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# Recycling on the local level in Thailand: influence of trust, norms and social networks

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## Abstract

Waste management is an important facet of sustainable development, as improper waste disposal will lead to various negative environmental and health impacts. Recycling has been found to be a useful way to manage waste materials and reduce the negative impacts of waste accumulation. In Thailand, attempts to increase recycling are being hindered by lack of public participation. The aim of this study is to find out how social aspects, namely trust, social norms and social networks influence recycling behaviour. To answer this question, a literature review is conducted to analyse the role of these aspects in relation to recycling. The theoretical framework guiding the analysis consists of a combination of social capital and social psychology theories. The results show that each of the social aspects under study has distinct impacts on recycling behaviour. Institutional trust is linked to the perceived efficiency of the service and the ability of the public to contribute to solving problems, and lack of trust in institutions is found to create disincentives for participation. Social norms among the public influence recycling by encouraging or discouraging certain behaviour based on what other community members are doing, whether it be recycling or not recycling. Meanwhile, social networks are important for information sharing and providing an opportunity to work together for community goals, including proper waste management. These findings have implications to how participation in recycling behaviour can be increased in the future.

**Key words:** Waste management, recycling, institutional trust, social norms, social networks, Thailand

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## List of abbreviations

3Rs	Reduce, reuse and recycle
BMA	Bangkok Metropolitan Administration
MSW	Municipal Solid Waste
PEB	Pro-environmental behaviour
TPB	Theory of Planned Behaviour
WTO	Willingness to Pay

## 1. Introduction

Consumption has been increasing rapidly in developing countries in the recent decades due to growing populations, urbanization and economic growth (Yukalang et al., 2017). This has consequently led to an increase in the amount of waste that communities produce and need to deal with. While developing countries in general produce less waste than industrialized countries, the volume of waste is increasing quickly, and the waste treatment and disposal systems are still lacking in terms of regulation for environmental and public health protection (Pharino, 2017, chapter 2).

Poor waste management has various negative impacts on the environment. It can cause water and soil contamination, accumulation of rodents and insects (Yukalang et al., 2017), greenhouse gas emissions – especially from the decomposition of organic waste or from buried waste, and worsening air quality due to gases (Challeharoenwattana & Pharino, 2015). Flooding of drains blocked by waste is also common in urban areas in developing countries (Yukalang et al., 2017), and waste treatment and disposal sites create aesthetic detriment and depressed property value for nearby communities (Challeharoenwattana & Pharino, 2015). In addition, waste can have various implications for human health, especially for those who work in the waste management sector and those who live near waste treatment or disposal sites. These health issues can include infections, risk of cancer or respiratory diseases, and psychological effects (Yukalang et al., 2017).

To reduce these negative impacts, a Waste Management Hierarchy has been devised to list waste management options in order of their level of environmental friendliness. It includes the 3Rs principle, which stands for reduce, reuse and recycle, and is then followed by recovery of materials, and finally landfilling and incineration (Pharino, 2017, chapter 1). This framework is used in many international and national contexts in deciding which waste management strategies to pursue. While waste reduction and reuse are placed higher in the hierarchy than recycling, as some amount of waste is bound to accumulate, it is important to develop recycling programs. In addition to environmental implications, source separation and recycling can have many beneficial impacts on waste management, as it returns materials back into the product cycle. This extends the lifespan of landfills since less waste ends up there (Suttibak & Nitivattananon, 2008), reduces greenhouse gas emissions from organic waste, and creates savings on virgin materials (Challeharoenwattana & Pharino, 2015).

There have been public demonstrations against landfill projects in Thailand, causing local governments to try and find alternative solutions for waste disposal (Challcharoenwattana & Pharino, 2016). Incineration is very costly and requires high initial investments, in addition to releasing greenhouse gases. Therefore, many municipalities are trying to incorporate the 3Rs into their municipal solid waste (MSW) management system (Challcharoenwattana & Pharino, 2016).

In Thailand, decentralization has been an important strategy to achieve developmental goals, providing public services and taking care of the environment (Napawan et al., 2018). Therefore, municipalities are in charge of many public services as well as environmental management systems, including solid waste management. About a third of Thai municipalities struggle with waste management problems, which is among the most common environmental problems alongside air and water pollution, wastewater management, and droughts (Napawan et al., 2018). As it is such a significant and continuous issue for Thai municipalities, waste management calls for attention in municipal planning.

Public participation in environmental management including waste management is important because the public is directly using the resources of the local environment (Napawan et al., 2018). Source separation of waste by the consumer allows for the collection of cleaner, better quality materials, which impacts the price and reuse value of recycled materials (Challcharoenwattana & Pharino, 2015). Therefore, it is important to consider public participation in the planning and implementation of waste management programs (Napawan et al., 2018). Public participation can improve the effectiveness of environmental decision-making and implementation, as well as increase the sense of ownership of the public and therefore their commitment to environmental programs (Napawan et al., 2018; Pongponrat & Chantradoan, 2012).

There are various reasons why people choose to participate in recycling behaviour. These reasons include an array of influences related to attitudes, environmental knowledge, convenience, economic and other incentives, and social aspects (Vassanadumrongdee & Kittipongvises, 2017). The social aspects, including trust, social norms and social networks, which influence recycling behaviour in Thailand require more attention from academia, and are the focus of this study.

## 1.1 Purpose and research question

The aim of this research is to see if and how social aspects influence participation in voluntary recycling programs in Thailand. The impacts of social factors such as trust, social norms and social networks can have a significant role in encouraging or discouraging participation in waste management initiatives, as has been found in previous research. While social aspects are a broad phenomenon which can manifest in many ways, I will focus on institutional trust in administration, existence of social norms in the community, and social networks on the local level, as delimiting categories. In Thailand the focus of research on recycling behaviour has often been on the influence of knowledge, attitudes or convenience (Vassanadumrongdee & Kittipongvises, 2017), with little attention paid to the aforementioned social aspects of trust, norms and networks. This study wishes to fill in this research gap in the discussion on voluntary participation and contribute to the knowledge of what influences recycling behaviour.

In Thailand, recycling is still not at a very high level, and considering the positive impacts of recycling discussed above, it is worth looking at what factors influence recycling behaviour. There have been attempts by municipalities in Thailand to create opportunities for the general public to participate in recycling, but participation levels have often been low. This has been found to be due to practical issues such as inconvenience, lack of environmental awareness, or lack of economic incentives (Vassanadumrongdee & Kittipongvises, 2017). However, this study wants to find out if trust, norms and networks carry a significant role in impacting people's recycling behaviour, and therefore whether placing focus on improving social incentives would increase participation in recycling programs.

To look at this issue, this study will employ a literature review approach and engage in analysis of secondary data collected in relation to waste management practices in Thailand. Theory perspectives of social capital and social psychology will be used to assess the potential impact of trust, social norms and social networks on individuals' participation. Previous research has found that these aspects are relevant for participation in voluntary recycling initiatives in other countries (Jones et al., 2011; Tsai, 2008). Therefore this study discusses the impacts of these aspects in the context of Thailand with the following research question: **In what ways do trust, social norms and social networks impact participation in recycling on the local level in Thailand?**

## 1.2 Significance of study

By answering the research question, this study hopes to contribute to the discussion on how to increase people's participation in waste management at the local level in Thailand. Separation of waste at source creates better quality recyclables, which can be used more effectively in production and which can be sold at a higher price, making separation at the household level important for recycling success (Challcharoenwattana & Pharino, 2015).

As mentioned above, the impacts of trust, social norms and social networks on recycling behaviour have received little attention in the context of Thailand, a research gap that this study aims to fill. The most common reasons for recycling in Thailand are found to be economic incentives and environmental reasons (Vassanadumrongdee & Kittipongvises, 2017). However, it can be expected that social surroundings have some impact on the way people choose to behave, as has been found in other contexts.

Thailand as a research focus is chosen because the MSW management system is the responsibility of municipalities, but recycling has thus far mostly been performed by the informal sector (Vassanadumrongdee & Kittipongvises, 2017). This has led to low separation rates of recyclable waste, as well as low quality of recyclables. However, since some municipalities have implemented community-level recycling programs, this gives a good backdrop to assess the reasons for voluntary participation in recycling. Furthermore, willingness to participate in recycling if the service provision was improved is also considered. Source separation of waste has rarely been formally enforced in Thailand, which is why this study focuses on participation in voluntary recycling programs.

## 1.3 Delimitations

This study aims to illustrate the influence of social aspects on recycling behaviour in the context of Thailand. However, while there is an array of possible social aspects impacting recycling behaviour, the focus is placed on institutional trust, social norms and social networks, as these have been used as relevant categories in previous research and are found to have the most significant effect. To show the differences of determinants to participation in metropolitan, urban, peri-urban and rural contexts, cases from each of these areas are included. This is done to get an idea of what issues are being faced in different localities, as the way waste management is organized in Thailand depends on the municipality. However, as the data is gathered from secondary sources, the findings will only be illustrative of the situation in the



specific study locations and not the entire country. Finally, it can be noted that the focus on trust, social norms and networks is not to imply that other factors do not influence participation in recycling to a great degree. Many factors including economic incentives, convenience, and knowledge on environmental impacts are important when considering the motivation to recycle. The focus on the aspects chosen here is only to highlight some of the less studied influences on recycling behaviour in Thailand.

#### 1.4 Disposition of thesis

The thesis is structured in the following way. The next section provides a background to the waste management situation in Thailand, including the state of recycling and public participation. The third section will give an overview of the literature on the most significant factors influencing recycling behaviour as well as what has been found in relation to social aspects in recycling behaviour in other countries. The fourth section introduces the theoretical framework, which is based on a combination of the social capital theory and conceptualizations of norms from the field of social psychology. The fifth section explains the methods and data collection in the making of this thesis. The sixth section introduces the findings and includes a detailed analysis of the data based on the theoretical framework. This section is structured following the aforementioned categorization of social aspects into trust, social norms and social networks, allowing me to discuss the implications of each category on recycling behaviour. The final part offers conclusions and suggestions based on the findings of the study.

## 2. Background

### 2.1 Waste management and recycling in Thailand

Municipal solid waste (MSW) includes waste from households as well as non-hazardous waste from commercial, industrial and institutional establishments (Yukalang et al., 2017). In the case of Thailand, management of MSW is usually the responsibility of municipalities, which organize its collection, transportation, treatment and disposal. Landfilling and open dumping are the most common ways to dispose of MSW in Thailand (Vassanadumrongdee & Kittipongvises, 2017), while open burning is also possible (Pharino, 2017, chapter 3). Estimates on recycling rates vary across different parts of the country, but are generally between 13-30% of the waste stream (Vassanadumrongdee & Kittipongvises, 2017; Pharino, 2017, chapter 3). Waste generation per person per day is estimated at 1.14 kg, with people living in urban areas

producing more waste than those living in rural areas (Vassanadumrongdee & Kittipongvises, 2017; Chalcharoenwattana & Pharino, 2015).

The Thai government has implemented two national frameworks for waste management, the Roadmap for Municipal and Hazardous Waste Management in 2014 and the Masterplan on Waste Management for 2016-2021 (Pharino, 2017, chapter 3). These national level initiatives seek to improve waste management practices, including promoting the view of waste as a resource, waste-to-energy transformation, stronger law enforcement and promoting public awareness of the 3Rs principle (Vassanadumrongdee & Kittipongvises, 2017; Pharino, 2017).

Despite these recent efforts, recycling in the municipalities is usually left to the informal sector. Waste pickers can access landfills to gather reusable materials, while municipal staff working in the collection of MSW may also separate recyclables and sell them for extra income (Mongkolnchaiarunya, 2005). It has been found that 13% of recyclable waste gets separated in Bangkok, where the official curb-side collection service is organized only for mixed waste (Vassanadumrongdee & Kittipongvises, 2017). Households can also separate and sell recyclables individually to itinerant sellers to get a monetary reward (Vassanadumrongdee & Kittipongvises, 2017). However, it has been found that the current system does not provide sufficient incentives for individuals to recycle (Pharino, 2017, chapter 3).

Municipalities are responsible for covering the costs of waste management, which is often a considerable part of their budget (Vassanadumrongdee & Kittipongvises, 2017; Sukholthaman et al., 2017). As it stands, the collected waste management fees do not cover most of the costs of operation (Chalcharoenwattana & Pharino, 2016). The fee itself is quite low in most municipalities, and in addition there can be problems with efficient fee collection, which leads to insufficient funding (Yukalang et al., 2017). Considering these issues, it is important to find the most cost-effective way to deal with MSW. It has been found that source separation reduces the costs of MSW management, specifically for disposal and transportation (Suttibak & Nitivattananon, 2008). Furthermore, community-based waste management has been found to have a low cost to the general tax payer, as it has low initial investment as well as operational costs (Chalcharoenwattana & Pharino, 2015; Suttibak & Nitivattananon, 2008). Dealing with waste management on a communal level can lead to benefits such as economies of scale and peer pressure created by surrounding people (Pharino, 2017, chapter 3).

## 2.2 Public participation and engagement in recycling behaviour

In this study, public participation is used to connote engagement in proper recycling behaviour in study areas where there has been an effort from the municipality in encouraging or facilitating recycling. Besides public participation, because many municipalities do not offer extensive recycling services, I have also considered some instances which are based on willingness to participate in or pay for the service in the case that the service would be improved by the municipality. The key point is that recycling initiatives can only be successful if the general public is engaged in source separation activities, otherwise the system will not be sustainable, or in fact cannot even get started.

Public participation in recycling facilitates further processes of managing recycled materials, including collection, treatment and disposal (Sukholthaman & Sharp, 2016). This is because materials separated at the source are cleaner and therefore easier to manage. According to Sukholthaman et al. (2017), each stakeholder in MSW management should adopt appropriate roles, in which case the public is in charge of sorting and correct disposal of waste and recyclables, as well as waste reduction. Meanwhile, the government as the provider of services is responsible for appropriate technology and reliable service. To encourage a change in waste management behaviour, the government and private actors need to provide incentives and education to the public (Pharino, 2017, chapter 3&4). For example, in a municipality in Northeast Thailand, the administration has organized a curbside pick-up service of not only mixed waste, but also of separated recyclables (Challcharoenwattana & Pharino, 2015). This added convenience, along with economic incentives and public education on recycling, has had a major positive impact on participation in recycling from the public (Challchroenwattana & Pharino, 2015).

However, lack of public participation in source separation has often been found to be a barrier to effective MSW management even when the municipality is making efforts to improve the system. Many people do not separate their waste at home and have low awareness of waste management issues in their community (Pharino, 2017; Yukalang et al., 2017; Challcharoenwattana & Pharino, 2016; Mongkolnchaiarunya, 2005). Mongkolnchaiarunya (2005) finds in his study in urban Yala municipality in Southern Thailand that cultural context impacts waste management behaviour. He says household habits such as bringing food home from the market in numerous plastic bags contribute to the accumulation of waste in everyday life, while people normally do not separate waste at home because of lack of awareness and incentives.

While there are issues of lack of participation by the public, it is also often the case that recycling schemes have not been adapted efficiently by the municipality. For example in Bangkok, Vassanadumrongdee and Kittipongvises (2017) find that the majority of people surveyed in their study had not heard of a waste separation campaign in their neighbourhood. Therefore, both the administration and the general public need to put in more effort and resources if a functioning recycling scheme is to be established. As Vassanadumrongdee and Kittipongvises note, establishing recycling systems is very investment heavy, and it is important to ensure public engagement so that the investment will not be in vain.

### 3. Previous research

#### 3.1 Non-social factors influencing recycling

In previous research, participation in recycling behaviour in Thailand has been looked at mostly from the perspective of individual behaviour. Issues impacting recycling behaviour have been found to be awareness of and attitudes toward environmental impacts, habit formation, and perceived convenience (Vassanadumrongdee & Kittipongvises, 2017) as well as perception of the significance of contribution and sense of obligation (Janmaimool & Denpaiboon, 2016). These issues are related to individual knowledge and understandings, as well as personal or moral norms that create obligations to engage in certain behaviours. Furthermore, convenience is often found to be very important, as those who consider recycling to be inconvenient are less likely to do it, especially if interest or incentives are low (Vassanadumrongdee & Kittipongvises, 2017). In addition, economic incentives, such as monetary rewards for selling recyclables, have been found to be significant in several studies (e.g. Tangwanichagapong et al., 2017; Vassanadumrongdee & Kittipongvises, 2017).

The Theory of Planned Behaviour (TPB) has often been employed to describe determinants of recycling behaviour. It includes attitudes toward the environment, subjective norms and perceived behavioural control as factors that impact the intention to recycle (Nguyen et al., 2015). Furthermore, awareness of consequences of waste management, habit formation, convenience, and socio-demographic variables carry important weight in determining the intention to recycle (Vassanadumrongdee & Kittipongvises, 2017). This intention is then translated into behaviour under suitable circumstances.

However, these factors cannot fully explain the reasons why people participate in recycling. Nguyen et al. (2015) note that there have been several studies stating that convenience is not a

guarantee of participation in recycling. The same is argued by Thomas and Sharp (2013) who find that despite curbside collection of recyclables, many individuals do not recycle in the UK. The same can be said about economic incentives. Especially the higher income classes in Thailand prefer not to receive money for recyclables in the fear of appearing in need of money (Mongkolnchaiarunya, 2005). This problem has been by-passed by some recycling programs by offering other goods in exchange for recyclables, such as eggs (Mongkolnchaiarunya, 2005). It has therefore been argued that those who recycle for economic returns and those who recycle for environmental reasons need different incentives, both of which should be considered in policy planning (Challcharoenwattana & Pharino, 2016).

### 3.2 Social capital in waste management

As Tsai (2008) argues, recycling behaviour is not just an individual matter, but rather a collective action, which can therefore be impacted by social capital. According to Tsai's research, social capital has a significant impact on recycling behaviour on the local level in Taiwan, if the proxy used for social capital is participation in voluntary organizations. Meanwhile number of social organizations is not significant. Therefore, she argues that recycling is enhanced by community involvement such as membership in organizations and local voluntary networks, which should be supported and funded by the state.

The importance of social capital in waste management is also discussed by Jones et al. (2011) with reference to Greece. They find that social capital in the form of institutional and social trust, networks and compliance to social norms impact people's participation in voluntary recycling activities. For example, institutional trust in management encourages individuals to do their part since it is expected that the management of waste will be efficient, while social trust enhances faith that others are also recycling properly. Meanwhile, networks can diffuse information about how to recycle (Jones et al., 2011). In their study they focus on formal norms, which are found to have no significant effect on voluntary recycling behaviour, only in mandatory waste management behaviour. Jones et al. also find that participation in MSW management can enhance trust in the system itself. They conclude that those who have higher social capital tend to have more environmentally responsible behaviour.

In addition to waste management, previous research on other environmental management activities can be useful to look at briefly. In their study about mangrove forest conservation, Berke et al. (2008) find that there is extensive social capital available in rural fishing villages in Ranong Province in Thailand. They find that the people of these villages have networks and

norms that can be drawn on to share information and help each other, however as is also found by Daniere et al. (2002), they argue that there needs to be a focus on local needs for people to participate in conservation efforts. Existing social capital can be mobilized for various functions even if that was not the original objective (Montgomery, 2000), making it possible to direct this type of social capital to waste management activities as well.

### 3.3 Norms in recycling behaviour

In addition to social capital, other perspectives have been employed to study social norms in the context of recycling behaviour. Thomas and Sharp (2013) discuss the normalization of recycling behaviour and the implications it has to other pro-environmental behaviours in the UK. They find that recycling can be a norm among some sections within the population without having become a norm throughout the population, as for example people with more environmentally friendly attitudes may adopt norms of recycling faster than others. Meanwhile, according to their study, younger people, people from lower social class or those living in apartments in the UK have lower participation in recycling programmes, suggesting that they have not adopted recycling as a norm to follow. Furthermore, Thomas and Sharp find that the influence of norms on recycling is linked to habit as well as identity, as starting up recycling requires effort and change in routine, while identity as a “non-recycler” may create resistance to changing behaviour.

Fornara et al. (2011) discuss the influence of norms on recycling as a localized process within the neighbourhood. They divide norms into four categories created from the distinction between descriptive and injunctive norms, as well as local and subjective norms. These will be explained in more detail in the theory section, but here it suffices to say they argue that descriptive norms, that is to say those based on actual actions of others rather than their opinions on what should be done (injunctive norms) were most relevant for recycling behaviour. It is also argued that when the end result is interdependent on the engagement of others, such as is the case with recycling, the perception of whether or not others are participating can have important effects on behaviour (Fornara et al., 2011). This is because the value of individual contribution is linked to the collective whole, and the payoff for recycling is higher if more people are doing it.

## 4. Theoretical framework

This section will discuss the theoretical underpinnings of the research. To be able to look at the social aspects arising from the data from different angles, the theoretical framework includes conceptualizations from two lines of thought, namely the social capital theory and social psychology theory. The key concepts included are institutional and social trust, social norms, and social networks, whose contribution to recycling behaviour will be discussed in more detail in the analysis section. Social capital theory can be used to assess how the participation of individuals contributes to the collective whole and becomes a resource which can be utilized in reinforcing recycling behaviour in the community. Meanwhile, the strength of social psychology in this context is being able to show the impacts norms have on the behaviour of individuals. As these concepts have been developed and often utilized in the context of industrialized Western countries, there may be some limitations to applying them in different cultural settings. The influence of local context may change how certain concepts function, creating possible limitations to transferring theory across cultures. However, there have been previous studies applying concepts of social capital in Asian cultural contexts, including Tsai (2008) and Danieri et al. (2002), who discuss social capital in Taiwan and Thailand respectively.

### 4.1 Social capital theory

The focus in this first section is on social capital theory, which discusses how social relationships and networks work as a resource in organizing collective action. In this research, the key issue is how social capital factors such as trust, norms and social networks can influence individual behaviour, and therefore contribute to participation in local waste management programmes on the community level. Social capital is found to be a good concept in this context because it is an important element of community capacity (Luckin & Sharp, 2005), in this case in relation to the ability of communities to encourage certain types of behaviour.

There are various conceptualizations of social capital, but I will be focusing on the aspects most relevant to voluntary and collective action. In its most basic form, social capital is the networks and relationships existing in society, which are influenced by norms, values and rules, and held together through reciprocity and trust (Parnwell, 2007). Social capital allows people to act collectively, facilitates communication and helps building up a reputation, which increases security within the network (Putnam, 1993).

Key features of social capital according to Putnam (1993) are networks, social norms and trust. Networks are a fundamental part of social capital, as they bring individuals together and enable collective action. They can also facilitate the spread of information (Coleman, 1988). Social norms dictate the kind of behaviour which is acceptable in a given community, and deviating from it can lead to sanctions, social or otherwise (Coleman, 1988). Finally, trust is important in creating reciprocity within a group (Putnam, 1993).

In this study I will utilize the conceptualization on social capital employed by Jones et al. (2011) in their study on the participation in obligatory waste management and voluntary recycling programmes in Greece. They divide social capital into four indicators, namely institutional trust, social trust, compliance with social norms and social networks. Each of these has distinct impacts on either obligatory or voluntary participation in waste management.

Institutional trust is the kind of trust which is directed towards authorities in the community (Jones et al., 2011). It is related to citizens' perceptions and satisfaction with the effectiveness of institutions, such as the local administration. This level of trust impacts acceptance of changes to policy and reception of information, as well as willingness to participate in decision-making (Jones et al., 2011). It also has implications on who the public goes to for information on waste management, whether they believe that information, and whether decision-making processes are considered fair (Petts, 1998). Acceptance and willingness to follow new laws have been found to be relevant social factors for waste management behaviour (Taherzadeh & Rajendran, 2014, chapter 4 in Ekström).

Meanwhile, social trust is relevant on the interpersonal level. It can be further divided into generalized and particularized trust (Jones et al., 2011). The former means trust in people on a general level, while the latter is directed toward specific social groups such as friends or neighbours. Generalized trust in other people influences individual participation in recycling by making one believe that others are also acting in an environmentally friendly way, therefore increasing chances that the individual will also feel more compelled to act in that way (Jones et al., 2011). Particularized trust can be relevant for example in the case of trust in specific people in the administration.

The third indicator of social capital is compliance to social norms. Social norms set the commonly accepted model of behaviour in a community (Jones et al., 2011). They are indicative of what is proper or acceptable behaviour, and are found to explain environmental behaviour (Jones et al., 2011). Non-compliance to social norms can be penalized through



sanctions such as social exclusion or personal disgrace (Coleman, 1988; Jones et al., 2011). In the study by Jones et al. where they talk about both obligatory and voluntary waste management activities, they place their focus on formal social norms, such as that of paying taxes or refraining from illegal construction. However, in this study as the focus is solely on voluntary recycling, and it was found by Jones et al. that formal norms have no impact on it, I find it a better fit to study informal norms instead. These will be more thoroughly explained under social psychology theory below.

Finally, social networks are the fourth category of social capital as discussed by Jones et al.. Social networks can be formal such as organizations, but also informal in the form of neighbourhood ties. In terms of formal organizations, participation can be active through volunteering and attending events, or passive through membership (Jones et al., 2011). Networks can be utilized for public participation and awareness through dissemination of information and inviting members of the network to join in on activities (Jones et al., 2011). In terms of recycling, this can for example mean that networks share information about how to separate materials properly. Jones et al. (2011) argue that participation in social networks is an indicator of individual interest in collective issues and the common good. Networks can either be internal to the community, or reaching out to those outside the community, especially to those in positions of power (Daniere et al., 2002; Dufhues et al., 2011). The latter is here called linkage, following the wording of Daniere et al. (2002). Linkage can be important in helping the community seek technical inputs or expertise, making it an important way to access physical or human capital beyond the immediate reach of community members (Daniere et al., 2002).

The parameters outlined above are chosen as they are expected to give a good idea of the different ways social aspects can influence participation in recycling, including both institutional and interpersonal factors. Furthermore, these aspects have been shown to carry weight in participation in recycling as indicated by Jones et al. (2011).

## 4.2 Social psychology theory

To get a more holistic view of norms, I will combine the social capital theory with theories from the field of social psychology. As social psychology focuses on how social aspects influence individual behaviour, as well as how individuals can contribute to changing social structures through consensus and norms, using these conceptualizations will help understand

the role of norms in impacting recycling behaviour. While norms are often considered as a part of social capital, here I want to employ the social psychology approach to see more thoroughly what exactly is the impact of norms on behaviour.

In social psychology, social and cognitive processes combine to impact the way people think, feel and act (Blumer, 1969; Smith & Mackie, 2007). In this way, what attitudes and actions are considered appropriate by the social group the individual identifies with are relevant for decision-making even when they are alone (Smith & Mackie, 2007). Smith and Mackie (2007) identify three main motivational principles for people in constructing reality and living in interaction with others. The first one is called mastery, which means seeking to understand the surrounding world so that one can behave in a way that leads to the best rewards. The second one is seeking connectedness with other people, including family, friends or teammates. Finally, the third principle is valuing oneself and having a positive view of people affiliated with you. This can lead to biased views that support one's own side in conflicting situations. These motivational principals guide human behaviour in the social world. When a group reaches agreement, it activates feelings of both mastery and connectedness, as an individual feels they hold the correct opinion and feel connected to others in the group. Individual opinions within the group converge to become more similar, thus creating a social norm (Smith & Mackie, 2007).

Social psychology is a broad field of theory with a long history, so the theoretical approach adopted in this study requires some more specification. With a focus on norms, I want to utilize theory that divides norms into different categories based on their function. Indeed, there are several distinctions made between different types of social norms. Here the distinction between descriptive and injunctive norms is of particular importance. Descriptive norms are based on the perception of what the majority of people do in a certain situation, while injunctive norms are based on the perception of what others think should be done in a certain situation (Fornara et al., 2011; Cialdini et al., 1990). In other words, descriptive norms are about actual behaviour, while injunctive norms are about disapproval or approval of behaviour. This is an important distinction in relation to recycling behaviour, as both types of norms draw from different motivational sources in inducing behaviour (Cialdini et al., 1990). Descriptive norms influence behaviour as a decision-making shortcut, with the assumption that if most people are doing it, it must be a reasonable thing to do. Meanwhile, injunctive norms do not just work as a source of information on others' behaviour, but rather imply social sanctions in case of non-compliance (Cialdini et al., 1990).

The effectiveness of norms is not only based on social sanctions, but also the internalization of values, as certain types of behaviour are linked to belonging in a group and the values of the group are considered right and proper by the individual (Smith & Mackie, 2007). The consensus of everyone doing the same thing and sharing support, as well as frequent activation through reminding people of the existence of specific norms are also important for effective upholding of norms. These non-enforced ways of maintaining social norms are conducive to their efficiency, as they do not require constant monitoring and sanctions (Smith & Mackie, 2007).

Thomas and Sharp (2013) discuss the normalization of recycling behaviour in a community, and argue that provision of facilities and information, as well as change in attitudes, habits and values all influence whether recycling becomes a far spread norm. However, recycling is not necessarily a norm for all individuals in the community even when the majority has adopted this norm. This is linked to identity and habit, with those who identify with more pro-environmental values recycling more. Habit can hinder adopting recycling behaviour because it is difficult to break away from automatic routines. Meanwhile, others may still hold non-recycling norms for example for the reason that they are not highly concerned about the impacts of recycling, or they are too busy (Thomas & Sharp, 2013).

## 5. Methodology

This research is carried out as a literature review, which allows for the use of a wide spectrum of previous research as an empirical base for the analysis. The literature used in this study is mostly peer-reviewed articles from journals and books. Articles were found through searches on online databases, using key search words such as waste management, recycling, environmental management, as well as social capital, norms, trust, networks and so on. These key words were considered relevant for answering the research question, and useful articles were chosen through reading the abstracts and eventually full articles discussing these themes. New articles were added throughout the literature review process to acquire more information.

The research papers used in this study are focused on waste management initiatives in Thailand, with a focus on recycling behaviour on the local level. As waste management is the responsibility of the municipality in Thailand, there are differences with how the system is organized in different parts of the country. This means that the role of the social aspects under study can also be different across regions. This is why data from both urban and rural settings are included, and differences between them are considered in the analysis section to give a

better idea of how behaviour is impacted by the local context. The included articles are all written after the year 2000 to allow for a contemporary perspective, with the most recent articles from the year 2017.

Since the focus of the study is on the impact of trust, social norms and social networks on recycling behaviour, articles discussing these issues were included. Since the data has been collected by other researchers and is here looked at from a different theoretical standpoint than might have been done originally, it is important to note that the analysis here is based on my interpretations of this data. Source criticism is also vital in assessing the results of studies and their applicability for the purposes of this research.

The benefits of choosing this research method include that it is considered very time and resource efficient and allows for more time to be spent on the analysis of data (Bryman, 2012). It also allows for new understandings to arise from data that has been previously collected for different purposes and consider it from new theoretical perspectives (Bryman, 2012). As this data is collected from several published articles, it allows a more extensive view of the impact of social aspects than just a single study.

However, there are some limitations to the use of secondary data. As it is collected by other authors, some relevant aspects may not be found in the original data, requiring adjustments to the approach of the current study (Bryman, 2012). It is also true that the results are not generalizable beyond the localities determined by the secondary data. However, the issues under study “can be seen as instances of a broader set of recognizable features” (Williams in Bryman, 2012, p. 406) and can therefore be used to draw comparisons to other contexts, including other localities within Thailand.

## 6. Analysis

### 6.1 Influence of trust on recycling

Vassanadumrongdee and Kittipongvises (2017) conducted a study on public intention to participate in recycling and willingness to pay for the service in Bangkok neighbourhoods. They base the study on the Theory of Planned Behaviour (TPB), although they add some additional variables such as past behaviour, awareness of consequence and trust in management as predictors of the intention to engage in source separation. Their study was based on surveys with 1076 responses from householders. According to self-reports, 66% of respondents separated at least one type of recyclable regularly, with the most common way to recycle being

selling recyclables to recyclable businesses that collect materials door-to-door. Many had also donated recyclables to waste pickers or sold them to junk shops. For 43,6% of the respondents, the main reason to recycle was economic reward while 40,6% recycled for environmental reasons. The most influential factors for separation intention and willingness to pay (WTP) according to this study are subjective norms, knowledge on the MSW situation and perceived inconvenience. Subjective norms are considered from the perspective of the TPB and defined as perceived social pressure from significant people to conduct certain behaviour.

The first social factor found in this study that I will discuss is trust in the management of waste, which has been low and worked as a disincentive to recycling for local communities in Bangkok (Vassanadumrongdee & Kittipongvises, 2017). Some locals had seen the municipal waste collectors mixing up already separated waste, which led to mistrust and a feeling of recycling efforts going to waste (Vassanadumrongdee & Kittipongvises, 2017). This was the fourth most common reason for not recycling after lack of sorting bins, lack of space for storage and lack of interest or time, with 14,6% of respondents indicating this type of mistrust. The kind of trust directed towards authorities in the community can be categorized as institutional trust (Jones et al., 2011). It is related to citizens' perceptions and satisfaction with the effectiveness of institutions, such as the local administration. It can be seen as a type of social capital in that it is a resource for the linkage between authorities and communities. When there is trust in institutions, cooperation between actors will be enhanced and acceptance of rules and information by residents in the community will be improved (Jones et al., 2011; Petts, 1998).

As seen in the case by Vassanadumrongdee and Kittipongvises in Bangkok, lack of institutional trust can translate into lack of participation in source separation (Jones et al., 2011). When the public feels that their efforts in sorting are not being reciprocated by the administration dealing with the waste, motivation in engaging in recycling behaviour may be decreased. The same impact is found in Tha Khon Yang municipality in Northeast Thailand, where residents were found to be cynical of source separation as all waste bags were collected on the same truck (Yukalang et al., 2017). It appears that when residents do not trust the MSW management service to function properly, implementation of recycling schemes becomes more difficult as willingness to participate and invest effort is reduced. Conversely, it follows that if the public were be able to trust in waste management staff and the effectiveness of the system, the intention to recycle would be enhanced (Nguyen et al., 2015).

Mancilla García (2017) argues that negative actions from the authorities tend to have a longer lasting impact on trust than positive actions, leading to resistant or continued distrust. This can be seen to implicate that once people have seen the waste being mixed, it will be difficult for the local administration to win back their trust. This may be the case even though in fact the mistrust in the case of Bangkok is based on a misunderstanding. Vassanadumrongdee and Kittipongvises find that the reason the collection staff have mixed waste is due to time limitations while gathering waste around the city, and proper waste sorting is done at a transfer station before final disposal at landfill. However, the BMA has not been clear in communicating this to residents, making it seem like all waste is carelessly being mixed together (Vassanadumrongdee & Kittipongvises, 2017). Negative perceptions that lead to resistant distrust may be difficult to change, as willingness to accept information from the administration may be decreased in situations like this (Petts, 1998).

In regards to willingness to pay (WTP) an increased fee for improving the recycling system within the MSW service, those with high satisfaction in the current service as well as those who had more knowledge on the waste management situation were more willing to pay (Vassanadumrongdee & Kittipongvises, 2017). This is echoed in a study conducted by Challcharoenwattana & Pharino (2016) in three locations across Thailand, namely Bangkok, the town of Hua Hin and a peri-urban municipality in Northeast Thailand. Here it is argued that satisfaction with waste management is linked to increased WTP for improvements of the system because people will be more likely to trust that proposed improvements will be beneficial (Challcharoenwattana & Pharino, 2016). As Jones et al. (2011) suggested, public satisfaction with the system is a key factor of institutional trust and can impact participation. Those who believe their money will be used effectively to improve the MSW system are often willing to contribute to the cause as they believe it will benefit themselves and the community as a whole (Challcharoenwattana & Pharino, 2016). On the other hand, those who do not believe the system is efficient may not want to contribute their own resources into MSW management (Challcharoenwattana & Pharino, 2016). This can create financial problems to the management system and hinder the implementation of recycling schemes, which require initial investments before they can be implemented, as well as continuous maintenance costs.

It was found by Yukalang et al. (2017) that some residents were not happy with the lack of community involvement in decision-making in Tha Khon Yang municipality. Referring to the administration, one dormitory owner said, “Even if we attend the meeting, they will not follow our suggestions ... They will do whatever they want anyway.” (Yukalang et al., 2017, p. 12).

This respondent seems to not believe that the public is able to impact the waste management policy or service in the municipality, and therefore did not attend a community meeting on MSW management. As indicated earlier, institutional trust or lack thereof impacts participation in decision-making and whether it is considered fair (Jones et al., 2011; Petts, 1998). This seems to be indicated here when a resident does not believe in their ability to contribute to improving the problem and therefore disengages from the issue altogether. If participation is hindered due to low trust in the administration or the feeling of being unable to contribute to solving the problem, the sustainability of waste management programs will be jeopardized. Promoting public participation would likely lead to better results than discouraging it when planning local environmental management (Berke et al., 2008). This discussion has allowed us to see some of the main ways institutional trust impacts the functions of MSW management and participation in source separation. The findings seem to indicate that institutional trust is an important contributing factor to whether or not the public will engage in recycling initiatives promoted by the municipality.

Social trust was also included as one of the categories used by Jones et al. (2011) in their framework for discussing social capital in waste management. However, none of the articles used as secondary data for studying the case of Thailand suggested social trust, meaning trust in the community as a whole, as a relevant feature of recycling participation. Since social trust has been found to be a useful factor to consider in studies on recycling behaviour in other contexts (Jones et al., 2011), it is possible that this aspect has simply not received attention from those who have conducted studies in Thailand, in which case further research is needed. While data is absent for this factor in waste management in Thailand, social trust in the form of particularized trust in community leaders has been found to be relevant in other local level environmental management. Studies discussing the importance of local leadership are related to fields as varied as planning for tourism, improvement of community environment, community development, and organic farming (Pongponrat & Chantradoan, 2012; Douglass et al., 2002; Parnwell, 2007). Trust in particular leaders is different from institutional trust in that it is the person that one trusts, rather than the broader institution. However, it can also have an effect on trust in policy (Jones et al., 2011). Whether or not community leadership is relevant for recycling behaviour cannot be ascertained based on existing literature.

## 6.2 Influence of social norms on recycling

The findings of Vassanadumrongdee and Kittipongvises (2017) are also relevant to consider when discussing social norms. They find that the existence of waste separation in the workplace has a positive influence on the intention to recycle and willingness to pay for the waste management service. Vassanadumrongdee and Kittipongvises suggest that providing an “easy recycling atmosphere” (2017, p. 96) in the community or workplace can encourage source separation and promote the view that recycling is socially desired. This could be explained by several members of the community engaging in recycling activities creating a norm of participation, which would have other community members joining in as well (Thomas and Sharp, 2013). Certain behaviours become normalized through more people starting to behave in the same way, which comes to be seen as the normal way to behave in a certain situation. Furthermore, the consensus and support from other people who are recycling facilitates participating in this behaviour (Smith & Mackie, 2007). Recycling in the workplace can be seen as a descriptive norm, as it is based on what others are doing, as opposed to what they think you should be doing (injunctive norm). Descriptive norms are found to have a stronger influence on recycling behaviour than injunctive norms, as recycling is a visible behaviour which people in the neighbourhood or workplace can monitor (Thomas & Sharp, 2013).

Contributing to this discussion, Janmaimool (2017) explores the impact of social, organizational and personal norms in his study about MSW management in Bangkokian workplaces. According to his conceptualization, social norms are based on what is considered normal behaviour by the general population, while organizational norms are based on shared understandings of appropriate behaviour in the workplace (Janmaimool, 2017). Personal norms on the other hand are based on each individual’s values and perception of moral obligation and are therefore not directly a social factor, but social norms can become personal norms if they are adapted by an individual (Janmaimool, 2017). This is called internalization and it works as a strong method for enforcement of norms, as it makes the individual believe that the behaviour in question is the correct thing to do in that situation (Smith & Mackie, 2007). Janmaimool finds that organizational norms and personal norms have the highest direct impact on recycling behaviour. Meanwhile, this study does not find a direct link between social norms and recycling behaviour, rather suggesting that social norms have an indirect link through their impact on organizational and personal norms.

While organizational norms are a specific category of norms relevant for formal organizations, they may have implications to social norms in general. The two studies in Bangkok seem to



indicate that source separation of waste in the workplace can lead to spillover effects to households through promotion of norms, as people observe the behaviour of those in their workplace and adapt the same behaviour (Vassanadumrongdee & Kittipongvises, 2017; Janmaimool, 2017). Recycling at work also provides an opportunity to practice proper sorting, which helps to adapt the habit and can enhance the spillover effect (Vassanadumrongdee & Kittipongvises, 2017). Engaging in recycling at work functions as a way to activate a norm in people's minds; the more one is reminded of a certain behaviour in a certain situation, the more likely it is that they will start to behave in the way implicated by the norm (Smith & Mackie, 2007). Cialdini et al. (1990) argue that norms must be activated before they can become salient, or in other words, before people will begin to follow them. If the norm of source separation is repeatedly brought up at work or school, people may start to think of it at home too when they are disposing of waste, making the behaviour of recycling more likely (Smith & Mackie, 2007). This supports the argument by Vassanadumrongdee and Kittipongvises of the creation of a spillover effect.

Vassanadumrongdee and Kittipongvises argue that by getting organizations and schools involved, waste reduction and recycling norms can be created in the society in the long run. This is supported by Thomas and Sharp (2013) who say there is evidence showing that projects for pro-environmental behaviour in schools can have spill-over effects to homes, especially to the extent that they increase the awareness of parents. Thus, it can be suggested that especially school waste banks, which are sometimes utilized to collect recyclables from the community in Thailand, can have a high impact on recycling behaviour as children from households are exposed to them in their everyday lives. This may accelerate the normalization of recycling in the community.

Janmaimool and Denpaiboon (2016) study the factors influencing rural villagers' pro-environmental behaviour (PEB) in Rayong province in Eastern Thailand. 102 people partook in the survey where the PEBs under consideration include conservation behaviour of mangrove forests and waste management behaviour. According to their definition, waste management behaviour means reducing, recycling and reusing waste materials. The authors divide determinants of PEB into four categories, namely social, dispositional/cognitive, attitudinal and psychosocial.

The authors find that conservation behaviour and waste management behaviour are influenced by different factors. For waste management behaviour including recycling, the most relevant

predictors were community norm and gender, with women engaging in waste management behaviour to a greater extent. Janmaimool and Denpaiboon argue that social norms are very important in the rural society, and that if waste management behaviour is seen positively, social pressure will encourage participation. When such a norm exists, villagers who do not engage in waste management behaviour can be “negatively viewed by a general public” (Janmaimool & Denpaiboon, 2016, p. 16). Similar views have been expressed in much of the literature. It has been argued that non-compliance to social norms can be penalized through sanctions such as social exclusion or personal disgrace (Coleman, 1988; Jones et al., 2011). In the case of waste management, in a community where a norm of recycling has been formed, those who do not recycle may be viewed as selfish or anti-social (Thomas & Sharp, 2013). Social sanctions can also include a bad reputation, while many may feel personally guilty for not complying to social norms (Halvorsen, 2008). In this way, social pressure through norms can be influential on recycling behaviour. It is possible this is especially the case for small rural communities such as the one Janmaimool and Denpaiboon studied in Rayong province, as it has been argued that social pressure is reduced in urban areas where neighbours often do not know each other (Halvorsen, 2008).

Yukalang et al. (2017) conducted a study in Tha Khon Yang municipality in Northeast Thailand, which was shortly referred to earlier when discussing institutional trust. Based on 28 interviews and 3 focus group discussions, the study categorizes barriers to effective waste management in technical, organizational, social-cultural, financial, legal and political barriers. Due to the scope of the current study, I will focus on their discussion on social-cultural barriers. These barriers are identified as lack of participation, poor cooperation between stakeholders and negative attitudes toward waste management.

Before discussing the findings, it is necessary to say a few words about the current MSW situation in the municipality. The existing recycling in the municipality is separate from the municipal curbside waste collection and is done by the informal sector, so only materials with high value get separated. At the time of the study, the Thai government closed down the local landfill in the area in an attempt to reduce open dumping. Ironically, this resulted in widespread dumping of waste on the roadside, as well as the administration unsuccessfully requesting the public to manage, sort and burn their own waste. This led to an increasing accumulation of waste in the local environment, which was worsened by concurrent population growth and urbanization of the municipality (Yukalang et al., 2017).

While there are various issues contributing to the dire situation, lack of participation is identified as a social barrier to efficient waste management. Incorrect disposal of waste and not attending meetings held by the administration on the topic of waste management are included as problems of participation. A market owner who was interviewed suggested that Thai people are not very concerned about the environment despite education, as they rather “take it easy” (Yukalang et al., 2017, p. 13), while a dormitory owner stated that even when separate waste bins were provided for recycling, residents mixed all the waste together. Several interviewees suggested that other community members behaved poorly, including bringing bad smelling waste to the wrong location and producing too much waste. This was exacerbated by the technical problems of unclear waste drop-off points and irregular waste collection. Furthermore, it was suggested that the public does not follow instructions such as signs prohibiting the dumping of waste (Yukalang et al., 2017).

These statements seem to imply the existence of non-conducive social norms in terms of recycling in the community. As opposed to the norms encouraging recycling mentioned by Vassanadumrongdee and Kittipongvises (2017) and Janmaimool and Denpaiboon (2016), this municipality appears to not have been able to establish social norms supportive of recycling, rather struggling with basic features of waste management behaviour. It is found by Thomas and Sharp (2013) that if there is no norm to recycle, or the norm is to *not* recycle, it will allow people to continue not participating in this behaviour. The visible nature of recycling mentioned above can encourage following the common behaviour in the locality (Thomas & Sharp, 2013). Norms that discourage recycling or create a general nonchalant attitude about waste management hinder participation in proper waste separation and disposal. While there are clear shortcomings in the service provision in Tha Khon Yang municipality, it is suggested by Thomas and Sharp (2013) that even when the service is adequately provided, this type of norms reduce inclination to participate in recycling behaviour.

A fourth of the people interviewed by Yukalang et al. thought that the waste management problem was impossible to solve, because the behaviour of people cannot be changed. A market owner said, “Waste producing behaviour cannot be changed. This is Thailand. We always discard waste”, (2017, p. 14). However, they indicated that people could participate more actively in waste separation than they do now. A school teacher also suggested that it is hard to change the behaviour of children. “They have no discipline. For example, if there is a bin, they will throw their rubbish to the side, not in the bin” (2017, p. 14). This further indicates the far spread of non-recycling social norms in this municipality. Thomas and Sharp (2013) discuss

social norms in relation to identity, as the interaction between self and society is often played out through consumption. They argue that there is often resistance to change by those who do not recycle, as it is part of their identity to not recycle. In Tha Khon Yang, the comments by community members who consider careless discarding of waste to be a part of the Thai way of life may be an implication of this. They seem to have always discarded waste in a certain way and appear resistant to changing this behaviour. Starting to recycle requires an effort to change habits, and can create a disruption to everyday routines (Thomas & Sharp, 2013). This can make it difficult for some people to get engaged in recycling, especially if they currently follow non-recycling norms.

The poor recycling behaviour in this municipality is possibly influenced by both descriptive and injunctive norms, which allow the disposal of unsorted waste. These norms can sometimes manifest at the same time, but they still have distinct meanings (Cialdini et al., 1990). The descriptive norm in this situation seems to be that it is acceptable to dispose of waste carelessly, as so many others are doing it. Residents can see that hardly anyone else is separating their recyclables, and can assume that waste pickers will do this later, despite the mess it creates when they open up garbage bags on the roadside (Yukalang et al., 2017). It has been found that people are more likely to litter in a place that is already messy, compared to a place where the environment is clean (Cialdini et al., 1990). This may be a contributing factor to how residents leave their waste in the wrong location, as well as fail to use proper waste bins in Tha Khon Yang (Yukalang et al., 2017). Meanwhile, the injunctive norm may be indicated in the comments by the community members who think it is okay to deal with waste this way, because it is the Thai way of life. Many residents seem to approve of the current MSW management practices because of their convenience. It was also said by several interviewees that the public doesn't consider MSW management to be their responsibility (Yukalang et al., 2017). This leads to low expectations for others to engage in proper waste management behaviour, which also possibly implies the existence of a non-recycling injunctive norm. However, this is contradicted to some extent by residents who complain about the improper disposal of waste in their neighbourhood, and who wish that people would read the signs and not bring waste to the wrong location again (Yukalang et al., 2017).

When non-recycling or poor waste management norms like this exist, it can be a challenge to change recycling behaviour. However, it is possible that new norms are created when the need arises. Coleman (1990) argues that when an action has externalities that influence others, those others may want to change that action. In other words, a demand for a norm can arise when a

group of people want to discourage or encourage a certain type of behaviour (Coleman, 1990). In the case of recycling, this can happen if awareness of the environmental and health impacts of waste management is increased, and people come to see the negative side effects of improper waste disposal. If a consensus were to arise within the community about the need to have a clean and healthy environment, it is possible that waste management behaviour would start to change.

From the discussion above, it can be suggested that there are some differences caused by the context between urban and rural areas. While norms are found to be relevant everywhere, their influence may be especially pronounced in the rural areas in Nernkhor subdistrict, studied by Janmaimool and Denpaiboon (2016). Because most people know each other in a village community, social pressure can be enhanced (Janmaimool & Denpaiboon, 2016). Furthermore, the monitoring of recycling behaviour is easier in a tightknit community as it can easily be seen if neighbours are recycling or not based on the trash bags they leave outside (Thomas & Sharp, 2013). On the other hand, in the urbanizing context of Tha Khon Yang municipality, the prevalent norm is seen to be to not recycle, and participation in all waste management related activities is found to be low (Yukalang et al., 2017). In this case, it appears that the current norms do not create incentives for source separation of waste, despite problems with accumulating waste due to the shutdown of the local landfill. Local authorities have suggested that people should manage waste by themselves by burying and burning it, despite obvious environmental and health hazards. While this situation is not necessarily caused by the urbanization of the municipality, it is likely worsened by the increasing amount of waste due to population growth, and possible lack of community due to migration, which will be discussed in more detail below (Mongkolnchaiarunya, 2005).

Meanwhile in Bangkok, there is potential for social norms to be utilized, but it is not yet used to its full advantage (Vassanadumrongdee & Kittipongvises, 2017). Even in a big city, it can be useful to deploy the neighbourhood or community as the group of focus when considering changing norms. This is because an ingroup such as “our street” can have a stronger influence on encouraging behaviour than reference to the general public (Reynolds et al., 2015; Fornara et al., 2011). This has also been suggested in terms of recycling by noting that people react more positively to signs suggesting their neighbourhood is doing well compared to other neighbourhoods in the district, which can create a sense of pride and increased willingness to participate (Thomas & Sharp, 2013). In addition, norms in the workplace are suggested to be

important in the metropolitan context of Bangkok, where a relatively large proportion of the labour force is in formal employment.

### 6.3 Influence of social networks on recycling

Daniere et al. (2002) discuss the impact of social capital on community environmental and waste management in five low income communities in Bangkok. Four of these communities have some level of access to waste management services provided by the BMA, but in two of the communities open dumping and burning of waste is a common way to deal with waste, while in two others all respondents claim to dispose of waste in bins organized by the BMA. In the study, social capital is defined as the link between social networks and integration in the community and the material, informational and financial resources made available through them. Social capital is considered within the community and in relation to seeking out outside expertise and technical inputs, the latter of which is here called linkage (Daniere et al., 2002). The authors find that social interaction along with environmental knowledge are the two aspects with most influence on participation in community environmental and waste management.

Community integration, that is to say, how often community members talk to each other and whether or not they feel comfortable talking to others about their problems or asking others in their community for help, is found to be linked to participation in community groups for environmental management (Daniere et al., 2002). According to Daniere et al., those who have a high level of social interaction are found to be much more likely to participate in community projects in Bangkok. The participation in projects varied greatly among the communities included in the study with the lowest percentage being just 20%, and the highest 80%. Daniere et al. argue that in communities with more residents participating in community projects, social capital has been successfully created so that residents can work together for the common good. If there is no coordination among people, they will defect even from mutually beneficial cooperation (Putnam, 1993). This is why it's important that community members interact with each other in both formal and informal networks. It is argued by Douglass et al. (2002) that reciprocal exchange beyond the family is crucial, as it facilitates household efforts in the management of the immediate environment. Douglass et al. argue that even engaging in just leisure activities with other households in Bangkokian slum areas work as inter-household networks that increase participation in environmental management. In the case of community

waste management, the interconnections within the community can help in decision-making and organizing practical activities such as clean-ups of scattered waste (Douglass et al., 2002).

Community groups can also be more formalized and work specifically for the purpose of improved waste management (Daniere et al., 2002). These groups can bring residents together to attain mutual benefits from a cleaner environment. Recycling programs in Thailand have often been run on the community level as community or school waste banks. These initiatives usually have a drop-off point in a set location, where people can bring their recyclables in exchange for an economic reward (Mongkolnchaiarunya, 2005; Chalcharoenwattana & Pharino, 2015). Many of them have established a banking system which includes an account where the money is deposited, with a six-month commitment period during which it is not possible to withdraw the funds. In addition, a funeral fund will be given to members who have continuously brought in waste for more than six months (Chalcharoenwattana & Pharino, 2015; Mongkolnchaiarunya, 2005). The initially required commitment period may help in making participation a habit, which will facilitate continuing with doing recycling later on (Thomas & Sharp, 2013). Community participation through these projects can enable households to come together, which enhances recycling performance (Tsai, 2008). It was found by Tsai (2008) in Taiwan that when a larger percentage of the population participates in waste management projects as volunteers, the overall recycling rate in the community goes up. This can be seen to be because of the ability of these projects to educate participants as well as uphold norms within the community (Tsai, 2008).

Community MSW programs make members of the community core operators of the system (Pharino, 2017, chapter 4). Community groups may be a sign of social capital in that they create a resource for the residents to interact with more people, who can help each other to attain benefits from investment into physical or human capital (Putnam, 1993). It has been suggested that this social capital can be drawn on to improve the quality of life of individuals by enhancing the ability of community members to work together for improved environmental management (He et al., 2015) and possibly make contact with authorities to enhance service provision (Daniere et al., 2002). The local environment referred to here includes the cleanliness achieved through proper recycling and waste disposal. It was found in Bangkok that association within the community can also be further strengthened if previous environmental projects work well, highlighting the self-reinforcing nature of social capital (Douglass et al., 2002; Putnam, 1993). Sustainable networks within the community embody positive past experiences with collaboration, and can be employed to tackle new problems as well (Putnam, 1993).

Participation in the management of local issues has been found to increase overall trust in the system, which encourages recycling behaviour (Jones et al., 2011). This is because members of the community are brought closer to decision-making and can understand relevant challenges and consequences better. Especially since lack of public cooperation is often identified as a problem for recycling, it can be beneficial to increase ownership by sharing responsibility over waste management with local communities (Pongponrat & Chantradoan, 2012).

Mongkolnchaiarunya (2005) studies how community-based waste management initiatives can contribute to MSW management. He uses a case in Yala municipality in Southern Thailand to explore the performance and the impacts of establishing a community level waste bank in a low-income neighbourhood. He finds that while there may be difficulties in sustaining a community-level waste management initiative, it improves the recycling situation and environmental conditions such as blocked drainage in the community.

Mongkolnchaiarunya argues that outsourcing functions such as waste management activities from the municipality to community groups, and subsequently working together to maintain the project can build up the relationship between the municipality and the community. This can be considered a form of linkage, meaning the type of social capital that connects those in the community to authorities (Daniere et al., 2002; Dufhues et al., 2011). This is also discussed by Daniere et al. (2002), who argue that linkages to those outside the community can help procure resources such as technical inputs or expertise. For example, 97% of those living in one of the five communities studied by Daniere et al. felt that after they had made requests to the BMA to help with waste management, the situation had improved. However, in another community the same percentage was significantly lower at 38%, suggesting that the BMA had not been as effective in responding to the issue of waste management there (Daniere et al., 2002). With more contact to authorities in the first community, this may be seen as a sign of the level of linkage in the community as having a significant impact on the effectiveness of local waste management.

The efficiency of employing the linkage type of social capital is dependent on many factors both in and outside the community. Within the community, interactions and engagement with community groups can improve the chances of getting in touch with officials (Daniere et al., 2002). On a higher level of abstraction, Beall (1997) argues that due to social and economic power imbalances in society, not all communities are able to make use of social capital in an



equal way. Those who are disadvantaged may struggle to be heard, as often their requests are not high on the agenda of administrators. However, as official government initiatives often do not reach low-income communities, networks of community cooperation can be especially important for them to improve local environmental conditions and procure access to MSW services (Daniere et al., 2002; Mongkolnchaiarunya, 2005). It is found by Yukalang et al. (2017) that lack of cooperation between stakeholders in Tha Khon Yang municipality is a barrier to effective MSW management. This can be said to be a lack of linkage between different actors and can cause problems of poor communication, hindering public participation and the effective service provision required for a recycling scheme to succeed.

Formal networks, which can also include community projects if they are fully organized, can be utilized for information sharing and spreading awareness (Jones et al., 2011). Luckin and Sharp (2005) argue that community-based projects can be used to educate people about the economic and environmental impacts of recycling. With a focus on the needs of local people, these projects can bring individuals from the community together and promote participation in recycling schemes through awareness (Luckin & Sharp, 2005). To increase knowledge and awareness of MSW issues and environmental impacts, as well as understanding on how to sort waste better, public education has been suggested by many authors as a needed measure (Pharino, 2017; Chalcharoenwattana & Pharino, 2015; Vassanadumrongdee & Kittipongvises, 2017; Yukalang et al., 2017; Mongkolnchaiarunya, 2005; Daniere et al., 2002).

Networks within the community could be utilized in organizing this education about recycling (Daniere et al., 2002). Networks in the form of waste management groups can bring people from the community together, and therefore possibly provide a platform for sharing information and best practices. As Daniere et al. (2002) found environmental knowledge along with community interaction being the most significant factors influencing community participation, they suggest that workshops could be organized to increase both interaction and knowledge among community residents. Mongkolnchaiarunya (2005) adds that education about source separation will be conducive to the sustainability of community projects related to MSW management, so it creates a beneficial loop to help the work of the community project.

Mongkolnchaiarunya (2005) finds that urbanization has sometimes led to a lack of community feeling for new residents, as there are more people and they are often not as closely connected as in rural areas. The length of time living in a community is found to be an important attribute to participation in community projects by Daniere et al. (2002) as well. This is because those

who have resided in the same area for a longer time have had more time to create social relationships (Daniere et al., 2002). It has also been argued by others that the time spent living in a community is connected to the social networks households have created in that area, meaning that migration is a relevant factor in terms of network creation (Putnam, 1995). The differences created by the length of time living in a community are important to consider especially in urban and urbanizing areas where the population is growing due to in-migration. In these areas, special attention can be paid to new residents in getting them involved in local networks and interested in the state of the environment (Janmaimool & Denpaiboon, 2016). If the population is growing and new residents are uninterested in the state of the environment, it can lead to worsening pollution and accumulation of waste (eg. Yukalang et al., 2017).

Overall, networks have an important role in bringing members of the community together and promoting participation in waste management and recycling. This can be done through community projects, which emphasize local responsibility and focus on the needs of the community. Information sharing and possible implementing public education are found to be important functions of social networks.

In addition, networks are linked to the other two social aspects discussed in this paper. Both informal and formal networks have the potential to promote social norms. Informal ties among the neighbourhood may promote recycling through the creation of norms within the community. Furthermore, affiliation with certain social groups such as the neighbourhood has been found to impact adoption of norms such as that of recycling (Thomas & Sharp, 2013). This is linked to individual identity, as people can for example identify as recyclers, which is indicative of propensity toward certain behaviour (Thomas & Sharp, 2013). It is possible that a community MSW project may also function as a social group that enables the creation of a certain identity and facilitates adoption of norms. Luckin and Sharp (2005) argue that formal community waste projects engage local community members in ways that reinforce norms of reciprocity and civic engagement. As mentioned above, networks can also possibly enhance the creation and maintenance of trust in the community, as it allows people more power in decision-making and potentially provides linkage to the administration, which can enhance institutional trust.

## 7. Conclusion

The aim of this study has been to find out what kind of impacts do social aspects, namely trust, social norms and social networks, have on public participation in recycling. Based on the discussion above, it seems that these factors can have an important role to play in impacting

recycling behaviour. Institutional trust appears to be relevant for peoples' willingness to participate in recycling programs through their belief of the effectiveness of the service and their satisfaction with it. When trust is low, people may be more likely to not participate in any MSW related activities including source separation, proper disposal of waste, paying the waste management fee, and attending community meetings. Unlike what was suggested by Jones et al. (2011), social trust does not appear relevant based on the existing literature in Thailand.

Social norms seem to carry important implications for recycling behaviour, as they determine the generally accepted behaviour in the community. When norms are repeatedly activated they can be internalized and become part of the habitual behaviour of individuals. Norms can possibly be created in the workplace and lead to spillover effects into people's waste sorting behaviour at home. After a conducive norm has come into existence, those who do not engage in recycling may get negative reactions from other members of the community. Meanwhile, norms which do not support recycling behaviour appear to hinder the adaptation of source separation, as well as encourage disinterest in waste issues in the municipality. It was also found that some people find it difficult to believe that existing behaviour can be changed at all, possibly creating barriers to effective adoption of recycling.

As the final social aspect under study, social networks have the potential to create opportunities for the public to work together in improving the waste management situation in their communities. They may also be employed as a link between community members and municipal administration, improving service provision. Interaction between community members is suggested to be beneficial for participation in local environmental or waste management projects. Networks may also be utilized in spreading information about proper MSW practices, which can promote recycling further.

The theoretical framework of this study requires some final comments. Bringing together social capital and social psychology perspectives has allowed me to look at how trust, social norms and social networks function in different ways to impact recycling behaviour. Trust, particularly institutional trust, as well as networks have been considered as local social capital which can be employed as a common resource in the community to enhance cooperation and recycling behaviour. The existing trust in the community and participation of individuals in voluntary networks can become a common good in the sense that all will benefit from a cleaner environment. Social norms on the other hand have been considered from the social psychology perspective, which discusses how norms influence behaviour. As people are seen as social

beings, the behaviour of others has implications for the behaviour of individuals. While social norms are often considered as social capital as well, employing the social psychology approach has the potential to focus deeper on the specific influence they have on individual behaviour. Therefore, combining these theories in the analysis has allowed the most relevant implications for each of the social aspects under study to arise. While considered as independent factors in this study, in reality trust, norms and social networks are interrelated and can influence each other.

The waste management sector is an important area for municipalities to consider in relation to sustainable development, as it has many environmental and social implications. This is especially relevant on the local level, as the immediate impacts of waste management success or shortcomings will be experienced in the community that produces the waste. It has been argued that in addition to the government, responsibility over environmental management should be shared by the local community that contributes to problems and is in constant contact with the surrounding environment (Janmaimool & Denpaiboon, 2016). To do this, public participation in MSW management and recycling at the source is necessary.

While the study's findings are only based on a few localities, they can potentially contribute to the discussion on ways to improve recycling performance in Thailand. To promote engagement from the public, improvements to service and infrastructure from the side of the municipality are necessary before effective and sustainable MSW management can be ensured. Based on the discussion presented in this study, reliable and effective service seems to also contribute to improved trust and satisfaction in the service and consequently more willingness to participate and pay for it. The creation of social norms may be encouraged through education and increased awareness, introducing recycling initiatives in workplaces and schools, and informal interaction through community networks. In addition to improving the conditions for social aspects in communities, other ways to improve participation rates in recycling include increased economic incentives including both rewards and policies such as pay-as-you-throw, formal education such as adding the 3Rs into school curriculums, improved communication between municipality and residents, and improved convenience from investments in infrastructure (Pharino, 2017; Vassanadumrongdee & Kittipongvises, 2017; Yukalang et al., 2017).

Local networks are especially helpful for low-income communities in organizing around waste management and carrying out recycling initiatives. Waste management often mirrors local

socio-economic structures, as people working in the sector are commonly from lower income groups, and often in well-off households it is the household staff that are in charge of waste disposal (Mongkolnchaiarunya, 2005). These inequalities may also be seen in differences in the waste collection services offered to different communities, with poorer neighbourhoods being at a disadvantage (Beall, 1997). This was also found in Thailand in both Bangkok (Danieri et al., 2002) and an urban-rural fringe area in Nonthaburi Province, where official waste collection was focused on new residential areas and rice farmers often buried or burned waste (Hiramatsu et al., 2009). Community waste projects are found to be a low-cost way to increase recycling on the local level (Suttibak & Nitivattananon, 2008). Municipalities could look into offering funding for these programs as a way to deal with local MSW management issues (Pharino, 2017; Tsai, 2008).

It is important that residents acknowledge their own responsibility over the waste they produce, rather than just expecting the municipality and government to take care of everything. In addition, if local participation in the system is enhanced, residents will have more power in demanding quality services (Mongkolnchaiarunya, 2005). This being said, however, the service provided by municipal authorities must be improved before the recycling system can be truly successful in the country. Cooperation between stakeholders and effort from both the municipal administration and the public are needed to improve the state of recycling in Thailand.

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