4E	aastricht University inspires, e						
Liter of Light	b-organization and its work is th						
Green Office Maastricht	The Green Office is a student-c				Organizations that work on sustainability	Sustainability	21
The InnBetween	The InnBetween is an open stu						
Foodsharing Maastricht	Foodsharing Maastricht is a gr						
Foodbank	The Foodbank is a non-profit i						
Dionyx	DIONYX is an open-minded, l						
GECCO Sustainability Cor	GECCO is your Universalis Su						
Mondiaal Maastricht	Mondiaal Maastricht is a hand						
UNU-MERIT	The United Nations University						
CNME	CNME stands for Center for N						
ImpactLab	ImpactLab is Maastricht Unive						
EDLAB	Through the UM-wide implem						
ICIS	The International Centre for In						

Organization	Description	Themes	Tags (Codes)	Frequency
The CSR+ Lab	The CSR Lab stands out because			
SDRLab	The Sustainable Development			
SITE4Society	Science, Innovation, Technology			
MC4E	The Maastricht Centre for Entrepreneurship			
Brightlands	Brightlands is the brand name			
ECDPM	The European Centre for Development Policy			
LOCotuinen	LOCotuinen is a self-harvesting			
Liter of Light	Liter of Light Netherlands aims			
Love Foundation	Love Foundation is an open network			
UNSA Maastricht Team	United Nations Student Association	Organizations closely involved with UN matters	UN	3
UNU-MERIT	The United Nations University			
SDRLab	The Sustainable Development			
Green Office Maastricht	The Green Office is a student-club	Organizations that deal with waste	Waste	5
Foodsharing Maastricht	Foodsharing Maastricht is a grassroots			
Foodbank	The Foodbank is a non-profit organization			
Gemeente Maastricht	Gemeente is the Dutch word for municipality			
LOCotuinen	LOCotuinen is a self-harvesting			