

THE INFLUENTIAL FACTORS OF CO-CREATION
IN NON-WESTERN SOCIETIES
IN THE CASE OF ENERGY
IN SULAYMANIYAH, KURDISTAN REGION

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I. INTRODUCTION

The world becomes more complex day by day; to keep up with complexity innovation is necessary. Innovation is seen in different field, one of those field is in the public administration. Pollit and Hupe define social innovation and co-creation magic concepts. The third sector is introduced; which is called many names as the (private) non-profit sector, the voluntary sector, civil society, and the social economy. But to make it less complex, we can say that the third sector includes all organizations and groups that are identified as under the other label without attempting to cage it in (Brandsen, and Pestoff, 2006; Kendall and Knapp 1995). The third sector is introduced because in the last few years innovation has been the new reform strategy in public administration. Governments wrestle with budget shortages and social challenges, that is why social innovation is a motivating concept.

There are many definitions for social innovation. In this paper, social innovation will be defined as “the creation of long-lasting outcomes that aim to address societal needs by fundamentally changing the relationships, positions, and rules between the involved stakeholders, through an open process of participation, exchange and collaboration with relevant stakeholders, including end-users, thereby crossing organizational boundaries and jurisdictions (Sorensen and Torfing 2011; Chesbrough 2003, 2006). If end-users are part of the process then it is called co-creation (Voorberg, Bekkers, and Tummers, 2015; Von Hippel, 1987). Co-creators can contribute resources, knowledge, ideas, creativity, and compliance (Loeffler and Bovaird, 2016).

Co-creation is a new concept. Some regions are practising co-creation without being fully aware of it. It is interesting to know whether the Kurdistan region does practice co-creation and what the influential factors are and whether it will work in the region since it is a non-western region. One of the cases where co-creation is practised is the energy sector. The government could not keep up with the demand of the citizens regarding energy. That is why they asked citizens to participate in the process of electricity deliverance. The citizens were supposed to set up generators that provided some extra hours of electricity for the citizens. The government provided subsidies as a piece of land that belonged to the municipality where the

generator could be places. The government provided cables to transmit the electricity from the generator to the houses of the people. It provided subsidy on the fuel in case the price of fuel would increase. Because the government provided this subsidy and came up with this idea they controlled how many hours the generators would work and how much money the generator owners needed to charge for the number of amperes and hours. The citizens job was to invest in a generator and to manage and maintain the generator. This generator was supposed to provide the neighbourhood with electricity. In return the neighbourhood paid for the number of hours and the number of amperes they received.

They provided subsidies and encouraged the citizens to co-create, and the citizens received their own benefits from the process. The main reason why this research is conducted is to know what factors influence the process of co-creation in the energy sector in Sulaymaniyah, and to know what factors have a stronger effect on the co-creation process. And whether the influential factors from the western societies do apply to the non-western societies. This case is different than other co-creation processes because other process add to what already exists. While in this co-creation process the utility that is provided is a basic need. The process itself is successful. The problem is that this co-creation process doesn't solve the overall problem of providing electricity for 24 hours a day. It doesn't solve the problem of electricity in the region. The process itself was set to be a short-term solution for the electricity shortage but it has been more than ten years that this process is ongoing. It is worth studying this case because it is important what the influential factors are for this co-creation process. And from the influential factors it can be seen whether the citizens are satisfied and whether this process can go on for a long time or that the government should find other ways to provide electricity.

RESEARCH QUESTION

The research question chosen for this paper is regarding the influential factors of co-creation in non-Western societies in the case of energy in Sulaymaniyah. In Iraq, and the Kurdistan Region of Iraq, electricity is a public service that is not provided 24 hours a day. The government adopted a policy. It provided subsidies to make the process easier. In this paper, three section of influential factors will be tested from the perception of the citizens, the organizational side, the outcomes of the process. This variety of factors can show that from different perceptions the case is tested, however the samples from each side is limited. This paper has sub question that add up to answer the main question:

What theories are there for co-creation?

How did the co-creation develop/resolve in Sulaymaniyah?

Which factors impact co-creation in Sulaymaniyah?

Question one is answered in the theoretical framework chapter. From the theoretical framework, a conceptual framework is composed to tailor the paper to be able to answer the second question and third question. In the operationalisation, it is explained how the research is measured to answer the questions. In the methodology chapter the best research approach regarding this case is explained. The conceptual framework, operationalisation, and the methodology are there to help answer the main question generally and the third question particularly. In the research background chapter, a background is given about the co-creation process regarding energy in the Kurdistan region. This chapter answers the second question of how co-creation developed in Sulaymaniyah. In the findings and analysis chapter, the data that is collected is explained and analysed to answer the third question. In the conclusion chapter, final conclusions are made and the main question is answered, the chapter also includes a recommendation section, suggestions for future research, and a reflection on the research conducted in this paper.

RELEVANCE OF RESEARCH

Research of co-creation in non-western societies is less than the western societies. In the Kurdistan region, no other research has been conducted regarding co-creation as being aware. This research could be an initial step toward more research in this field. Co-creation can be practised in many fields and in many ways. For each way, a set of variables can be applied. Thereby, this paper is an attempt to see how the process of co-creation in the energy sector works. That will say this research is supposed to be a start of the element to the theoretical body of co-creation. The conceptual framework and the hypotheses might not work as was initially set up. Further research is needed to proof the theory. It is important to mention that the co-creation in the energy field is a necessity and because of that the co-creation will occur even though if not all the variables are influential enough. Societal relevance can be obtained by informing the government about trying to come up with other solution to this problem. However, there are other external factors as financial resources and the ISIS crisis that play a role in this matter. For the academic relevance, a good background research has been

conducted to be familiar with already existing research, and from that the conceptual framework for this paper has been compiled.

II. THEORETICAL FRAMEWORK

History

There are many reasons why interest is growing for the third sector. One of these interests is that it helps with providing public services. The main objectives for co-creation are to gain more effectiveness, efficiency, customer satisfaction and increase citizen's involvement (Voorberg, Bekkers, and Tummers, 2015). In Germany and the Netherlands, it has traditionally a large role in building of the post-ware welfare state. In United Kingdom, it started in the New Public Management and in the setting of outsourcing 1990s. In addition, many citizens' initiatives have helped with production of public services. One other reason is that because of performance measurement, privatization, and contracting out, and the traditional boundaries between the state, third sector, and market has become blurry, which leads us to the existence of the class of organization hybrids (Brandsen, and Pestoff, 2006; Evers and Laville 2004; Brandsen et al. 2005). This means that the organizations in the third sector have developed more characteristics of state and market organizations in terms of maximization of income and formalization. There is no organization that is can be called "pure" but we have come to a point the ideal type of the third sectors, market, or state cannot anymore help us to understand them. (Brandsen, and Pestoff, 2006)

One reason of this development is isolationism; the sector in both its normative and conceptual sense was called to become separated. Organizations of the third sector were requested to avoid having close relationships with the state. Not all the organization did what they were asked and still have a good relationship with the market and state. This occurred in Germany and Netherlands in the 19th century, in the 20th century for Sweden, and in the 1990s in the United Kingdom. This has for sure changed those countries and has led some of those countries to claim that they have changed to an extend that they have lost their uniqueness from state organizations. Policy makers are interested in the third sector because they can contribute to increase the quality of the public sector. (Brandsen, and Pestoff, 2006)

Initially, co-production linked mainly to the participation of clients/citizens in creation, through user involvement whether in the private or public sector. It started to become famous among administration scholar in America in the 70s and 80s. (Brandsen, and Pestoff, 2006; Parks et al. 1999). In the 1970s wrestled with the main concepts of urban governance regarding the policy suggestions of enormous centralism. The scholars believed that citizens as clients will more efficient and effective services provided by experts working in bureaucratic agencies. After several researches in metropolitan areas they found out what they believed was not true (Brandsen, and Pestoff, 2006; Ostrom 1999).

They tripped on several myths for public production. One of the ideas was that a single producer is responsible for city services within each authority. Usually, they discovered numerous agencies and private firms providing direct response services. Above all they discovered that it is important that those who are receiving a service should actively participate in the production of that service (Brandsen, and Pestoff, 2006; Ostrom 1999). They called this action co-production whereby the regular producer and the client worked together to produce a service or good. At that time, the term co-production had a micro focus regarding the participation of groups or individuals in the production process, although their involvement could have sharp consequences for the macro and meso-levels of the society. (Brandsen, and Pestoff, 2006)

In the United Kingdom, co-production has been used to examine the role of VCOs (voluntary and community organizations) in the delivery of public services (Brandsen, and Pestoff, 2006; Osborne and McLaughlin 2004). The concept of co-production seems to indicate a more controlled service delivery role for voluntary and community organizations in the delivery of community services, that is for a provider and a service agent. There are other terms that are used such as co-coordination or co-management; these terms discuss a wider role for VCOs in local service management. While co-governance discusses the role of VCOs in community governance and policy formation (Brandsen, and Pestoff, 2006; Osborne and McLaughlin 2004). In general, what is important is that third sector transforms and increases the production of public services with a dynamic two-way relationship between the two parties. The participation of citizens changes the quality of the service with more variety, but the service then transforms the citizens themselves.

Co-creation is both used in the private sector and in the public sector. In the private sectors companies and customers work together on value creation and innovation. In many industries of customer's sectors and technologies, customers have played a crucial role in advising new features and improvements for services and products that already exists. Some examples of companies who have taken suggestions from their customers are BMW, Hallmark, and Ducati. Other companies take the ideas and design exclusively from their customers, like Threadless, which is a T-shirt producing firm who gets most of their design from users of their online community.

Inside the public sector, co-creation is found in many policy sectors like regional media, library services and garbage disposal, but mainly in healthcare and education (Voorberg, Bekkers, and Tummers, 2015). The essential segment of co-creation is that the end-users are citizens that are part of the production of a public service. The European Commission believes that “social innovation mobilizes each citizen to become an active part of the innovation process” (Voorberg, W., V Bekkers & L. Tummers, 2015 European Commission 2011, 30). It is an essential condition to have citizens participate in the social innovation process in public administration. That is why it is important to know what the influential factors to make co-creation easier and more likely to happen.

Definition of Co-creation and Co-production

The concept of co-creation is defined differently in different literature. According to Vargo and Lusch co-creation “refers to the *active* involvement of end-users in various stages of the production process” (Voorberg, Bekkers, and Tummers, 2015, Prahalad and Eamaswamy 2000; Vargo and Lusch, 2004). Co-creation differs from participation in the sense that participation refers to passive involvement. Another concept that is talked about in the literature is co-production. Looking at the definition of the co-production and co-creation they seem to be close to each other by meaning. Bovaird and Loeffler define co-production as “public services and citizens making better use of each other’s assets and resources to achieve better outcomes or improve efficiency” (Bovaird, Loeffler, 2016: 1006). While Brandsen and Honingh define co-production as a “relationship between paid employee of an organization and (groups of)

individual citizens that require a direct and active contribution from these citizens to the work of the organization” (Jo and Nabatchi, 2016). Co-creation isn’t only close to co-production but to many more concepts as community involvement, public participation, and collaborative governance.

Voorberg, Bekkers, and Tummars compared the definitions of different authors, and they observed that to a large degree they are defined correspondingly. In general, for both of co-production and co-creation citizens are valuable contributors in public service production. The differences are seen in the way of contribution; in some cases, the formation of durable relationships between citizens and the government is focused on (Voorberg, Bekkers, and Tummars, 2015; e.g. Ryan 2012). On the other hand, in other cases the focus is on the joint accountability citizens and the professional for public service production (Voorberg, Bekkers, and Tummars, 2015; e.g. Lelieveldt et al. 2009). While in some other cases the focus is on the assessment of the involvement of the citizens in the production of public service delivery (e.g. Ostrom 1996). Ostrom definition is “the process through which inputs used to provide a good or service are contributed by individuals who are not in the same organization (Bovaird, 2007; Ostrom 199: 1073). The main difference that is talked about in literature is that co-creation as a value is more emphasis upon (Voorberg, Bekkers, and Tummars, 2015; e.g. Gebauer, Johnson, and Enquist 2010).

Types of co-creators and co-producers

It is essential to know who are the ones who are co-creating and what their substantive content is. By clients it is meant those who deal with the organization/public sector at its business end (Alford, 2002; Moore, 1995), as its public in contact (Alford, 2002; Blau and Scott, 1963). Clients receive private value that is consumed individually rather than value that is consumed collectively as what happens in public goods. Volunteers, on the other hand, are those who deliver work inputs to the organization or public sector voluntary instead of on a purchased basis, without obligatory personally consuming it. Nor are clients and volunteers the same as citizens. A citizen is part of a collective “we,” those who show their goals through a diverse voice mechanism (Alford, 2002; Hirschman, 1970), by way of political contributions like voting that build up democratic processes. On the opposite, clients are acted upon as people who indicate their desires by way of market purchases or substitutes as customer surveys and complaint departments. In any circumstance the government decided for them the services.

Client receive private value and citizens receive public value (Alford, 2002; Moore, 1994). The relationship between the government and citizen is made up of a range of obligation, accountabilities and rights. While for the clients the relationship with the manufacturer by way off service encounter (Alford, 2002: Walsh, 1991).

Regarding the three types of individuals and co-production, obviously, clients have a more material interest where they receive private value in way of services. Their willingness to produce might be affected by the value that they receive. Nonetheless, volunteers don't receive good or services from the governmental agency where they take part in. Their reasons to participate thus seems to be different. At last, citizens do receive value for the governmental organization in a collective way. In the situation of each indivial citizen there is not a direct link between what they co-create and the value that they get from.

Others have classified co-creation as explorers, ideators, designers, and diffusers. The explorers are citizens that define and discover existing and emerging issues. Ideators are citizens that theorize novel solutions for well-defined issues. Designers are citizens that develop implementable to issues. Diffusers are citizens that are directly involved in the diffusion and adaption of solutions and innovation of a public service for specific target groups. (Nambisan, and Nambisan, 2013). Bovaird and Loeffler (2012) collected a wide range of types of co-production like co-planning, co-managing, co-assessment, co-financing, co-design, co-prioritisation, and co-delivery.

But in most of the literature three types of co-creation/co-production are distinguished; co-implementers, co-designers, and initiators. The first type is when citizens are involved in the process as co-implementers. An example of this type is when citizens help with garbage disposal services. Citizens separate garbage before throwing them away. In this way, they are part of the process to manage garbage disposal by separating different kinds of garbage (Voorberg, Bekkers, and Tummers, 2015; Benari 1990). In the second type citizens are defined as co-designers. Usually the public workers lead the process, but the citizens decide the design of the service delivery. One example of co-designers is when citizens contribute in designing the maintaining the outdoor reformation after the local government invited them to do so (Voorberg, Bekkers, and Tummers, 2015; Wipf, Ohl, and Groeneveld, 2009). The last type is when the government acts as an actor that follows and the citizens as an initiator. An example

of this is when citizens initiated themselves to restore monuments when the historical centre of Naples was reopened for people.

Osborne and McLaughlin (2004) distinguish co-production its original concept into three modes; co-production, co-governance and co-management. All three of these modes discuss a type of co-cooperation where the third sector has a direct effect on the nature of the output; the service in this case. Firmly speaking these notions aren't completely connected to a micro, meso, or macro kind of analysis, even though there could be an empirical similarity. For example, co-management tends to incline to a meso level. Osborne and McLaughlin believe that co-governance deals with a plan in which the third sector contributes in the delivery and planning of the public service. While in co-management they believe that the services in the third sector are produced in collaboration with the state. In co-production, they believe that limited use of the term, discusses the plan where citizens make their own services at least in part. These are just some of the readings there are many more types (Osborne and McLaughlin, 2004; cf. Evers, 2006). Each of these terms can be connected to wider strand of literature. But they have distinguished co-governance, co-management, and co-production into two dimensions:

1. "A distinction between the organizational and the individual level. Whereas co-management refers primarily to interactions between organizations, co-production refers to voluntary efforts by individual citizens" (Osborne and McLaughlin, 2004).
2. "A distinction between phases in the policy cycle, between planning and production. This separates co-governance from the other two concepts: the former focuses on policy formulation, the latter on implementation" (Osborne and McLaughlin, 2004).

This shows that the notions are not reciprocally exclusive. It is possible that third sector administrations have participating arrangements that both co-production and co-management are joined. On the other hand, production is prepared only around the users of services, in which case there is only co-production. (Osborne and McLaughlin, 2004)

Influential Factors

Influential factors on the organizational side

When exploring the literature there are several influential factors that are mentioned. Firstly, there is effect of a risk-averse culture to public co-production. The managerial culture doesn't always invite the incorporation of the third sector; the citizens. That is because of the bureaucratic and legalistic culture (Voorberg, Bekkers, and Tummers, 2014; Damanpur, 1991; Kelman, 2008), the culture of the public administrations has become conservative and risk-averse (Voorberg, Bekkers, and Tummers, 2014; Baars, 2011; Talsma & Molenbroek, 2012). Because of this culture, the manner of public politicians and official is holding back those who want to co-create. The reason for that is because those public officials might feel their expertise is challenged and questioned (Voorberg, Bekkers, and Tummers, 2014; Fugslang, 2008), or they might think that citizens are not skilled enough to participate in the process (Voorberg, Bekkers, and Tummers, 2014; Gebauer, Johnson, & Enquist, 2010; Kingfisher, 1998). This will hold back citizens to participate in the process of co-creation. In the literature, it is suggested that having clear objectives and incentives why participation of the citizens is useful can change that attitude (Voorberg, Bekkers, Tummers, 2014; Abers, 1998; Evans, Hills, & Orme, 2012). It is hard to make those incentives because the in the public administration these are framed in intrinsic aspects instead of tangible gains (Voorberg, Bekkers, Tummers, 2014; Wise, Paton, & Gegenhuber, 2012). If the public officials allow for these incentives to be present and the public organizations invite and are open to co-creation this then should lead to co-creation. Adjustments should be made for the procedures and structure inside the public sector to co-creation, like communication structures, training facilities, and supporting organizational processes (Voorberg, Bekkers, Tummers, 2014; Andrews & Brewer, 2013; Bovaird & Loeffler, 2012a).

Another factor that helps citizens to co-create is when the government provides subsidies to help the service delivery; "citizens can take the initiative to improve the liveability of their neighbourhood, and later involve the government for legal checks, subsidies and network ties, among else. (Voorberg, Bekkers, and Tummers, 2015). That is not enough the government needs to have the right policies for citizens to participate in the co-creation process. They need to "adopt strategies that would link the "internal" (the agency employees, structures, and processes) with the "external" (citizens and citizen communities). It ensures that the problems identified or solutions offered by citizens are acted upon by the agency and result in viable new

services, policies, or offerings” (Nambisan, Nambisan, 2013: p. 44). In addition, the government needs to be compatible to co-create. Chen argues that organizational compatibility “underlies the strength of the partners to collaborate and resolve their differences and problems that arise. Compatibility determines their fit as directed by their shared or complementary cultures and philosophies, and the alignment of their strategies, goals and objectives” (Chen et al., 2011: p. 1341). Voorberg and his colleagues (2015), discuss that a positive attitude toward co-creation is essential. They talk about that politicians and higher level public officials regularly invite co-creation enterprises. Though, employees on the street-level bureaucrats as nurses, teachers, and co-workers are not as welcoming as the politicians. They don’t fully have the trust in the competences of the citizens to co-create. They might state that nurse is better than an unqualified citizen to help an elderly woman (Voorberg, Bekkers, and Tummers, 2015).

Influential factors on the citizen side

The most important factor on the citizens’ side is that the citizens need to be willing to participate. This willingness to co-create from citizens determined to what degree the citizens are fundamentally interested. This is described as “the client’s sense of self-determination and competence” (Voorberg, Bekkers, Tummers, 2014; Alford & O’Flynn, 2009). In addition, Wise shows that intrinsic values like civic duty, loyalty, and the desire to see progress in the government, makes the citizens more likable to participate (Voorberg, Bekkers, and Tummers, 2014; Wise et al. 2012).

Family composition and education are examples of personal traits of the citizens that play a role on the citizen’s side (Voorberg, Bekkers, and Tummers, 2014; Sundeen, 1988). Citizens who have received higher education; education more than high school, were able to express their needs better and they were better aware of the needs of the community. Age, gender, and location are also important drivers for citizens to co-create, older citizens, women, and citizens in urban areas are more likely to participate in co-production (Bovaird and Loeffler, 2016). This is for individualist co-producers, for collective co-production older people are less likely to participate in comparison to younger citizens. People that are less educated and don’t work are more likely to participate in collective co-production (Bovaird and Loeffler, 2016).

Ability to co-create is another factor that is needed. In past researches this is called awareness to influence, and the need to have feelings of ownership (Voorberg, Bekkers, and Tummers, 2014; Pestoff, 2012). Gebauer also talked about this, he takes the customers of the Swiss railway-service as an example. When the citizens had the feeling, they could participate and improve the quality of the services, it causes a “snow-balling’ effect and they got a feeling that they were to an extent that they were responsible for the quality of the services. This is called the ‘feeling of ownership’. The feeling of ownership can be felt by the citizens who take the action, but also by the people in the neighbourhood to allow co-creation to occur. Gebauer explains that “Citizens need to have a feeling of ownership to make a difference in their neighbourhood or city (Voorberg et al., 2015: p 15; Gebauer et al., 2010; Pestoff, 2012). This notion is about if citizens feel that they own a special area of geographical area, they will try to do more to protect or enrich it. Talsa and Molebroek take the example of eco-tourism in India, the people living in the region put more effort as normal citizens to improve those services (Voorberg et al. 2015, Talsa and Molebroek, 2012).

Diana Mitlin talks about how co-production can help poverty. She talks about the government helping to provide incomes for the poor. She also mentions that providing an income is not enough; “much more comprehensive change is required, with a notable increase in the ability of city governments to establish systems and structures that produce adequate supplies of land and the infrastructure required for the delivery of basic services” (Diana Mitlin, 2003: p 3). If a government provides land for the citizens to use in whatever field it is this is an influential factor for the citizens to co-produce.

Alford differentiates motivational factors between clients, volunteers and citizens. He explains that not many authors are writing about client and motivational factors, because the main motivation is private value. For citizens, what motivates them the most is firstly materialistic incentives, that are tangible profits, as services, goods, and money. Secondly, solidary incentives, which is the reward of joining up and interacting with others by way of socializing, the feeling of belonging to a group by way of membership or identification, or by being viewed as fun and warm. (Alford, 2002: Clark & Wilson, 1961). Thirdly, expressive gains are intangible reward that stem from the feeling of satisfaction of having participated to the achievement of a

valuable cause (Alford, 2002; Wilson, 1973), like revealing corruption, ecological preservation, or helping the ones in need. Volunteers incentives are categorised into six motivations by Clary and her colleagues. The first one being *value*, where people volunteer to show humane concerns and humanitarian values. Second one being *understanding*, whereby the Individuals seek to develop skills and gain knowledge. The third one being *enhancement*, for psychological development and to boost their esteem. The fourth one being *career*, where people can gain experience that is helpful for their career. *Social* being the fifth one, to help people, fit in and intermingle with social groups that are important for them to have connections with. At last, *protective*, for people to reduce feelings of guilt, so they deal with their inner anxieties. He also talks about intrinsic rewards whereby one doesn't get a tangible reward but when they get a "self-administered 'kick' we get out of doing something, particularly when we do it well" (Alford, 2002; Schneider & Bowen, 1995, p. 96)

Social capital is the last important factor mentioned, Social capital is the 'features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Voorberg, Bekkers, and Tummers, 2014; Putnam, 1995; p. 2). Social capital includes the alliances of individuals in a neighbourhood or city, but also to command understanding of the interest of the public and trust in the abilities of the other partners. Social capital can be measured as a conditional upbringing for co-creation (Voorberg, Bekkers, and Tummers, 2014; Andrews & Brewer, 2013; Uitermark, 2014; Uitermark & Duyvendak, 2008). Social capital is needed to create willingness and awareness for citizens to co-create.

Outcomes of co-creation processes

March and Olsen (1989) distinction between logic appropriateness and logic consequence can be used for the evaluation of the co-creation outcomes. This is because the outcomes of co-creation are measured by what the added value is for co-creation (Voorberg, Bekkers, and Tummers, 2014; Alford, 2009; Stoker, 2006). The logic of consequences explains to what extent is the benefits realized; in other words, it refers to what extend different options are considered and can be rationally calculated. The beneficial extents shown in tangible and concrete benefits, with a concrete objective mentioned beforehand. On the other hand, the logic

of appropriateness is ‘to the extent in which co-creation efforts fit within a specific context’ (Voorberg, Bekkers, and Tummers, 2014; March and Olsen 1989). The beneficial extent here are not about the concrete calculations of benefits and costs, but about the identity-driven concepts.

In the literature, important values of logic of appropriateness and logic of consequences have been defined. In the logic of consequences, the values refer to degree of rational achievement of an involvement like effectiveness, efficiency, quality and quantity of output, and consumers’ satisfaction (Voorberg, Bekkers, and Tummers, 2014; Andrews, Boyne, & Walker, 2006; Boyne & Dahya, 2002; O’Flynn, 2007; Stoker, 2006). Quality of outputs means the enhancement of better service production than before co-creation occurs and quantity of output deals with concrete products. Formal effectiveness explores whether the needs of the customers are addressed. Citizen satisfaction deals with whether the citizens are satisfied with the new service. (Voorberg, Bekkers, Tummers, 2014)

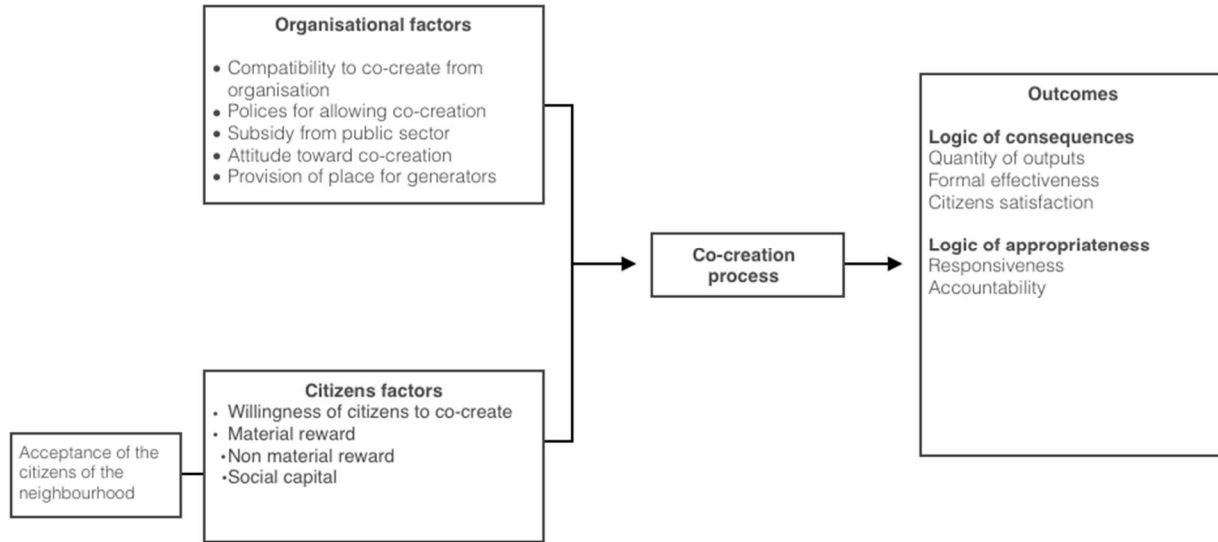
The value of accountability is used to judge whether a public value creation is appropriate. (Voorberg, Bekkers, and Tummers, 2014; Boyne & Walker, 2004; Moon, 2001; Smith, 2004; Van der Wal, De Graaf & Lasthuizen, 2008). Moreover, managerial values appear to be equity, which includes a more equivalent and fair opinion for involved participants which is a more just delivery of public goods and services (Voorberg, Bekkers, Tummers 2014; Moon, 2001; O’Flynn, 2007) and responsiveness, including the capability of public administrations to reply to social requests (Voorberg, Bekkers, and Tummers, 2014; Boyne & Walker, 2004)

III. RESEARCH DESIGN

Co-creation can be practised in many field and in different ways. The variables in this research were chosen from the theoretical framework according to the kind of co-creation. The independent variable was co-creation, and the dependent variables that were divided into three categories. For the organisational factors, there were the compatibility to co-create from organisation, policies for allowing co-creation, subsidy from public sector, attitude toward co-creation, and provision of place for generators. For the citizen's factors related to the end-users the feeling of ownership variable was chosen. Regarding the citizen's factors regarding the citizens that participated in the willingness to participate, material rewards, non-material rewards, and social capital variable were tested.

The outcomes factors were divided into two sections. Firstly, the logic of consequences that included the quantity of outputs, formal effectiveness, citizen's satisfaction. Secondly, for the logic of appropriateness the responsiveness and accountability factors were tested. The hypothesis was that the citizen satisfaction and the subsidy from the government would be major influential variables with the other variables having a small impact. But it is also important to mention that the co-creation process in case of energy is out of necessity and for the provision of an essential basic need of the citizens that they can't be without. This basic need can change the degree of importance of the variables. And the theoretical framework if for a western society, and it might not be applicable to non-western societies.

Conceptual Framework:



IV. OPERATIONALIZATION

Variable	Definition	Indicator
Influential Factors		
Organisational Factors		
Compatibility to co-create	Getting along between governmental actors and citizens (Chen et al., 2011: p. 1341)	Perception of level of interaction
Policies for co-creation	The best way for government agencies to benefit from the creativity of citizens is to ensure that they adopt strategies that would link the “internal” (the agency employees, structures, and processes) with the “external” (citizens and citizen communities). It ensures that the problems identified or solutions offered by citizens are acted upon by the agency and result in viable new services, policies, or offerings. (Nambisan, Nambisan, 2013: p. 44)	Existence of a policy to co-create; for citizens to provide public service energy in this case

Subsidy	citizens can take the initiative to improve the liveability of their neighbourhood, and later involve the government for legal checks, subsidies and network ties, among else. (Voorberg, Bekkers, and Tummers, 2015)	Existence of subsidy from the government
Attitude toward co-creation	Having a positive attitude to co-produce (Voorberg, Bekkers, and Tummers, 2015)	To what extent do public administrators invite citizens to co-create
Provision of place	Supply the citizens with a piece of land to do their job (Diana Mitlin, 2003)	Does government allow citizens to use piece of land of the state
Citizens Factors		
Willingness to participate	the client's sense of self-determination and competence" (Voorberg, Bekkers, Tummers, 2014; Alford & O'Flynn, 2009)	How many neighbourhoods are participating
Material rewards	tangible profits, as services, goods, and money (Alford, 2002)	Do citizens receive tangible reward and is that the reason what drivers them co-create.
Non-material/intrinsic rewards	"self-administered 'kick' we get out of doing something, particularly when we do it well" (Alford, 2002; Schneider & Bowen, 1995, p. 96)	Does the citizen feel they accomplished something by producing energy
Social capital	'features of social organisation such networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Voorberg, Bekkers, and Tummers, 2014; Putnam 1995; p. 2)	Does the citizen need to have personal or professional connection with governmental actors to co-create
Feeling of ownership	Feeling of citizens that they own a specific geographical area, and try to enrich the place. (Voorberg et al., Gebauer et al., 2010; Pestoff, 2012)	Do citizens claim that they own the neighbourhood and do they act and participate in any process that occurs in their neighbourhood
Outcomes		
Logic of consequences		
Quantity of output	deliverance of concrete products	Number of electricity hours increased

Formal effectiveness	(Voorberg, Bekkers, & Tummers, 2014) Customer needs better addressed	To what extent are citizens more satisfied
Citizens satisfaction	(Voorberg, Bekkers, & Tummers, 2014) The satisfaction of the citizens with the new kind of service delivery (Voorberg, Bekkers, & Tummers, 2014)	Level of satisfaction of citizens with the public service provided
Logic of Appropriation		
Responsiveness	involving the ability of public organizations to respond to societal demands (Voorberg, Bekkers, and Tummers, 2014; Boyne & Walker, 2004)	To what extent has the public service become more flexible and adaptable to the need of the citizens
Accountability	Clarification of who is responsible of what part of the service (Voorberg, Bekkers, & Tummers, 2014)	Clear separate responsibilities between citizens and governmental actors

V. METHODOLOGY

Even though often qualitative research is critiqued for lacking rigour, having poor justification, and lacking transparency in the analytical processes and the results being only an assortment of individual opinions subject to authors bias (Rolfe, 2006). Some researches can be conducted better by way of qualitative research to acquire a better and in-depth understand of the matter. Sometimes numerical research is not enough to understand the matter. This research will consist of one case only. But for this one case, citizens from two neighbourhoods are interviewed to have a variety of opinions and perceptions. Difference in economical stabilities in those neighbourhoods might affect some factors. The strategy used for this paper is a combination of interviews and document analysis. The reason why documents will be analyzed is to know how open the government is to co-creation and how they support co-creation by way of policies. The interviews will be used to know the perception of the different factors and how they outcomes of co-creation are.

Samples and interviews

Semi-structured interviews were conducted to have descriptive answers and to avoid leading questions that could lead to biases. This approach was chosen because in this way people start to talk about other issues that otherwise with other approaches they would not have the chance to talk about. In this way, the data that is collected is broader than by other approaches.

In this paper there is one case, but for that one case, the interviews have been conducted in two different locations. To have a less biased and more random variety of answers and perception of the citizens. Because it was thought that the economic situation of the neighborhoods influences the satisfaction of the citizens. The citizens in the richer neighborhood had more amperes than those in the poorer neighborhoods. However, they all believed that the amperes were pricey. Both neighborhoods are treated as one case. The purpose of having two neighborhoods is to have a more diverse sample.

The interviewees will be categorized into three groups. Because some questions are only needed to be asked to citizens, while other only to the governmental official, and again others only to the citizens who are using the public service that is produced. Some questions will be asked to two or more categories. In this way, the paper cannot be biased toward one group of people since from three different perspectives the influential factors will be tested.

It was preferable to interview many governmental officials, but only two governmental officials could be interviewed. Two generator owners were interviewed. For the citizens from one location five citizens were interviewed that were thought to have a good economic status. Another five citizens were interviewed from a less stable economic location. More citizens were interviewed than governmental officials, because of the ability of the governmental officials and because from the side of governmental officials provided documents whereby evidence for some of the influential factors are seen in it.

Because this research is done in KRI (Kurdistan Region of Iraq), and the main language that the people speak is Kurdish; the interviews will be conducted in Kurdish. This is because the people can express themselves better and a more reliable research will be conducted. The

documents are also in Kurdish. The quotes or statements taken from documents will be translated for to English for a better understanding of the readers.

Reliability and validity

Regarding reliability of this research because of the combination of documents and interviews reliability will be provided. Triangulation will be used in this paper. It has several forms but usually it “refers to the employment of multiple data sources, data collection methods, or investigators” (Long and Johnson, 2000). In this paper triangulation is used by way of the background of the different interviewees, they are related to co-creation in three different ways. Some of them are users, other co-creator in two different settings. I will be interviewing citizens who use the public service, citizens that co-produce and governmental organizations. This means that target group is not one kind of user of the public service and this keeps me away from bias. Except from that documents will be used to have more reliability and validity.

As mentioned above qualitative research is often seen as less reliable. It is true that almost no knowledge can be counted as certain, “and the best that we can do is to seek means of judging claims to knowledge in terms of their likely truth” (Long and Johnson, 2000:31; Hammersley, 1992). “Pure interview – enacted in such a way that it comes as close as possible to providing a “mirror’ reflection of the reality that exists in the social world (Silverman, 2006:52)”. In short qualitative research can “provide us access to social worlds, as evidence both of ‘what happens’ within then and of how individual make sense of themselves, their experience and their place within these social worlds (Silverman, 2006: 53). The perception and what they believe is true is important to know, since narratives are vital to humans (Silverman, Presser and Sanberg, 2015). However, text alone is not all that there is, sometimes “a text is only a reproduction of what the subject has told us. What the subject tells us is itself that something that has been shaped by prior cultural understandings” Silverman, 2006: Denzin, 1991:68). There is a negative view toward the government, because the government cannot provide 24/7 electricity. This can maybe lead people think bad about co-creation and not be satisfied, because they feel like it is the responsibility of the government. Except from that the interview setting might change what people will say and what they won’t say. Emotionalists believe that interviewers should try to create an open and undistorted communication” (Ikeda, 2000: 66;

Holstein & Gubrium, 1997). That is why in this paper the interviewer will try to be a good listener and will not try to lead the interviewees answer to a direction that is desired for their own results. Because “the interviewers must make great efforts to invite the interviewee to step out of that role and share their “lived experience (Ikeda, 2007:66). All the interviews will be recorded and translated and kept for record.

Regarding the external validity, the concept of co-creation is new in Western societies and in the KRI no other reaches have been done about co-creation. The conceptual framework is customized to research the influential factors of co-creation in case of energy in Sulaymaniyah. For the city of Sulaymaniyah and other cities in KRI the same rules and regulations are followed. So, this research can be generalized for other citizens working together with the government to provide electricity. It can also be used for other situation as the government helps other sectors as well to provide them with help for them to produce certain utilities and goods. Some examples are water and agriculture. For research outside the country maybe other factors need to be mentioned and looked at that are not mentioned here. Regarding internal validity will be high because the influential factors that are measured are measured from the side of the government, the users, and the owners of the generators. And there are a variety of variables that are used from the three categories to research what this paper intends to research

VI. BACKGROUND OF KRI AND ELECTRICITY SECTOR

From the aftermath of the 1991 Gulf War, around four million Kurds have experienced autonomy in the Kurdistan Iraq of Iraq. They have obtained a semi-autonomic region from the federal state of Iraq. The Kurds were protected from the Saddam regime under a no-fly zone and behind a strong army called the Peshmerga. The Kurds have had their own elections and have formed their own legislature. They have chosen their own president. For the first time in history, the Kurds are exercising noteworthy political supremacy, negotiating for control over their military, and power over new natural resources findings in their territory. (Viviano, 2006)

Sulaymaniyah is in the Iraqi Kurdistan. It is formally called the Kurdistan Region by the Iraqi Constitution. It is in the Northern part of Iraq and it's regularly called the Southern Kurdistan of the Greater Kurdistan. Officially the region is ruled by the Kurdistan Region of Iraq (KRG). KRG

is a 111-seats parliamentary democracy. The updated constitution of Iraq describes the Kurdistan Region as a federal part of the country Iraq. Iraq has two joint languages: Kurdish and Arabic. The KRI has four governorates: Sulaymaniyah, Hawler, Halabja, and Duhok, that have together add up to have an area of around 41,710 kilometers, with around 3 to 4 million citizens. In 2014, when the IS crisis happened the region took over some of its disputed territories. (Kurdistan Regional Government website, 2017)

The Kurdistan Region was established by an autonomy agreement in March 1970 between the region and the Iraqi government after years of fighting heavily. That agreement failed and led to another war between the two parties in 1974. Further quarrels occurred as the Al-Anfal Campaign in 1988 by Saddam regime. In 1991, the Kurds participated in an uprising and their Peshmerga, their Iraqi Kurdistan's military, succeeded in taking out the Iraqi forces from their territory. The Peshmerga were successful and the Western establishment of South Kurdistan no-fly zone after the 1991 Gulf War, formed the base for Kurdish self-government and enabled the return of refugees that fled when there was war to the neighbouring countries. In 1992, the Patriotic Union of Kurdistan (PUK), and the Kurdistan Democratic Party (PDK) formed the semi-autonomous KRI; Kurdistan Regional Government. In 2005, a new constitution was approved because of the invasion of Iraq and the successive political changes. (Kurdistan Regional Government, 2017)

In the electricity sector, the private sector contribution has been initiated in power generation by way of an independent non-governmental power manufacturer platform that has produced positive outcomes. The accessibility of electricity has amplified from around 500 megawatts in 2005 to above 5,000 megawatts in 2015. The authority is functioning with independent electricity manufacturers on building of transmission lines, but that is not enough. An additional 568 million dollars is needed for the essential high voltage network. (Kulaksiz, 2017)

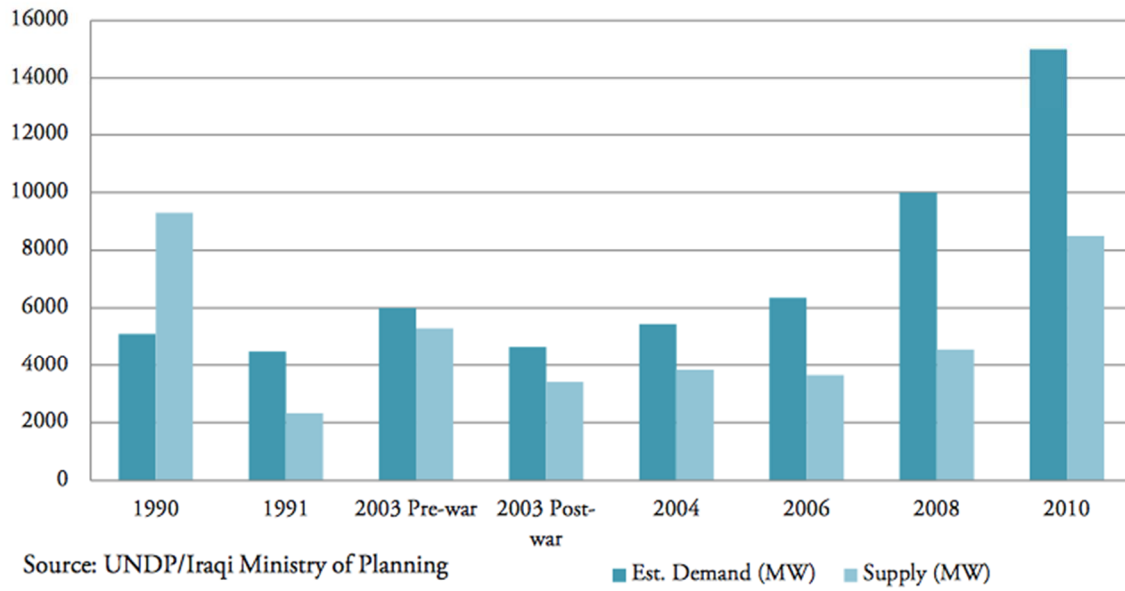
Two major backlashes occurred that declined the process of enhancing the power sector. One of them being the IS Crisis, because of that many internally displaced people and refugees moved to the region. Also, the global oil price went down which affected the economy and budget of the region. Because the oil sector provided around 95 percent of the government revenues. In

addition, it also had 80 percent of foreign contractors and standstills, lead to pulling out of around six generation projects that damaged the social development and economy. (Al-Khatteeb & Istepanina, 2015)

Also, the “lack of corporation and strategic planning, major barriers to the efficient functioning of the sector remain” (World Bank, 2015) Further funds are needed to deliver electricity to the amplified population in 2015. The World Bank approximated that \$275 million will be essential to gratify the necessities of refugees and internal displaced people. Under the low setting for the influx approximates, the stabilization price at \$364 million, while under the high scenario, the stabilization price is assessed at \$517 million. (World Banks, 2015)

The electricity sector in Kurdistan Region of Iraq is under the authority of the Ministry of Electricity of the Kurdistan Regional Government. The ministry possesses all distributions and transmission services. They have some of the older generating thermal plants and some other hydroelectric power plants. Most of the bas load thermal plants from the last 10 years are owned by the private sector with power purchase agreements. The region provides petroleum for the electricity deliverance to the private sector companies, in return companies will deliver power for the three governorates. The agreements are on a take-and pay basis. The demand for power has been increasing and the companies have custom-made new gas-turbine power plants since the regional government had plans to use natural gas for the power deliverance. However, there some other backlashes as “such as high technical and nontechnical losses, transmission and distributions system bottlenecks, low tariff and collection rates, lack of regulatory frameworks, and high dependence on budgetary support.” (Al-Khatteeb & Istepanina, 2015)

Figure 3: Electricity Supply/Demand (1991 – 2010)¹²



(Al-Khatteeb & Istepanina, 2015)

VII. FINDINGS:

The purpose of the findings chapter is to know what data was collected and what the overall opinion, perceptions, and facts are used for this paper. This chapter is about the data that is collected. This chapter has a more empirical content. While the upcoming chapter has more of a theoretical content.

The previous chapter explained the electricity system in the Kurdistan Region. It explains that the government has issues with providing electricity for the citizens 24 hours a day. That is why in 2005/2006 the government came up with an idea to ask citizens to co-create and help with the process of energy deliverance. The government announced that it would subsidized those citizens who took part in the process. In exchange the citizens would invest in a generator and maintain it. They would also manage the process and the distribution. This plan was implemented all over the region. In the beginning, it was a risky process that is why the government subsidized the process and was motivating the people to take part. In each neighborhood, a person would set up a generator. Beforehand they needed to collect signatures to know how big the generator needed to be. Later there were neighborhoods that extended and the same person set up a second generator or changed its older one with a bigger one.

In Sulaymaniyah all the neighborhood that exists have a neighborhood generator. The director of central maintenance list included 535 neighborhoods that have generators. In an interview an official there said that all the neighborhoods have generators. Some neighborhoods are large or have enlarged. Consequently, the generator owner sets an extra generator in the same neighborhood to keep up with the need. Except from that there are also 30 business generators that work for the Bazaar (market) and other private places. There are apartment compounds that also have their own generators in Sulaymaniyah there are 51 generators like that.

The case that is used in this paper only focuses on the neighborhood generators. But to have one neighborhood it would have been too narrow to have a perceptive of the overall city. That is why two neighborhoods one from the upper class and one from the lower class have been chosen. However, they have been one case. Overall the citizens had the same opinion and responses in both neighborhoods. The difference was in how many amperes each household could afford. In the richer neighborhood, the people could afford more amperes. But since all the neighborhoods have generators. The co-creation process was not so much affected.

There were many organizational factors in previous researches. But for this research four factors were chosen: compatibility to co-create, existence of policy, subsidy, attitude toward co-creation, and provision of place. The reason the existence of policy and provision of place were chosen was because before the research started these factors were mentioned a lot. It was mentioned that it was influential and important. The process is done by citizens and sometimes the governmental official didn't invite the co-creation process and they had a negative attitude toward the process. That is why this factor was chosen to see whether a positive attitude from the organizational side was effective. This is linked to compatibility to co-create, since the government and the citizens had different rules and regulation. It was essential to know whether unless those rules and regulation the process would be effective, and whether they could have a strong relation with difference in the management system.

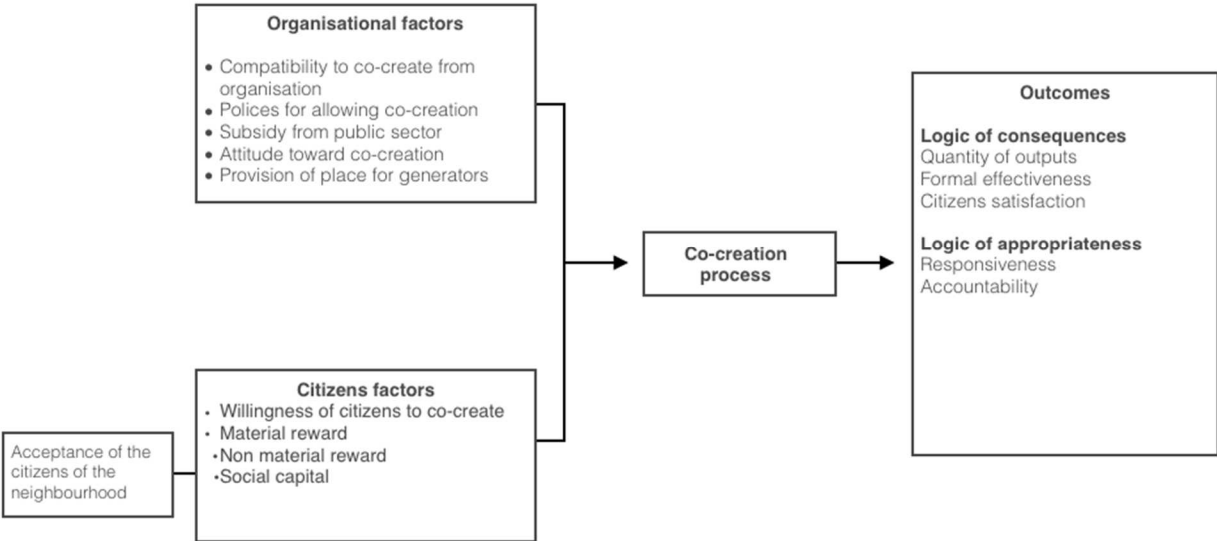
For the citizen's factors in the beginning the feeling of ownership was chosen because the generator owners needed to collect signatures in the beginning of the process. During the process the citizens could complain if something was wrong. That is why this variable was chosen to understand whether the acceptance of the citizens was a factor for the overall process.

The other citizen factors were related to the citizens that co-created while the feeling of ownership is related to the end-user citizens. The willingness of citizens to co-create is important because if people are not willing the process will not occur. All the neighborhoods participated in the process so there was no problem here. For the rewards the material and non-material rewards were chosen. The citizens that co-created needed to have something in return. They are not volunteers that they would only rely on non-materialistic rewards. That is why the materialistic reward was chosen and because it was obvious that the generator owners did receive materialist rewards. The non-materialistic reward variable was chosen to know whether the generator owners felt like they are helping the people by not letting them sit in the dark and whether that was a main driver for them. Before starting with the research, in general there were a lot of citizens that mentioned special connection. They believed that special connections were needed to get a contract with the government to co-create. That is why the social capital variable was added to the citizen's factors.

It is important to know whether the outcomes of the process satisfied the people and whether that is why the process is still ongoing. That is why five outcome factors were introduced. The main purpose of the co-creation process was an increase in the output of electricity. That is why the quantity of output variable was chosen. The formal effectiveness, citizen’s satisfaction, and responsiveness variables were chosen to measure the feedback of the people. To know whether they are satisfied with what they are provided with. The accountability variable was chosen because there are two main parties with different rules and regulation. It is important the roles and responsibilities are separated so that the process will go smooth.

There were other factors that were not focused on. For example, that the government excludes the generator owners from paying tax. Because at the end it is a business from the private sector. Also, the needs of the people have increased and the government cannot keep up with those needs. Those two factors could have been focused more upon.

Conceptual Framework:



ORGANIZATIONAL FACTORS:

Compatibility to Co-create

For compatibility to co-create the measurement was done by way to ask the generator owners and the governmental actors what their perception of level of interaction was. In general, the parties involved are as one respondent said: *“In general, the relationship with the director [of electricity], we, we have a relationship with the generator owners, and the central maintenance director. We have 5 zones. We have direct connections. There are in total 825 generators, there are a sum of neighborhoods that have one engineer. They have connections, they have contact. If they have any issues they turn to us.”* The director of electricity, the governmental maintenance department, the generator owners are interacting with each other all the time. Nonetheless, for some of the procedures the municipality, the deputy governorate office, and the civil security are notified. For example, when a citizen wants to set up a generator they need those three parties to agree with them setting up the generators. Or when the citizens want to change the generator owner those parties get involved.

What was interesting while measuring this is that there is an intermediate actor that works to regulate the relationship between the parties. The association is established to defend the right of the private generators owners. One respondent said:

In the government, for example we have the so-called committee of the private generators, they are an association of the generators. When there is any problem or complaint we will tell them about it. They then with the government they have their own committee with the governor and a committee with the financial security department. They will hold meetings with those. There are contracts between the generator and the national electricity- there are contracts. For example, we both need each other for work- maybe he is more dependable on us. In a time that- for example now its spring the national electricity is more and the neighborhood generators work less. But for next month or so we will go into summer, the national electricity will go up and the generator electricity will go down.

In this way when there is a problem it is better fixed. When a governmental actor is making some tasks harder for the generator owners they can notify the association. They will then try to solve the problem. However, the governmental actors needed to get along with the generator owners, and the generator owners had to deal with the problem because of their own benefit. The generator owners will also notify the association when their generator is malfunctioning to not be fined and to find a direct solution. The association has made things easier and if they need to interact they become a judge between the parties. However, those who are in the

management team of the association need to have their own neighborhood generator to be part of this association.

It is on one side tiring for the generator owners to be obliged to all what they are told but because of their own benefit they take it. And because it is something that they all need to oblige they don't find it annoying because it is not different what one generator can do and what the other can do.

In the beginning the need for generators were a lot and the people needed electricity as soon as possible, that is why the governmental actors do understand that they don't need to have professional and the generators have started around 2005 and by that time they have become experienced in their job, they have their own people when something breaks. *Generator Owner: "Today those [professional] people are unique. And the generators are not one or two, in the border of Sulaymaniyah there are 526 now, this many generator are there in the city of Sulaymaniyah. You can't have a professional staff for the 500 something generators."* He further explained that they all have tried to have their own professional staff. And the reason for that is if something goes wrong they need to pay and they are punished that is why they try as hard as they can. Overall, the interaction between the governmental actors and the generator owners are quite good, the reason for that is that there is interdependence, they are mutually dependent on each other. The governmental actors need to provide more electricity for the people and the generator owners provide that electricity. The generator owners deal with the issues because they have their own rewards and benefits

Both governmental actors that were interviewed said that it is in the interest of the generator owners to have a good relationship with the governmental actors. One respondent said: *"The generator owners were really, really helpful because of their own financial interest. With the help of government, people came. He/She [the citizen] only needed to manage it."* The governmental actors believed that it was in the interest of the generator owners to set up the generator, since the government helped them in several ways. The generator owners just needed to buy a generator and maintain it. Another respondent working in the government said: *"Initially why do the generator owners want to set up the generator, because of, because of their own interest that they set up the generators."* This proves that it is in the benefit of the generator owners to

set up a generator. They also don't do the job alone since most of the generator owners have their own maintenance staff. What they were trying to explain was that it was really for the citizens to set up a generator, because they received a lot of help from the government. All they needed to do was to manage the generators.

The governmental actors believed that they had good relationship between each other because of two main reasons. One reason was because they mutually depended on each other. One respondent working for the government said: *"Connection... Of course- it's quite good. They have a committee, we had mutual [dependency], for all the generators they are supervised while working, to be on time. "The mutual dependency makes them accept some of the hardship they have because of the different rules and regulations. One is a governmental agency with its one rules, the other is somehow a private sector with their own routine of working. The government needs someone to provide electricity. The generator owners receive financial benefit from it. The relationship between the two is made more smoothly with an intermediate actor, which is the association for the private generators.*

The department of electricity set ups how many hours the generators owners should work daily with the generators. Because they are paid per hour in this way the government tries to get hours of electricity on specific times on the day where it is most needed. The citizens don't need to pay too much the hours are set. One example is the schedule from May 2017 that the association provided was that in the month May the generator owners need to be ready to offer electricity from 16:00 till 01:00. For each ampere, they must charge 44 dinars.

Policies for Co-creation

A policy does exist that the government and citizens can work together to co-create. However, the policy we talked about is only about co-creation regarding electricity provision. In general, there is a policy, and the government announced it that they needed people to set up neighborhood generators. They even provided people with cables, piece of land, subsidy on fuel. These will be talked about in more detail further in this paper. When asked if there were any policies one respondents working in the government answered: *"Yes, yes a policy was created and published. A ministerial order was published for setting up generators in the*

neighborhoods and the governmental announced itself that they would provide those things.” The order was published in 2006. When asked another governmental actor the answer was: *“Of course, neighborhood generators were set up in 2006 by way of an order, neighborhood generators in general, it was announced for that- for that, it was 2000 emm- I think- I don’t know, it was 5 or 6 it was set up. It was announced for that people write a written request to set up generator.”* There is not only a policy between every generator owner and a government actors there is a contract.

Subsidy

The government did provide subsidy for the citizens who wanted to co-create. The subsidies mainly were provision a place to set the neighborhood generators. The land that they can use are mainly land that was set to become neighborhood gardens in the masterplan. One respondent said:

“That time when the decision was made to set up neighborhood generators, the government itself, provided cables till the front of the house. Cables were provided. Place was provided. That was the major point of the subject. What was the responsibility of the generator owner, the generator owner was only the provision of the generator and making a place and managing, only that.

Except from that the government helped with money for the fuel. If fuel was expensive at that period the government provided vouchers for the generator owners to buy fuel for less, if the price was affordable the generator owners would buy it on the market. When a governmental actor was asked whether the government provided gas or money. He answered: *“Money is not provided, but gasoline when it is expensive in the market. The government provided it. So that the money would be less for the citizens, so that is stops at a point. But if it is cheaper on the market the citizens bought it from there”*. Another governmental actor supports that by saying that they provided the gasoline with a governmental price. The price was somehow a constant number. He also said that was until 2016, after that all of this stopped. Another generator owner said: *“before it was not like this, its approximately 2 years. Before that we received gasoline vouchers like big cars we received it for a cheaper price.”* They did receive subsidy on vouchers but since the economic crisis it has become less.

The government provided most of the generator owners with a piece of land to set up their neighborhood generators. When asked whether the government provides a piece of land. Most

of the land that was provided was set for public gardens in the masterplan but because of the lack of electricity they believed that was the best place to set up the generators. Only around 4/5 generators didn't get a place and they needed to rent a piece of land to set up the generator. The respondent all replied that land was provided but there were different opinions on what area of the land was. Some respondent said that the area was 8 meter by 8, but later it was increased to 13 meter by 8. In the beginning gasoline was easy to buy in the market. But there was a period when their scarcity. The generator owners needed to buy a large amount of gasoline and keep it in the containers in order not to ruin out. The containers needed space that is why one respondent said that more land was provided. While another respondent said that the municipality has decreased the area that they can use. According to him when a citizen uses more of 70 meters they need to pay rent to the government. One respondent said:

“Yes, those pieces of land that private generators are placed are mostly the property of the government, it is the property of the nation and that is according to some procedures, for example we, if a generator owners ask for permission” ... “The municipality then comes for those 49 meters – 7 by 7- that is 49. In that area, you can place a generator. That under the conditions that it is away from the citizens and they people of that region don't have a problem.

Both generator owners received cables. One of said that they have received the cables but after their contract is over they should give it back to the government. The governmental actors didn't say anything about that the generator owners must pay back and give back the cables after the contract is over. But they did say that cables were provided. The government provided the generator owners with cables, the amount of cables was according to how big the area was that they provided electricity to. But that has been in the past the government cannot provide that anymore.

Attitude Toward Co-Creation

For this variable, the aim is to know to what extend do public administrators invite citizens to co-create. The government does invite the citizens to co-create because they couldn't provide it themselves. The wanted it to be provided it as soon as possible. But also, because the numbers of generators were a big number that is why the governmental actors invite the citizens to co-create to an extent. When asked what they thought about citizens providing public services and co-creating and whether they wanted professional people doing that job or whether anybody

could do this job. In general, the governmental actors believed that it is better to have experiences and skilled people to work as it will make their job better. They also believed at the time when generators were started up it was hard. The city has grown enormously, and the government couldn't keep up with the amount of electricity that needed to be provided. When generators were set up many citizens needed to come forward and apply to set up generators. The people needed to be able to provide a large generator would not everybody could provide. On the other side the region at that time was ruled by two major parties, they wanted their own followers to set up the generator like one respondent working in the government said:

“When there was no sanction anymore, several good attempts were made, but it could not keep up because the [number of] people expanded, it increased. If Sulaymaniyah was 4/5 neighbourhood 15-20 had increased. It has doubled. Because of that it was not possible for choosing professional people for the right places [jobs]. That caused some mistakes for this country because they were set on political bases. People were chosen that were not experienced in those fields. People were chosen that didn't have the right skills. And that is a problem.”

Before the country was ruled by a dictator and there was an economic sanction on the country. Import and export were limited if not at all. When the dictator was gone and the government didn't have sanction on it the government didn't have enough time to find the right people for the right positions. The political parties that took over the region had a lot of power and they wanted to have people doing this business that were from their party or relatives of them.

What the governmental actors found important is that the people have experience, because without experience they mentioned that their job will become harder. It was not important to them who did it as long someone experienced did it. In the beginning some people were chosen who were not experienced, but it has been 10+ years, so the co-creators have become experienced to an extent. To add to that the people need electricity if there are not enough power plants to provide sufficient electricity they neighbourhoods generators will be there. It will be the only option for the people. In this way, the interdependency between the government and the generator owners has made the governmental actors adapt their attitude in a way that they invite citizens to co-create and set up the generators. The number of neighbourhoods were too many to wait and find the right people for it. And because the job was not hard, it was more on basis who could afford a generator and set it up rather to find someone professional. Because most of them have their own professional staff.

Because they are interdependent on each other they must work together. And because it has been a long time that they work together they have gotten used to how to interact with each other. Both sides need each other and the governmental must invite them to co-create because they need electricity for the people. Not much experience is needed as long if you have a team or the right contact for when something goes wrong then it will be all alright. The government has a large amount of people working in the public sector to give people something to do, they wanted to distribute them among the neighborhood generators, but the generator owners didn't accept that because something like that is not mentioned in the contract.

From the citizens side the citizens were willing to take part in this idea. Because of their own financial interest, they saw it as a business but because it was new it was risky. However, in the beginning for the poor neighbourhood it was risky because they want a less number of amperes. When asked till what extent were the citizens helpful and willing to set up neighbourhood generators one governmental actor answered: *"The generator owners were really, really helpful because of their own financial interest. With the help of government, people came. He/She [the citizen] only needed to manage it."* Another governmental actor answered: *... Initially why do the generator owners want to set up the generator, because of, because of their own interest that they set up the generators."* So, from the side of the generator owners they will deal with the situation and because it is in their own benefit. For the generator owners, the rules and regulations are challenging. The rules and regulations are different because one party is a governmental agency and the other one is the private sector. But all the generator owners need to apply to those rules that is why they don't believe that is a big problem.

The association did fix most of their problems, the governmental actors and the generators fix problems if they have and that has made the job of both sides easier. The association started off as a committee than spread any recommendation that the government had and they tried to fix the problems that the generator owners had. It has almost been a year that it is recorded as an association. In the beginning, they wanted already to become an association but they were not allowed because the plans of the Ministry of electricity was to have 24 hours of electricity and thought that this would have been a temporary solution. They wanted to become an association to have more legal right so they started to receive support letters from all the generator owners and from that they asked the government to become an association. They have plans to have

elections, and provide 24/7 services to the generator owners. If they have a problem to provide them with the right mechanicals. If they have a generator that doesn't work anymore they will provide generator for rent till they fix their generator so that they don't get fine by the government. Or when they should fix their generator and they don't have the right amount of money then they can help them by borrowing them money and then later the generator owner can pay it back monthly. The association is not funded by the government. The generator owners pay an amount of 15,000 IQD [± 10 euros] annually for the services they receive and 10,000 IQD [$\pm 7/8$ euro] for making a membership card.

There is a counter on the generators that is installed by the government. Each month the counter is read and from that they know how many hours that generator has worked. This is to know whether the generator owner has followed the schedule that was set for the month. Every month on the 28th the counter of the generator is measured. Before the government provided the car for each generator counter to be measured, but after the crisis the director of central maintenance doesn't have the funding to maintain those cars. Because of that the association provides one car for each zone to measure the counter. One member of the association together with one employee of the government will together go visit generator by generator for each zone. The invoices/receipts are provided by the association. When they go visit the neighbourhood generators they also give out the plan for the number of hours they need to provide electricity for the upcoming month. If there is a problem between the two parties they will try to fix it. That is why 15,000 is asked for each generator owner for the service the association provides. In this way, this association makes their job easier.

Provision of Place

The government provides almost all of generator owners with a piece of land from the municipality that they can use to build a place to place the generator in and a place to keep their equipment, and one room for the worker of the generator owner. The place that they can use was primarily set in the master plan to become public garden. The public gardens are still there but part of it is set for the neighbourhood generators. All the respondents said that the government does provide a place for the generators. The opinions were different on how many meters could be used. Some said that it should not exceed 70 meters because they then

should pay rent to the municipality while others said that that the number of meters they can use has increased.

There was a period when gasoline had become scarce, they both it for a long period of time and kept it in containers so they would not run out of gasoline. Before they just could go the Bazaar and get the amount they wanted. But sometimes gasoline is much in the market that is why the must keep some for their security. One respondents said: *"It's land of municipality, in 2009/2010 it was 80 meter. Now it has been a while they made it into 70 meters for us. The law says if you use more than 70 meters the municipality you should pay. When a piece of land is more than 70 meters then rent must be paid to the municipality, but that has not been implemented yet."* While another respondent said: *"8 by 8. 8 meters by 8 meter. Later, it was made into 13 meters after they asked for it. It was arranged to be 7 by 13 to have a container for the gasoline. In the beginning, it was predicted to have gasoline all the time. But then in a period there was shortage of gasoline, they got big containers for the gasoline. Because of that they got a bigger area."* Another respondent said: *"Yes, those pieces of land that private generators are placed are mostly the property of the government, it is the property of the nation and that is according to some procedures, for example we, if a generator owners ask for permission" ... "The municipality then comes for those 49 meters – 7 by 7- that is 49. In that area, you can place a generator. That under the conditions that it is away from the citizens and they people of that region don't have a problem."* The different opinions are in the area that the generator owners can use and not in whether the government allows them and gives them piece of land to co-create. It is for sure that the government did provide a piece of land for the generator owners, but the amount of land that they received to work on varied per person asked.

CITIZENS FACTORS

Willingness to Participate

To know whether the people are willing to participate it is important to know how many neighborhood participate or have neighborhood generators. According to the list of the director of central maintenance 535 neighborhoods have generators. A governmental actor said: *"There are in total 825 generators"*. This is because some neighborhoods are big or have expanded. Consequently, the generator owner sets another generator in the same

neighborhood to keep up with the demand. Or because later the neighborhood has expanded and another generator is needed to keep up with the demand.

“approximately there are around 539 neighborhoods that only work for the neighborhoods, but they are private generators, it comes from the people. They give it to the government by amperes. Monthly they give it to citizens according to the hours that has been set. We also have 30 business generators, like they work for the Bazaar and places like that, and we have 51 generators they work for the apartments- for the cities, those are distinguished, they work with Kilowatts”.

According to them all the neighborhoods have neighborhood generators. Except from that there are generators that work for the private places like the Bazaar, since they need electricity for 24 hours. Also for the cities as mentioned above there are different generators. Those generators work to provide electricity 24 hours. Those cities are apartment compounds and villas that have their own borders and they are inside the city.

Material Rewards

One other variable is to know what drives the citizens to co-create is whether they receive tangible rewards and that is why they are co-creating. In the case of generators, the generator owners do receive tangible rewards, money in this case. For the this is a business. Both generator owners that were interviewed said they co-created primarily because of the material rewards. One generator owner said: *“Like we can say this is a job, you will receive a something financial, so you work with it. You try to do a good job.”* For the it is a business and what is most important to them is receiving money in return. One generator owner said: *“Without doubt because as we said when we said the private sector we mean profit, but it is not the profit alone like everybody has their own standards “.* Primarily the main reason why the generator owners co-create is because of tangible rewards.

However, in the beginning when the government helped them it was better now because of the crisis the subsidies have become less. One generator owner: *“Some months one ampere is 10,000 when you go to collect the money the people think all the money is for you. They think it is all net profit but it is not like that. You come and subtract the running cost, 20% will remain for you. Then you must pray that in that month nothing happens to your generator.”* 80 percent of the money they collect goes to the technicians and the fuel, that if nothing happens to the

generators. Tangible rewards are not the only rewards that they think about, it also gives them a good feeling to provide the citizens with this public service.

Intrinsic Rewards

In general, apart from the tangible rewards it was obvious that the generator owners felt good providing the people with electricity. The job they have is hard because the government is the one responsible to provide the people with this public service. But it is not their responsibility to do so. Something they are the ones that are blamed for the lack of electricity, even though they don't have power to change this and increase the national electricity. It is true they mainly produce the electricity because of tangible rewards. If there were no tangible reward they would probably not do it. Because that is the source of their income. But people do complain too much on them, and they need to be patient to endure those complaints. One of the respondent said: *"Without doubt, for example I'm sitting here serving the people as much as I'm capable of and according to the schedule the government gives me. Sometimes it is not in our capability, the government, we don't say anything we provide the service more."* What he is trying to say is that how much they can they provide people with the public service under the provision of the government. Sometimes because of this crisis many people can't pay for the public service, they wait for them till the next month, or they help them through another way. (This will be discussed further in the paper.) The second generator owners supported the first one by saying:

"Yes, it does give the that feeling, each one of us feels that they have a difficult duty. Because except from that that the primary reason for this project is financial gains. It is a big duty that you have taken responsibility for. For example, each one of us in the border of that place that we have gotten permission; we serve. We try to have at least as possible issues and complaint from the people. We believe that formerly we have a behavior/manners duty. Second it is a social job. For example, the person has a sick person in house, and they have children. You for that time when you provide them with electricity when it is warm, or in the winter you brighten up their house. This in itself, it gives you how do you say it a good feeling that you serve; that you have the ability to do something except from profit. In itself it is a good feeling, that you can serve and you can provide a good service.

There is more than only receiving the money or the profit. The feel that they are taken a big responsibility sand if they do their job is a bad way it reflects directly badly to the citizens since you take away the service they must get.

Social Capital

There were different opinions for whether special connections were needed in the government to receive neighbourhood generators. When we asked the citizens that were using the public service whether the generator owners needed special ties to the governmental actors most of them said that it is true. It is hard to find the answer to this by looking at documents that is why people were asked. The generator owners said that no special connections were needed. The governmental actors said that it is better that someone is chosen that they know because they know the person and that makes their own job easier. In general, observing the matter and by a collecting of the all the interviews in general in this region most of the times special connections are needed. This is also because the political parties or governmental actors want to receive their shares from the deal that is made between the government and the private sector. This happens not only in the matter of neighbourhood generator but in almost all the sectors. However, for some neighbourhoods that are less appealing and believed that less money is profited the competition to receive a neighbourhood like that is less. Some political figures want to set up generators but they don't register in their own name because they don't want the citizens to know and when they register in secret they are the priority. Special connections are needed to set up the generators, in the beginning it was probably not as strong as it is now. Because at that time the citizens were encouraged to apply and many people were needed to set up the generators. Later, when people knew that there was benefit in the matter, the competition was stronger to set up a generator. In the beginning, there was no limit to how many generators one wanted to set up later. After that because more people knew about the job and the profit there was a limited and one person could not register for more than three generators.

When the citizens were asked, there were different opinions, but most of them believed that special connections were needed a respondent said: *"Now, if a person wants to set up a generator they must have someone with them. We see and we hear [from others]."* That means that in general a lot of people hear about for all the tender, collaborations, or co-creation products and services you need to know people in the government to be selected for this process. Another respondent said: *"Wallah, most of the times it is needed, but that was before. Before the government didn't have a lot of connection with the generator owners, but now for the*

company owners for residential places it is better that you know someone like the company owner or- at that time it will be given sooner than someone normal." In other words, the respondent believed that for the neighbourhood generators it was not needed to have special ties but now when more and more apartment compounds are build and they have 24/7 electricity they need bigger generators. To get those you need to have the right connections whether in the government or with the company owner that build that place. Most of the times the company owners will receive a percentage of the profit. To find out about the social connections it is hard because a person can register with someone else's name an.

The governmental actors indirectly believed that special ties were needed. When only the citizens would say that the evidence would not be enough. But to hear the governmental actors say that special ties where needed, there must be something going on. One respondent working in the government said:

"You don't need to have connections, most of the ones that set up generators didn't need to have that special connection. But some people for to stay in the neighbourhood or to be set. All the special connections are in friendship. For example, I tell someone to set up a generator, of course to someone I know, as I will know that person and I will know they won't cause any problem or something. That is better because later when the generator is set up in the time of managing, they won't cause problems. I know them. I know how they are, I know how they aren't. But that was not a must. Because everybody can, it was not set for the generator owner to have an [educational] degree. In the beginning when I worked in a meeting we discussed that let the ones who set up a generator to have a high school degree. And that would be the minimum. They said why? I said because I have experience before. In 2002 when there were generators, the generators, there were some generator owners, you couldn't talk with them. They had anxiety with them. They got angry. They would get angry for you as a worker that supervises them; to tell them what to do or what not to do. They would get angry and take it in a different way. We said let's have people that have a degree, they said that is not needed because in this country not everybody is like this."

He says that he would prefer someone who he know to set up the generators because he will choose someone he knows how they are like. So later in the supervision part he wouldn't get any headache. To see that the government needed people fast they didn't even had requirement for someone to be educated to do this job. He says the reason for that is that it would have made the interaction between the easier, but whether that was the real reason is the question. Another governmental actor said that no special ties were needed it was more on a first come and first serve basis. The first one who wrote a request was the one who would be chosen to do this job. In the request the signatures of the people in the neighbourhood was

needed for to know how big the generator should be and to have their permission. Because when the people signed the also needed to say how many amperes they wanted.

Feeling of Ownership

For the continuity of the co-creation it is important that the citizens agree with whom is going to provide the public service to them. In this paper to know citizens were asked whether generator owner needed to collect signatures if the wanted to set up a generator. From the interviews the results showed that in most neighbourhoods before the generators were set up signatures were collected. The reason for the signatures to be collected was to know how many amperes the want and whether they want the citizens for that person to set up and manage the generator. Other said they were not asked at all or they were not at home at that time when they signatures were collected. But signatures have been collected if not to ask for their approval it was asked for how many amperes a household needed. Most of the people signed and wanted to electricity. There were neighbourhoods that went to the government departments ask for neighbourhood electricity themselves. In the beginning some citizens were sceptical and ask for a small number of amperes to see if they would be in fact provided with extra hours. One respondent said:

“they [the one wanting to set up the generator] asked whether we wanted electricity from the generator or not. They [his wife and children] had said let him come back then we will know. When I came back I asked where they went, they said we don’t know. Then we heard nothing from them till we heard the generator, till they connected cables to the houses. When the neighbours connected, it we did so too.”

The citizens can change the owner of the generator of they want to they must write a request and give it to the maintenance department. They tend send it to the civil security and the municipality. They needed to go accord then the generator owners can be changed. The citizens were also asked whether they had the power or they felt the responsibility if they could change the generator owner if they could. There were different opinions. The majority said they can change him by first going to the generator owner and asked him to fix him selves, otherwise by collecting signatures and bringing it to the civil security and the municipality. One respondent working in the government said:

“In the beginning this generator is in this [public] garden this row of houses you have to go and ask for their signatures whether they go accord for the smoke and that sound to be close to them, this is signatures here. Then you have worked after a period you need to know whether the people are satisfied. The one who works with it [the generator], the one who collects the money, the one who does electrical work for you. All of those, not only in the beginning. Me myself I ask the guy who collects money for me once in 4/5 months, I go ask whether people have any issues or problems.”

They need to be concerned because if the people know they are ignore their issues they will file a complaint and they will get in trouble themselves. To see that the generator owners are concerned whether the people are satisfied or not. This means that the people have something to say and that they can change someone if they want. But it is also for the citizens to believe themselves that they have the power to do something.

The procedures for filing a complaint in the government works in this way according to a respondent working in the government: *Wallah, that we, we write a letter for the civil security, one for the civil security, and one for the deputy governor office they need to have the permission of the civil security that this person has a generator at this neighborhood and the civil security had to go accord with that. “*

The citizens had diverse opinions. Some believed that it is not possible to change the owner even if they wanted to because there is a contract between the government and that person. It is possible if in the neighbourhood there is someone powerful living there, or that has something to say in the government. But you can't find someone like that in every neighbourhood. It is hard for the neighbourhood to change the owner because there were special ties between the two and that they shared the profit. Others had the opinion that they could change the owner. One respondent said: *“Wallah if we all are not satisfied we can change it, if we don't want him let someone else come. But they are good people they are not bad.”* Another respondent said: *“by way of collecting signatures and whether there is making the government aware of it. You need the signatures of the houses and you can talk to the people of the neighbourhood and then collect signatures to make him change the mistake or let him fix it.”* The people feel like they have the right to change him. In the past neighbourhood generators have changed their place because the citizens asked them to do so. So, they have in one sense a

feeling of ownership. They can to an extent change something if they don't like it. One respondent believed that they she is powerless and can't change anything.

LOGIC OF COSEQUENCES

Quantity of Output

The main purpose of setting up neighborhood generators was to have more hours of electricity. Before the neighborhood generators it was already little. Right now, it is also little because we don't have enough power plants in this country. This happens in a moment when power plant is placed. They have tried a lot of things. The only problem is that there is too little electricity and that is why they set up neighborhood generators. If we had enough electricity we wouldn't have generators. In general, the electricity hours have increased because of the neighborhood generators. One respondent said: *"Before we had 8 hours of national electricity, and the neighborhood electricity provided 8 more hours, that is 16, and 8 hours we were without electricity, that is 24 hours. But now it is good, now we have 24 hours of electricity. When the national one is shut, if it doesn't decrease it is good now. Now, he gives us its 8 hours, and the national one how much it gives [it's not constant]."* This means that the number of hours has increased, and the hours they are proving electricity is the hours when there is no national electricity. Another respondent said: *"We are good, from 4- from 2 it will come back till 7 in the evening. At 7 it will be shut off for two hours. Then when the generator will come back it won't be shut off till 8:30 in the morning."* Thus, they don't have electricity 24 hours in a day but they have it more than before there were generators. In fact, observing the situation the neighborhood generators are the best short-term solution. But the generators are there for more than 10 years and it doesn't look like that soon they will be changed for better power plants.

Nonetheless, there is a limitation on the usage of the extra hours. The citizens pay per ampere, so not all their needs have not been stipulated. There were different opinions about the quantity of the output. Some said it is better than nothing. They said it is better not having electricity at all. While others believe the little amount of the amperes is almost useless. The owners of the generators are given monthly schedules for how many hours they need to provide electricity. The government places counters that are sealed and then the see how many

hours they have provided electricity and whether they followed the schedule. This shows that outside the normal hours that the government provides electricity more hours of electricity is provided. The number of hours depends on the seasons, in autumn and spring the hours provided are less because the people needs less cooling and heating systems. But in the summer and the winter the hours are increased, because the people use electricity to cool the house in summer and make it warmer in the winter. One respondent said: *"For example, now we have 4 or 5 hours of electricity, but next month we will go into summer maybe the generator will work for 10/11 hours."* When more hours of electricity are provided by the generator owners it means that the citizens need to pay more money. One respondent said:

"It cannot take the place [replace] the national electricity, except from the brighten the room." Because you know yourself when it is cold the generator cannot provide the electricity for the right equipment. It needs a lot of amperes; it needs a lot of money. Maybe not everybody can't afford that. That is why we cannot say it can replace electricity. But it is that it doesn't make you sit in the dark, a student or the beneficiary can't profit from that."

Not every house can turn on their air-conditioners but there are other water-cooled air conditioners that take less ampere to work with. Still it is better to have the freedom of paying for one source of electricity and having to those for yourself how many electricity you use. Other respondent had different opinions about the quantity of electricity and said they were happy with the amount that is provided.

"I will it a good grade, I give it a 6. You know why a while ago there was almost no national electricity. Isn't that true. But he has set a schedule for when the national one is shut off, he says tomorrow there is no national [electricity]. But when there is generator electricity you are happy; our own generator from this neighborhood is punctual. You look, in the morning you go to work, you wake up. Isn't that true? Then you are happy with it but in the morning when you don't have hope for any of them that is not nice. But we have hope in the generator."

It is better now because when the national electricity is shut off people wait for the generator electricity to come back, but before they only had the national electricity and they only waited till that came back. So, she thinks it is better now. Because you cannot rely on the national electricity, the generator gives you hope and you will at least have light in the morning when you change and make yourself ready to go to work. So here you can see that the electricity hours have increased. Accordingly, the hours vary but it is still better than how it was when

there was only one source of electricity. The national electricity is much better because there is no limit to it. The generator electricity is expensive, and most of the people take not many amperes to have all their needs fulfilled. But it is still better than sitting in the dark. In short, the number of hours has been increased but the amount that they can use that is limited.

Formal Effectiveness

In the case of the number of hours, the number of hours have increased. But the problem is that there is a limitation for how much electricity one can use. The citizens pay per ampere and hours of electricity that the neighborhood generator and providing. There were two neighborhoods. In the poor neighborhood, the amperes that people had very less than the rich neighborhood. In the poor neighborhood people could afford less amperes of the neighborhood generators. They had between 2-4 amperes. While in the rich neighborhood the citizens had between 6-10 amperes. Overall the citizens don't have any other option than to take the limited amperes. Even though they are not fully satisfied. It takes someone from the highest class to buy their own generator and maintain their own generator. Especially in the economic crisis when the salaries of the public-sector employees have been cut to one third. There are many people that struggle with paying the money. For this matter, there were different opinions. Some citizens said they had no other options but they are satisfied because it is better than not having electricity. One respondent said:

"Before we had 8 hours of national electricity, and the neighborhood electricity provided 8 more hours, that is 16, and 8 hours we were without electricity, that is 24 hours. But now it is good, now we have 24 hours of electricity. When the national one is shut, if it doesn't decrease it is good now. Now, he gives us its 8 hours, and the national one how much it gives [it's not constant]."

More electricity hours have been provided so the satisfaction was there to an extent. However, on the other side, some said they cannot turn on all the necessities in the house, when they want to turn on air-conditioning they should turn off their one device to work with another. For some devices that is not a problem but for a fridge that is a problem if it is not working the entire day. Especially the poor neighborhood that had less electricity they said that it is almost like they don't have any electricity. They believed that sometimes it is better to pay for one electricity source. While mostly in the rich neighborhoods they believed that the money was

too much but they still believed that with all the mistakes and the problems it is better to have it and they were to a degree satisfied. They believed that it is more important to have electricity than to say it is expensive or not because it is a basic need. It fills in the hours the national electricity is shut off. One respondent said:

“With all its problems, I find it better to have it. Because you can’t be without electricity. Not everybody can buy their own private generator and use it for their house. If they use they need either buy the really big ones, you know yourself it costs a lot. Not everybody can afford that. It is true that in our neighbourhood there are people who have it. Thank god. But in the poor neighbourhoods they must do their best to pay for the money of neighbourhood generators. How can they then buy their own generator? That is why I believe it is not as needed.”

People use electricity from the neighbourhood generators out of necessity otherwise they are not fully satisfied. Even though the level of satisfaction has gone up because now they have more hours of electricity but the hours are less.

Citizen Satisfaction

Overall the citizens are satisfied that they have now more electricity than before. But they are not satisfied by how much electricity they can use. The amount of electricity is limited and they must pay per ampere. The citizens were asked if they could rate the generator electricity how much they would give. One of the respondent said: *“For the sure the good one [grade]. Because once you don’t have electricity and it provides you with electricity. As a grade, a 9/8.* Another respondent said:

“Wallah I would give him grades [a good grade]. We will give him a 6. Ha-ha. You know what because a while ago the national electricity was very little. Isn’t that true? But he has a schedule he says tomorrow there is no national [electricity], but when there is the generator [electricity] you will be happy. And the guy of this neighbourhood he is a decent guy.”

People are happy with the electricity because if they don’t have the generator electricity, they can only rely on the limited hours of the national electricity. The other respondents rated the neighbourhood electricity with 2 sevens, a five/six, an eight, and a ten. One other respondent didn’t rate it at all because she said she was not satisfied at all. With all its problems, the citizens are satisfied that there they have generator electricity.

LOGIC OF APPROPRIATENESS

Responsiveness

The government has become more adaptable and flexible to the needs of the people by subsidizing the neighbourhood generators. There is a price tag on providing the public service, that not all the classes of the citizens can afford. Most of the citizens said the money is too much but they don't have any choice that is why they accept it and use it. Other say that it is good and it is better than not having any electricity at all. One respondent said: *"But you can benefit from it. Now it is neighbourhood [at that time the neighbourhood electricity was on], from 2 o'clock the [national] electricity has been shut off, at 2 o'clock it has been shut off, then it came back till 2 in the night, we benefit from it, from now on, if there is nothing at all, we can turn on a fan with it."* The neighbourhood generators have become more adaptable to the needs of the people because they can at least turn on something with the electricity, even though it is not fulfilling their demand. But there are others they believe that the national electricity is better since you can use it the way you want. One respondent said:

"With all its problems, I find it better to have it. Because you can't be without electricity. Not everybody can buy their own private generator and use it for their house. If they use they need either buy the really big ones, you know yourself it costs a lot. Not everybody can afford that. It is true that in our neighbourhood there are people who have it. Thank god. But in the poor neighbourhoods they must do their best to pay for the money of neighbourhood generators. How can they then buy their own generator? That is why I believe it is not as needed."

It has become more flexible and adaptable mostly for the rich citizens because their money doesn't affect them that much and they can afford more amperes. In general, all the citizens said that the money was too much. Especially in this time-period when the region is facing an economic crisis.

Accountability

To have more accountability it is better than have their responsibilities divided. The generator owners and the governmental actors had clear role separations. They have contract between them. The government sets the schedule for the generator owners and they need to follow it and provide the electricity in the hours that the government has set for them. One respondent in the government said:

Yes, our supervision is that we set the schedule. In the beginning, let's say our duties start like this, when we composed the schedule when rotate between them to see whether they

are following it or not. When they make mistakes in, or whether they don't make mistakes in it."

In the beginning, there were a lot of problems because the money was paid in the beginning of the month and the generator owners were asked to provide a certain hour of electricity. Later the money became postpaid, this caused less problems because they generator owners were paid for money that they provided. The government decided upon this to satisfy more people, and to make the process doing with less problems. In addition, the government checked upon the generator owners by installing a counter on each neighborhood generators. At the end of each month one member of the association and one member of the government examine the counters. If the generator owners didn't follow the schedule they could be fined. If there is a technical problem with their generator they need to let the association know so that the maintenance department knows of the problem. The association will help the generator owners and it has made their job easier by becoming an intermediary; it has made the job of the generator owners easier. The government interact with the generator as their own employees and they need to follow the rules that is set for them. What rules applied to government employees applied to the generator owners.

The government sets the price of one ampere. A market research is done once in 10 days to know the price of gasoline at that moment. The three prices are divided by 3 and from that one price is selected for the price of gasoline. There is an equation for the price of gasoline and it is inserted in an equation and from that they price for one ampere is set by the government and the association. The association provided some documents as examples for how the price is set. One document is from last year, that is the one they still had a copy of. Between the period of 10 September and 20 September 2016 the price for 1 liter gasoline was between 460-440 IQD. Another document that they provided us; is the schedule from May 2017 that the association provided was that in the month May the generator owners need to be ready to offer electricity from 16:00 till 01:00. For each ampere, they should charge 44 dinars. One respondent said:

"The price you know who it is set, it is set according to hours. One hour how much it costs outside [in the market], if gasoline is expensive they will count 47 dinars for you per. When gasoline becomes around 550 they will count 45 on you they will count 42 on you. So, it is according to the hours. At the end of the month, at the central maintenance of electricity, one [an employee] comes and measures the counter. At the end of the month the counter will be measured. Then according to this counter, for example if it has worked

for 100 hours, the 100 is multiplied by that number of dinars and then they will bring a bill for you.”

They give the electricity but the price is set by the government and that is according to how much gasoline is at that period.

The bills are made by the association and the government and then the generator owners are told to charge a certain amount from the people. However, the money collecting is done by the generator owner and has nothing to do with the government. Both generator owners said that sometimes they wait for several months for the people to pay the bill and if they don't they will cut the electricity. At that time to government can't say anything because it is business of the generator owner. The generator owners can also give extra amperes to people, most of the time they provide the extra amperes to those people who live near the generator. The smoke and sound may annoy them.

Extra Findings:

Tax:

There were two aspects that before starting this research they were not mentioned in the conceptual framework. The government doesn't tax those who set up generators. In this way, it is easier for them to set up the generator because more of the profit will return to the generator owners. Because the government was in a hurry to find a solution they didn't tax the generator owner to motivate them to join. The number of neighbourhood were a lot so to have them all covered they tried to make it as easy as possible for them. A respondent working in the government said:

“No, not even tax- in the beginning we decided on tax Later by a decision [from the government] the tax was excluded for them to do this job in a hurry. To set up the generators and to help the national electricity as soon as possible. That is why they were excluded from tax and they don't need to pay for the piece of land.

Respondent who is a generator owner said:

“We are excluded from tax, I want you to write that down. This is one of the assistance the government provides to encourage the private sector. Citizens- this job providing electricity, is the government's responsibility. But the government because of this situation and so, it opened it door for the people, to motivate people.”

The government not asking the generator owners for tax is an influential factor. The exclusion of tax leads to more profit for the generator owners. This means more tangible rewards in an indirect way. This drives the generator to work in this field. However, in the beginning it was not clear whether the government would tax the generator owners or not, but because they were in a hurry they agreed to have them excluded from paying tax. This could also drive the generator owners to continue and not stopping with the job they have now.

The citizens have more needs and use for electricity:

One other aspect is that before the people didn't use as many equipment as before, but now this has been increased. In the time of Saddam what could enter the country was limited and the people used less electricity. The cities also expanded rapidly, the government had to not only provide with enough power plants of the inhabitants at that time, but also have enough power plants to carry the load for the expansion of the number of inhabitants and of the increase in the number of the neighbourhoods. That is not the only problem, export and import was new to the country. Before the country was ruled by a dictator and there were economic sanctions. Later there were no more sanctions and most of the project that were implemented by the government were new. This shows because of the expansion it was believed that the needs of the people had increased. The government and the people started building new and better houses and building that needed more electricity. More electrical devices were imported from the outside that needed more electricity. The most used electric device was the air-conditioning, most of houses have several air-conditioners and that needed more electricity. The governmental actors believed that that had an influenced the government not providing electricity for 24 hours. Not enough power plants were built in that time to keep up with the demand.

The government couldn't provide for the neighbourhoods expanding, even before that the hours of electricity were limited. Now the neighbourhoods have expanded and the people are building bigger houses, also use more electrical devices. Especially in the winter in most of the houses you find multiple air conditionings. The opinions of the citizens were divided, some believed that no matter what it was the responsibility of the government to provide the electricity since it is a basic need. A respondent said: *The government instead of having these small sources of electricity they can make something big. Our gasoline is all burned, it goes*

wasted. *Why can't it turn it into electricity, it has the ability to do so.*" In developing countries this problem exists while the government of developed countries could provide enough electricity no matter the demand. Others believed that it is true that the demand has increased and that the citizens use too much electricity. One respondents said: *"There are houses that have 6 air conditioners, when the national electricity comes back the turn all of them on."* One reason for that could be that the national electricity is cheaper than the generator electricity. They believed the reason for the people doing this is because nobody is feeling responsibility toward the country. *"Nobody sees this country as their own, nobody sees this government as their own. The nation must do it themselves. You instead of switching on 10 lights turn on 4."* The relationship between the government and the people has become weak. The government can't provide electricity for 24 hours. When the national electricity is turned on again the people in revenge for the government shutting down the electricity, the citizens turn all the electric devices in the house. The people don't think about that when they do that they will have less hours of electricity. At the end this is because of: *"A bad reflection is made, because of our misunderstanding, and the government not feeling responsible."*

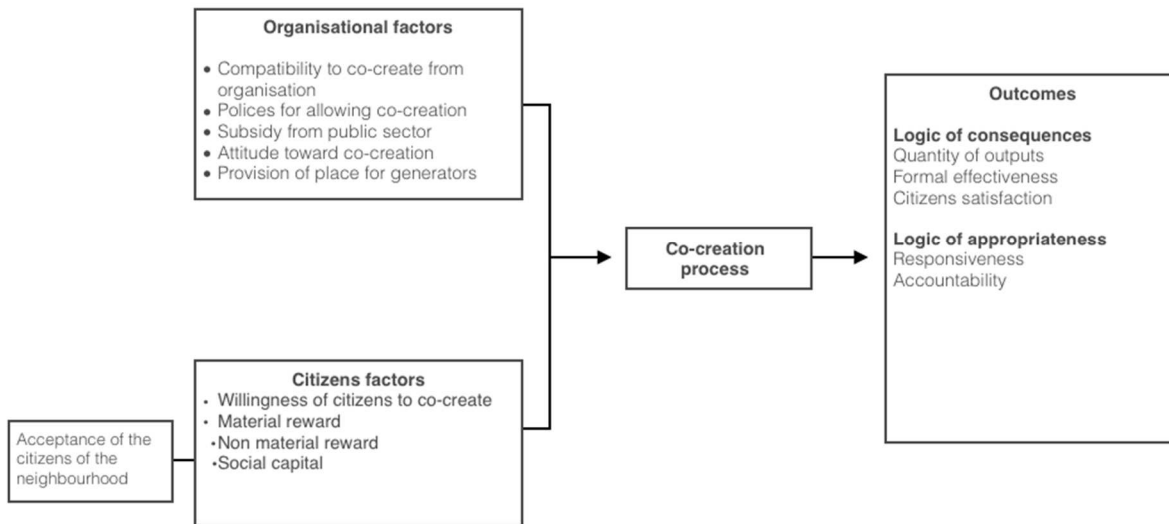
Other believed that in the past a family could all live collectively in one room while now everybody needs their own room and has their own electric devices to be used. A bigger house mean more electricity. Now the situation has changed and everybody wants to have their own room. For each room, you have your own electric necessities so the needs have increased. Now people have become lazy for the most basic thinks they want to use an electric device.

VIII. ANALYSIS

In the previous chapter the data that was found for each variable was described. While in this the data is analysed by its theoretical content. It is needed to know how the organizational factors, and citizen's factors affect the co-creation process and what the outcomes proof the degree of the effect.

The influential factors to drive co-creation vary per case. For the case of energy in Sulaymaniyah some variables were chosen and some empirical data was collected. To provide considerable answers to the questions that are the matter of this research, the outcomes will be analysed below. The analysis is divided into three parts. Before the process of co-creation can be started the conceptual framework in this paper has a pre-condition, and that is the variable acceptance of the citizens in the neighbourhood.

Conceptual Framework:



Citizens Factors

Feeling of ownership

For co-creation to occur it is important to know whether the citizens allow for co-creation to occur. They are the end-users, if they don't use the public service than the co-creation cannot continue. As shown in the conceptual framework it is a citizen factor, but it comes before the others. The citizen here are the users of the public service and not the producers of the public service. First the citizens who are using the public service need to give permission to the citizens that want to set up the generators and produce the public service. In the case of energy in Sulaymaniyah acceptance of the citizens in the neighbourhood was needed to co-create. The government wanted those who applied to set up a neighbourhood generator to collect signatures to have the permission of the neighbourhood. One respondent said they were asked by the generator owner in the beginning to sign if they agree for them to set up the generator: *“to know you like the person or something, and that according to some condition.”* Most of the respondents were asked whether they agreed. Other respondent said someone came to visit their house but they didn't sign the forms because they were not home:

“they [the one wanting to set up the generator] asked whether we wanted electricity from the generator or not. They [his wife and children] had said let him come back then we will know. When I came back I asked where they went, they said we don't know. Then we heard nothing from them till we heard the generator, till they connected cables to the houses. When the neighbours connected, it we did so too.”

In general, all the neighbourhood needed to do that, but they didn't need to collect signatures from all the houses so from all the citizens that lived in that neighbourhood. This makes it difference. They collected enough signatures for setting up the generators. The signatures of all neighbourhood were needed, but not all the citizens. Not only for the permission but also to know the number of amperes they wanted. And to buy a generator according to that. Acceptance of the citizens of the neighbourhood was according to have enough people to set up the generator, since not all the citizens agreed and not all of them were home at the time the generator owner collected the signatures, it means that not 100% of the citizen's signatures were needed, just of the majority; enough to set up a generator.

Conversely, most of the citizens did feel that they have the power to change the generator owner if they didn't like him. However, there were some that they felt powerless because the government has already a contract with the government and because of special ties between the governmental actors and the generator owners. In general, the citizens did have a feeling of ownership, but the question was how much power they thought they had to change the owner of the generators. Two citizens out of ten said that a situation occurred when the generator owners had to change the location of the generators because they were too close to their houses. The generator owners provide additional amperes for free, for those citizens that live close to them to keep them satisfied and for them not to complain about it. In general, the citizens have a feeling of ownership and those who wanted by way of collecting signatures could file a complaint to the governmental departments. That is from the side of the citizens. According to the conceptual framework of this paper the generator owners also required some influential factor from their side as citizens to co-create.

In short, it would have had a strong effect if the signatures of all the citizens were needed. But in this case just enough citizens were needed to proceed with the co-creation process. It has no effect on the organizational factors. For the citizen factors, the willingness of citizens to co-create was not affected by the acceptance of the citizens of the neighbourhood because all the neighbourhoods did participate in the process. The reason for that is the difference between co-creation in this case it is a necessity and a basic need that people cannot be without. For the material rewards and the non-material rewards, and the social capital factor it didn't influence the citizens because they were only for the citizens that owned the generators. Regarding the

outcomes, the quantity of output was according to the schedule that the government set for the generator owners so the acceptance of the citizens didn't influence the quantity of output. Other outcomes which were formal effectiveness, citizen's satisfaction, and responsiveness were about citizen's satisfaction. In the beginning of the process when the signatures were collected this didn't have any influence of the three factors. But over time their feeling of ownership did influence these three factors. Because if the citizens were less satisfied, they could go and tell the owner of the generators to fix himself or if they wanted to change the location of the generator. This has happened and he has changed according to what he can do. Nonetheless, the generator owner has a fixed schedule for the hours he can provide electricity, and the price per ampere is fixed. This means that the feeling of ownership of the citizens has a small effect on these three factors. For the last factor of the outcomes accountability, the separation of the roles between the generator owners and the governmental officials doesn't have any correlation between them.

Willingness to Participate

To know whether the citizens are willing to participate it is important to know how many neighbourhoods are participating. A governmental actor said:

"approximately there are around 539 neighborhoods that only work for the neighborhoods, but they are private generators, it comes from the people. They give it to the government by amperes. Monthly they give it to citizens according to the hours that has been set. We also have 30 business generators, like they work for the Bazaar and places like that, and we have 51 generators they work for the apartments- for the cities, those are distinguished, they work with Kilowatts".

All the neighbourhood in the border of Sulaymaniyah had neighbourhood generators and participated in this type of co-creation. In total 535 neighbourhood were registered to have neighbourhood generators, some neighbourhoods had more than one because of the extra load on the generator and the area of the place. This added up to 825 neighbourhoods in total. Except from that there were 51 generators that worked for the apartment compounds, and the other ones that were build had already demand upon for generators to be set up there. This is an important driver for co-creation, however whether all the neighbourhoods have generators or just one neighbourhood, it is still co-creation and it still occurs. The amount of neighbourhood participating doesn't have a large effect whether co-creation will occur or not. But for each neighbourhood generator to continue to work they need enough people to pay for

the electricity. Obviously, they have enough citizens in each neighbourhood, that is why till now all the neighbourhoods have generators.

Though, what is important here that the willingness to participate of the people as in using the utility is important because if not enough citizens apply to use the public service than the maintenance of the generators cannot happen. The generator owners use the money of the citizens that use the public service to maintain the generator. From that perspective, it is important for enough citizens to sign up so that they amount of money they spend on providing the public service is less than the money they receive from the people. At the end this is the occupation of the generator owners if they don't get benefit out of it they will stop doing this job. Looking at it in this perspective willingness to participate is important. Since almost all the neighbourhoods have generators that means enough citizen are using the facility for the generator owner to maintain the generator and have profit. So, willingness to participate is an important variable in for the co-creation process.

Regarding the outcomes factors the quantity of the outcomes is set by the governments schedule so it doesn't change by changing the willingness of the people to participate. If only one neighbourhood has a generator or all the neighbourhood the quantity of output won't change and it has other factors that it depends on like price of gasoline, the season, and the number of hours there is national electricity. Again, formal effectiveness, citizen's satisfaction, and responsive are about how much citizens are satisfied. The willingness of the citizens doesn't have much to do with those three factors, because the citizens don't have another option than to use this utility. Otherwise they need to sit in the dark in the hours when there is no electricity. The separation of roles; accountability, is also not linked to willingness of citizens to participate.

Material Rewards

The citizens that co-create receive tangible profit, and that is why they mainly co-create. They said that at the end it is a business and you need to get certain profit to continue. One generator owner said: *“Without doubt because as we said when we said the private sector we mean profit, but it is not the profit alone like everybody has their own standards.”* Another generator owner said: *“Like we can say this is a job, you will receive a something financial, so you work with it. You*

try to do a good job." In the beginning, it was a risk to start with this project for them but later they continued for more than 10 years, so the profit was enough for them to continue. Till before the economic crisis there was a large demand on receiving a contract from the government to co-create, the demand is still there but it has shifted more toward the apartment compounds because the material rewards are higher for that case.

They have some expenses that they need to cover, and sometimes their generators stop functioning so they need to have enough economic stability to continue. However, the profit is more than that. Because it takes a lot of money to buy a generator and invest in it, so the profit should be high too. Otherwise there are other ways of business they can invest in. The subsidies of the government made it easier because there were some expenses that were covered by the government. This has stopped after the economic crisis and all the neighbourhoods still have generators so that means that even without those subsidies they have enough profit to continue. For the case of neighbourhood generators tangible rewards is a must, it is hard for someone to invest money and time in a project that is the responsibility of the government. They need to take the complaint of the people, the risk of the generator to break, and their spending their money and time, so they would want something in exchange. The material reward is an important aspect. All the generator owners receive material rewards and that is mainly why they are providing the public service. Apart from that of course they like the good feeling that comes with it since there are delivering a public service which is the non-material rewards. But the material reward is still way more important influential factor for the co-creation process to occur.

Material rewards does have a big influence on the co-creation process. Because if there wouldn't be any material rewards the generator owners wouldn't co-create. For the generator owners that is their income and they have the right of doing it for that purpose since it is a business. If the generator owners wouldn't co-create then the quantity of the output wouldn't increase. Before there was only national electricity but now there is national electricity and generator electricity so the number of electricity has increased. There is a link here. However, the formal effectiveness, citizen's satisfaction, and responsiveness has increased but electricity is a basic need and it can't be fulfilled by the limited hours. And the material rewards do motivate the generator owners to co-create. The people are more satisfied but it is still not the

best solution for the lack of electricity. The accountability factor, so the separation of the roles doesn't affect the co-creation factor.

Intrinsic Rewards

The generator owners did feel happy because they were delivering a public service. They felt there have a duty to provide the public service and make their life easier. As one generator owner said: *“Yes it does give the that feeling, each one of us feels that they have a difficult duty. Because- except from that that the primary reason for this project is financial gains. “Conversely, non-material rewards are not an essential factor, but just an additional factor. If this factor wasn't there the co-creation process would not be affected. Because proving the public service was more a business for them and that is why they delivered it. The good feeling of providing a service people needed was just an additional reward. The non-material rewards don't affect the outcome factors and the co-creation process. It is an additional factor.*

Social Capital

Social capital was examined in this paper in way to see whether the governmental actors have special ties with the ones that wanted to set up the neighbourhood generators and whether that was essential. In the beginning of setting up the generators many generators were needed so the citizens were encouraged to co-create and set up the generators. At that time, the people didn't need to have special connections since they needed people to set up the generators in a short period of time. One governmental official said:

“You don't need to have connections, most of the ones that set up generators didn't need to have that special connection. But some people for to stay in the neighbourhood or to be set. All the special connections are in friendship. For example, I tell someone to set up a generator, of course to someone I know, as I will know that person and I will know they won't cause any problem or something. That is better because later when the generator is set up in the time of managing, they won't cause problems. I know them. I know how they are, I know how they aren't. But that was not a must.”

If they needed to have special ties, it was because they wanted to set up a generator in a rich neighbourhood or to make the interaction smoother. The citizens needed to be rich, to invest in the generators. That is why most citizens perceived that the government chose only those people that knew them and whereby they could share the profit. The governmental actors said that it was better for them to have someone they know to set up the generators because they

will make their own job easier. This is still the question and it cannot be found that easily because if something like this happens it happens in secret. One respondent said: *“Now, if a person wants to set up a generator they must have someone with them. We see and we hear [from others].”* Those who said that special ties were needed said they heard that it was like that. It is hard to prove even if there such a thing. Some believed that the government (officials) wouldn't allow someone profiting without letting the government (official profit. One respondent said: *“How would the government allow them to set up a generator if they are not sharing the profit.”* Later when the citizens knew there was profit in setting up the government for the new neighbourhoods and the new apartment compounds there was some competition to get the contract of those places.

Social capital was not as essential as it was predicted in the conceptual framework. However, there were some neighbourhoods where the profits were thought to be more than other and those neighbourhoods were perceived as less problematic. The reason for that being that the economic situation of the citizens in those neighbourhoods is better compared to others. They demand more electricity than the other ones, and they could pay their money on time. In two different neighbourhoods 5 citizens were interviewed in each neighbourhood. For the richer neighbourhood, the citizens had a range from 6 to 20 amperes. While for the poor neighbourhoods the citizens had a range from 2 to 6 amperes. It could be an indicator that the richer neighbourhoods were more appealing than the poor neighbourhoods. Social capital was not needed for co-creation to occur because all the neighbourhoods needed to have neighbourhood generators. Yet, according to the perception of the citizens some generator owners did have priority in setting up the generators.

Social capital is a citizen's factor of co-creation. Social capital can give priority to some of the citizens to get a contract with the government but it is not an essential factor to co-create. The quantity of output will not be effected since it is set by the government. The formal effectiveness, citizen's satisfaction, and responsiveness is about the needs of the citizens and the satisfaction of the citizens. The social capital doesn't have an impact on the social capital. The last outcomes factor is accountability, and it is about the separation of the roles and it doesn't have a link with the social capital. The social capital is more an influential factor in a

way who are those get the chance to co-create. The process will be done anyways but it makes it easy for certain people to co-create and get the contract.

ORGANISATIONAL FACTORS

Compatibility to Co-Create

For co-creation to become easier it is important for the governmental actors and the generator owners to interact co-create. The governmental actors have divided the city between 5 zones and that is easier to handle. Each engineer that supervises a zone has interaction between the generator owners in that zone. By a matter of time they get to know each other and that makes their relationship smoother. But what is interesting is that there is an intermediate actor which is the non- governmental association for private generators. This association acts like a bridge between the government and the citizens (generator owners). One respondent said:

“In the government, for example we have the so-called committee of the private generators, they are an association of the generators. When there is any problem or complaint we will tell them about it. They then with the government they have their own committee with the governor and a committee with the financial security department. They will hold meetings with those. There are contracts between the generator and the national electricity- there are contracts. For example, we both need each other for work- maybe he is more dependable on us. In a time that- for example now its spring the national electricity is more and the neighborhood generators work less. But for next month or so we will go into summer, the national electricity will go up and the generator electricity will go down.”

A good relationship is important to have since this is a long-term project and if they didn't have the bond that they have now it will cause chaos. The intermediate actor has made it easier since it regulates the process and separates the responsibilities.

Regarding the governmental actors to believe that only professional people from the government that are trained to set up generator owners, it is not the case. The governmental actors believed that it didn't matter who set up the generators if they have some knowledge on the generators. Because the number of generators were a large number they government wanted to start as soon as possible. They didn't even want people to have a high school certificate to co-create. This shows that they didn't want professional staff, because of the lack of time. It was more a matter to provide the public service as soon as possible.

The generator owners have over time become professionals in their job, in the beginning the government wanted to set up the generators as soon as possible that is why they needed look for professionals. One respondent said: *"Today those [professional] people are unique. And the generators are not one or two, in the border of Sulaymaniyah there are 526 now, this many generator are there in the city of Sulaymaniyah. You can't have a professional staff for the 500 something generators."* That is not a crucial point because at the end each generator owner has a mechanical staff for when something is wrong.

Though, because of the interdependencies compatibility is a variable that makes the job easier it is not too vital for the co-creation process. Also, because of their interdependencies they do have a good relationship. Because the government needs some to deliver the public sector, and the generator owners want to profit and get an income. If they don't have a good bond the interdependency makes them work anyway, but to make the co-creation easier and the process more smoothly.

Compatibility to co-create is an organizational factor and it is important to make the co-creation process to proceed smoothly. Regarding the quantity of the output factor it won't affect that factor because it depends on other factors as what season it is and what the capability is of the parties. Formal effectiveness, citizen's satisfaction, and responsiveness is about whether the needs of the people are better addressed and whether they are more satisfied. The compatibility doesn't have an impact on those because the satisfaction of the citizens depends on how much electricity is provided for them and that will increase the level of satisfaction. The accountability factor which is part on the outcomes section does influence the interaction between the governmental actors and the generator owners. Because if the roles are divided they know what their roles are and will work according to those. But if the roles were not separated it would have led to chaos. The chaos would make the interaction between the governmental officials and the generator owners harder and more chaotic. The intermediate actor doesn't also smoothen the relationship between the two parties. To have an association as the one of the private generator could also be a factor that makes the interaction more positive and smoother and their problems would be solved easier and without quarrels. Also, it there is a problem both parties know who to ask for help, the association in this case.

Policies for co-creation

The government has a strategy to connect its internal (their processes, agency employees, and structures) with the external (the citizen communities) by way of a policy in the case of delivery of electricity. One respondent said: *“Yes, yes a policy was created and published. A ministerial order was published for setting up generators in the neighborhoods and the governmental announced itself that they would provide those things.”* The ministry decided to get the citizens to apply to set up generators and help with provision of the public service. This a very important aspect, because if there are no policies that will encourage the citizens the co-create then they will be less driven, or the co-creation won't expand to all the neighbourhood, and to almost all the cities (a few towns do have 24 hours of electricity). The policies are also important because the government has provided subsidies, so it is a pathway for the generator owners to co-create and the co-creation has become easier. However, before there was a policy people still had generators, mostly for their personal usage, there were others that shared between a few houses. However, it was not as a scale as it is now. In this case, this would have been more a self-organizational procedure, but for the government to be a part of the process and to turn it into a co-creation procedure it is important to have a policy. The policy for co-creation is an influential factor in the sense that it will make co-creation easier and it makes it expand throughout the city in the case of energy.

The co-creation concept is new and especially in the region where the research is taking place. There is not a policy that encourages co-creation in its general concept. However, there is a policy for people to set up neighbourhood generators. Having a policy is important to apply the co-creation aspect to different cities and to apply is on a bigger scale. Existence of a policy is part of the organizational factors and it is important for the co-creation process. Because if there would not be a policy the quantity of the output would not be regulated by the two parties. Before the policy there were still small generators that were shared between a few houses and it would be turn on whenever they wanted. The quantity of the output would have increased because obviously, they would have more electricity. But the output of the electricity hours would have been only for the few houses. Now the quantity of the output would increase for a bigger group of citizens and that is why partially the policy factor is important. The formal effectiveness, citizen's satisfaction, and the responsiveness are also affected by having a policy. The reason for that the needs of the people have been better addresses because there are

neighbourhood generators, however they are not fully satisfied. If there would be no policy there were people that there would be no generator in the neighbourhood and they would not have the additional hours they have now. These three factors are affected by having a policy to co-create. The accountability factor is part of the policy because if the policy is written clearly than the separation of the roles will be separated in a manner that will make the interaction easier. Thus, to have a written document whereby the roles are separated clearly it does affect the accountability since it will then be implemented and the co-creation process will go easier.

Subsidy

The government provided several kinds of subsidies. The government provided cables for the generators to the houses of the people, it provided gasoline subsidy and a piece of land to place the generators. One governmental actor said: *“That time when the decision was made to set up neighborhood generators, the government itself, provided cables till the front of the house. Cables were provided. Place was provided. Except from that the government excluded them from paying tax. As one respondent said: “No, not even tax- in the beginning we decided on tax ... Later by a decision [from the government] the tax was excluded for them to do this job in a hurry. To set up the generators and to help the national electricity as soon as possible. That is why they were excluded from tax and they don’t need to pay for the piece of land.”* Another governmental actor said: *“Money is not provided, but gasoline when it is expensive in the market. The government provided it. So that the money would be less for the citizens.”* The subsidies did encourage more citizens in the beginning to co-create because these were and are costs that they needed to provide otherwise and when they didn’t have to their profit would increase. Nonetheless, now because of the economic crisis the government doesn’t provide cables, and subsidy on gasoline but the co-creation process is still going. In the beginning because it was a new business and the citizens didn’t know how long it lasted, they perception was that it was a short-term solution, but 10 years later that has been the only solution.

There have been power plants built but they city has also grown and the power plants cannot keep up with the speedy growth of the city. In the beginning for more people to be encouraged to take this risky step those subsidies make the co-creation process easier and more people co-created. Now some of those subsidies have been cancelled but the process is still going on. Over time subsidy has become a less influential factor, though in the beginning it was an important

factor for the co-creation process. That is because in the beginning there were more subsidies provided. Even because of the risky beginning people were motivated and subsidy had become a driver for the co-creation process. Now, that there are less subsidies the generators still work and there is still profit for the owners. In the beginning the subsidies was very important and all the generator owners did receive the subsidies. If subsidies are stopped from the government and the generator owners have enough people asking for amperes than the process can continue.

The public sector is subsidizing the generator owners to deliver a public service. In the beginning this was a great influential factor over time it has made the generator owners to continue with this process for over 10+ years. But with the crisis the subsidy has become less but the process is continuing now. Subsidy by the public sector is an organizational factor and it does to an extend has made the co-creation process smoother especially in the beginning of the co-creation process in 2005 and 2006. If the generator owner would not have been provided with the subsidy, some of the generator owners would have made the decision to co-create, so then the quantity of the output would not have been increase since then the people would have only the limited hours of the national electricity. However, over time the quantity of the output has increased but the number that is increase is according to other factors as what season it is and how many hours the government has set in the schedule and how many hours the government is providing the national electricity. The subsidy by the government has made an increase over the quantity of the hours but the amount that is increased has other factors that is depends on. The formal effectiveness, citizen's satisfaction, and responsiveness is effected and it has increased by providing subsidy to the generator owners and they are more motivated to deliver the public service and start with the co-creation process. But the satisfaction and the needs have not been fully satisfied and since this is a basic need that the government should provide for its citizen this kind of co-creation is not solving the problem that is there. But the subsidy does affect those three factors since it is providing electricity, but the degree that the needs as better addressed is not enough to satisfy the citizens.

Attitude Toward Co-Creation

Politicians and higher public officials were the one coming up with the policy to co-create and they invited co-creation. Street-level bureaucrats also did invite the people in the beginning

that didn't have enough experience to co-create. However, they wanted them to have at least finished high school but because the demand was high and they needed people in a short period of time, that was later dismissed. One respondent said:

"Wallah, what is important that someone does it that has the right skills and experience whether from in the government or outside- it is better to be experienced. If the government does it, whomever does it is good, if it has experience, because without experience how is it acceptable? Can something be done without experience?"

The street level bureaucrats said if they make our job easy we are fine with anyone co-creating. In this way, a positive attitude toward co-creation can smoothen the co-creation process. However, without all the generator owners having the right expertise co-creation still occurred. A positive attitude toward co-creation would smoothen the co-creation process but without it, it can still occur.

Attitude toward co-creation is an organizational factor and in a sense, it is important that the governmental officials do encourage co-creation and have a positive attitude toward it. The quantity of the output does have a link with this factor. Because if the officials don't have a positive attitude toward co-creation they won't invite the co-creation process, that is more to the high-rank governmental officials. It needed to happen anyhow because the citizens would be without electricity most of the time. However, for the normal rank officials it doesn't affect it so much because they are not the ones shaping policies and have as much to say as the high rank officials. The formal effectiveness, citizen's satisfaction, and responsiveness and attitude toward co-creation don't have a direct link with each other. The three former are related to citizen's satisfaction and needs, and the latter one is about whether the governmental officials invite co-creation. The link that could be there is that if the attitude toward co-creation is positive the co-creation process will occur in an easier manner and then the number of hours will increase that will lead to a higher level of satisfaction and the needs of the citizens are addressed better. But because the service that is provided is a basic need even if the attitude toward co-creation from the normal ranking officials and to an extent to the high rank officials the process needed to occur anyhow. The accountability factor, the separation of the roles, does affect the attitude toward co-creation. Because if the roles are clearly separated then the process will go smoothly and not in a chaotic way. Thus, the governmental officials will have a more positive attitude toward co-creation.

Provision of Place

The government provided all the generators with a place to co-create, except from 4/5 neighbourhood generators out of the 535 neighbourhoods. One respondent said:

“All the generators in general, except from 4/5 generators, at that time in those neighborhoods there was no place. Renting, with rent they received a piece of land, so they can work on it by renting it. Otherwise all the others received a piece of land to set up the generator and make a room for the one working there, and a place for the electric equipment.”

The reason for that was because there was no place from the municipality that they could place the generators. To find a place in the neighbourhood is hard, because the generators should be in a place that the citizens of that neighbourhood don't get annoyed by the smoke and noise. Most of the generators have been provided a piece of land that was set to be public gardens in the neighbourhoods. Hence, provision of place for co-creation is essential for the co-creation process. Otherwise they need to pay around 300/400 euros rent for the piece of land. It is essential but there were 4/5 neighbourhood generators that still co-created and were paying for the piece of land they were using. The co-creation process could happen without the provision of place, but it is better that the government does provide the piece of land, so the owners can profit more from it and they are then more likely to participate in the co-creation process.

Provision of place for the generators makes the co-creation process possible because not in every neighbourhood there is a good place to place the generators. But if the municipality has public piece of land that they have planned to turn into something else in the master plan and they will allow the generator users to use that piece of land it will help because then the co-creation process will occur and the quantity of the output will increase. The formal effectiveness and citizen's satisfaction and responsiveness will then occur as well, since there is more electricity and the needs of the people are better addressed. However, the quality of the output is not enough to fully satisfy the citizens by providing this public service. The provision of place doesn't have any link with the provision of place.

LOGIC OF CONSEQUENCES

Quantity of Output

The quantity of the output has increased; more hours of electricity is provided. The quantity of output is important for the co-creation process because that is the main reason the citizens accept the co-creation.

Before we had 8 hours of national electricity, and the neighborhood electricity provided 8 more hours, that is 16, and 8 hours we were without electricity, that is 24 hours. But now it is good, now we have 24 hours of electricity. When the national one is shut, if it doesn't decrease it is good now. Now, he gives us its 8 hours, and the national one how much it gives [it's not constant].

Before if the people have 8 hours of national electricity they would have been without electricity for the remaining 16 hours. However, now the people have around an additional 8 hours from the neighbourhood generators that makes them be without electricity for 8 hours. This is an example because the hours of electricity of the national electricity and the generator electricity change per month. But the number of electricity that the people have has increased. However, the amount that they can use depends on the how much ampere the pay for. Almost all the citizen use this utility that means that is there only option. If the number of hours didn't increase it meant that nobody would use it. But certainly, the number of hours have increased and the people use it even though it is limited. Quantity of output is an essential for feedback of the co-creation process. Because the outcome from the co-creation process does increase the quantity the people use is even though they have complaints. If the number of hours wouldn't increase there would be no use to pay for a utility that doesn't satisfy the needs of the people, so the quantity of output is essential 100 percent.

Overall, the quantity of output had several factors that increased the hours of electricity. The government subsidized the generator owners by providing an almost constant price for gasoline, cables, piece of land. Except from that the government excluded the generator owner from paying tax that is not mentioned in the conceptual framework. These were organizational factors that in the beginning that motivated the generator owners to co-create. Now overtime when the government has stopped with providing cables and the money for gasoline the process continues. But still it is a factor that drives the process. The compatibility to co-create from the organisation side makes the interaction easier since they will have a good relationship together. Though, it is not an essential factor. The same goes with attitude toward co-creation,

it is important that the high-ranking officials invite co-creation and have a positive attitude toward it to write a policy regarding delivery of this public service. The problem here is that this kind of co-creation for filling a big gap of a basic need but for other kind of co-creations it is more to invent and add more to the wants of the people. The policy to co-create is essential to have the co-creation process extent to a bigger scale. Before there were people who together set up a generator. But now this co-creation process has spread throughout all the cities. These were the organizational factors that helped to increase the outcome factor of quantity of output.

Regarding the citizen's factors and the quantity of outputs the willingness of the citizens to co-create doesn't affect the quantity of output. The quantity of output is increased and if not all the neighbourhoods participated only a few, only in those neighbourhood the quantity would increase. But the amount that increases doesn't depend on the willingness to participate but on the governments timetable. So, the willingness to participate does depend on the quantity of output because if none of the neighbourhoods would participate then there would only be national electricity and the quantity would have not increased. But the amount that increases doesn't depend of the willingness of the citizens to co-create. Regarding the material reward it depends on the quantity of output. If there would be no material rewards for the generator owners they wouldn't take part in the co-creation process and the quantity wouldn't increase. However, the amount of the increase doesn't depend on the materialistic rewards but on the government. For the non-material rewards, the kick the generator owners get out of delivering this public service it doesn't affect quantity of output since it is just an additional reward and without it the co-creation process would still occur. Regarding the social capital, it doesn't affect the quantity of output since the social capital is about who get to co-create, the co-creation process still happens but it is the individuals that get to co-create that is affected by the social capital.

Formal effectiveness

People use neighbourhood generators electricity out of necessity. Else, they are not entirely satisfied. Even though the level of satisfaction has gone up because now they have more hours of electricity but the amperes they can use with the generator electricity are less. One citizens said:

“If there is [electricity of] neighborhood generator, it is good, when there are neighborhood generators it is better but neighborhood generator is expensive. One ampere sometimes is 11,000 [8/9 euro], sometimes 10,000 [7/8 euro], sometimes it is 8 [6/7 euro].”

But their needs have been addressed better. These outcomes do affect the co-creation process, because some people might stop using the neighbourhood electricity if they believe that it is not useful. When they stop using it the co-creation process can stop. However, this might happen more in the poor neighbourhood rather in the rich neighbourhoods. Because now in the poor neighbourhood less amperes are used, while in the rich neighbourhoods the people have more amperes because they simply can afford to pay for more amperes. The citizens that were interviewed in the poor neighbourhoods had a range between 2 to 4 amperes, while in the rich neighbourhoods the range was between 6 and 20. The demand to set up a neighbourhood generator in the rich neighbourhoods is more than the poor because the citizens there want more amperes and they can pay for the amperes. This means they need to set up generators with more Kilowatts and this leads to more profit. Formal effectiveness is essential for the co-creation process, because if their needs would not be better addressed there would be no point in using it. However, their needs are not 100 percent provided, it is better than having only the limited hours of national electricity.

Formal effectiveness and the organizational factors have different degree of influence on the co-creation process. Formal effectiveness is about whether the needs of the citizens is better addressed. From the organizational factors the existence of a policy is the most important aspect for the needs of the citizens to be better addressed. Because the policy has regulated the process and it made it occur in a bigger scale. Though, the needs are addressed in a substitute solution it doesn't solve the bigger problem of not having electricity. The compatibility to co-create and the attitude toward co-creation has made the process of co-creation go easier. But the formal effectiveness is constant in this case because if you have better interaction with the governmental officials and if the governmental officials have a more positive perception of co-creation; the needs are addressed only according to the increase of the hours and amperes of electricity. For the subsidy and the provision of place it is a driver for the co-creation process, regarding the formal effectiveness in a way that these subsidies have made the co-creation process start easier. It also has made generator owners to start with the project to increase the

formal effectiveness. But after some of the subsidies have been eliminated the co-creation process is ongoing. Maybe that is because the subsidy and provision of place are not a major influential factor. Or maybe it is because they have already invested in this field of work and they can't give it up easily.

Formal effectiveness and the citizen's factors have a less influence on the process of co-creation than the organizational factors. Willingness of citizens to co-create leads to more formal effectiveness but there is another factor that affects this connection. If it was free everybody would want to participate and they would take the amount amperes they wanted. This would be an ideal process. However, even if the citizens pay and the amount of the amperes is limited they still use this utility. This means that to some extent the formal effectiveness is increased. Since their needs are better addressed however this doesn't mean that is enough to be satisfied with this fundamental need. The willingness of citizens to co-create is important to co-create whether that is out of voluntarily participation or participation out of necessity. The material rewards for the generator owners is essential for the formal effectiveness. Because if the generator owners, which is their right, didn't receive materialistic rewards they wouldn't participate in the co-creation process and the level of formal effectiveness wouldn't have increased. The non-material rewards on the other side is not that essential to formal effectiveness since it is an additional influential factor. Without it can occur easily. The social capital process is about who gets the privilege to set up the generators, so this factor doesn't affect the formal effectiveness. Since the co-creation will still occur but the question is about who gets the priority to co-create.

Citizens Satisfaction

Overall, the citizens gave the level a satisfaction ranged from 7 till 10. One citizens said she would give it between a 5 and a six. Another citizen gave it a six, two citizens gave it a seven, one citizen an eight, and another citizen gave it a ten. One citizen was so angry and said she wouldn't rate it because she taught that she was not satisfied at all. The other citizens didn't give it a grade. Citizens satisfaction is important for the outcome of the co-creation process because if the citizens are not satisfied they won't use the utility. But in this case, there is no other way than to use it. And overall the citizens were using it, but even the citizen that was

angry and said she wouldn't rate it, still used the utility because she did accept the fact that it is better than sitting in the dark.

Thus, the citizen's satisfaction is important but in this case the citizens were not all fully satisfied but they still used the utility because otherwise they wouldn't have no electricity at all when it is time for the neighbourhood generator to provide electricity. One respondent said:

"No, it is for filling in the hours of national electricity. But at the same time, it cannot take the place [replace] the national electricity, except from the brighten the room." Because you know yourself when it is cold the generator cannot provide the electricity for the right equipment. It needs a lot of amperes; it needs a lot of money. Maybe not everybody can't afford that. That is why we cannot say it can replace electricity. But it is that it doesn't make you sit in the dark, a student or the beneficiary can't profit from that."

If there were more option the people could not use one source electricity and use another but in this case, they can't do that. There is another option for the citizens to have their own generator. But the problem here is that the smaller ones usually have more noise, and they need to maintain it and buy fuel all the time. The neighbourhoods won't accept it to have the smoke and the noise next door. For now, the neighbourhood generators are the only option to have electricity in the gap hours. Citizens satisfaction is important but because it is a basic need they accept it even if they are not fully satisfied. They are more satisfied but not fully satisfied. Full satisfaction is essential for the co-creation process, but some sort of satisfaction is needed for the co-creation process to keep going.

The citizen satisfaction has increased by way of the co-creation process. Having a policy to co-create has made the co-creation process function on a bigger scale so a bigger number of citizens can profit from it. The subsidy and the provision of a piece of land has also made the process easier since the expenses of the generator owners has decreased. This has made the co-creation process easier so the citizen satisfaction has increased. Compatibility to co-create makes the process of co-creation easier but the amount of electricity that is provided is constant so the citizen satisfaction doesn't depend much on that. For the positive attitude of the governmental officials of the high-ranking officials in the beginning of the process it was needed because they are the ones that write the policies. For the normal bureaucrats, this is not as essential as the high-ranking officials. The citizen satisfaction will increase because of the positive attitude of the high-ranking officials the satisfaction will increase. However later in the process the satisfaction doesn't depend on the attitude of the public-sector officials. On the

other hand, with the increase of those factors the citizen's satisfaction doesn't increase since it depends on the number of amperes and the hours that the electricity is provided.

For the citizen factors and the citizen's satisfaction firstly for the willingness to co-create there is not a connection between these two factors. For the material rewards and the citizen satisfaction there is no link. Because one is an income for the generator owners and the other is the satisfaction of the people by more electricity. The same counts for the non-material rewards. The social capital is about who co-creates and not about the satisfaction of the citizens.

LOGIC OF APPROPRIATENESS

Responsiveness

The government has become more adaptable and flexible to the needs of the people by subsidizing the neighbourhood generators. There is a price tag on delivering the public service; it's easier for the ones that economically better off to pay and have more amperes. The middle class and the poorer areas have a hard time to pay for the utility. However, they are still happy that there is such a thing even though it is a short-term plan that lasted longer than was planned. One respondent said:

"But you can benefit from it. Now it is neighbourhood [at that time the neighbourhood electricity was on], from 2 o'clock the [national] electricity has been shut off, at 2 o'clock it has been shut off, then it came back till 2 in the night, we benefit from it, from now on, if there is nothing at all, we can turn on a fan with it."

The government has done its best to be involved and come up with a substitute for the electricity, by way of a policy and the subsidies provided. This was supposed to be a short-term plan to adapt more to the needs of the citizens. Though, this way of responsiveness is not enough because the citizens feel like the government has the responsibility to provide electricity 24 hours a day. The responsiveness here is a good outcome for the co-creation process since it motivates for co-creation to occur and it has been this way for more than years. The continuity shows that the government responsiveness has an influence for the co-creation process. Even though now the subsidies have become less, but the piece of land and the tax exclusion makes the co-creation process continue. Even without this two subsidies that are left the co-creation process is likely to continue. But the continuity of the co-creation process or the

service delivery is what the responsiveness is about. It is continuing and it will continue for quite a few more years at least.

The responsiveness is about involving the ability of the public organizations to respond to the societal demands. It is connected to citizen's satisfaction. The government has set up this co-creation process to keep up with the demand of the people. Though, this co-creation process has not satisfied the people since the satisfaction is increased but it is still a basic demand and for the people to have 24 hours of electricity in a day is a basic need and not a want or something luxurious. The government has focused more on the needs of the citizens by way of providing subsidies and a place for the citizens to co-create in this way they have focused more on the demand of the people. They have a policy in order regulate the co-creation process and make the co-creation process occur throughout the region. The attitude of the governmental officials is positive mostly this is also a way to increase the needs of the people. For the compatibility to co-create does also play a small role since in this way the governmental actors and the citizens will get along to work on the co-creation process. That is the connection between the organizational factors and the responsiveness of the government.

For the citizen's factors and the responsiveness there is no clear connection because the responsiveness is more from the side of the government while the citizen factors must do with the generator owners and the citizens.

Accountability

In the paper the responsibilities for the citizens that set up the generators and the governmental actors have been divided clearly. The governmental actors have given the neighbourhood generators some freedom to do some tasks their own way. But for the most part they supervise the generator owners. For the generator owners, not to provide less hours of electricity, or not provide the amount they said they would. For example, one respondent working in the government said:

Yes, our supervision is that we set the schedule. In the beginning, let's say our duties start like this, when we composed the schedule when rotate between them to see whether they are following it or not. When they make mistakes in, or whether they don't make mistakes in it."

Another one said: *“The price you know who it is set, it is set according to hours. One hour how much it costs outside [in the market], if gasoline is expensive they will count 47 dinars for you per.”*

The government set the prices for the generator owners. This separation of responsibilities has a big impact of the outcome of the co-creation process. Because in the beginning the monthly fee from the citizens was prepaid and the generator owner where asked to provide an amount of electricity. This lead to many problems. But then the governmental actors decided to make it post-paid because the owners didn't follow the rules and didn't take the responsibility of their role. If the governmental actors didn't have the supervision role they couldn't do much about it, but because they could change the payment methods this was fixed. When it was prepaid the governmental actors had many complaints and it did affect the outcome of the co-creation process. There were people that said the wont pay the money anymore. But now the citizens for electricity that is provided for them. As a result, separation of the roles of actors involved is important for the outcomes of the co-creation process. Because it regulates the process and it leads for problems to be solved.

For the organisational factors and the accountability there is a link. Because both factors are connected to the public administration. If the jobs are clearly divided between the governmental actors and the citizens, then the attitude of the governmental actors will be incline toward a more positive attitude. Since the process will be more stable and it will be less chaotic. Compatibility will follow that if each side knows what their roles are and getting along will be easier between the parties. For the provision of a piece of land and the subsidies there is not a link about how it would affect the co-creation process. For the policy about co-creation it will help to make the process of be implemented in a better way. Before starting with the process to separate the responsibilities. For the citizen's factors, there is no link because accountability is about the separation of the responsibilities and the citizen's factors is about the citizen's influential factors.

ADDITIONAL FINDINGS

Tax

The government has excluded the generator owners from tax. This has made the co-creation process easier. A generator owner said:

"We are excluded from tax, I want you to write that down. This is one of the assistance the government provides to encourage the private sector. Citizens-- this job providing electricity, is the government's responsibility. But the government because of this situation and so, it opened it door for the people, to motivate people."

This decision was made after the policy was published, so even without the tax exclusion the co-creation process would have occurred. But it is also important that the generator owners did ask for the government to exclude them from tax. It is an additional variable that makes the co-creation process easier, without it the process would still have occurred. This could have been an organizational factor on the conceptual framework. Since it encourages to generator owners to co-create since their costs become less.

The citizens have more needs and use for electricity

It is true that the citizen's needs are more, but even before that the government didn't have enough electricity for the little needs that they had. However, because the needs of the people are more, people pay for more amperes to the generator owners. That doesn't mean that the government should provide the inhabitant with limited hours of electricity. One citizen said: *The government instead of having these small sources of electricity they can make something big. Our gasoline is all burned, it goes wasted. Why can't it turn it into electricity, it has the ability to do so.*" This could help for the co-creation process because if the needs of the people were less than less amperes were needed. And then the generator owners would set up smaller generators. That would lead for less profit. Observing this variable in this way it could have an influence of the co-creation process. But as mentioned before this variable can't be this powerful to become an influential factor because no matter what the people should have 24 hours of electricity, it will depend on them to be careful with how much electricity they use. Other policies can be created for this matter.

Several factors here smoothen the way to the co-creation process. While some others are just an additional factor and they are not essential. However, all the additional variables together add up to making the process much easier.

IX. CONCLUSION

What theories are there for co-creation?

The main purpose in this paper was to know what the influential factors are of co-creation/co-production in case of energy in non-western societies in Sulaymaniyah. There are different definitions of co-creation, somehow, they are close to each other. In general co-creation is about the citizens, end-users, or the customers contributing in the process of producing a public service or product. Co-creation started in the private sector to get feedback from the consumers and to maximize profit. In general co-creation can occur in a variety of fields whether that is the public sector or the private sector. Because of performance measurement, privatization, and contracting out, and the traditional boundaries between the state, third sector, and market has become blurry, which leads us to the existence of the class of organization hybrids (Brandsen, and Pestoff, 2006; Evers and Laville 2004; Brandsen et al. 2005). That is why the government must be innovative and invent other ways of governance. The main aims for co-creation are to add more effectiveness, efficiency, customer satisfaction and increase citizen's involvement (Voorberg, Bekkers, and Tummers, 2015).

There are several types of co-creation. Alford in distinguishing three types: clients, volunteers, and citizens. Clients receive private gains that is spent personally rather than gains that is spent jointly as what happens in public goods. Volunteers are those who produce work inputs to the society or public sector voluntary instead of on a gained basic, without compulsory individually consuming it. At final, citizens do obtain value for the administrative organization in a collective way (Alford, 2002). Other have identified co-creators as; diffusers, ideators, and explorers. (Nambisan, and Nambisan, 2013). Bovaird and Loeffler (2012) collected a wide range of types of co-production like co-planning, co-managing, co-assessment, co-financing, co-design, co-prioritisation, and co-delivery. But in most of the literature the types of co-creation are divided as following co-implementers, co-designers and initiators. Co-implementers are the ones that help with the implementation of a co-creation process, while the co-designers help with the design. At last the initiators the government is an actor and the citizens an initiator of

the co-creation process.

There are many influential factors mentioned in the literature. There is the risk-averse culture to the public-sector co-creation. This is because the legalistic and the bureaucratic culture is different of each organisation. This is mainly because the public officials feel like their expertise is challenged or they might believe that the citizens don't have enough experience (Voorberg, Bekkers, and Tummers, 2014; Baars, 2011; Talsma & Molenbroek, 2012). Clear objectives and incentives why the citizens are participating can smoothen the process and the understanding between the parties. Other factors can be the government subsidizing the citizens to co-create (Voorberg, Bekkers, and Tummers, 2015). In addition, having policies to drive co-creation is important (Voorberg, Bekkers, and Tummers, 2015). This is to connect the internal (public sector) with the external the citizens in this case (Nambisan, Nambisan, 2013: p. 44). Organisational compatibility is another aspect that is important, because it is about the interaction between the two parties. If they have a good level of interaction it will make their job easier and the co-creation process easier (Chen et al., 2011: p. 1341). The last organisational factor discussed in this paper is having a positive attitude toward co-creation. (Voorberg, Bekkers, and Tummers, 2015). The governmental need to have a positive attitude and welcome co-creation. By setting policies, or subsidizing the co-creation process. In short by welcoming it and trying to make it happen and believe in co-creation.

For the citizen's factors, there are many factors like willingness to participate, intrinsic values, personal traits, ability to co-create, provision of a place, and social capital. Willingness to co-create is essential because if the citizens are not interested they won't start with the process. Alford describes this as "the client's sense of self-determination and competence" (Voorberg, Bekkers, Tummers, 2014; Alford & O'Flynn, 2009). Intrinsic values are about getting a kick out of being part of the co-creation process. Personal traits are family compensation, education, age, gender, and location (Bovaird and Loeffler, 2016). Ability to co-create is another factor in this paper it is called feeling of ownership. This view is about if inhabitants sense that they possess an area of geographical area, they will attempt to do more to guard or develop it (Voorberg et al., 2015: p 15; Gebauer et al., 2010; Pestoff, 2012). The government needs to help the citizens in order making the process easier for example by providing them with a piece of land (Diana Mitlin, 2003: p 3). Social capital is about "features of social organization such as

networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Voorberg, Bekkers, and Tummers, 2014; Putnam, 1995; p. 2).

Alford believed that there were different influential factors for different types of co-creators, for example for citizens, volunteers, and clients. For clients, he believed the private value were important to them. For citizens, he believed material rewards as tangible profits were important to them. And solidary incentives, to socialize and be part of a group. At last he believed for this group, expressive gains are intangible reward that originate from the feeling of satisfaction of having contributed to the accomplishment of a valuable cause. For volunteering incentives, he believed that value, understanding, enhancement, career, social, and protective incentives are important for them. He believed that for young people to build a career and feel that they are part of a community and that they can bring a change is why they are co-creating.

Regarding the outcomes March and Olsun distinguished between logic of consequences and logic on appropriateness. The logic of consequences explains to what extent is the benefits realized; in other words, it refers to what degree diverse options are measured and can be reasonably considered. Examples are as following: effectiveness, efficiency, quality and quantity of output, and consumers' satisfaction. On the other hand, the logic of appropriateness is 'to the extent in which co-creation efforts fit within a specific context' (Voorberg, Bekkers, and Tummers, 2014; March and Olsen 1989) Examples of this kind of logic can be responsiveness, accountability, and managerial values.

How did the co-creation develop/resolve in Sulaymaniyah?

In Sulaymaniyah the co-creation process started because there was a lack of a public service, a basic need: electricity. Citizens used personal generators but that was a hard process. Because they needed to maintain their generators, buy fuel for it, and the noise was too much. Not everybody could afford it and it was dangerous to have a generator with fuel in your yard. That is why some citizens decided to share generators and maintain it together but again that was a chaotic process. Around 2005/2006 the government decided to publish and announce a policy to have neighbourhood generators and it requested for citizens that had the right resources to set up a neighbourhood generator. The government promised that a piece of land of the municipality will be provided for them to set up the generators to make the process easier. It

also promised to help with providing cables from the generator till in front of the houses of the citizens. It helped with fuel. If the price of fuel was too expensive in the market they would provide fuel vouchers so that they could get gasoline for a price that was less than in the market. If the price was low they could buy it like normal people in the market. The government also excluded the generator owners from tax. Because at the end it is a business but for the project to be implemented they helped in this way. In the beginning the neighbourhood generators were set as a short-term solution but 10 years later this process is still ongoing.

Which factors impact co-creation in Sulaymaniyah?

In this paper, for the organisational factors the compatibility to co-create, existence of policies, subsidy, attitude toward co-creation, and provision of place were chosen. There were two sets of factors for the citizen's factors. Feeling of ownership was before the other set of citizen's factors. The feeling of ownership was a citizen factor that was related to the end-users while the other set of citizen's factors was related to the citizens that co-created. The first set occurred and then the second set deprived from the first set. For the second set willingness of citizen to co-create, material rewards, non-material rewards, and social capital were chosen. The organisational factors and the citizens factor lead to the co-creation process. The output of the co-creation process was also measured by logic of consequences and logic of appropriateness. The outcomes were measured by logic of consequences; quantity of outputs, formal effectiveness, and citizen's satisfaction. For the logic of appropriateness, it was measured by the responsiveness and accountability variables.

The conceptual framework that was put together for this paper was mostly used for western societies. But there is a difference with electricity, because it is a need and not a want. Electricity is a basic need and that changes the importance of some variables and the overall theory. Other cases that have been wants of the people and an addition to the improvement of peoples' life. That will change the importance of one variable to another.

The co-creation in this case is there to fill in the big gap of electricity, while it is not the best solution. In the beginning when the project was announced when a citizen wanted to set up a

neighbourhood generator they needed to ask for formal permission of the people in the neighbourhood. The acceptance of the citizens in the neighbourhood (feeling of ownership) would be essential. But for this case not all the citizens signed for the generator owners to set up a generator. Some didn't want to sign, while others were not home at that time, and other people had other reasons. Even though, not all citizens signed and agreed, the process still occurred. Mainly, because at that time having generators in the neighbourhood was the best option. They could set up their own personal generator which is hard to maintain and it is more expensive and the noise is too much for their neighbours. The other option is simply not having electricity at that time. Thus, it is hard for the citizens not to accept the neighbourhood generators electricity even if they are not satisfied with it. But to support the feeling of ownership variable this factor did have an effect in a different way. When the generator was placed in a place near to citizens houses they collected signatures and the owner of the generator had no other option than to replace the generator. Or the owner would give the citizens living near the generators extra free amperes for them to accept the noise and smoke. That is for the citizens not to complain.

The acceptance of the citizens was thought to influence the beginning of the process for co-creation. But even though all the citizens didn't sign for the process to continue; all the neighbourhoods were willing to participate in the co-creation process. That is mainly because electricity is a basic need. The non-material rewards, material rewards, and the social capital factors didn't impact the end-user citizens because they were only for the generator owners the quantity of output, outcomes were according to the timetable provided by the government. That will say that the acceptance of the citizens didn't have an impact in the quantity of output variable.

Formal effectiveness, responsiveness, and citizen's satisfaction, were related to what extend the citizens were satisfied. In the beginning of the process those three factors didn't have any effect on the feeling of ownership variable. That changed over time when the process had already started. If the citizens were not pleased, they could go and tell the owner of the generators to fix the problem. The generator owners did try to fix the problem, because he cared about the perception of the citizens that used his service. But also, because they had a

contract with the government that supported the citizens. At last, the accountability; separation of responsibilities, doesn't have any correlation with the acceptance of the neighbourhoods.

For the citizen's factors the most influential factor was materialistic rewards. The main reason why the citizen co-created was because they invested in generators and they received money in exchange. Without the material rewards the co-creation wouldn't occur by the generator owners. That would say that for the outcome variables the quantity of the output would not increase. That would result in the formal effectiveness, citizen's satisfaction, and responsiveness not increasing. The citizens would be less satisfied since they would not have the extra limited-ampere hours. For the non-material reward, it was not an influential factor since it was an additional factor and they did feel good by providing an essential service to the people. And it didn't have any effect on the outcomes variables.

All neighbourhoods participated, this means that the willingness of citizens to participate is important. If the neighbourhoods didn't participate the process would not occur. In each neighbourhood, enough citizens were needed to set up the generators so that the generator could benefit financially. The quantity of the output would increase then increase.

This then lead to an increase in the formal effectiveness, the citizen's satisfaction and responsiveness. Because the needs of the people are better addressed. However, the people are not fully satisfied and the needs are not fully supplied. That is another problem but regarding the co-creation it did change those factors. For the accountability, it is more about the separation of the roles and doesn't have any effect on the willingness of citizens to co-create. For the willingness of the citizens to co-create, all the neighbourhood participated in the co-creation process. This shows that is important, because if not enough people in one neighbourhood would use the neighbourhood generator than in that neighbourhood there will be simply no neighbourhood generators. But all the neighbourhoods did have the neighbourhood generators and this shows that willingness to participate is an important influential factor. However, if one neighbourhood would have a neighbourhood generator the co-creation process would still occur but on a smaller scale.

The social capital factor is critical for individual owners because they will have the priority and the right connection to be granted a contract to co-create and set up the neighbourhood generators. But for the overall process; all the neighbourhoods did have someone to set up a generator and there are many other people that would be able to co-create. Consequently, it is an essential influential factor for individual interest. However, for the bigger co-creation process it is not because there are enough people who would want to co-create. The reason for that is that it doesn't matter who co-creates. The process will still occur than the outcomes variables will be affected. It is just that one person gets the priority over another person. However, in the beginning this was a bit risky because it was a new project and it was said that the neighbourhood generators would be a short-term solution.

The organisational factors did help the co-creation process. For example, the existence of a policy to co-create in this case has made the process exist all over the region. Thus, the quantity of the output did increase in a sense that more citizens did have electricity. However the quantity per neighbourhood that was provided was dependable on other factors. The citizen's satisfaction, formal effectiveness, and responsiveness was that more citizens could have electricity because of this co-creation process. Thus, the needs of more people were addressed, however how much citizens were satisfied didn't depend on this variable.

Before the co-creation process it was chaotic and some citizens would together and set up a generator. But the co-creation process made the process easier and it made it function on a bigger scale. The government set up some rules and regulations and it provided subsidies to make the process go smoother. It is essential to have a policy for the co-creation process to be practised all over the region. It regulates the process. The subsidies and the provision of the place for the generators made people co-create in the beginning of the process. Later some of the subsidies were cancelled but the generator owners didn't stop with co-creating. This could be because of two reasons. The first one being; they still benefit enough (materialistic rewards) not to stop with the process. Second; most of them have been doing this process for 10 years and they have invested their time and resources in it and it is hard for them to stop. It could be because of a variation of both reasons.

The compatibility to co-create in this paper was measured by the level of interaction between the two parties: the government and the generator owners. In general, the interaction between the parties were decent, and that is because of two reasons. Firstly, because of their interdependencies. The governmental actors needed someone to provide extra hours in addition to the national electricity for the citizens. The generator owners had invested in the process and they received materialistic rewards from it. Secondly, there is an association for the generator owners, when each party has a problem they would go to the association and they would try to fix the problem, since they acted like an intermediate actor between the two actors.

There is a contract between the generator owners and the government. If the level of interaction (compatibility to co-create) was not ideal the still needed to occur. This variable is influential but without this variable the process would still occur. So, this variable can be seen more as a factor that smoothens the process. The compatibility to co-create wouldn't not have any effect on the quantity of the outputs, nor would it be on formal effectiveness, citizen's satisfaction, and responsiveness, since it is related to citizen satisfaction. It would have affected the accountability. Since if the roles are separated clearly, it would mean that the compatibility to-create would increase, so the level of interaction would increase.

For the positive attitude toward the co-creation process, there is a difference between the high-ranking officials and the normal governmental officials. It is important for the high-ranking officials to have a positive attitude toward co-creation. Since the high-ranking officials are the ones shaping policies. For the high-ranking officials to create a policy will make the co-creation process happen. The quantity of the output will increase. The same applies for the other three factors that are related to the satisfaction of the people and the needs of the people will be better addressed. Though, the positive attitude will not have any correlation with the accountability. The normal ranked officials didn't have a problem with the citizens co-creating. They said they don't mind who co-creates, as long they have a basic knowledge and they know what they are doing. A positive attitude from the high-ranking officials is essential toward co-creation, but for the normal bureaucrats it is not as essential for the co-creation process. Since they are implementing what they officials above them are telling them to do.

Observing the outcomes, the quantity of the output has increased in the co-creation process. That is mainly why the process is still going for 10 year. The compatibility to co-create and the positive attitude have had a normal role in the increase of the quantity of output. It has made the process easier. The policy for co-creation, the subsidies, and the provision of a place has also had a significant effect on the quantity of the output since it has made the process easier on the co-creators. It has invited more people for the process. That is regarding the organizational factors. For the citizens factors the material rewards has a big impact on the quantity of outputs since that is the main driver for the generator owners to co-create. Followed by the willingness of the citizens to co-create, since if enough citizens in a neighbourhood participate it makes the process occur in that neighbourhood. This then leads to an increase in the quantity of output.

However, the quantity that has been increased has not fully satisfied the people. Firstly, because the amperes and the hours of electricity are limited. The citizens cannot turn on most of the electronic devices that they need or want to use. Even if they have enough amperes the hours are limited and there are hours that you don't have any electricity. Secondly because it is expensive. Thirdly, because together with the national electricity it will not add up to 24 hours of electricity in a day. The quantity is an important influential factor and that is why mainly the process is still ongoing. Conversely, it is not the best solution for the lack of electricity. It can be said that this factor is the most important one amongst the outcome factors. Because the people are not fully satisfied and their needs are not totally addressed. The accountability variable and the separation of the roles variable are useful but it is not an important factor as the quantity of the output.

For the formal effectiveness, the question is to what extend are the people more satisfied. The citizens are happy with the extra hours of electricity. Even though it is pricy and the hours and amperes are limited. Most of them said with all the problems they would still accept it. Since it is better than sitting in the dark for those hours that the generator provides electricity, they can use a simple fan to cool the room a little bit. Otherwise, the extra hours are not even close to the needs they have. The same goes for the citizens' satisfaction, they are happy with the generators, and it better than not having electricity. But it still doesn't give them what they want; that is 24 hours of electricity. The responsiveness is about the government becoming

more adaptable and flexible toward the needs of the people. The government has become more flexible and adaptable since they have set up the whole process. However, it is not the best solution because the citizens are not provided with what they want. It just has filled in a gap of what they want. For the satisfaction to increase, even though it is not fully, the co-creation process needs to occur. Material rewards is the most influential factor here since it is the main driver that allows the citizens to coo-create and benefit. Other factors that have an impact are the policy to co-create, and the subsidizing by the government, and the willingness of the citizens to participate.

The accountability, separation of the roles, has made the process itself go easier. Because it has become less chaotic. It is an influential factor, but it is not an essential factor nor is it a useless factor. It is a normal factor to regulate the process easier. It doesn't affect the organisational and citizen's variables.

RECOMMENDATIONS

Before starting with the paper from personal experience it was observed that the neighbourhood generators were not the best solution for providing electricity. However, there was no research done already to proof this observation. In the hypothesis, there were numerous variables that were ought to be influential. Through this research paper it was concluded that some factors were more important than others. This research has provided showed what factors were more important and what factors were additional factors. This paper could be a political weigh to change the system. The citizens already knew it was not the best solution but no survey or other research had been done to proof that. That is why mainly this research is conducted. Another reason that this research is conducted is to know how co-creation of providing a basic need to a non-western society is and whether it has negative or positive consequences.

In this paper, the recommendation will be for the government. It is true that the needs of the people are better addressed now and the quantity of the hours of electricity is more. But this doesn't solve the lack of electricity. The co-creation process is a decent process. But instead of continuing with this process that was initially a short-term solution, it is better that the

government spends its resources and time in building more power plants. Co-creation of the neighbourhood generators is a short-term solution, the people are not satisfied. Co-creation has a positive connotation, but in this case because it is an exclusive service it is better to build more power plants because it is a basic need. The people are not provided with 24 hours of electricity, and for a lot of citizens it is too expensive to have many amperes.

DISCUSSION

Will this method that works for a democratic capitalist country work for a non-western federal government?

The method that is used for this paper is a method that is used in western societies. In this paper, the method of a western society was applied to a non-western society. This method worked for a democratic capitalist country, but the question is whether it works for a non-western federal government. Nobody has taught about the process to be a co-creation process when it was started. In 2005/2006, the region just started to develop. The demand on electricity was high and the government could not provide the amount that was needed. That is why a written document was publishing to set up generators. The decision that were made was to get the public service to the people as soon as possible. That is why the generator owners were provided with pieces of land and other subsidies.

Overall, the conceptual framework did work for the co-creation process. There were some factors as material rewards, existence of policy, and quantity of outcome that had more influence than other factors as non-material rewards. However, in most of the western societies the co-creation process is implemented to improve a way of living or to make the job easier of the government. Like separating garbage to help the government. For the citizen's factors in the western societies the co-creation acts like an addition and it is more satisfying their wants while in the case of neighbourhood generators the public service is more a need. That is why the level of satisfaction differs from other cases. In this case, the co-creation process is providing something essential to the life of the citizens: a basic need. The process itself is useful, but the process doesn't satisfy the citizens because the process is not a solution for the need of electricity throughout the whole day. Co-creation is something good but now it is negative because it is a short-term solution.

The organisational factors were more flexible for the generator owners. Many people were needed to invest in the process, and the time was limited. They generator owners didn't even need to have a high school certificate. This shows that they attitude toward co-creation was positive anyhow. And that experts were not chosen. This is not the fault of the governmental officials but of the situation the country was in. Power plants are not easy to build, so they need to have a short-term solution. However, the problem here is that the short-term solution turned into a long-term solution. The attitude toward the citizens co-creating was not a big deal because what was important was to deliver the service. Another factor, the compatibility to co-create was measured by level of interaction. The interdependencies on the parties were too much that even if the interaction was not too well the process is still going, because you can't let the people sit the in dark. Because of the basic need, some of the factors that would have been important in the western societies were people co-create more for the wants have lost their importance in this case which is a non-western society. Because the process needs to happen.

The same goes to the formal effectiveness, citizen's satisfaction, and responsibility. In western societies if the citizen's needs were not addressed and the citizens were not satisfied the process would have been stopped more likely. But for this case, a non-western one, even if the citizens are not fully satisfied there is not much they can do because the quantity of the output is increased. They must accept it since their other options are sitting in the darker maintain their own generator which takes time, energy, and safety.

In western societies, there are people who would volunteer mainly because of intrinsic rewards or because of solidary incentives. But in this case because in the region everything was new, even the government. For them to co-create the citizens needed more than just those two rewards. That is also because they invested money in the matter and it is a big project. The western theories could fit the context, but the degree of importance of the factors in the western societies could change.

If I could do the research over, what would I have done differently?

Before starting this paper, what could have been done differently was that to explore more before starting the writing. There were other factors as tax exclusion and the needs of the people that had been increased that were not part of the conceptual framework. There was an intermediate actor the association, that could have its own place in the conceptual framework but that wasn't their because throughout the research it was found out that they existed. Overall, there were other factors that maybe were influential for western societies but that were not influential for the non-western societies. What also could have been different is that the influential factors could be more from a public service that would have been a necessity or a basic need rather than a small process of co-creation that adds meaning to a public service.

Future Research

Co-creation is new in the region, and the process is applied to most of the cities regarding the energy sector. To know if the different cities will have different influential factors. No research has been conducted so far regarding the influential factors of co-creation and whether co-creation is the solution for some of the necessities that the region needs. For this paper only one case has been explored, it is suggested that more cases can be explored. And with more factors that are more relevant to the specific region. In the future, the apartment compounds can be researched to see what the differences are comparing it to the normal neighbourhood generators. Since the neighbourhoods don't have 24 hours of electricity while the apartment compounds are provided with 24 hours' electricity with the national electricity and the generator electricity combined. That is because usually the richer people live in the apartment compounds. Then results can be compared and it can be observed whether the system of the apartment compounds can be applied to the normal neighbourhoods. Overall, by that way it can be observed if co-creation will work in this way or that the normal power plants are the better way of energy deliverance.

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