PUBLIC ACCEPTANCE OF OFFSHORE WIND FARMS IN THE NETHERLANDS:

Testing and adjusting the public acceptance models for a better wind of change

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ABSTRACT

As part of the renewable energy transition, for the past few years, the Netherlands has been implementing wind farms as its resource, both onshore and offshore. The onshore wind farms so far gained shallow public acceptance with various issues such as overlooked locals' interests, unfairness sense and low trust to the government, and physical visibility, noise, and shadow of wind turbines. Previous studies showed that people possess a better acceptance of offshore wind farms in other countries. However, since offshore wind farms are newer and very different than the onshore ones, there is no research that specifically assesses the public acceptance of offshore wind farms in the Netherlands. This research aimed to fill that gap by examining the public acceptance using an existing framework provided by POLIMP, an organization founded by the European Union. This organization consists of several research institutions that put interest in social aspects of sustainable development, including renewable energy technology. They identified five possible influential elements which were public awareness, fairness sense, trust towards stakeholders, evaluation of costs, risks, and, benefits of a technology/resource, and local context.

This research tested that framework and based on the analysis of it, came up with a new adjusted framework, customized specially for investigating the factors that influence public acceptance of offshore wind farms in the Netherlands. The data of this study were gathered with an online survey and analyzed quantitatively with correlation and regression methods. The results show that based on the existing framework, public's high level of awareness, positive evaluation of costs, risks, and benefits and local context fit influenced public acceptance of offshore wind farms in the Netherlands. The results from the new adjusted model reveal that knowledge about the needs of renewable energy and trust towards the researchers as the source of that knowledge is essential to influence public acceptance. Fairness sense, trust towards other involved stakeholders, and demographic characteristics did not give any positive influence to the public acceptance of offshore wind farms in the Netherlands.

It is recommended for the researchers to be open for interaction and communicate with the public to not just improve public's awareness but also their understanding regarding the knowledge about the needs and the technology of offshore wind farms. This awareness will lead the public to have a better evaluation of performance and regulations of offshore wind farms. It is also advised to pay great attention to the location of offshore wind farms. Not only regarding the view and sound impacts, but also the ecology impact related to biodiversity and the fishing industry.

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5. Discussion

1. INTRODUCTION

The European Union countries are committed to achieving a 14% renewable energy target by 2020, including the Netherlands. The Dutch government, together with a large number of organizations interested in this matter, in September 2013 initiated the energy transition in the country, by signing the "Dutch Energy Agreement for Sustainable Growth." Currently, the leading renewable energy resources for the Netherlands are biomass, solar, geo-thermal, aero-thermal, and onshore wind power. But these sources are not enough to make the Netherlands keep up the pace with other countries' progress that the Netherlands is still lagging behind them in producing renewable energy (Ecofys, 2014). Almost 2,300 turbines sited in the Netherlands just supply 9% of the country's electricity demand by the end of 2017, while the other EU countries have averagely 11.6% of their electricity generated from the wind turbines (GWEC, 2017). Installing new renewable energy resources can also be expensive that a country needs to allocate extra fund for that. On the other hands, the Netherlands also wants to make the energy transition go hand in hand with economic growth. Thus, there has been a trend towards the deployment of large wind farms since 2015 in this country, realizing that wind energy is the most effective option when it comes to price, performance, and reliability (GWEC, 2017).

Although wind power based on the previous studies is proven to be the most potential and effective renewable energy resources in the Netherlands, it does not mean that the deployment of wind farms is a panacea for this problem (Agterbosch et al., 2007). Public acceptance is also one of the most crucial things that should be taken into account, besides the practical or technical matter. Indeed, the public has a positive attitude towards it in general, but in reality, most onshore wind farm projects regularly face resistance from the local community. The onshore wind farm projects were carried out in a top-down manner by the Ministry of Economic Affairs and somehow resulted in public acceptance issues. Too focused with the practical aspects of offshore wind farms, overlooked of citizens' needs/initiatives and stakeholder interests, unfair feelings from local population that their region is being disadvantaged (low trust towards the government), opposition to negative effects related to visibility, noise, and the intermittent shadow of wind turbines are some problems the Netherlands has been facing since last decade (Agterbosch, Glasbergen, & Vermeulen, 2007; De Boer & Zuidema, 2013).

While issues related to public acceptance of onshore wind farm have been around since a long time in the Netherlands, public acceptance of offshore wind farms is a newer issue. Contrary to onshore wind farms that mostly only have few turbines and are distributed across the country, all offshore wind turbines are gathered and sited in just some large wind farms. By the end of 2017, wind farms in the Netherlands produced 4,341 MW energy, only 25,75% (1,118 MW) of which was offshore-based

(GWEC, 2017). Currently, there are five working offshore wind farms in the Netherlands and one offshore wind farm under construction, which is expected to work in 2021. The name, characteristics of turbines, capacity, kilometer (distance) to the shore, commissioning year, and the owner of each wind farms can be seen in the table below.

Table 1: Offshore Wind Farms in the Netherlands

Wind farm	Turbines	Capacity (MW)	Km to shore	Commissioning	Owner
Irene Vorrink	28x Nordtank NTK600/43	17	1	1996	Nuon
Princess Amalia	60x Vestas V80-2MW	120	26	2008	Eneco Energie
Egmond aan Zee (OWEZ)	36x Vestas V90-3MW	108	13	2008	Nuon & Shell
Eneco Luchterduinen	43 × Vestas V112/3000	129	24	2015	Eneco & Mitsubishi
Gemini	150x Siemens SWT- 4.0-130	600	55	2017	Northland Power, Siemens, Van Oord, HVC Group
Friesland	89 × Siemens SWT-3.6-107	320	2	2021 (Expected)	Windpark Frysland B.V.

Source: Global Wind Report Energy, 2017

Generally, people are more positive towards offshore wind farms compared to onshore, especially when it comes to the direct physical impact of wind turbines (Ladenburg & Moller, 2011). However, further and deeper analysis should be conducted in order to understand overall public acceptance of offshore wind farms. Other European countries, responding to the EU energy agreement to produce 14% renewable energy by 2020, have been working on large scale offshore wind farms as their renewable energy sources such as Denmark, United Kingdom, Norway, Germany, and others. There are previous studies that examined public acceptance of offshore wind farms in these countries which show that offshore wind farms are accepted differently in each country as renewable energy resources. However, there is no research that specifically assesses the public acceptance of offshore wind farms in the Netherlands and therefore, this research aims to fill that gap.

Furthermore, the previous studies that have been conducted used various different theoretical framework, methods, and measures. This study adopted POLIMP's framework, which was formulated based on extensive literature studies and case studies of public acceptance of renewable energy resources. The framework proposed was believed to be comprehensive, but it was not formulated specifically for offshore wind farms. On the other hand, it is crucial to have a specified framework since

each renewable energy resource possesses different characteristics which result in different implications, including acceptance. Thus, this study intended to test POLIMP's framework as a starting point and tried to adjust the framework based on the context of offshore wind farms in the Netherlands. The research question proposed is: *What factors influence public acceptance of offshore wind farms in the Netherlands?*

2. THEORETICAL FRAMEWORK

2.1. The Importance of Public Acceptance

Although public opinion surveys show widespread support for renewable energy resources in Europe, new energy projects often fail because of a lack of stakeholder acceptance. Thus, in recent years, there has been increasing attention to the concept of 'social acceptance' or 'public acceptance' of renewable energy resources (Eurobarometer, 2006). Public acceptance is a phenomenon that is always evolving and changing, because it is not merely about renewable energy technology but also related to environmental, economic, and social aspects. Nonetheless, our understanding of how public acceptance emerges or fails to emerge is still quite limited (Energy Research Centre of the Netherlands, 2008). Therefore, research in public acceptance of renewable energy technologies is needed, especially for the new technology, which in this case is offshore wind farms.

Public acceptance is a form of attitude that looks into people's interest or resistance towards novelties (Kalantari et al., 2018). Public acceptance is defined as a positive attitude towards a matter at a particular point of time which is stated in a specific idea or in a particular behavior including encouragement, confirmation, and approbation (Cohen, Reich, & Schmidthaler, 2014). This means public acceptance happens when a renewable energy technology, including its policy and practice, is supported by people who can be affected by it in any circumstances. Support is important because without a supportive attitude, it will be described as public tolerance, not acceptance (POLIMP, 2014). Beside the economic and environmental issues, public acceptance is supposed to be viewed as a key part of renewable energy in reaching sustainable development (Yuan, Zuo, & Huisingh, 2014). By doing the research of public acceptance, we can see the public attitude towards the offshore wind farms, whether they support it or oppose it and what factors make them so.

2.2. Factors Influencing Public Acceptance

The European Commission in the Roadmap for Moving to a Competitive Low Carbon Economy in 2050 has outlined how the European Union can become a competitive low emission economy with possible actions to reduce the greenhouse gas emission by of 80 to 95% by 2050. The roadmap showed what both planned and existing policies will lead to and what efforts are needed to achieve the goal. It did

not only describe the technical and economic aspects related, but also emphasized that it is essential to include an analysis of social aspects that influence public acceptance of the clean renewable technologies (European Commission, 2011). Clean renewable technologies that are economically and technically feasible may not result in successful implementation due to public resistance. Public resistance or even opposition could delay or stonewall the implementation of the technologies, which further could hinder the attainment of the goals, for instance, reducing the greenhouse gas emission.

Taking the background explained above in consideration, it is very vital to understand what elements comprise public acceptance of renewable energy technology/resource in the first place, before formulating the policies. A group of European organizations that have concern about climate and policy—JIN Climate and Sustainability (Netherlands), Centre for European Policy Studies (Belgium), University of Piraeus Research Center (Greece), Universitaet Graz (Austria), Ecologic Institut Gemeinnutzige (Germany), Climate Strategic (United Kingdom), and Instytut Badan Strukturalnych (Poland)—formed a group called POLIMP to answer this challenge. It aimed to identify the knowledge gaps to improve existing policies and formulating new policies in the future for every stakeholder involved in the renewable energy technologies. Their works are funded by the European Union's Seventh Framework Programme for Research, Technological Development, and Demonstration under Grant Agreement Number 603847.

In their 1st Policy Brief, POLIMP presented five essential elements of public acceptance of renewable energy resource. The policy brief was based on case studies and extensive literature review and was published in June 2014. The elements from their study are going to be used as the measures of public acceptance of offshore wind farms in the Netherlands. The elements which from now on will be called as "factors" in this report are 1) Awareness; 2) Fairness Sense; 3) Trust towards Stakeholders; 4) Evaluation of Costs, Risks, and Benefits; and 5) Local Context.

2.2.1. Awareness

Public awareness is the prelude to any action toward sustainable development in a country. Thus renewable energy technology acceptance will ultimately depend on public awareness (UNESCO, 1997). As a factor, public awareness, in this case, consists of three sub-factors which are; *knowledge of the needs for renewable energy*, *knowledge of the practical aspects of renewable energy technology*, and *familiarity with renewable energy technology* (POLIMP, 2014) There is evidence of positive relationship between people's awareness of the need for renewable energy, their acceptance of sustainable or renewable energy resources, and their willingness to act/support (Strazzera, Mura, & Contu, 2012). The public needs to know at the first place why renewable energy is needed and how it

can be produced by renewable energy resources. It is also important to note that familiarity with technology is needed when considering public acceptance. A technology that is unfamiliar for the public is more likely to face resistance or opposition from the public, even though it is more potentially useful, compared to other familiar technology options (UNDP, 2010). Technology that is familiar for the public, especially the one that the public has experience with, is more likely to be accepted. Based on the previous researches, it is known that public awareness of wind farm technology is high in the Netherlands, however, it did not differ between onshore and offshore one (Energy Research Centre of the Netherlands, 2008; POLIMP, 2014).

H1: Public awareness positively influences public acceptance of offshore wind farms in the Netherlands.

2.2.2. Fairness Sense

The second element/factor of public acceptance is fairness sense, which comprised of three-sub factors; *public involvement, public interests,* and *transparency.* The public will perceive a technology project as fair when they have chance to sound their opinions, listened by the involved stakeholders, and when their concerns and interests are taken into account in the decision-making process (Terwel, Harinck, Ellemers, & Daamen, 2011). Public interests, in this case, could be related to economic, legislation, and location of a renewable energy resource. The transparency of the involved stakeholders also should not be neglected. Public expect them to be open and informative about their work so the public's evaluation can be done well. Fairness aspect in offshore wind farms needs serious attention because taking a lesson from the research conducted before it was found that the fairness aspect of onshore wind farm project is perceived really low by the public. The Ministry of Economic Affairs only involved landowners; and the project was carried out in a top-down manner. The public was only informed about the spatial designs of the wind farms, but their needs, initiatives, and interests were not taken into account in the planning and preparation process so that they feel they get more disadvantages than the advantages from the renewable energy technology project (De Boer & Zuidema, 2013).

H2: *Fairness sense positively influences public acceptance of offshore wind farms in the Netherlands.*

2.2.3. Trust towards Stakeholders

Public trust towards stakeholders as the third factor depends on the perception of their *competence* and *integrity*. Competence is related to how well the public see an organization does its jobs or responsibility. Based on the competence, the public will consider whether they can rely on the positions taken by this stakeholder or not. Integrity is related to the honesty and morality of an organization or stakeholder. What to note here is if the public perceives the integrity of a stakeholder

as low, there is a tendency for them to take the opposite opinion of that particular stakeholder (Terwel et al., 2011). A stakeholder is a group or individual who can affect or is affected by the achievement of the organization's objectives (Mitchell, Agle, & Wood, 1997). In this case, the stakeholders of offshore wind farm projects in the Netherlands are *government, private companies, Non-Governmental Organizations* (NGOs), and *researchers*. The national government carries the offshore wind farms projects mostly in the planning, decision making, and monitoring process of operational and legislation matters. The private companies are hired by the government to run the operational matter such as building and maintaining offshore wind farms. Non-Governmental Organizations have a concern about environmental issues—mostly are not profit-oriented—that aim to facilitate, fund, promote, and provide assistance for achieving the environmental goals. In this case, NGOs evaluate and monitor the offshore wind farms projects objectively without any political or profit motives. The last stakeholder, researchers, are the ones who assess the effectiveness of overall wind farms projects from any possible field/perspectives.

Based on the research about onshore wind farm projects in the Netherlands before, it was found that the trust level in the national government is really low. The public doubted the government's integrity because they felt unfair that their region is being disadvantaged by having the wind farms around them, not the other regions. In order to not repeat that case and gain public acceptance, we need to know how the public perceived not just the government's but also other stakeholders' competence and integrity of carrying offshore wind farm projects (De Boer & Zuidema, 2013). Therefore, in this study, the sub-factors used to measure trust were not the competence and integrity, but differed per stakeholder.

H3: *Trust positively influences public acceptance of offshore wind farms in the Netherlands.*

2.2.4. Evaluation of Costs, Risks, and Benefits

Another element that determines public acceptance, as the fourth factor in this study is the evaluation of costs, risks, and benefits. Costs, risks and benefit of a renewable technology resource are related to *socio-economic* and *environmental* aspects, as our two sub-factors. For the socio-economic aspect, the green reputation of a country is one of the considered things. By producing energy from renewable energy resources, the country will have a green reputation and lead to other benefits or incentives in economy activities (Tamanini, 2013). By having more renewable energy resources, a country could also reduce its reliance on imported energy, which leads to more affordable energy. In order to be accepted, the offshore wind farms need to be able to produce electricity at a competitive rate, compared to what the public are using at the moment (Sovacool & Ratan, 2012). More affordable

energy also means giving more chance to the industries to grow, since most businesses have realized that sustainable development is the key to success long-term performance. There will also be more job opportunities to actualize the renewable energy resource projects (IRENA, 2018a). However, there is also a concern that offshore wind farms that are placed close by the shore could disturb the fisheries industry and tourism (Acheson, 2012).

The costs, risks, and benefits of offshore wind farms related to the environmental aspects are the view, the sound, and the impact on biodiversity, air, and overall quality of the environment. The sound and visual impact from wind farms are the most contributing problem to the public opposition (Sullivan & Meyer, 2014). The public feels disturbed continuously by the noise and view having wind farms nearby their residence and their concern about health issues are raised (Petrova, 2013). Having offshore wind farms also raises the concern that more birds and marine animals could be killed, either by the wind turbines or by the infertile habitat (Kaldellis, Apostolou, Kapsali, & Kondili, 2016; Snyder & Kaiser, 2009). There are environmental benefits of offshore wind farms that compensate the risks such as having clean energy which can reduce the greenhouse gas emission and improve the quality of the environment (Firestone, Kempton, Lilley, & Samoteskul, 2012).

H4: *Evaluation of costs, risks and benefits positively influences public acceptance of offshore wind farms in the Netherlands.*

2.2.5. Local Context

The last element or factor in this study regarding public acceptance is the local context. Local context has two sub-factors which are the *use of local potentials* and the *impact on daily life.* Related to the use of local potentials, a renewable energy resource will generate higher public acceptance if it directly uses locally available potentials such as nature potential, which in this case is quite favorable since the Netherlands has a lot of wind to be harnessed by the offshore wind farms to generate energy. In order to be accepted by the public, a renewable energy resource needs to be well-matched with the existing land use functions and the culture. So in this case, to be accepted by the public offshore wind farms need to be perceived as fit to the Netherlands' culture and to the function of the sea.

Public acceptance sometimes can be deceiving because although in general the public has a positive attitude towards the renewable energy resource, there are more resistance and negative views in the local context since it affects the public's daily life. This phenomenon is often described as NIMBY concept (Not in My Back Yard) where locals oppose to a renewable energy project due to personal reasons such as not wanting to have the shadows in their area, feeling disturbed by the sound of wind turbines, or even feeling annoyed by looking at wind turbines in the sky (Haggett, 2011). A particular

reason for skepticism towards renewable energy resources is that they demand are tend to be highly visible and sound for the public. They are very much different than non-renewable energy resources that are usually far away from the public and cause no inconvenience or trigger no risk to public's personal life (De Boer & Zuidema, 2013; Sijmonds & Van Dorst, 2012).

H5: *Local context positively influences public acceptance of offshore wind farms in the Netherlands.*

2.3. Demographic Characteristics

Throughout the literature, some studies have shown ambiguity related to demographic factors (J Firestone, Bates, & Knapp, 2015; Rand & Hoen, 2017). Demographic data always varies depending on the location, subject, time, and other variables or context. Previous studies showed ambiguity in how the education, income, and distance from offshore wind farms affect its acceptance by the public (Acheson, 2012; Ladenburg, 2010; Nichifor, 2016). This study would like to put those three demographic aspects as another independent variable.

2.3.1. Education

Public acceptance of wind farms is influenced by the education of the public itself. A study examined the public acceptance of offshore wind farms in Maine, US came up with a result that people with lower educational levels were less supportive than those with higher educational levels (Acheson, 2012). On the other hand, a research of public acceptance of Danish wind farms found that people with a master degree are negatively inclined towards offshore wind farm compared to those with lower education (Ladenburg, 2010). From the previous studies we cannot conclude any generalization about how education affects the public acceptance of offshore wind farms in the Netherlands and need to fill that gap.

H6: Level of education positively influences public acceptance of offshore wind farms in the Netherlands.

2.3.2. Income

A previous study of the public acceptance of offshore wind farm in the US found that higher-income respondents were willing to pay more and have more positive attitudes (Acheson, 2012). In a similar vein, a study conducted in Denmark showed that people with higher income have more positive attitude towards offshore wind farm than people with lower income. However, an unexpected result came from a study examined the willingness to pay of 64 random Dutch respondents. It was found that half of them would not agree to pay anything additionally for renewable energy consumption, even when the benefits of wind energy were taken into consideration (Nichifor, 2016). However, the

willingness to pay only accounts a little part of public acceptance. Therefore, how income affects the public acceptance of offshore wind farm in the Netherlands is still needed to be explored in this study.

H7: Level of income positively influences public acceptance of offshore wind farms in the Netherlands.

2.3.3. Distance to Wind Farms

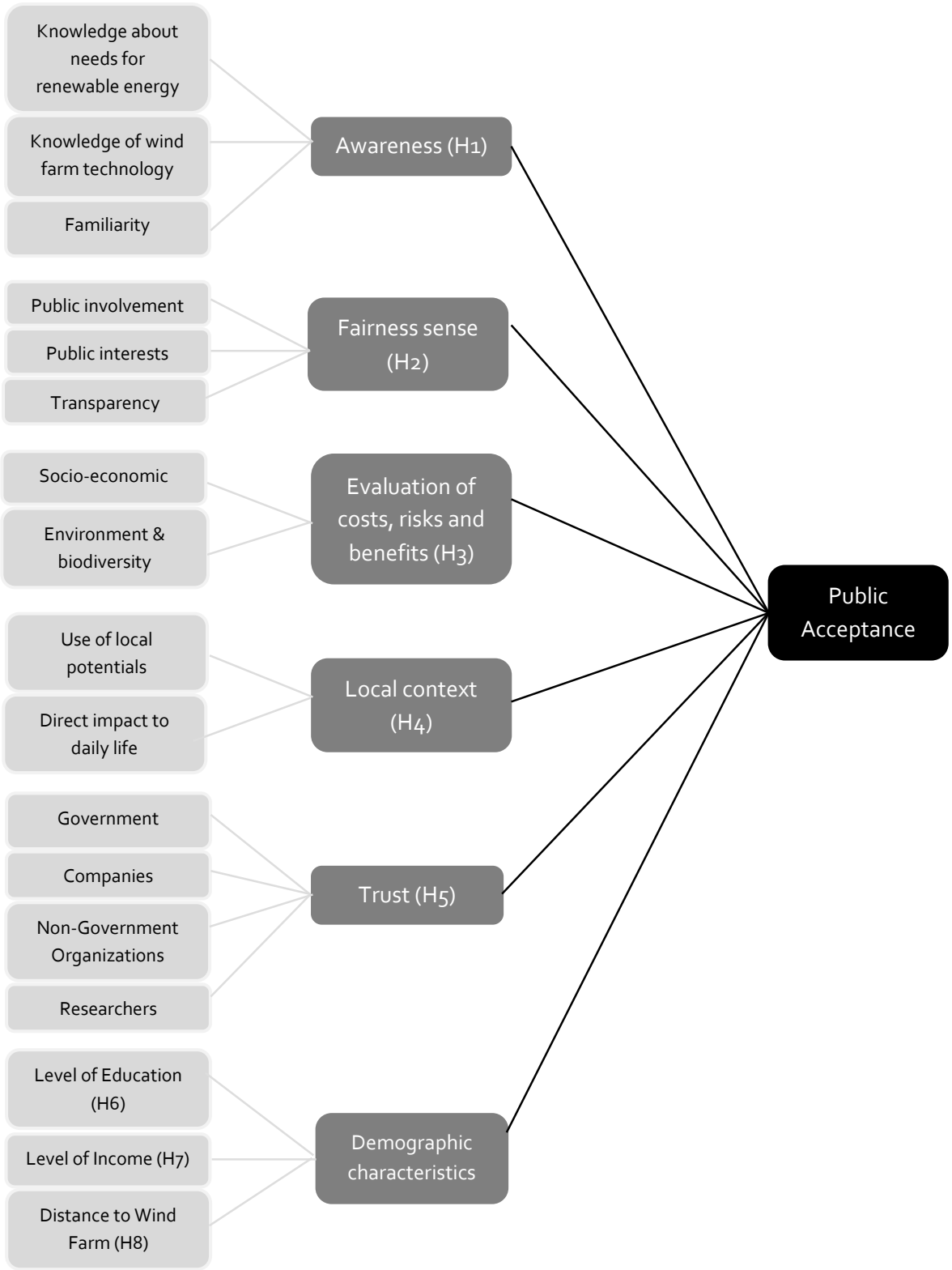
Distance to the turbines has been an issue for the onshore wind farms, regarding the noise and visual impacts. However, this does not mean the offshore wind farm is the panacea. A study mentioned that when wind farm is placed from three to 20 miles offshore will make insignificance sound. Wind farm placed more than 20 miles offshore is only visible under some conditions (Acheson, 2012). Another study examined the public acceptance of offshore wind farm in Ireland has found that people who are exposed to the offshore wind farm or live nearby the shore have a far better understanding of the overall project concept and therefore increase their acceptance, in comparison to those living in areas with no exposure to the offshore wind farms, (Melia, 2013). This study is expected to find out how the distance to the offshore wind farms affects the public acceptance in the Netherlands.

H8: Distance to wind farms positively influences public acceptance of offshore wind farms in the Netherlands.

2.4. Research Model

Based on the hypothesized relationships discussed in the previous sections, the visual representation of the conceptual research models is presented in figure 1.

Figure 1: Research Model 1



3. METHODOLOGY

3.1. Design

The purpose of this study is to investigate the public acceptance of offshore wind farms in the Netherlands. To test the hypotheses, an online questionnaire was carried out to gather the data that was needed. The questionnaire was believed to be the best method based on some considerations. First, a questionnaire is self-administered, allowing respondents to assess their own opinion or thoughts and answer the questions themselves. Second, an online questionnaire was selected instead of an offline or paper-based one because it is easier and faster to reach the participants that are dispersed throughout the Netherlands. Third, an online questionnaire was chosen in consideration of the research convenience. The participants could complete the questionnaire from any place and any time frame given, having no pressure to participate. It is also generally time and cost-saving for the researcher (van Selm & Jankowski, 2006).

3.2. Procedure

Based on the variables in this research, several constructs were formed and statements were generated from different resources. Some of the statements were newly defined by the researcher, some were formulated based on the findings of previous researches, and some were just rephrased from previous researches (existing scales). The statements in the questionnaire were formulated in English in the first place and then translated into Dutch. The detail of this can be found in Appendix 1. A pre-test was conducted with 20 Dutch participants who were asked to complete the questionnaire and were encouraged to give recommendations or critics about things that they thought could be improved. By doing this pre-test, it was possible to know about exact areas where improvements were needed, such as the structure, grammar, and diction of the survey. The pre-test was done in a group discussion session so that the overall feedbacks were delivered directly to the researcher, and a reliability test was performed immediately after that. The researcher then revised, rephrased, and even removed several statements that had low reliability scores, meant that they were irrelevant to the study. A second pre-test was conducted with 25 Dutch participants and resulted in high reliability scores, meaning that the survey was ready to be used to gather the data.

The survey was uploaded to an online survey tool ‘Qualtrics’ from which a link was generated to distribute the survey. To give the respondents a more appealing and more memorable link, the researcher also made a simplified link via URL shortener tool (bit.ly/windmolenparkeninzee). Two bol.com gift cards worth 25 euro each were raffled to invite as many respondents as possible. The link was spread mainly through social media (Facebook and Instagram) and instant messaging app (WhatsApp). The survey was put in every marketplace Facebook group in the Netherlands to get

participants with heterogeneous demographic backgrounds. It was also uploaded to any random Dutch Facebook group (such as Utopia NL, MetalHeads Netherlands, Respondenten Gezocht, Carpool Amsterdam, etc.) and the other various WhatsApp group. The snowball sampling technique played quite a big role where respondents who have taken part in the survey were asked to distribute the survey link within their network to gather other respondents.

At the beginning of the questionnaire, the research was introduced briefly, and the respondents were asked to participate in the survey. They were also informed about the importance of their opinion and the confidentiality of their data. There were 47 statements about public acceptance of offshore wind farms in the Netherlands which needed to be indicated by the respondents to what extent they agreed or disagreed with each statement using a five-point scale. Furthermore, there were three questions asked related to the demographic data of the respondents. At the end of the survey, the researcher thanked for the respondents' participation, and they can fill in their email if they want to join the raffle.

3.3. Measures

In this research, the dependent variable is public acceptance of offshore wind farms in the Netherlands. The dependent variable is expected to be influenced by the independent variables, which are awareness, fairness, trust, evaluation of costs, risks and benefits, local context, and demographic characteristics. The demographic characteristics consist of level of education, level of income, and distance to wind farm. These variables are treated as factors or constructs, and each of them has their own sub-factors, which have been explained in the theoretical framework before. To measure the constructs, there are items formulated based on the sub-factors. Some of the items were adopted from previous studies with the consideration that the measurement qualities have already been proven so that this study is even more reliable. The source of measurements used can be seen in Table 4 below. Some of the items were also newly formulated by the researcher herself based on the findings of previous studies or formulated independently. The Dutch version of the items that were used in the survey can be seen in Appendix 1.

Table 4: Source of Measurements

Construct / Factor	Sub-Factor	Label	Item	Source
Awareness	Knowledge about needs for renewable energy	A1	I think we need to reduce the global warming effect in the atmosphere.	(De Best-Waldhober, Daamen, & Faaij, 2009)
		A2	I think sustainable green renewable energy is needed.	(IRENA, 2018b)
		A3	I think renewable energy resources are needed.	
	Knowledge of wind farm technology	A4	I understand about how energy is produced by the wind turbines.	Melia (2013)
		A5	I understand about how wind farms in the sea work.	
		A6	I think wind farms in the sea can provide clean electricity.	
		A7	I think wind farms in the sea can provide affordable electricity.	
	Familiarity	A8	I have seen wind farms in the sea in the Netherlands.	
		A9	I have heard about wind farms in the sea in the Netherlands.	
Fairness	Public Involvement	F1	In general, I think the public is involved in the planning process of wind farms in the sea.	(POLIMP, 2014; Sijmonds & Van Dorst, 2012; Terwel et al., 2011)
		F2	In general, I think the public has the opportunity to voice their opinion about wind farms in the sea.	
		F3	In general, I think the national government is listening to the public's opinion about wind farms in the sea.	
	Public Interests	F4	In general, I think the public has the opportunity to invest to wind farms in the sea.	
		F5	In general, I think the public has the opportunity to participate in the policy making of wind farms in the sea.	
		F6	In general, I think the public has the opportunity to vote the location of wind farms in the sea.	
	Transparency	F7	In general, I think the national government is open about the legislation of wind farms in the sea.	
		F8	In general, I think the commercial companies (Eneco, Shell, Siemens, etc) are open about their work of wind farms in the sea.	
Trust	Government	T1	The national government has the competency to carry out the wind farms in the sea project.	(POLIMP, 2014; Terwel et al., 2011)
		T2	The national government has the integrity to carry out the wind farms in the sea project.	
	Private Companies	T3	Private companies that build and maintain wind farms in the sea have the competency.	
		T4	Private companies that build and maintain wind farms in the sea have the integrity.	
	Non-Government Organizations	T5	NGOs have the competency to monitor the wind farms in the sea.	
		T6	NGOs have the integrity to monitor the wind farms in the sea.	
	Researchers	T7	Researchers have the competency to assess the wind farms in the sea.	
		T8	Researchers have the integrity to assess the wind farms in the sea.	

Evaluation of costs, risks and benefits	Socio-economic	E1	Wind farms in the sea help building the reputation of the Netherlands as a green sustainable country.	(Melia, 2013)
		E2	Wind farms in the sea help reduce reliance on foreign energy import.	(Acheson, 2012)
		E3	Wind farms in the sea result in more industries and job opportunities.	
		E4	Wind farms in the sea disturb the recreational boating, tourism and fishing industries.	
		E5	Wind farms in the sea lead to more affordable electricity rates.	
	Environment	E6	Wind farms in the sea result in horizon pollution.	
		E7	Wind farms in the sea result in noise disturbance.	
		E8	Wind farms in the sea increase the mortality of birds and other sea creatures nearby them.	
		E9	Wind farms in the sea reduce the CO2 and its effect in the atmosphere.	
		E10	Wind farms in the sea improve the quality of environment.	
Local Context	Use of Local Potential	L1	Wind farms in the sea harness the nature potential of the Netherlands.	(Energy Research Centre of the Netherlands, 2008; POLIMP, 2014)
		L2	Wind farms in the sea fit to the culture of the Netherlands.	
		L3	Wind farms in the sea match the function of the sea in the Netherlands.	
	Direct Impact to Daily Life	L4	Wind farms in the sea will have less impact to public daily life than wind farm on the land.	(Ladenburg & Moller, 2011; Melia, 2013)
		L5	Wind farms in the sea impact the society's life negatively.	
		L6	Wind farms in the sea bring the quality loss to my personal life.	
		L7	The effect of wind farms in the sea is depended on how far they are installed from my place.	(Sijmonds & Van Dorst, 2012)
Public Awareness		P1	I have positive feeling about wind farms in the sea in the Netherlands.	
		P2	I support wind farms in the sea as renewable energy resource in the Netherlands.	(Kardooni, Kari, & Yusoff, 2016)
		P3	I am willing to purchase the energy produced by the wind farms in the sea in the Netherlands.	(Nichifor, 2016; Ntanos et al, 2018)
		P4	I will recommend other people to support wind farms in the sea as renewable resource in the Netherlands.	(Kardooni et al., 2016)
		P5	I prefer wind farms in the sea than other renewable energy resources in the Netherlands.	
Item is rephrased from previous research(es).				
Item is newly formulated based on the findings of previous researches.				
Item is newly formulated by the researcher.				

3.3.1. Reliability Analysis

Awareness

The awareness is determined by how the public realize the needs for renewable energy and knows the wind farms technology, and how familiar public with the offshore wind farms. There were nine items used to measure this construct. Some of the statements were derived and/or adjusted from previous studies such as "*I understand how wind farms in the sea work*" and some were newly generated by the researcher herself such as "*I have seen wind farms in the sea in the Netherlands*". The reliability of the awareness construct was significant with 0.77 Cronbach's alpha score.

Fairness

Sense of fairness is determined by how much chance the public have to sound their opinion, how much their interests are taken into account, and how transparent are the projects carried. To measure this constructs, eight items were newly generated by the researcher herself based on the findings of previous studies. One of them was "*In general, I think the public has the opportunity to participate in the policy-making of wind farms in the sea*." The reliability of these items to assess fairness construct was significant with the score of Cronbach's alpha 0.81.

Trust

In this research, trust is related to the competence and integrity of government, private companies, Non-Governmental Organizations (NGOs), and researchers. Eight items were significant to be reliable to measure the trust construct with 0.83 score of Cronbach alpha. One of the items in this construct was "*The national government has the integrity to carry out the wind farms in the sea project*." The items were self-constructed by the researcher.

Evaluation of Costs, Risks, and Benefits

The evaluation of costs, risks and benefits is related to how positive the offshore wind farm projects affect the socio-economic aspects both micro and macro scale, and the environmental aspects. There were ten items adopted from previous studies such as "*Wind farms in the sea increase the mortality of birds and other sea creatures nearby them*." With Cronbach's alpha score of 0.82, these items were significant and reliable to measure the construct.

Local Context

The use of local potential and direct impact on the public's daily life should be measured when it comes to the local context. There were seven items formulated by the researcher based on the result

of previous studies such as "*Wind farms in the sea harness the natural potential of the Netherlands*" These items were significantly reliable to assess the local context construct with 0.73 Cronbach's alpha score.

Public Acceptance

To measure the overall public acceptance, there were five items employed. Two items such as "*I support wind farms in the sea as a renewable energy resource in the Netherlands*" were self-constructed by the researcher and three other items were derived from previous studies. The reliability of this construct was quite high with a Cronbach's alpha of 0.83.

3.3.2. Factor Analysis

To discover whether all items formulated measured the right construct, factor analysis was conducted. Orthogonal rotation (Varimax) method was used to rotate the factors one another to see the correlation among factors and the relationship among items in the constructs. It was suggested that a construct should have at least three items with >0.4 factor loading score (Field, 2013). The factor analysis result which can be seen in Table 5 showed that all items had factor loading score more than 0.4 which means that all items were valid to measure the construct. However, the result also showed that there were 12 components or construct recognized, even though this research only had 6 constructs.

Table 5: Factor Analysis

Component	Label	Item	Factor Loading
1	P1	I have positive feeling about wind farms in the sea in the Netherlands.	.561
	P2	I support wind farms in the sea as renewable energy resource in the Netherlands.	.775
	P3	I am willing to purchase the energy produced by the wind farms in the sea in the Netherlands.	.686
	P4	I will recommend other people to support wind farms in the sea as renewable resource in the Netherlands.	.729
	P5	I prefer wind farms in the sea than other renewable energy resources in the Netherlands.	.434
	L1	Wind farms in the sea harness the nature potential of the Netherlands.	.418
	L2	Wind farms in the sea fit to the culture of the Netherlands.	.678
	L3	Wind farms in the sea match the function of the sea in the Netherlands.	.478
	L5	Wind farms in the sea impact the society's life negatively.	.446
	L6	Wind farms in the sea bring the quality loss to my personal life.	.540
	A6	I think wind farms in the sea can provide clean electricity.	.411

Component	Label	Item	Factor Loading
2	A1	I think we need to reduce the global warming effect in the atmosphere.	.782
	A2	I think sustainable green renewable energy is needed.	.855
	A3	I think renewable energy resources are needed.	.833
	T7	Researchers have the competency to assess the wind farms in the sea.	.464
	T8	Researchers have the integrity to assess the wind farms in the sea.	.539
3	F1	In general, I think the public is involved in the planning process of wind farms in the sea.	.734
	F2	In general, I think the public has the opportunity to voice their opinion about wind farms in the sea.	.687
	F3	In general, I think the national government is listening to the public's opinion about wind farms in the sea.	.809
	F4	In general, I think the public has the opportunity to invest to wind farms in the sea.	.613
	F5	In general, I think the public has the opportunity to participate in the policy making of wind farms in the sea.	.716
	F6	In general, I think the public has the opportunity to vote the location of wind farms in the sea.	.474
	F7	In general, I think the national government is open about the legislation of wind farms in the sea.	.604
	F8	In general, I think the commercial companies (Eneco, Shell, Siemens, etc) are open about their work of wind farms in the sea.	.403
4	E2	Wind farms in the sea help reduce reliance on foreign energy import.	.624
	E3	Wind farms in the sea result in more industries and job opportunities.	.650
	E5	Wind farms in the sea lead to more affordable electricity rates.	.698
	E10	Wind farms in the sea improve the quality of environment.	.522
5	E4	Wind farms in the sea disturb the recreational boating, tourism and fishing industries.	.607
	E6	Wind farms in the sea result in horizon pollution.	.648
	E7	Wind farms in the sea result in noise disturbance.	.675
	E8	Wind farms in the sea increase the mortality of birds and other sea creatures nearby them.	.675
6	T1	The national government has the competency to carry out the wind farms in the sea project.	.412
	T2	The national government has the integrity to carry out the wind farms in the sea project.	.568
	T5	NGOs have the competency to monitor the wind farms in the sea.	.853
	T6	NGOs have the integrity to monitor the wind farms in the sea.	.778
7	T3	Private companies that build and maintain wind farms in the sea have the competency.	.418
	T4	Private companies that build and maintain wind farms in the sea have the integrity.	.505

Component	Label	Item	Factor Loading
8	A4	I understand about how energy is produced by the wind turbines.	.846
	A5	I understand about how wind farms in the sea work.	.880
9	A7	I think wind farms in the sea can provide affordable electricity.	.701
10	A8	I have seen wind farms in the sea in the Netherlands.	.810
	A9	I have heard about wind farms in the sea in the Netherlands.	.757
11	L7	The effect of wind farms in the sea is depended on how far they are installed from my place.	.713
	F6	In general, I think the public has the opportunity to vote the location of wind farms in the sea.	.526
12	L4	Wind farms in the sea will have less impact to public daily life than wind farm on the land.	.678

From the result exhibited in the table above, it can be seen that there are items that supposedly do not belong together, but the factor analysis considered them as one construct. And there are also items that should belong together but dispersed in different constructs. This could be due to the underlying factors behind them. Component/construct 1, for example, consists of all items to measure public acceptance factor/variable, but there are also five items from local context factor and one item from awareness factor. However, if we look thoroughly, all items in Component 1 are related to the public's attitude towards the offshore wind farms, which potentially could be the underlying factors. Next, there are three items to measure awareness factor and two items to measure the trust factor in the Component 2. The three first items are related to the public's knowledge for the needs of renewable energy and this knowledge are usually gotten from knowledge institutions or figures, such as researchers. Thus, public knowledge is the underlying factor in Component 2. Component 3 satisfyingly consists of all items to measure fairness factor only.

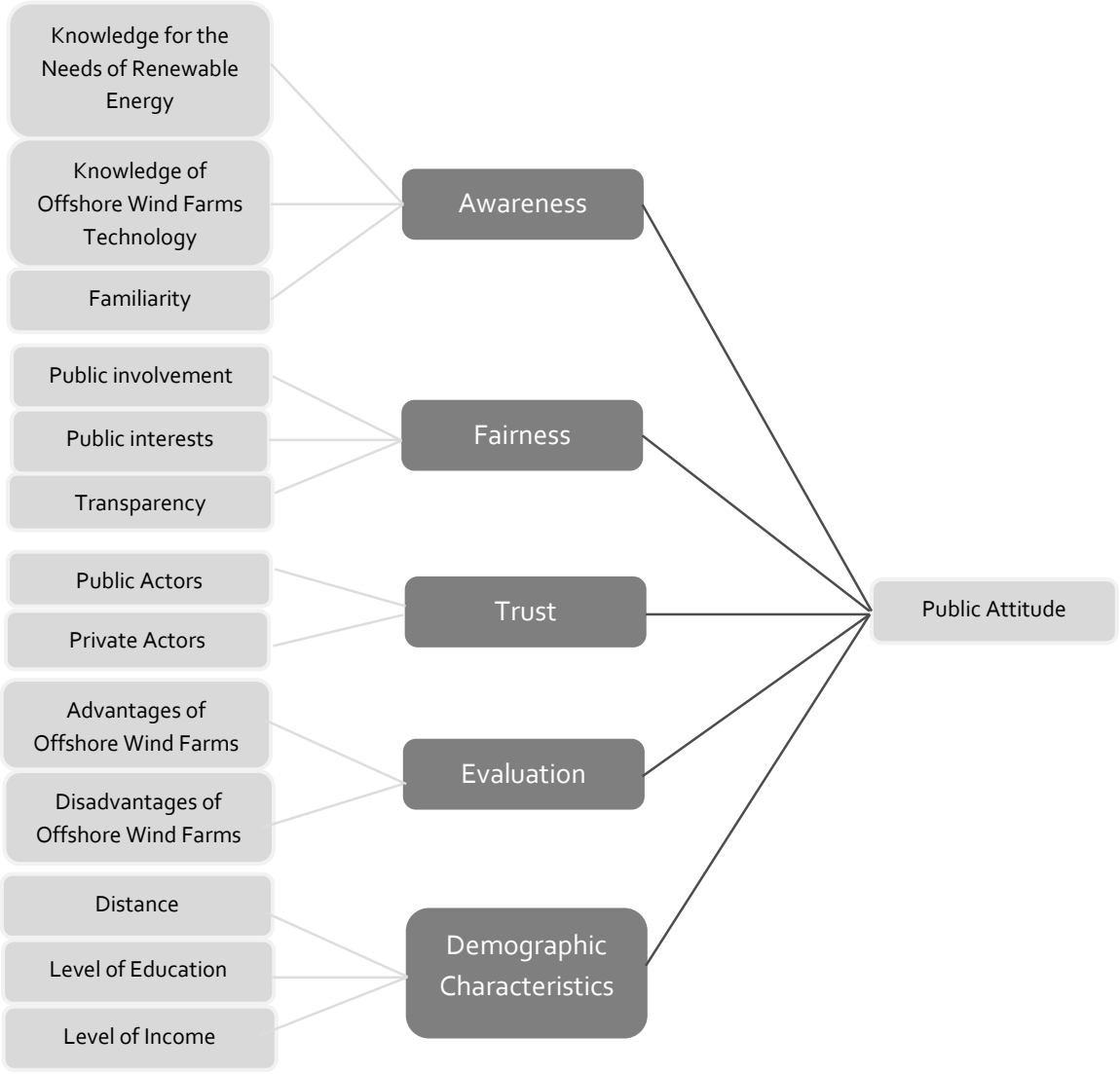
Both Component 4 and Component 5 consist of items to measure the evaluation factors, yet they are divided into two different groups. This is understandable since all items in Component 4 are related to the advantage of offshore wind farms, while all items in Component 5 are related to the disadvantage of offshore wind farms. The same case happened to Component 6 and Component 7, where both of them consist of items to measure the same factor, trust. Nonetheless, they are still divided into two groups since items in Component 6 are related to public actors and items in Component 7 are related to private actors. Next, there are also items from awareness factor, which are divided into three component groups. Component 8 consists of two items that are related to the practical knowledge of offshore wind farms technology sub-factor while Component 10 consists of two items that are indeed supposed to belong together to measure familiarity sub-factor.

At the beginning of the report, it was mentioned that this study, besides testing the public acceptance of renewable energy resource model formulated by POLIMP, is also aimed to adjusting the model specifically to measure the public acceptance of offshore wind farms in the Netherlands. Taking the result explained above into consideration, this study decided to use the components recognized by factor analysis as the new constructs. Thus, there is another adapted framework that will be tested in this study, shown in Table 6 and Figure 2. There is only one item that belongs to Component 9 and one item belongs to Component 11, which are not considered as new constructs since they do not represent any factors. There are also items related to the location of the wind farms in Component 11 but they themselves do not relate to each other so that consequently Component 11 is not treated as a construct either. One item that measure awareness in Component 1 is also discarded since it does not relate to the other items in the group.

Table 6: Construct Comparison of Frameworks

Variable/Factor	Constructs/Sub-Factors		
	POLIMP Framework (Model 1)	Adjusted Framework (Model 2)	Adjusted Items of Model 2
Dependent	Public Acceptance	Public Attitude	P1, P2, P3, P4, P5, L1, L2, L3, L5, L6
Awareness	Knowledge for the needs of renewable energy	Knowledge for the needs of renewable energy	A1, A2, A3, T7, T8
	Knowledge of offshore wind farms technology	Knowledge of offshore wind farms technology	A4, A5
	Familiarity of offshore wind farms	Familiarity of offshore wind farms	A8, A9
Fairness	Public involvement	Public involvement	F1, F2, F3
	Public interests	Public interests	F4, F5, F6
	Transparency	Transparency	F7, F8
Trust	National Government	Public Actors	T1, T2
	Non-Governmental Organizations		T5, T6
	Private Companies	Private Actors	T3, T4
	Researchers	-	-
Evaluation of Costs, Risks, and Benefits	Socio-economic	Advantages	E2, E3, E5, E10
	Environmental	Disadvantages	E4, E6, E7, E8
Local Context	Use of Local Potentials	-	-
	Impacts to Daily Life	-	-

Figure 2: Research Model 2



3.4. Participants

The respondents in this study were the Dutch population that based on the estimation counted into 17,100,000 per December 2018 (Centraal Bureau voor de Statistiek, 2018; Worldometer, 2018). Based on that population size, taking 95% confidence level and 7% margin of error, this research needed 196 people as its sample/respondents. Public acceptance of offshore wind farm is depended on some specific factors such as daily life impact on the local context, fairness in decision-making process and trust to the government. Considering these factors, the respondents were limited to only Dutch people who live at least 5 years in Netherlands. This time span is believed to be long enough for the respondents to be involved in any offshore wind farm project development such as voicing their opinion in the planning process, voting for the political parties that have concern about offshore wind farms, and maintaining the operational and evaluation of offshore wind farms. Almost 400 people took part in the survey, yet some of them left out in the middle of the survey before completing it and

some only filled in half of the survey, so the researcher had to exclude their participation. In total, after more than a month of gathering data, 221 data of the respondents that could be used for further analysis.

The respondents were scattered throughout 65 places in the Netherlands. These participants were then categorized based on the distance of the nearest offshore wind farms to their residence. The data showed that 61.5% of the participants (136 people) live more than 60 kilometers from any offshore wind farms. This happened because all of the offshore wind farms in the Netherlands are located in the northwest side of the country. 19.9% participants (44 people) live between 30 to 60 kilometers away from any offshore wind farms. 6.7% participants (15) people need to travel between 15 to 30 kilometers from their residence to the offshore wind farm. Only 1.3% participants (3 people) who live within 15 kilometers from offshore wind farm, while 10.44% participants (23 people) did not state the location of their residence so their distance to any nearest offshore wind farms is unknown.

Figure 2: Distribution Map of Participants

Table 7: Distribution of Participants

Distance from Residence to Offshore Wind Farms	Count	Percentage
<15 km	3	1,3%
15 – 30 km	15	6.7%
30 – 60 km	44	19.9%
>60 km	136	61.5%
Unknown	23	10.4%

The participants in this study also vary based on their level of education and income. More than half of the participants hold a degree from university, where 101 people completed their bachelor education, and 60 people completed their master or doctoral education. There were 14.9% participants (33 people) with a secondary education diploma and 9.9% participants (22 people) with a professional/vocational training diploma as their highest completed education. Only 0.9% of participants (2 people) had elementary school as their highest completed education while 1.3% of participants (3 people) gave no indication about it. When it comes to gross income per year, 67.4% of the participants (149 people) earn no more than 20,000 euro, 11.3% participants (25 people) earn 30,000-40,000 euro, and 9.5% participants (21 people) earn between 20,000 and 30,000. There were 6.3% of participants (14 people) with annual gross income between 40,000 and 50,000 euro. 3.6% of participants (8 people) have more than 50,000 euro yearly gross income, while 1.8% of them(4 people) did not give any indication about it.

Table 8: Level of education and annual gross income of respondents

Variable	N	%	Variable	N	%
Level of Education			**Level of Income**		
Basisonderwijs	2	0.9	<20,0000	149	67.4
Voortgezet onderwijs	33	14.9	20,000 – 30,000	21	9.5
MBO	22	9.9	30,000 – 40,000	25	11.3
HBO/WO Bachelor	101	45.7	40,000 – 50,000	14	6.3
Master/PhD	60	27.1	>50,000	8	3.6
Unknown	3	1.3	Unknown	4	1.8

4. RESULTS

4.1. Descriptive Statistics

Table 9 shows the scores of mean and standard deviation for each variable/factor of Model 1 in this study. It can be seen that "Public Acceptance" has the highest score among all the variables tested with M=3.82, SD=.72. This means that overall, the offshore wind farms are accepted by the public quite well in the Netherlands. The highest score was then followed by "Local Context" with score M=3.80, SD=.62, "Awareness" with score M=3.78, SD=.61, "Trust" with score M=3.68, SD=.60, and "Evaluation of Costs, Risks, and Benefits" with score M=3.54, SD=.61. By having these scores, it can be seen that offshore wind farms are perceived as adequately fit to the local context and the public was fairly aware of the offshore wind farms. Public trust and the evaluation of costs, risks, and benefits scores indicated that the public had a decent perception of offshore wind farms effectiveness and trustworthiness. However, "Fairness" has the lowest score among all the variables with M=2.73, SD=.63, suggesting that the public tends to perceive offshore wind farm projects as not fair enough.

Table 9: Descriptive Statistics Model 1

Variable	N	Mean	Std. Deviation
Awareness	221	3.78	.61
Fairness	221	2.73	.63
Trust	221	3.68	.60
Evaluation of Costs, Risks and Benefits	221	3.54	.61
Local Context	221	3.80	.62
Public Acceptance	221	3.82	.72

Table 10 exhibits the mean and standard deviation score for each variable/factor of Model 2, which was adjusted from POLIMP's framework as Model 1. Unexpectedly, instead of Public Attitude variable, which is equal to Public Acceptance variable in Model 1, in Model 2 Awareness variable scored highest with M=3.84, SD=.61. This means according to our new adjusted framework, the most public has high awareness of offshore wind farms. Public attitude, although it has a lower score than awareness, still shows high mean score with M=3.83, SD=.66, suggesting that public generally has a favorable attitude towards offshore wind farms. Two other variables/factors also generated fair mean scores with M=3.57, SD=.61 for trust variable and M=3.43, SD=.64 for evaluation of costs, risks, and benefits. The results indicated that the public had a decent perception of offshore wind farms effectiveness and trustworthiness. In line with the result of Model 1, fairness variable also scored the lowest in Model 2. With M=2.73, SD=.63 the result indicated that the public did not perceive offshore wind farms projects were held fairly for them.

Table 10: Descriptive Statistics Model 2

Variable	N	Mean	Std. Deviation
Awareness	221	3.84	.61
Fairness	221	2.73	.63
Trust	219	3.57	.61
Evaluation of Costs, Risks and Benefits	219	3.43	.64
Public Attitude	219	3.83	.66

While the tables above show the big pictures of the variables, it is also important and interesting to discuss the details of the findings per sub-factor.

Public Awareness of Offshore Wind Farms in the Netherlands

When it comes to the knowledge about the needs for renewable energy, the public shows a great level of awareness. 90% of the participants agreed or strongly agreed that green renewable energy is needed, and so is its resource. 87% of the participants also agreed or strongly agreed that we need to reduce the global warming effect. Related to the knowledge about offshore wind farm technology, it is known that 61% of the participants understood how energy is produced by wind turbines, and 56% understood how offshore wind farms work. 80% of the participants agreed or strongly agreed that offshore wind farms could provide clean electricity, but only 43% of them agreed or strongly agreed that offshore wind farms could provide affordable electricity while 41% had a neutral opinion about it. In relation to the familiarity, at least 70% of the public have seen offshore wind farms, and 76% have heard about it.

Fairness Sense of Offshore Wind Farm Projects in the Netherlands

The low mean score of fairness could be explained when we look into the details that tend to result in a negative opinion. 52% of participants disagreed or strongly disagreed that the public was involved in the planning process of wind farms in the sea, while 28% did not agree nor disagreed about it. The participants also had varied opinions about the public's opportunity to voice their opinion where 32% disagreed or strongly disagreed about it, 29% agreed or strongly agreed, and 31% were not sure about it. The same thing happened when the public was asked whether they think the government listened to their opinion about the offshore wind farms in the Netherlands or not. 34% of the participants disagreed or strongly disagreed, and 41% were neutral about this.

The overall statistic regarding public interests also exhibits neutral results or tend to be negative. 42% of the participants did not agree nor disagreed about whether the public has the opportunity to invest in offshore wind farm projects or not, and 40% disagreed about it. 44% of participants did not think

that the public has the opportunity to participate in the policy-making about offshore wind farms while 39% took the neutral position. 55% of the participants thought that the public does not have any right to vote for the location of offshore wind farms, while 30% did not agree nor disagree. The transparency factor does not result in much different from the two other factors. 40% of the participants were not sure whether the government was transparent about the offshore wind farm legislation or not, while 31% of them were sure about it, and 29% of them were not. In the matter of private companies' transparency, 38% of the participants were not sure, 42% of the participants were negative, and 21% of the participants were positive that the private companies were transparent about their works of offshore wind farms.

Trust towards the Stakeholders of Offshore Wind Farms in the Netherlands

66% of the participants agreed or strongly agreed that the government has the competence to carry out the wind farm projects and 59% of the participants agreed or strongly agreed that the government has the integrity to do so. The statistic result for NGOs was not much different either, where 57% of the participants were sure about the NGOs' competency, and 60% were sure about its integrity. A very unique result was generated for the private companies where 70% of the participants agreed or strongly agreed that the private companies have the competency to build and maintain the wind farms, but only 35% of the participants thought that the companies have the integrity to do so. Researchers, as the last factor in the trust variable gain a very positive result. 81% of the participants believed that the researchers' have the competency to evaluate the wind farm projects, and 79% of the participants also believed in their integrity.

Evaluation of Costs, Risks and Benefits

In the matter of evaluation of costs, risks, and benefits both socio-economically and environmentally, the statistics mostly exhibit favorable results. More than 80% of participants agreed or strongly agreed that offshore wind farms help to build the reputation of the Netherlands as a green sustainable country and reduce reliance on foreign energy import. When exposed to the statement "offshore wind farms result in more industries and job opportunities", 56% of participants agreed or strongly agreed with it. 39% of participants disagreed or strongly disagreed while 35% agreed or strongly agreed that offshore wind farms disturb the recreational boating, tourism, and fishing industries. The affordability of electricity produced by offshore wind farms was doubted by more than half of the participants where 22% disagreed or strongly disagreed and 42% participants neither agreed nor disagreed about it. 60% of the participants disagreed or strongly disagreed that offshore wind farms cause noise disturbance, and 28% took a neutral position. 46% of the participants also disagreed or strongly

disagreed that offshore wind farms create horizon pollution while 24% neither agreed nor disagreed about this. The public has varied opinions regarding the mortality of birds and other sea creatures nearby offshore wind farms where 37% of participants disagreed or strongly disagreed that the mortality is increased by the wind farms, 22% of participants agreed or strongly agreed about it, and 42% of them did not agree nor disagreed. When the participants were exposed to the statements "offshore wind farms reduce the CO2 and its effect on the atmosphere", 64% of them agreed or strongly agreed with it. And the statement "offshore wind farms improve the quality of the environment" generated 72% of participants' agreement.

Local Context

Local context variable also gains favorable result to support public acceptance. More than 75% of participants agreed or strongly agreed that offshore wind farms harness the natural potential of the Netherlands and offshore wind farms will have less impact to public's daily life than wind farm on the land. Over 60% of the participants also agreed or strongly agreed that offshore wind farms fit the culture of the Netherlands and their effect is depended on how far they are installed from the public's places of activity/residence. There was no significant percentage of participants who thought offshore wind farms would lead to the loss of daily life quality.

Overall Public Acceptance

Generally, the offshore wind farms in the Netherlands gain really positive acceptance from the public. More than 80% of the participants had a positive feeling about offshore wind farms in the Netherlands, supported them as renewable energy resources, and showed a willingness to purchase the energy produced by them. 68% of the participants agreed or strongly agreed to recommend other people to support wind farms in the sea as renewable resources in the Netherlands. 38% of the participants preferred offshore wind farms than other renewable energy resources in the Netherlands, while 40% of the participants were neutral about it, and 22% of them chose the opposite position.

4.2. Correlation Analysis

Pearson's correlation analysis was performed prior to the regression analysis to see whether the variables correlate one another or not. There were eleven significant correlations found in Model 1 as displayed boldly in Table 11. It can be seen that the strongest correlation between the dependent variable and the independent variables was between the "Public Acceptance" and the "Evaluation of Costs, Risks and Benefits" ($r=.74$, $p<.01$), followed by the correlation between "Public Acceptance and Local Context" ($r=.69$, $p<.01$). Other significant correlations between the dependent variable and the independent variables were between "Public Acceptance" and "Trust" ($r=.49$, $p<.01$) and between

"Public Acceptance" and "Awareness" (r=.44, p<.01). The analysis result suggested that all the independent variables except "Fairness" (r=.06, p<.01) correlated significantly with the dependent variable.

Table 11: Correlation Analysis Model 1

	Awareness	Fairness	Trust	Evaluation	Local Context	Public Acceptance
Awareness	1					
Fairness	.011	1				
Trust	**.373****	**.197****	1			
Evaluation	**.482****	.039	**.525****	1		
Local Context	**.410****	.039	**.503****	**.641****	1	
Public Acceptance	**.437****	.067	**.493****	**.742****	**.689****	1

**Correlation is significant at the 0.01 level (2-tailed)

The greatest significant correlation among the independent variables was the correlation between "Evaluation" and "Local Context" (r=.64, p<.01), followed by the correlation between "Evaluation" and "Trust" (r=.53, p<.01). "Trust" and "Local Context" (r=.50, p<.01), "Trust" and "Fairness" (r=.20, p<.01) also correlated significantly as independent variables. "Awareness" correlated with almost every other independent variables which were "Trust" (r=.37, p<.01), "Evaluation of Costs, Risks and Benefits" (r=.48, p<.01), and "Local Context" (r.41, p<.01) but not with "Fairness" (r=.01, p>.01). Based on the analysis result it was also found that "Fairness" did not correlate with other independent variables except "Trust".

Table 12: Correlation Analysis Model 2

	Awareness	Fairness	Trust	Evaluation	Public Attitude
Awareness	1				
Fairness	-.004	1			
Trust	**.375****	**.247****	1		
Evaluation	**.442****	.020	**.420****	1	
Public Attitude	**.476****	.027	**.444****	**.720****	1

**Correlation is significant at the 0.01 level (2-tailed)

Moving to the second model in this study, there were seven significant correlations found as displayed boldly in Table 12. It can be seen that the strongest correlation between the dependent variable and the independent variables in Model 2 was between the "Public Attitude" and the "Evaluation of Costs, Risks and Benefits" (r=.72, p<.01). Other significant correlations between the dependent variable and independent variables were found between "Public Attitude" and "Awareness" (r=.48, p<.01) and between "Public Attitude" and "Trust" (r=.44, p<.01). The analysis result suggested that all the independent variables except "Fairness" (r=.03, p<.01) correlated significantly with public attitude as the dependent variable.

Besides three correlations found between dependent and independent variables, there were also four significant correlations among the independent variables themselves. The strongest correlation was found between "Evaluation" and "Awareness" factors (r=.44, p<.01), followed by correlation between "Evaluation" and "Trust" factors (r=.42, p<.01). Other significant correlations were found between "Trust" and "Awareness" (r=.38, p<.01) and between "Trust" and "Fairness" (r=.25, p<.01).

4.3. Regression Analysis

4.3.1. Model 1 Testing

In order to test the formulated hypotheses in this research based on Model 1, a regression analysis was executed. The outcome of the analysis can be found in Table 13. There are two types of result exhibited in Table 13, Model 1A treated the independent variables/factors as the constructs and Model 1B treated every sub-factor from every factor as the constructs. Based on Model 1A, eight independent variables are able to explain 63% of the variance in the public acceptance of offshore wind farms in the Netherlands (R^2=.634, F(8,206)=45.65, p<.01). Although based on the R square all variables when combined together as a set could satisfactorily predict the public acceptance, in fact not every variable were unique singly by themselves. Three of the independent variables positively have significant influence to public acceptance. The variables are evaluation of costs, risks and benefits with beta coefficient score .59, p<.001, local context with ß=.40, p<.001, and awareness with ß=.13, p<.05.

Table 13: Regression Result Model 1

	Construct	ß	Sig.
	Awareness	.13	**.03**
	Fairness	.05	.29
Model 1 A Regression	Trust	.01	.85
Per Factor	Evaluation of costs, risks, and benefits	.59	**.00**
R Square=.65	Local context	.40	**.00**
Adjusted R Square=.64	Distance to wind farms	.04	.40
	Level of education	.02	.23
	Level of income	.04	.48

	Construct	ß	Sig.
Model 1 B Regression Per Factor R Square=.65 Adjusted R Square=.64	Knowledge about the needs for renewable energy	.08	.11
	Knowledge of offshore wind farm technology	.02	.76
	Familiarity of offshore wind farms	.04	.22
	Public involvement	.01	.88
	Public interests	.05	.35
	Transparency	-.01	.84
	Trust towards national government	.04	.50
	Trust towards private companies	-.02	.72
	Trust toward non-governmental organizations	-.01	.88
	Trust toward researchers	.02	.77
	Socio-economic evaluation	.32	**.00**
	Environmental evaluation	.24	**.00**
	Use of local potentials	.24	**.00**
	Impact to daily life	.18	**.00**
	Distance to wind farms	.04	.38
	Level of education	.02	.48
	Level of income	.02	.52

When the sub-factors are used to be the constructs in Model 1B, it resulted slightly different from the previous model 1A. The seventeen factors are able to explain 63% of the variance in the public acceptance of offshore wind farms in the Netherlands (R^2=.628, F(17,206)=21.49, p<.01). However, Model 1B did not consider any sub-factor from awareness variable as influential, even though in Model 1A awareness played a role to influence the public acceptance. There are only four influential sub-factors of public acceptance in the second model, which are socio-economic (ß=.32, p<.001) and environmental that belong to evaluation variable (ß=.24, p<.001) and use of local potentials (ß=.24, p<.001) and impact to daily life (ß=.18, p<.001) that belong to local context variable. From the result of Model 1 explained above, it could be inferred that the sub-factors from awareness variable gives stronger positive influence on public acceptance when combined as a set. Five other independent variables—Trust, Fairness, Distance to Wind Farms, Level of Education, and Level of Income—in both models showed no positive influence on public acceptance.

4.3.2. Model 2 Testing

This research offered another adjusted measurement to test the hypotheses. The regression analysis outcome of this can be found in Table 14. In the similar vein with Model 1 before, there are two types of result exhibited in Table 14. Model 2A treated the independent variables/factors as the constructs, while Model 2B treated every sub-factor from every factor as the constructs. Based on Model 2A, eight

independent variables are able to explain 61% of the variance in the public acceptance of offshore wind farms in the Netherlands (R^2=.610, F(7,206)=46.07, p<.01). Although based on the R square all variables when combined together as a set could satisfactorily predict the public acceptance, in fact not every variable were unique singly by themselves. Only two of the independent variables significantly have positive influence to public acceptance. The variables are evaluation of costs, risks and benefits with beta coefficient score .68, p<.001 and awareness with ß=.19, p<.001.

Table 14: Regression Result Model 2

	Construct	ß	Sig.
Model 2A Regression Per Factor R Square=.62 Adjusted R Square=.61	Awareness	.20	**.00**
	Fairness	-.02	.68
	Trust	.09	.09
	Evaluation of costs, risks, and benefits	.68	**.00**
	Distance to wind farms	.08	.08
	Level of education	.02	.57
	Level of income	.02	.54
	Knowledge for the needs of renewable energy	.18	**.00**
	Knowledge of offshore wind farm technology	.01	.61
	Familiarity of offshore wind farms	.03	.29
	Public involvement	-.07	.19
	Public interests	.01	.82
Model 2B Regression Per Sub-Factor R Square=.64 Adjusted R Square=.61	Transparency	.05	.30
	Trust towards public actors	.07	.18
	Trust towards private actors	-.02	.71
	Advantages	.37	**.00**
	Disadvantages	.30	**.00**
	Distance to wind farms	.07	.07
	Level of education	.01	.67
	Level of income	.03	.34

When the sub-factors are used to be the constructs in Model 2B, it resulted slightly different from the previous model 2A. The thirteen factors are able to explain 61% of the variance in the public acceptance of offshore wind farms in the Netherlands (R^2=.612, F(13,206)=26.03, p<.01). There are three influential sub-factors of public acceptance in the second model, which are advantages (ß=.37, p<.001) and disadvantages that belong to evaluation variable (ß=.30, p<.001) and knowledge about the needs for renewable energy (ß=.18, p<.001) that belong to awareness variable. From the result of Model 2 explained above, it could be inferred that the sub-factors from awareness variable gives

stronger positive influence on public acceptance when combined as a set, but the most significant sub-factor is the knowledge about the needs for renewable energy. Other independent variables—Trust, Fairness, Distance to Wind Farms, Level of Education, and Level of Income—in both models showed no positive influence on public acceptance. . In addition, it should not be forgotten that local context also plays role since the items are measured together with public acceptance in public attitude variable.

4.4. Hypotheses Overview

From the interpreted analysis results in the previous sections, Table 10 exhibited whether all formulated hypotheses in this research were rejected or supported. Overall, there were only three supported hypotheses and the other five hypotheses were rejected.

Table 10: Overview of Hypotheses

	Hypotheses	Result Model 1	Result Model 2
H1	*Public awareness significantly influences public acceptance of offshore wind farms in the Netherlands.*	Supported	Supported
H2	*Fairness sense significantly influences public acceptance of offshore wind farms in the Netherlands.*	Rejected	Rejected
H3	*Trust significantly influences public acceptance of offshore wind farms in the Netherlands.*	Rejected	Rejected
H4	*Evaluation of costs, risks and benefits significantly influences public acceptance of offshore wind farms in the Netherlands.*	Supported	Supported
H5	*Local context significantly influences public acceptance of offshore wind farms in the Netherlands.*	Supported	
H6	*Level of education influences public acceptance of offshore wind farms in the Netherlands.*	Rejected	Rejected
H7	*Level of income influences public acceptance of offshore wind farms in the Netherlands.*	Rejected	Rejected
H8	*Distance to wind farms influences public acceptance of offshore wind farms in the Netherlands.*	Rejected	Rejected

4.5. Final Research Model

To close this chapter, two final research models were developed based on the result of the tested hypotheses.

Figure 3: Adjusted Model 1

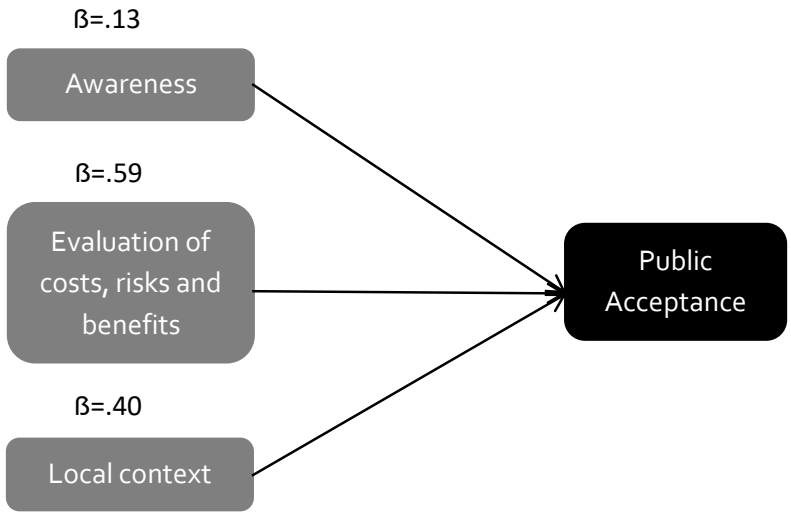
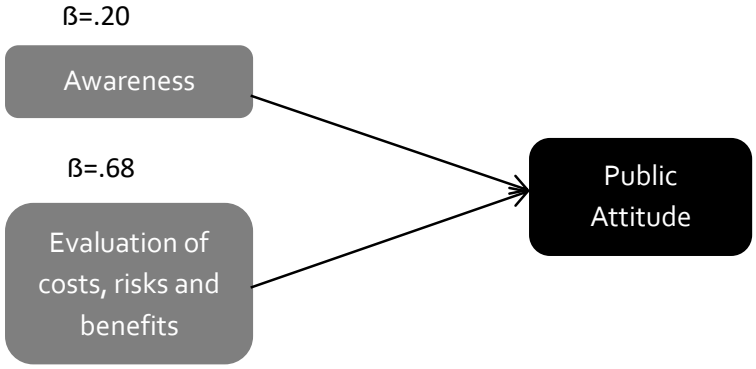


Figure 4: Adjusted Model 2



5. DISCUSSION

5.1. Main Findings

This study focuses on two main objectives. First, to test the public acceptance framework developed by POLIMP and second, to adjust that existing framework. Both objectives were aimed to answer the question about what factors positively influence the public acceptance of offshore wind farms in the Netherlands. Model 1 in this study gave the result that awareness, evaluation of costs, risks, and benefits, and local context positively influence the public acceptance of offshore wind farms, while fairness and trust did not. Model 2 gave the result that awareness and evaluation of costs, risks, and benefits influence the public attitude of offshore wind farms in the Netherlands, while trust and

fairness did not. And related to these models, it is important to note that different outcomes are caused by different items in the constructs used to measure the public acceptance.

Both in Model 1 and model 2, public awareness show a positive influence on public acceptance, and the statistic results of this variable show a high level of awareness for every sub-factor. The fact of public's high knowledge about the needs of renewable energy is important to note since if the public thinks that renewable energy is not needed or does not know that it is needed, they will see there is no use to replace the non-renewable energy resource. The deployment of renewable energy resource such as offshore wind farms then will gain no support or worse, resistance. And taking the high level of knowledge of wind farm technology among the Dutch population into account, the public acceptance of offshore wind farms is even more foreseeable. When the public understands how the energy generated from renewable non-polluting resources, going for their utilization is seen as a good idea by the public (Khambalkar, Kakhede, & Dahatonde, 2010). The statistics results also indicate that most of the population is familiar with offshore wind farms. The public tends to perceive it more friendly since the resource is not "alien" for them which explains how the Dutch familiarity of offshore wind farms influences their good acceptance (Botelho, et al., 2016; Schweizer et al., 2016).

However, despite its positive influence as a variable/factor, the sub-factors that comprise it cannot explain the variance of public acceptance alone. As seen in the regression analysis result of Model 1, when treated as constructs, none of the awareness sub-factors is influential enough by themselves. Knowledge about the needs for renewable energy, knowledge about wind farm technology, and familiarity of offshore wind farms need to be combined as a set to predict the public acceptance. Yet based on the sub-factors regression analysis of Model 2, there is one sub-factor that showed a positive influence on the public attitude; knowledge about the needs for renewable energy. The explanation of why this sub-factor only showed its influence in Model 2 but not in Model 1 is presumably because it was comprised of different items. In Model 1, there are three items used as measurement: "*I think we need to reduce the global warming effect in the atmosphere", "I think green renewable energy is needed",* and "*I think renewable energy resources are needed".* In Model 2, these three items were also used, but two more items regarding trust were added: *"Researchers have the competency to assess the offshore wind farms"* and "*Researchers have the integrity to assess the offshore wind farms."* The researchers are seen as the source of the knowledge about the needs for renewable energy. Therefore, to maintain or even enhance the positive influence of public awareness towards public acceptance of offshore wind farms, it is strongly advised to prioritize improving public's knowledge of why offshore wind farms are needed in the Netherlands, especially by involving the researchers to be open to interaction with and communicate to the public. It is important for the

researchers to not merely focusing on the results of researches but also ensuring great understanding among the general public (The Young Academy, 2012). Such action besides improving the public awareness consequently would also help the public evaluating the decision making and performance of offshore wind farms.

Another interesting result to note from the awareness variable/factor is regarding the statistics of item "*I think offshore wind farms can provide affordable electricity".* This statement generated a diversified response with almost half of the participants involved did not agree nor disagree about it. This could be due to the economic view that the public has over the renewable energy resource, besides their knowledge (Olson-Hazboun, 2017). This assumption was supported by the correlation analysis result when each sub-factor of public awareness was treated as a single construct, knowledge of wind farm technology factor (which consists the items that measure offshore wind farms' performance of producing affordable energy) has the strongest correlation with the socio-economic evaluation factor. This leads the discussion to another influential factor/variable, evaluation of costs, risks, and benefits.

Based on the statistics results exhibited in the previous descriptive section, it could be inferred that most of the Dutch population evaluate the offshore wind farms positively. Model 1 in this study distinguished the socio-economic and environmental costs, risks, and benefits as the sub-factors. Model 2, on the other hand, distinguished the sub-factors into advantages and disadvantages of offshore wind farms. All factors from both models showed great positive influence.

From the socio-economic perspective, offshore wind farms are accepted well by the public to build the Netherlands' reputation as a sustainable country. This acceptance is evaluated as an advantage since currently, the country's green reputation is going lower due to the lack of share of renewable energy in the economy (Dual Citizen LLC, 2016). The green renewable reputation, in turn, influences the investment rate in the country positively, leading to more industries and job opportunities, which is another advantage for the public.

In the Netherlands, the stringent and enforced sustainable policy polishes the attractiveness of the country as the good "haven" for machines, electronics, automotive and transportation, and communication industries (Poelhekke & van der Ploeg, 2012). Yet, despite this economic advantage, there is a concern about the possibility that offshore wind farms might disturb the fishing industry. The Dutch fishing industry generates around 4 billion euro total revenue, about 6200 fulltime jobs and concerns around 300 companies in the country (Visfederatie, 2018). Ergo, the influence of this industry to the public acceptance of offshore wind farms is certain, and it demands serious attention. In June

2018, for instance, hundreds of fishermen protested to that they were being crowded out of their waters and the turbines damage fish stocks, deafen and displace the porpoise population. The Dutch government fought off accusations that they rushed in developing the offshore wind farms without examining ecology and economy consequences at the first place (The Guardian, 2018). This example of the fishing industry's issue if was not taken care seriously would lead to the public's apathy, let alone the opposition.

From the regression analysis of environmental sub-factor, it is clear that the view, the sound, and the impact to animals nearby offshore wind farms are viewed as the disadvantage of offshore wind farms by the public in the Netherlands. Pulsating swishing sounds, turbine engine hum, and the thought of landscape aesthetic degradation as the main causes of disadvantage could potentially influence public's level of acceptance of offshore wind farms if they are placed at within 30 kilometers from the shore (Jaber, 2013; Snyder & Kaiser, 2009). The potential of mortality of birds and other marine animals during the construction, operation, and decommissioning phase of offshore wind farms also influence its acceptance (Kaldellis et al., 2016). It is strongly recommended to minimize these three prominent disadvantages to maintain and enhance the public acceptance of offshore wind farms in the Netherlands.

The last factor that positively influences the public acceptance of offshore wind farms in the Netherlands is the local context. It is comprised of two sub-factors; use of local potentials and impact to daily life. These sub-factors showed positive influence when they are treated as constructs in Model 1. In Model 2, the items from these sub-factors are combined with the items of public acceptance to measure public attitude. Harnessing the natural potential of the country, fitting its culture and the function of the sea, and the absence of negative impact on public's life quality successfully influence the public's acceptance of offshore wind farms. It is suggested to maintain and improve those matters to keep public to be in favor of offshore wind farms as a renewable energy resource in the Netherlands. Putting offshore wind farms far from the public's activities and minimizing the negative consequences are some instances of the effort could be done.

Generally, the offshore wind farms in the Netherlands gained really positive acceptance from the public. Most of the population have a positive feeling about offshore wind farms in the Netherlands, support them as renewable energy resources, and willing to purchase the energy produced by them. However, there are still quite diversified opinions among the public about preferring offshore wind farms over other renewable energy resources in the Netherlands. Most of the Dutch population did not only accept the fact that offshore wind farms exist, but also support the operation/practice, and concerned about the policies. And this favorable acceptance of offshore wind farms is influenced by

the public's awareness, evaluation of costs, risks, and benefits, and local context. The other factors/variables considered in this study; fairness sense, trust towards stakeholders, distance to wind farms, level of education and level of income did not show any positive influence to public's acceptance of offshore wind farms in the Netherlands.

5.2. Theoretical Implication

The framework used in this study was based on the POLIMP's investigation about public acceptance of renewable energy technologies or resources. It was found that the public acceptance consists of five elements, which are awareness, fairness sense, trust in stakeholders, evaluation of costs, risks and benefits, and local context. From those elements, the researcher tried to find what their underlying factors are. And from each factor, the researcher tried to develop the measurements. Some of the measurements were adopted from previous researches, and some were formulated by the researcher herself.

However, the factor analysis of this framework showed a very unique result. Instead of recognizing six components; five independent variables and one dependent variable, there were twelve components revealed. And the components did not always consist of the items that should belong together. The researcher managed to find the similarities among these items in the components and decided to use ten of the components as new measurement. Therefore, not only testing the existing framework, this study also offers an adjusted new framework to examine the public acceptance of a renewable technology. It is learned from this research that in figuring out the public acceptance of a renewable energy resource or technology, examining the elements that comprise them and investigate their core factors is important to formulate the unique customized measurements. What is a problem for the acceptance of one renewable energy resource could be a neutral or positive influence for the other renewable energy resources.

5.3. Practical Implication

There were a lot of previous studies related to the offshore wind farms, including the acceptance of them as renewable energy resources in some countries. There were also few studies related to the public acceptance of onshore wind farms in the Netherlands. However, to the best of author's knowledge, there was not any study that examined the public acceptance of offshore wind farm in the Netherlands. Therefore, it was important to conduct one to see how the public perceives the offshore wind farms and reveal the factors that make them think so.

The Dutch government stated that offshore wind farms as renewable energy resources are a favorable option for a longer-term in the Netherlands (Rijksoverheid, 2011). In that sense, gaining a high level of public acceptance is very crucial. This research provided the data of public acceptance that was needed and examined what factors influenced. It is hoped that the result of this research could be the base or consideration of any action or decision made regarding the offshore wind farms in the Netherlands in the future.

Some recommendations were presented in the discussion part. Every concerned stakeholder of offshore wind farms in the Netherlands is expected to maintain and enhance the public's knowledge and familiarity of renewable energy needs and offshore wind farms technology. Hence, the public could make a better evaluation of the offshore wind farms' costs, risks. and benefits. Maximizing the natural wind potential and keeping the negative consequences minimized are also suggested to maintain the thought that offshore wind farms fit the local context in the Netherlands.

5.4. Limitations

Beside the theoretical and practical implications of this study, there were also some limitations that happened. The most unavoidable one was the participants who dropped out of the survey before they completed it. In fact, in this research, the data gathering process was the longest process which lasted for more than a month. The survey that was distributed online in the consideration of participants' convenience still suffered from a high drop rate. The most potential explanation of this problem is the word choices in the statements/items in the survey were not very familiar for the general public, especially the ones who have no or minimum interest in renewable energy and its policies/practice.

Another limitation was related to the number of participants and their distribution. At the beginning of this research, it is stated that with a 7% margin of error, from 17,000,000 of the Dutch population, 196 people were needed as participants. Although in the end, more than 200 people took participation in the study, in the future, the margin of error still could be suppressed. In other words, the number of participants could be increased to get a more reliable result. The distribution of the participants is not proportionate either. There are cities where the researcher could gather more than twenty participants, while there are also cities where less than five people participated. There were only two people with basic level of education involved, and half of the participants have the same level of income. For that reason, the demographic characteristics should be tested in the future with a better proportion of participants to see whether they influence the public acceptance of offshore wind farms in the Netherlands or not.

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Appendix 1 – Items Translation

Code	Label	English	Dutch
AA	A1	I think we need to reduce the global warming effect in the atmosphere.	Ik vind dat we het broeikaseffect moeten tegengaan.
	A2	I think sustainable green renewable energy is needed.	Ik vind dat duurzame, groene energie nodig is.
	A3	I think renewable energy resources are needed.	Ik vind dat duurzame energriebronnen nodig zijn.
AB	A4	I understand about how energy is produced by the wind turbines.	Ik begrijp hoe duurzame energie wordt opgewekt door de windturbines.
	A5	I understand about how wind farms in the sea work.	Ik begrijp hoe windmolenparken in zee werken.
	A6	I think wind farms in the sea can provide clean electricity.	Ik denk dat windmolenparken in zee schone elektriciteit kunnen opleveren.
	A7	I think wind farms in the sea can provide affordable electricity.	Ik denk dat windmolenparken in zee goedkope elektriciteit kunnen opleveren.
AC	A8	I have seen wind farms in the sea in the Netherlands.	Ik heb weleens een windmolenpark in zee gezien in Nederland.
	A9	I have heard about wind farms in the sea in the Netherlands.	Ik heb weleens gehoord van windmolenparken in zee in Nederland.
FA	F1	In general, I think the public is involved in the planning process of wind farms in the sea.	Ik vind dat de bevolking over het algemeen betrokken is bij het planningsproces van windmolenparken in zee.
	F2	In general, I think the public has the opportunity to voice their opinion about wind farms in the sea.	Ik vind dat de bevolking over het algemeen de kans krijgt om zijn mening te uiten over windmolenparken in zee.
	F3	In general, I think the national government is listening to the public's opinion about wind farms in the sea.	Ik vind dat de nationale overheid over het algemeen luistert naar de publieke opinie over windmolenparken in zee.
FB	F4	In general, I think the public has the opportunity to invest to wind farms in the sea.	Ik vind dat de bevolking over het algemeen de kans krijgt om te investeren in windmolenparken in zee.
	F5	In general, I think the public has the opportunity to participate in the policy making of wind farms in the sea.	Ik vind dat de bevolking over het algemeen de kans krijgt om mee te bepalen met het beleid omtrent windmolenparken in zee.
	F6	In general, I think the public has the opportunity to vote the location of wind farms in the sea.	Ik vind dat de bevolking over het algemeen de kans krijgt om te stemmen over de locatie van windmolenparken in zee.
FC	F7	In general, I think the national government is open about the legislation of wind farms in the sea.	Ik vind dat de nationale overheid over het algemeen transparant is over de wetgeving omtrent windmolenparken in zee.
	F8	In general, I think he commercial companies (Eneco, Shell, Siemens, etc) are open about their work of wind farms in the sea.	Ik vind dat de commerciële bedrijven (Eneco, Shell, Siemens etc.) over het algemeen transparant zijn over hun werk aan windmolenparken in zee.

TA	T1	The national government has the competency to carry out the wind farms in the sea project.	De nationale overheid is competent om de windmolenprojecten in zee uit te voeren.
	T2	The national government has the integrity to carry out the wind farms in the sea project.	De nationale overheid beschikt over de integriteit om de windmolenprojecten in zee uit te voeren.
TB	T3	Private companies that build and maintain wind farms in the sea have the competency.	Commerciële bedrijven die windmolenparken in zee bouwen en onderhouden zijn daarvoor competent.
	T4	Private companies that build and maintain wind farms in the sea have the integrity.	Commerciële bedrijven die windmolenparken in zee bouwen en onderhouden zijn integer.
TC	T5	NGOs have the competency to monitor the wind farms in the sea.	NGO's zijn competent om de windmolenparken in zee te monitoren.
	T6	NGOs have the integrity to monitor the wind farms in the sea.	NGO's beschikken over de integriteit om de windmolenparken in zee te monitoren.
TD	T7	Researchers have the competency to asess the wind farms in the sea.	Onderzoekers zijn competent om de windmolenparken in zee te evalueren
	T8	Researchers have the integrity to asess the wind farms in the sea.	Onderzoekers beschikken over de integriteit om de windmolenparken in zee te evalueren.
EA	E1	Wind farms in the sea help building the reputation of the Netherlands as a green sustainable country.	Windmolenparken in zee dragen bij aan een groene en duurzame reputatie van Nederland.
	E2	Wind farms in the sea help reduce reliance on foreign energy import.	Windmolenparken in zee helpen Nederland om minder afhankelijk te zijn van de import van energie.
	E3	Wind farms in the sea result in more industries and job opportunities.	Windmolenparken in zee resulteren in meer industrie en kansen op de arbeidsmarkt.
	E4	Wind farms in the sea disturb the recreational boating, tourism and fishing industries.	Windmolenparken in zee verstoren recreatief varen, toerisme en de visindustrie.
	E5	Wind farms in the sea lead to more affordable electricity rates.	Windmolenparken in zee leiden tot lagere energietarieven.
	E6	Wind farms in the sea result in horizon pollution.	Windmolenparken in zee veroorzaken horizonvervuiling.
	E7	Wind farms in the sea result in noise disturbance.	Windmolenparken in zee veroorzaken geluidsoverlast.
EB	E8	Wind farms in the sea increase the mortality of birds and other sea creatures nearby them.	Windmolenparken in zee verhogen de sterfte van nabije vogels en andere zeedieren .
	E9	Wind farms in the sea reduce the CO2 and its effect in the atmosphere.	Windmolenparken in zee verminderen CO2-uitstoot
	E10	Wind farms in the sea improve the quality of environment.	Windmolenparken in zee verbeteren de kwaliteit van het milieu.

LA	L1	Wind farms in the sea harness the nature potential of the Netherlands.	Windmolenparken in zee helpen het natuurlijke potentiëel van Nederland te benutten.
	L2	Wind farms in the sea fit to the culture of the Netherlands.	Windmolenparken in zee passen bij de Nederlandse cultuur.
LB	L3	Wind farms in the sea match the function of the sea in the Netherlands.	Wndmolenparken in zee sluiten aan bij de functie van de zee in Nederland.
	L4	Wind farms in the sea will have less impact to public daily life than wind farm on the land.	Windmolenparken in zee beïnvloeden het dagelijks leven van de bevolking minder dan windmolenparken op het land.
	L5	Wind farms in the sea impact the society's life negatively.	Windmolenparken in zee hebben een negatieve invloed op de maatschappij.
	L6	Wind farms in the sea bring the quality loss to my personal life.	Windmolenparken in zee hebben een negatief effect op de kwaliteit van mijn persoonlijke leven.
	L7	The effect of wind farms in the sea is depended on how far they are installed from my place.	Het effect dat windmolenparken op mij hebben is afhankelijk van de afstand waarop deze van mij geplaatst zijn.
P	P1	I have positive feeling about wind farms in the sea in the Netherlands.	Ik heb een postief gevoel bij windmolenparken in zee in Nederland.
	P2	I support wind farms in the sea as renewable energy resource in the Netherlands.	Ik ben voorstander van windmolenparken in zee als duurzame energiebron in Nederland.
	P3	I am willing to purchase the energy produced by the wind farms in the sea in the Netherlands.	Ik ben bereid energie af te nemen afkomstig vanwindmolenparken in zee in Nederland.
	P4	I will recommend other people to support wind farms in the sea as renewable resource in the Netherlands.	Ik raad andere mensen aan achter windmolenparken in zee als duurzame energiebron te staan.
	P5	I prefer wind farms in the sea than other renewable energy resources in the Netherlands.	Ik zie in Nederland liever windmolenparken in zee dan andere duurzame energiebronnen.

Appendix 2 – Descriptive Statistics Model 1

Descriptive Statistics

	Mean	Std. Deviation	N
Awareness	3,7714	,61288	221
Fairness	2,7318	,63018	221
Trust towards Stakeholders	3,6765	,59767	221
Evaluation of Costs, Risks, and Benefits	3,5409	,61013	221
Local Context	3,7966	,61949	221
Public Acceptance	3,8188	,72377	221

Appendix 3 – Descriptive Statistics Model 2

Descriptive Statistics

	Mean	Std. Deviation	N
Public Attitude	3,8324	,65750	221
Awareness	3,8412	,61530	221
Fairness	2,7318	,63018	221
Trust	3,5674	,61136	221
Evaluation of Costs, Risks, and Benefits	3,4298	,63969	221

Appendix 4 – Correlation Analysis Model 1

Correlations

		Awareness	Fairness	Trust towards Stakeholders	Evaluation of Costs, Risks, and Benefits	Local Context	Public Acceptance
Awareness	Pearson Correlation	1	,011	,373**	,482**	,410**	,437**
	Sig. (2-tailed)		,875	,000	,000	,000	,000
	N	221	221	221	221	221	221
Fairness	Pearson Correlation	,011	1	,197**	,039	,039	,067
	Sig. (2-tailed)	,875		,003	,567	,561	,322
	N	221	221	221	221	221	221
Trust towards Stakeholders	Pearson Correlation	,373**	,197**	1	,525**	,503**	,493**
	Sig. (2-tailed)	,000	,003		,000	,000	,000
	N	221	221	221	221	221	221
Evaluation of Costs, Risks, and Benefits	Pearson Correlation	,482**	,039	,525**	1	,641**	,742**
	Sig. (2-tailed)	,000	,567	,000		,000	,000
	N	221	221	221	221	221	221
Local Context	Pearson Correlation	,410**	,039	,503**	,641**	1	,689**
	Sig. (2-tailed)	,000	,561	,000	,000		,000
	N	221	221	221	221	221	221
Public Acceptance	Pearson Correlation	,437**	,067	,493**	,742**	,689**	1
	Sig. (2-tailed)	,000	,322	,000	,000	,000	
	N	221	221	221	221	221	221

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 5 – Correlation Analysis Model 2

Correlations

		Public Attitude	Awareness	Fairness	Trust	Evaluation of Costs, Risks, and Benefits
Public Attitude	Pearson Correlation	1	,476**	,032	,444**	,720**
	Sig. (2-tailed)		,000	,635	,000	,000
	N	221	221	221	221	221
Awareness	Pearson Correlation	,476**	1	-,004	,375**	,442**
	Sig. (2-tailed)	,000		,954	,000	,000
	N	221	221	221	221	221
Fairness	Pearson Correlation	,032	-,004	1	,247**	,014
	Sig. (2-tailed)	,635	,954		,000	,832
	N	221	221	221	221	221
Trust	Pearson Correlation	,444**	,375**	,247**	1	,420**
	Sig. (2-tailed)	,000	,000	,000		,000
	N	221	221	221	221	221
Evaluation of Costs, Risks, and Benefits	Pearson Correlation	,720**	,442**	,014	,420**	1
	Sig. (2-tailed)	,000	,000	,832	,000	
	N	221	221	221	221	221

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 6 – Regression Analysis Model 1 per Factor

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,805[a]	,648	,634	,42958

a. Predictors: (Constant), Education, Fairness, Income, Awareness, Distance to wind farm, Local Context, Trust towards Stakeholders, Evaluation of Costs, Risks, and Benefits

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67,406	8	8,426	45,659	,000[b]
	Residual	36,538	198	,185		
	Total	103,945	206			

a. Dependent Variable: Public Acceptance

b. Predictors: (Constant), Education, Fairness, Income, Awareness, Distance to wind farm, Local Context, Trust towards Stakeholders, Evaluation of Costs, Risks, and Benefits

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,823	,374		-2,203	,029
	Awareness	,129	,059	,105	2,177	,031
	Fairness	,053	,050	,047	1,060	,291
	Trust towards Stakeholders	,013	,067	,010	,188	,851
	Evaluation of Costs, Risks, and Benefits	,587	,074	,502	7,900	,000
	Local Context	,397	,073	,319	5,432	,000
	Distance to wind farm	,036	,042	,037	,853	,395
	Income	,022	,031	,031	,718	,473
	Education	,036	,030	,054	1,209	,228

a. Dependent Variable: Public Acceptance

Appendix 7 – Regression Analysis Model 1 per Sub-Factor

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,812[a]	,659	,628	,43302

a. Predictors: (Constant), Education, Trust towards Private Companies, Distance to wind farm, Income, Knowledge about the needs of renewable energy, Public Involvement, Familiarity, Impact to daily life, Knowledge of offshore wind farms technology, Trust towards NGOs, Use of local potentials, Trust towards Government, Transparency, Environmental evaluation, Trust towards Researchers, Public Interests, Socio-economic evaluation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68,506	17	4,030	21,492	,000[b]
	Residual	35,439	189	,188		
	Total	103,945	206			

a. Dependent Variable: Public Acceptance

b. Predictors: (Constant), Education, Trust towards Private Companies, Distance to wind farm, Income, Knowledge about the needs of renewable energy, Public Involvement, Familiarity, Impact to daily life, Knowledge of offshore wind farms technology, Trust towards NGOs, Use of local potentials, Trust towards Government, Transparency, Environmental evaluation, Trust towards Researchers, Public Interests, Socio-economic evaluation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,788	,395		-1,996	,047
	Knowledge about the needs of renewable energy	,079	,049	,086	1,620	,107
	Knowledge of offshore wind farms technology	,015	,049	,015	,304	,762
	Familiarity	,036	,030	,057	1,227	,221
	Public Involvement	,008	,056	,009	,142	,887
	Public Interests	,052	,056	,057	,934	,351
	Transparency	-,011	,053	-,011	-,204	,839
	Trust towards Government	,035	,053	,037	,670	,504
	Trust towards Private Companies	-,020	,056	-,020	-,364	,716
	Trust towards NGOs	-,008	,049	-,009	-,157	,875
	Trust towards Researchers	,017	,058	,018	,293	,770
	Socio-economic evaluation	,318	,078	,287	4,084	,000
	Environmental evaluation	,242	,067	,233	3,628	,000
	Use of local potentials	,235	,059	,243	3,948	,000
	Impact to daily life	,175	,058	,156	3,011	,003
	Distance to wind farm	,039	,044	,039	,890	,375
	Income	,021	,033	,028	,639	,523
	Education	,022	,031	,034	,720	,473

a. Dependent Variable: Public Acceptance

Appendix 8 – Regression Analysis Model 2 per Factor

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,790[a]	,623	,610	,39447

a. Predictors: (Constant), Education, Fairness, Awareness, Income, Distance to wind farm, Trust, Evaluation of Costs, Risks, and Benefits

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51,266	7	7,324	47,067	,000[b]
	Residual	30,965	199	,156		
	Total	82,231	206			

a. Dependent Variable: Public Attitude

b. Predictors: (Constant), Education, Fairness, Awareness, Income, Distance to wind farm, Trust, Evaluation of Costs, Risks, and Benefits

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,076	,335		,226	,821
	Awareness	,195	,055	,172	3,537	,001
	Fairness	-,019	,046	-,019	-,419	,676
	Trust	,093	,055	,087	1,694	,092
	Evaluation of Costs, Risks, and Benefits	,678	,052	,672	12,937	,000
	Distance to wind farm	,077	,039	,087	1,970	,050
	Income	,017	,029	,026	,603	,547
	Education	,016	,027	,026	,577	,565

a. Dependent Variable: Public Attitude

Appendix 9 – Regression Analysis Model 2 per Sub-Factor

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,798[a]	,637	,612	,39340

a. Predictors: (Constant), Education, Trust towards Private Actors, Distance to wind farm, Income, Public Involvement, Knowledge of offshore wind farm technology, Disadvantages, Familiarity, Knowledge about the needs for renewable energy, Advantages, Transparency, Trust towards Public Actors, Public Interests

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52,362	13	4,028	26,026	,000[b]
	Residual	29,869	193	,155		
	Total	82,231	206			

a. Dependent Variable: Public Attitude

b. Predictors: (Constant), Education, Trust towards Private Actors, Distance to wind farm, Income, Public Involvement, Knowledge of offshore wind farm technology, Disadvantages, Familiarity, Knowledge about the needs for renewable energy, Advantages, Transparency, Trust towards Public Actors, Public Interests

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-,004	,344		-,013	,990
	Knowledge about the needs for renewable energy	,181	,051	,188	3,555	,000
	Knowledge of offshore wind farm technology	,014	,028	,023	,505	,614
	Familiarity	,029	,027	,050	1,066	,288
	Public Involvement	-,065	,050	-,080	-1,302	,194
	Public Interests	,011	,051	,014	,226	,821
	Transparency	,049	,047	,058	1,023	,308
	Trust towards Public Actors	,072	,054	,076	1,332	,184
	Trust towards Private Actors	-,019	,050	-,020	-,371	,711
	Advantages	,373	,048	,409	7,734	,000
	Disadvantages	,300	,041	,382	7,263	,000
	Distance to wind farm	,074	,039	,084	1,876	,062
	Income	,028	,030	,043	,952	,342
	Education	,012	,028	,020	,423	,673

a. Dependent Variable: Public Attitude

Appendix 10 – Online Survey

Bedankt voor het meewerken aan deze enquête over uw mening ten aanzien van windmolenparken in zee in Nederland. Uw mening is van groot belang. Het invullen van deze enquête duurt ongeveer 5 à 10 minuten. De gegevens die worden verzameld uit deze enquête zijn anoniem en er wordt vertrouwelijk mee omgegaan.

Ik vind dat we het broeikaseffect moeten tegengaan.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat duurzame, groene energie nodig is.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat duurzame energriebronnen nodig zijn.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik begrijp hoe duurzame energie wordt opgewekt door de windturbines.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik begrijp hoe windmolenparken in zee werken.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee ens	Zeer mee eens
○	○	○	○	○

Ik denk dat windmolenparken in zee schone elektriciteit kunnen opleveren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik denk dat windmolenparken in zee goedkope elektriciteit kunnen opleveren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik heb weleens een windmolenpark in zee gezien in Nederland.

Nooit				Zeer vaak
○	○	○	○	○

Ik heb weleens gehoord van windmolenparken in zee in Nederland.

Nooit				Zeer vaak
○	○	○	○	○

De volgende vragen gaan over uw mening over de betrokkenheid van de Nederlandse bevolking bij de besluitvorming rondom windmolenparken in ze in Nederland.

Ik vind dat de bevolking over het algemeen betrokken is bij het planningsproces van windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de bevolking over het algemeen de kans krijgt om zijn mening te uiten over windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de nationale overheid over het algemeen luistert naar de publieke opinie over windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de bevolking over het algemeen de kans krijgt om te investeren in windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de bevolking over het algemeen de kans krijgt om mee te bepalen met het beleid omtrent windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de bevolking over het algemeen de kans krijgt om te stemmen over de locatie van windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat de nationale overheid over het algemeen is transparant over de wetgeving omtrent windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Ik vind dat commerciële bedrijven (zoals Eneco, Shell, Siemens etc.) over het algemeen transparant zijn over hun werk aan windmolenparken in zee.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

De volgende vragen gaan over uw mening over de betrouwbaarheid van de belanghebbenden bij windmolenparken in zee in Nederland.

De nationale overheid is competent om de windmolenprojecten in zee uit te voeren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

De nationale overheid beschikt over de integriteit om de windmolenprojecten in zee uit te voeren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Commerciële bedrijven die windmolenparken in zee bouwen en onderhouden zijn daartoe competent.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Commerciële bedrijven die windmolenparken in zee bouwen en onderhouden zijn integer.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

NGO's zijn competent om de windmolenparken in zee te monitoren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

NGO's beschikken over de integriteit om de windmolenparken in zee te monitoren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Onderzoekers zijn competent om de windmolenparken in zee te evalueren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Onderzoekers zijn integer genoeg om de windmolenparken in zee te evalueren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

De volgende vragen gaan over uw mening over het nut van windmolenparken in zee in Nederland.

Windmolenparken in zee dragen bij aan een groene en duurzame reputatie van Nederland.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee helpen Nederland om minder afhankelijk te zijn van de import van energie.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee resulteren in meer industrie en kansen op de arbeidsmarkt.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee verstoren recreatief varen, toerisme en de visindustrie.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee leiden tot lagere energietarieven.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee veroorzaken horizonvervuiling.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee veroorzaken geluidsoverlast.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee verhogen de sterfte van nabije vogels en andere zeedieren.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee verminderen CO2-uitstoot.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee verbeteren de kwaliteit van het milieu.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee helpen het natuurlijke potentiëel van Nederland te benutten.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee passen bij de Nederlandse cultuur.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee sluiten aan bij de functie van de zee in Nederland.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
○	○	○	○	○

Windmolenparken in zee beïnvloeden het dagelijks leven van de bevolking minder dan windmolenparken op het land.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Windmolenparken in zee hebben een negatieve invloed op de maatschappij.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Windmolenparken in zee hebben een negatief effect op de kwaliteit van mijn persoonlijke leven.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Het effect dat windmolenparken op mij hebben is afhankelijk van de afstand waarop deze van mij geplaatst zijn.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Deze laatste vragen gaan over uw algemene mening over windmolenparken in Nederland.

Ik heb een postief gevoel bij windmolenparken in zee in Nederland

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Ik ben voorstander van windmolenparken in zee als duurzame energiebron in Nederland.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Ik ben bereid de energie af te nemen die geproduceerd wordt door windmolenparken in zee in Nederland.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Ik raad andere mensen aan achter windmolenparken in zee als duurzame energiebron te staan.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

Ik zie in Nederland liever windmolenparken in zee dan andere duurzame energiebronnen.

Zeer mee oneens	Mee oneens	Niet mee oneens niet mee eens	Mee eens	Zeer mee eens
O	O	O	O	O

In welke plaats woont u?

Appendix 11 – Ethics Committee Approval

UNIVERSITY OF TWENTE.

APPROVED BMS EC RESEARCH PROJECT REQUEST

Dear researcher,

This is a notification from the BMS Ethics Committee concerning the web application form for the ethical review of research projects.

Requestnr. :	191021
Title :	Public Acceptance of Offshore Wind Farms in the Netherlands
Date of application :	2019-07-03
Researcher :	Astrid Priscilla Dion, .
Supervisor :	Gosselt, J.F.
Commission :	Galetzka, M.
Usage of SONA :	N

Your research has been approved by the Ethics Committee.