

Gift Giving with Coercion in Rural Communities of Tanzania

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science

in

Agricultural and Resource Economics

Department of Resource Economics and Environmental Sociology

University of Alberta

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## Abstract

Poor households may face various risks, especially in countries with limited access to public safety nets. In order to cope with these risks, poor households can implement ex ante risk-reducing strategies or rely on risk-coping system such as inter-household transfers. These transfers, which are mostly in kind, are often requested by the household in need and, as such, some amount of haggling and moral coercion take place in these demands. From the perspective of the receiver, exerting coercion to obtain more gifts when he is in real need, may be a way to help him to cope with risks and raise his welfare.

To have a better understand of gifting behaviors among households, and especially how coercive effort from receiver influences gift values and well-being, this study uses a primary rich dataset collected from two Districts of Tanzania to examine the impact of altruism, coercion, gifting motivations, and demographic factors on gift values, and investigate the impact of gifting transfers on households' well-being.

To do so, we first develop a gifting model where gift value is due to the combined effect of altruism and coercion. Consistent with our theoretical model, empirical results show that the gift monetary value is positively related to altruism, and that receivers extract more expensive gifts when they exert coercion on their close family members. Moreover, gift motivations and household demographic characteristics have various significant impacts on gift values. The model contributes to our understanding of mutual-help systems, and how coercion helps individuals to obtain gifts. Thoroughly examining what empirically determines the gifting value sheds light on existing mechanisms of insurance and emphasizes the hidden influence of social networks.

We then use propensity score matching approach to explore the effect of gifting on the well-being of households. We find household that headed by male and elderly are less likely to be involved in gifting. And being involved in gifting indeed helps households to improve their consumption and production levels. These findings provide important policy implications to local government and NGOs.

## Acknowledgments

First and foremost, I would like to express my ultimate gratitude to my supervisors, Dr. Philippe Marcoul and Dr. Bruno Wichmann, for their enormous support, suggestions, training, and encouragements towards the successful completion of this research. I would not have achieved this without their dedicated and patient supervision. I would like to extend my sincere gratitude to Dr. Feng Qiu for your professional guidance and great support in my research. I am also grateful to Dr. James Rude for being part of my thesis committee and offering important comments.

Thanks to staff members and friends in the Department of Resource Economics and Environmental Sociology. I would like to give special thanks to Jeffery Andrews and Shaoyan Sun for their help in sharing literature, thoughts, and suggestions. Also special thanks to Chenxi, Claire, Shuo, Xinlei, Yanan, Yunyan, and Zhaochao, for keeping me motivated in research and happy in spare time over the last years.

In addition, I extend my thanks to all my family members for their support, especially my parents. A special thank-you to family—Cheng Hsin Li— for treating me as family while I was far away from home.

Last but not the least, thanks to the Crop-Goat Tanzania project, Brett Cortus Memorial Scholarship for financially supporting my research.

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# Chapter 1: Introduction

## 1.1 Background

Informal mutual-help groups are a response to the pervasive income shocks that characterize the agrarian life in village communities of developing countries (Eswaran and Kotwal, 1989; Fafchamps, 1992). When an individual incurs or expects to incur an income shock, she can rely on her friends or relatives to give her a transfer that will help her family to get by. In fact, to the extent that the risks faced by villagers are somewhat uncorrelated, the possibility to receive a transfer in case of misfortune can significantly enhance risk sharing within the community (Udry, 1994; Foster and Rosenzweig, 2001).

An important corollary to the widespread existence of mutual-help groups is that social norms tend to be shaped according to the logic or the needs of these groups. If the main function of these groups is to allow transfers across their members, then the social norms pertaining to gift giving or receiving should facilitate such transfers. This adaptation of gift giving social norms manifests in the fact that, unlike developed countries, it is socially acceptable for an individual confronted with an income shock to formulate gift requests to a friend or to a relative. Likewise, it is also harder for a potential giver to deny a request from a friend or a family member which provided the latter has acceptable reasons to make it.

Yet, if social norms facilitate gift requests then they naturally can give rise to abuses. Typically, gift demands by the receiver might be higher than what the giver is prepared to give out of pure altruism or empathy. In order to obtain a larger gift, the receiver may coerce the potential giver into giving more by using powerful moral leverages such as guilt or shame. In sub-Saharan African countries, social pressure to redistribute income or savings

are quite high (Kennedy, 1998; Platteau, 2000). Moral coercion, devoid of physical violence, can thus become a mean through which an individual can either extract gifts that would never have been made out of pure altruism or simply increase the actual value of the gift that the giver would (unconditionally) propose.

Arguably, the value of the gift plays a crucial role in the effectiveness of any risk-sharing group. If the value of the gift is insufficient then the group will not achieve adequate risk sharing and, perhaps coercion can help raise this value. Similarly, when the receiver is in real need, then if coercion gives rise to a gift that would not exist absent coercion, it is unclear whether the very social norms allowing coercion are necessarily an evil. Since exerting coercion may help the receiver to cope with risks and raise his welfare. As such, understanding the genesis of gifts and the determinants of their value can help us better understand the welfare implications of a gift-giving village economy.

In this research, we first develop a model of coercion in giving based on Alger and Weibull (2010) and Marcoul et al. (2017) to better understand how the interplay between coercion and altruism generates the gift value. In the model, an (unlucky) individual in need must decide how much coercive pressure he must apply to request a gift from a friend or a relative. In the formal analysis, we show that the (equilibrium) gift value is a non-monotonic function of the strength of the existing altruism link between the receiver and the giver. Two effects play an important role in explaining this (perhaps) counter intuitive outcome. First, exerting coercion is costly and the receiver must take into account these social costs which are usually very high when one tries to morally coerce a distant relationship into giving. Second, exerting too much pressure on a very close family member creates an endogenous utility cost that is incurred by the receiver and as such, it tends to moderate demands made to very close family members. From this new developed gifting model, we find that when receiver exerts coercion on the giver, the expected gains from coercion shows an inverted-U relationship with the altruism link between the giver and the receiver. The theoretical model helps us to understand the role played by coercion in increasing gift values. Clearly, our model shows that coercion is the ‘least useful’ for either close relationship or very distant acquaintances.

The results of the model are consistent with the recent economic literature on kinship pressure showing that African households usually try to evade sharing obligations with other

family-related households (Di Falco and Bulte, 2011). More importantly perhaps, the model begs the question of whether coercive pressure really affect gifts values ‘in the field’. Also, we wonder what other factors, such as gift motivations, significantly influence the gift values?

Determining which factors influence the value of gifts can provide a better understanding of gifting behaviors. However, this is not the whole picture. It is also important to know whether informal mutual-help systems can help local households to improve their welfare. In particular, while gifting might be supported by some degree of coercion, we wonder to what extent the gifting activity is associated with higher level of household’s welfare. Finally, in light of the gifting model, we may further wonder whether the coercion from receiver can eventually help raise households’ welfare.

## **1.2 Objectives**

To address these research questions, we study the gifting behavior of villagers within friends and family networks in Tanzania. This research has three main objectives. The first objective is to develop a gifting model with consideration of the combined effect of altruism and coercion. Then we use both descriptive and empirical analyses to examine relationships between gifting, altruism, and coercion, and find evidence to support the three main hypotheses derived from the gifting model. Also, we explore and analyze how factors including other gift motivations and socio-economic factors, affect an individual’s expected giving gift value and expected receiving gift value separately. The last objective is to examine the effect of gifting on the well-being of local households by using three consumption indicators and production indicators. The findings of this objective may provide important policy implications, such as non-gifting households may be more vulnerable and need assistance from local government and NGOs.

## **1.3 Thesis Organization**

The remainder of the thesis is organized as follows. The next chapter reviews literature on gift-giving behaviors and the transfer patterns of gift giving. In Chapter three, we introduce

the gifting model and derive three main hypotheses from this model. In Chapter four, we present our sampling and study area. Then, we empirically examine how a range of factors influence the gift values including altruism, coercion, other gift motivations, and socio-economic factors by using gift level data in Chapter five. In the next chapter, we use household level data to estimate the effect of gifting on the well-being of households. Finally, Chapter seven presents conclusions from previous chapters, lists some limitations of this research, and provides suggestions for future research.

# Chapter 2: Related Literature

This chapter reviews literature on gift-giving behaviors and the transfer patterns of gift giving. We start by presenting the literature surrounding gift giving occasions such as celebrations and ceremonies. Next, we discuss the role of kinship networks in the livelihoods of families in developing countries. We also review the literature on gifting motivations, including debates about altruism, reciprocity, social norms, and obligations. Finally, we summarize empirical works on gift transfers, highlighting the gift flow patterns studied in the literature.

## 2.1 Gifting Occasions

People give gifts with various frequency and on various occasions. In a developed country like the U.S., the most popular gifting occasions are birthdays and Christmas (Belk, 1979; Caplow, 1982). However, different countries may have other important occasions for gifting. For instance, in China people like to exchange gifts during Chinese New Year and the Mid-Autumn Festival (Seidemann et al., 2016). In India, people like to gather together and give gifts during Diwali and Rakhi festivals (Kalagayan, 2015).

Exception of the function of celebrating events, gift giving appears to be ceremonial and serves as a symbol of social support to family members or friends from one life stage to another such as wedding, graduation, and funeral (Scammon et al., 1982). In most developing countries, people spend large amounts on weddings, dowries, and christenings (Banerjee and Duflo, 2012). Banerjee and Duflo also argue that, in Tanzania, it has been widely documented that local people are more likely to give gifts at weddings, visiting newborn babies, and funeral, and spend a large amount on gifts partially as a result of the compulsion not to lose face.

## 2.2 The Role of Kinship Networks

Research in anthropology suggests that one of the survival strategies of poor households in developing countries is to develop social and economic links with other poor households (Lomnitz, 1977). These interactions characterize social networks, which include members of a household's closed and extended family, as well as friends and neighbors.

Social networks provide many forms of insurance and protection against adverse events. For instance, Munshi (2003) finds that migrants provide shelter and assistance to freshly arrived migrants. This social phenomenon creates tightly migration networks linking villages of origin and places of destination. Another illustration of insurance institutions often formed by kinship networks are funeral societies. Dercon et al. (2006) documented the importance of funeral societies in rural Ethiopia and Tanzania as a way of dealing with funeral costs. Kinship networks also help to spread information about jobs and business opportunities (Barr and Oduro, 2002; Granovetter, 2000; Munshi, 2003).

Fafchamps and Lund (2003) demonstrate that risk is shared via gifts, transfers, and informal loans. They show that risk sharing takes place primarily within relative and kin-based networks. They also point out that while close relatives provide gifts, more distant relatives make informal loans. In India, Munshi and Rosenzweig (2016) find that gifts and loans flowing through social links between caste members serve as informal insurance mechanisms that are strong enough to constrain rural-urban migration. Johny et al. (2017) show that individuals in rural India tend to form social networks with others in the same caste and ethnic group. They find that these social networks play an important role in the diversification of household income.

## 2.3 Gifting Motivations

Distangling motivations for gift transfers is an important component in understanding transfer flows in general. What are the inherent motivations for gifting? The literature offers various understanding of gifting motivations that generate different motivational classifications.

The early study by Malinowski (1922) proposes that a continuum of feelings are involved

in gift giving. They characterized gifts as pure gifts (for which nothing is expected in return) and as barter or forms of exchange (where personal profit is the dominate motive). Mauss (1925) further indicated that reciprocal gift exchange creates moral ties between people which let them feel indebted to each other.

Sherry (1983) used his three-stage model of gift giving to distinguish between altruistic and agnostic motives. The altruistic motive maximizes satisfaction of the receiver, while the agnostic motive maximizes personal satisfaction. The existence of these two motivations for giving has been debated, especially, as it does not incorporate giving out of obligation (Caplow, 1982; Goodwin et al., 1990). Goodwin et al. (1990) then provides a more fundamental motivational distinction between voluntary and obligatory gift giving. Moreover, they specify two forms of obligation, one is reciprocity, another is ritual. They offer different examples that can be classified using their typology. For instance, when people give gifts to cheer up friends, to celebrate events, or to express concerns they often do out of voluntary motives. In contrast, gift giving occasions such as families and friends create mutual obligations (reciprocity) at holidays and birthdays, and one-sided obligations (ritual) at weddings and housewarmings are motivated by obligation.

Motivations can be also divided into utilitarian and hedonic. Based on this theory, Wolfenbarger and Yale (1993) developed three distinct constructs of motivations for giving: experiential/positive, obligated, and practical. An experiential/positive orientation toward giving is a reflect that givers enjoy the gift giving behavior, and gifting is used to show their love and friendship to receivers. Also, they identified that the main reasons behind obligation to give are: i) feelings of guilt if they do not give, ii) gifting due to others' expectations, and iii) feelings of obligation to reciprocate when they receive gifts. In fact, these obligations are fueled by social norms of reciprocation. Lastly, the primary motivation for practical givers to give is to provide practical assistance to the receivers.

Hussein and Kajiba (2011) study motivating factors for private income transfers and propose three main motives: altruism, exchange, and insurance. When an individual remits part of her income to other socially related but economically worse individual, she does so out of pure altruism motivations. Exchange motivations happen when an individual provides income transfers to others expecting in-kind or money gifts in return. Insurance motivations

are similar to altruistic counterparts, however, the emphasis is to help poor households to smooth consumption against idiosyncratic shocks.

Finally, Zigah (2014) classifies gifting motivations using ideas from Wolfinbarger and Yale (1993) and Hussein and Kajiba (2011). He argues in favor of three reasons for gifting: altruism, reciprocity, and social norms. Zigah (2014) treated social norms as a new distinct motivation of gift giving. As suggested by Kolm and Ythier (2006) and Alger and Weibull (2007), individuals may be coerced by social norms to *appear* altruistic towards agents through gifting.

Table 2.1: Review of gifting motivations

Study	Motivation Paradigm
Sherry (1983)	Altruism <i>vs</i> Agnostic
Goodwin et al. (1990)	Voluntary <i>vs</i> Obligatory
Wolfinbarger and Yale (1993)	Experimental/positive attitude <i>vs</i> Obligated attitude <i>vs</i> Practical attitude
Hussein and Kajiba (2011)	Altruism <i>vs</i> Exchange <i>vs</i> Insurance
Zigah (2014)	Altruism <i>vs</i> Reciprocity <i>vs</i> Social Norms

While the above literature shows different frameworks to classify gifting motivations, empirically, it is hard to disentangle gifting motives. Nevertheless, a few recent studies take on this challenge using experiments to identify whether motivations are predominantly altruistic or reciprocal.

Leider et al. (2009) perform experiments using Harvard undergraduates where students played dictator games. When students were matched against a random recipient, offers in the dictator game were significantly lower than offers when students were matched with friends. They use this result to distinguish between baseline altruism towards random strangers and directed altruism in favor of friends. By using repeated games, they are also able to identify a distinct motive of giving - reciprocity - motivated by the prospect of future interaction. Specifically, they find that directed altruism leads to an increase in gifts of 52 %, while reciprocal giving leads to an increase of 24 %, both comparing to baseline altruism.

Ligon and Schechter (2012) use dictator games between villagers in rural Paraguay to empirically investigate resource sharing. They find evidence of three motivators: one preference-related (directed altruism) and two incentive-related (sanctions and reciprocity). They find that ‘real world’ gift giving is primarily motivated by the expectation of reciprocity.

## 2.4 Gifting Flow Patterns

We refer to *gifting flow patterns* as a characterization of who is giving and who is receiving. Understanding these private transfer patterns is important as they often fulfill public transfers functions. Such a characterization may shed some light on the issue of whether or not private gift transfers work as social insurance for local vulnerable individuals. A summary of gifting flow patterns from the empirical gifting literature is presented in the following table (Table 2.2).

The information in Table 2.2 suggests that, in many developing countries, especially in rural areas, older generations rely on their young kids to support them. Butz and Stan (1982) and Ravallion and Dearden (1988) respectively find significant transfers from young to old in Malaysia and Java (an island of Indonesia). Cox et al. (2006) studied 11 countries and found that transfers from young to old exceed transfers from old to young in Jamaica, Panama, Nicaragua, and Vietnam, whereas the reverse happens in Russian and Bulgaria. In Nepal, they found a bi-modal age pattern, with higher transfer from the middle-aged to both the young and the old. Cox and Jimenez (1989) also find that gift transfers are more likely from middle-aged family members to the young and the old in Peru.

While inter-generational gifting flows vary by country, flows by the gender of the receiver do not. For instance, in all eleven countries studied by Cox et al. (2006), female-headed households are more likely to receive gifts. This finding is also supported by Lucas and Stark (1985), Kaufmann and Lindauer (1986), and Cox and Jimenez (1989). Cox and Jimenez (1989) invoke two main reasons to explain this phenomenon. The first is sex differentials in life expectancy. Females tend to live longer than males and thus receive more gifts at later stages of life. Second, the gift transfers may be a mechanism to compensate females for discrimination in formal labor markets. Schultz and Strauss (2008) propose reciprocity

Table 2.2: Summary of findings: gifting flow patterns in developing countries

Study	Country	Gifting Flow
Butz and Stan (1982)	Malaysia	From young to old
Lucas and Stark (1985)	Botswana	Females or female headed households have a higher probability of receiving transfers
Kaufmann and Lindauer (1986)	El Salvador	From high income households to low income households; females or female headed households have a higher probability of receiving transfers
Ravallion and Dearden (1988)	Indonesia	From young to old; transfers to the sick in rural areas; transfers to unemployed households
Cox and Jimenez (1989)	Peru	From middle-aged family members to the young and old; transfers to the sick, but transfer amounts are lower; transfers to the unemployed; targeted to females or female head households; targeted to households whose heads are less educated
Fafchamps and Lund (2003)	Philippines	Transfers to households with unemployed individuals
Cox et al. (2006)	11 Developing Countries†	From richer to poorer, transfers target households headed by women and households with ill individuals
Davies (2011)	Malawi	Transfers to the sick in rural areas; better educated individuals are more likely to receive gifts from parents or children

† The eleven countries are Albania, Bulgaria, Jamaica, Kazakhstan, Kyrgyzstan, Nepal, Nicaragua, Panama, Peru, Russian, and Vietnam.

motives to justify female-targeted gifting. Empirical evidence from sociology and social psychology shows that women are more heavily involved in family services such as caring for extended family members. Under the gift exchange hypothesis, gifts may be a way to compensate women for their services.

In general, private transfers flow from high income households to low income households. This is another pattern found in all eleven countries examined by Cox et al. (2006). Specifically, they conclude that the lower a household's pre-private-transfer income is, the more likely it is that the household will receive a private transfer, and the less likely it is that the

household will give one. In El Salvador, Kaufmann and Lindauer (1986) also find a gifting flow from high to low income individuals . They argue that social networks serve as an income redistributing tool where individuals who fall below a perceived basic need threshold are assisted.

There is mixed evidence regarding the role of education in gifting patterns. As Cox and Jimenez (1989) and Cox et al. (2006) explain, education is correlated with earning ability and size of social networks, and both features are the result of long-term investments developed over an individual's lifetime. Low education levels are often associated with low income, and thus a higher need for assistance from relatives or friends. This indicate that low-educated individuals may receive more gifts. They report empirical support for this effect in Jamaica, Peru, Nepal, and Vietnam. On the other hand, the education level maybe signal the receiver's ability to reciprocate gifts and gain trust from others in their social network. They find that transfers target households whose heads are more educated in Bulgaria and Russia. Davies (2011) examines transfers received from parents and children and finds that education of the receiver increases the chances of receiving gifts in Malawi. In the case of gifts from children, Davies argues that this finding is in line with the idea that having children serve as an "insurance" mechanism.

Other studies also suggest that private transfers help to mitigate the effects of being disabled, ill, or unemployment. For instance, in Indonesia and in Peru, households with unemployed members were more likely to receive a private transfer (Ravallion and Dearden, 1988; Cox and Jimenez, 1989). Fafchamps and Lund (2003) find that gifts were highly responsive to certain shocks in Philippines, such as unemployment of the household head or spouse, or funeral expenses. According to Gertler and Gruber (2002), one of the most serious and least predictable shocks to a household is illness, as it may cause households not only to increase their family expenditure in medical care, but also to lose their wage income if adult family members are the ones affected by illness. In addition, the impacts of illness are further pronounced in developing due to the lack of health insurance coverage. Empirically, Ravallion and Dearden (1988) find that givers assist the sick in rural area of Indonesia, and Cox and Jimenez (1989) find a similar effect in Peru. Cox et al. (2006) offers additional empirical evidence. In their research, they separate households into two groups: "healthy"

and “ill”, with the “ill” group defined as households with one or more members having a chronic illness severe enough for him or her to miss work or limit the daily activities. In all eleven countries of their study, they find that the ill group have a higher fraction of receiving transfers, though the size of the difference varies across countries. Davies (2011) also shows that relatives increase transfers to their family members who have suffered from health shocks in rural Malawi.

# Chapter 3: Conceptual Framework and Hypotheses

Gift giving is a universal ritual. It is not only a material/financial exchange, but also a social, cultural, and economic experience that is inherent across human societies (Camerer, 1988; Joy, 2001). The amount (or value) of the gift may not only reflect the quality of the relationship between the giver and the receiver, but also might play an important role in influencing their future relationships. For instance, giving too little may reveal that you undervalue the relationship, but giving too much can cause embarrassment. Determining the value of the gift is especially important in poor countries because giving an appropriate amount may help poor households to survive adverse events.

Previous research study what influences the amount/value of gifts by examining the relationship between the giver and the receiver, gift motivations, and household demographic status. Belk (1979), Caplow (1982), and Wolfenbarger (1990) show empirically that gifts to kin members are of greater value than gifts to non-kin members. Saad and Gill (2003) find that the allocation of gift expenditures are the highest to romantic partners, followed by those to kin members, then to close friends, and finally those to distant family and step-family members. They argue that this finding can be explained by an evolutionary psychological mechanism. Typically, a gift to a romantic partner is driven by reproductive fitness, to kin members is due to nonreproductive fitness, and gifting to non-kin members are motivated by reciprocal altruism (Saad and Gill, 2003).

Goodwin et al. (1990) provide support to the hypothesis that consumers spend greater amounts on the gifts due to voluntary rather than obligation motives. Mitrut and Nord-

blom (2010) formulated a theoretical model about how social norms, impure altruism, and reciprocity motivate the act of gift giving. They find theoretical support to the idea that rich individuals reciprocate gifts while poor individuals tend to simply receive. Interestingly, impure altruism and reciprocity result in different predictions regarding the relationship between gift values and recipient income. In their empirical analysis, they found that the strength of social norms is important for gift behavior, and positively influence the gift values. Also, they empirically uncovered that poor and non-poor households have different motivations for gift giving, confirming their theoretical predictions.

Other studies conclude that household demographic characteristics also have considerable effects on gift values. Caplow (1982), Cheal (1986) and Fischer and Arnold (1990) find that most gifts are given by women, but more expensive gifts are given by men. Garner and Wagner (1991) observe that the value of annual expenditures for gifts are related to household income, family size, education, and life-cycle stage.

While reciprocity and obligation are examined in the literature in isolation, it might be possible that both factors motivate gift giving. For instance, poor individuals may be inclined to demand gifts and this might crowd-out reciprocity motives of rich individuals. Moreover, as discussed in the introduction, the gift demand by the receiver might be higher than what the giver is prepared to give out of pure altruism. In order to obtain more gifts from givers, receivers may exert coercion on givers. However, no previous work studied how coercion from receivers influence the gift values.

Therefore, we first develop a basic gifting model where gift value is due to the combined effect of altruism and coercion and describe this model in the following sections. Then we contribute to the empirical literature by adding obligation motives to a model with reciprocity, altruism, and social norms and examine the influence of three categories on the value of the gifts: (1) motivations for gift giving, (2) coercion effort during gift giving events, and (3) household demographic factors in Chapter 5.

## 3.1 A Simple Model of Coerced Gift-giving

The objective of this gifting model is to describe how factors like altruism and coercion effort influence gift values. In the next subsection, we begin by presenting a gift value model that only considers the impact of altruism. The altruism model is similar to that of Alger and Weibull (2010), and to a larger extent Marcoul et al. (2017). We then proceed to a gift value model that further considers the coercion impact exerted by receivers.

### 3.1.1 The baseline model: gifting without coercion

Consider households living in an environment where there is no access to market insurance. Households earn income solely from uncertain farming activities. Some households may have a relatively good harvest, while others may have a relatively bad harvest. If households are altruistically connected, the lucky household may provide a gift to the unlucky household. Conversely, unlucky household may want to obtain more gifts from the lucky household and exert *coercion* to extract gifts from the unlucky one.

We consider two identical gifting households  $A$  and  $B$  who share some level of altruism toward each other. Let  $A$  denote the rich (or lucky) household whose crop outcome is high yield (measured in monetary terms by  $y_H$ ). Let  $B$  denote the poor (unlucky) household for which crop outcome is low yield (measured in monetary terms by  $y_L$ , with  $y_H > y_L$ ). After the state of nature is realized and observed by both households, household  $A$  chooses a gift transfer while household  $B$  chooses a gift coercion.

The utility of household  $A$  is made of by its own material payoff and  $B$ 's material payoff, weighted by the existing level of altruism between households  $A$  and  $B$ ,

$$U_A = V_A(y_H) + \lambda V_B(y_L) \tag{3.1}$$

where the parameter  $\lambda \in [0, 1]$  captures the magnitude of  $A$ 's altruism toward  $B$ . Note that we restrict the domain of  $\lambda$  to positive values, such that  $B$  *adds* to  $A$ 's utility.<sup>1</sup> Moreover, we consider  $\lambda \leq 1$  such that we rule out the possibility of  $A$  carrying about  $B$ 's payoff more

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<sup>1</sup>Refer to Bramoullé (2001) for a model of envious individuals.

than A's own payoff.<sup>2</sup>

Let  $t_s$  be the value of the transfer supplied by household  $A$  to  $B$ . This is the gift value that would be freely given by the rich household in the absence of any harassment or pressure from  $B$ . Assuming the material payoff function is  $V = \ln(\cdot)$ , the optimum transfer is given by the solution of

$$\max_{t_s} \ln(y_H - t_s) + \lambda \ln(y_L + t_s) \quad (3.2)$$

The optimal transfer  $t_s$  is:

$$t_s(\lambda) = \begin{cases} 0 & \text{if } \lambda \leq \frac{y_L}{y_H} = \frac{1}{\rho} \\ y_L \frac{\lambda \rho - 1}{1 + \lambda} & \text{if } \lambda > \frac{y_L}{y_H} = \frac{1}{\rho} \end{cases} \quad (3.3)$$

where  $\rho \equiv y_H/y_L > 1$ .<sup>3</sup>

This gifting rule is intuitive. First, when the altruism link between the two households is weak ( $\lambda \leq 1/\rho$ ), the rich household will not provide any gift transfers to the poor household. When the altruism link between the two households is above the threshold  $1/\rho$ , the rich household is willing to provide gifts to the poor household based on their production output differences  $\rho$  and the strength of their altruism link  $\lambda$ .

Similarly, the utility of household  $B$  has two components and it is made of by its own material payoff and household  $A$ 's payoff, weighted by the altruism  $\lambda$ .

$$U_B = V_B(y_L) + \lambda V_A(y_H) \quad (3.4)$$

From the perspective of the poor household, we denote  $t_d$  is the gift value that the poor household demands from household  $A$ . Assuming  $V = \ln(\cdot)$ , the optimal gift demand comes

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<sup>2</sup>Refer to Neilson and Wichmann (2014) for further discussion.

<sup>3</sup>Note that the model predicts that the poor household will not make a gift to the rich one. To see this, assume that the contrary and solve  $\max_{t_d} \ln(y_L + t_d) + \lambda \ln(y_H - t_d)$ . This yields solution  $t_d(\lambda)^* = \max(\frac{\lambda y_L - y_H}{1 + \lambda}, 0) = 0$  for any  $\lambda \in [0, 1]$ .

from the following utility maximization problem:

$$\max_{t_d} \ln(y_L + t_d) + \lambda \ln(y_H - t_d) \quad (3.5)$$

The optimal gift demand function  $t_d$  is defined as:

$$t_d(\lambda) = y_L \frac{\rho - \lambda}{1 + \lambda} \quad (3.6)$$

Our model allows us to examine the relationships between the supply of gift  $t_s$ , the demand of gift  $t_d$ , and the altruism parameter  $\lambda$ . Comparative statics on equations (3.3) and (3.6) reveals the following:

$$\frac{\partial t_s(\lambda)}{\partial \lambda} = \begin{cases} 0 & \text{if } \lambda \leq 1/\rho \\ \frac{y_L(\rho+1)}{(1+\lambda)^2} > 0 & \text{if } \lambda > 1/\rho \end{cases} \quad \frac{\partial t_d(\lambda)}{\partial \lambda} = \frac{-y_L(1+\rho)}{(1+\lambda)^2} < 0 \quad (3.7)$$

An increase in the strength of the altruism link increases the gift transfer supplied from  $A$  to  $B$ , and it decreases the gift demand from  $B$  to  $A$ . The difference between the  $A$ 's gift supply and  $B$ 's gift demand is:

$$t_d(\lambda) - t_s(\lambda) = y_L \frac{(1-\lambda)(1+\rho)}{1+\lambda} > 0 \quad (3.8)$$

The above equation shows that  $t_d > t_s$ , indicating that demands by the poor household are higher than what the rich household is prepared to give out of pure altruism. Therefore, there is a conflict between the giver and the receiver. In order to obtain more gifts, it is highly possible that the poor household will exercise pressure or coercion on the rich household.

### 3.1.2 Gifting with coercion

We now consider the case where the poor household can exert coercion on the rich household to obtain more gifts. Assume that the coercion can be successful or not, and the probability of success depends on the coercion effort  $s \in [0, 1]$ .<sup>4</sup> If  $B$  is successful in coercing  $A$ , then  $B$

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<sup>4</sup>Our intuition is that coercion effort maps into a probability, i.e.  $p = p(s)$ . Note that the simplification of using  $p(s) = s$  is without loss of generality.

receives its demanded gift transfer  $t_d$  from  $A$ . If  $B$ 's coercion fails, then  $B$  receives  $t_s$ .

The allocation of coercion effort is costly. Let the coercion cost depend on the strengths of social norms regarding mutual-help practices ( $\beta$ ) and altruism link ( $\lambda$ ). We assume that  $\beta$  reflects the social awkwardness of asking an individual for a gift. For simplicity, we assume the following coercion cost function:  $\frac{\beta s^2}{2\lambda}$ . Note that when  $\beta$  is small, requests for gifts are socially acceptable and cost is low. The cost also decreases when the altruism link between households  $A$  and  $B$  becomes stronger. This feature reflects the fact that it is always harder to ask for a gift to someone who does not share strong altruism with us (e.g., a stranger).

The optimal coercion effort ( $s$ ) is obtained by solving the following expected utility maximization problem<sup>5</sup>:

$$\max_s s[\ln(y_L + t_d) + \lambda \ln(y_H - t_d)] + (1 - s)[\ln(y_L + t_s) + \lambda \ln(y_H - t_s)] - \frac{\beta s^2}{2\lambda} \quad (3.9)$$

Recall that when the altruism between the two households is lower than  $1/\rho$ , household  $A$  will not transfer any gifts to the household  $B$ . Therefore, we consider two alternative environments.

**Environment 1:** low altruism,  $\lambda \leq 1/\rho$ ,  $t_s = 0$ .

When altruism is low, the optimal level of coercion that household  $B$  exerts is:

$$s_1 = \frac{\lambda}{\beta} \left[ (1 + \lambda) \ln\left(\frac{\rho + 1}{\lambda + 1}\right) + \lambda \ln\left(\frac{\lambda}{\rho}\right) \right] \quad (3.10)$$

**Environment 2:** high altruism,  $\lambda > 1/\rho$ ,  $t_s = y_L \frac{\lambda\rho - 1}{1 + \lambda}$ .

Similarly, when altruism is high, the optimal level of coercion is:

$$s_2 = -\frac{(1 - \lambda)\lambda \ln \lambda}{\beta} \quad (3.11)$$

---

<sup>5</sup>Note that our model does not allow coercion to “backfire” such that the transfer when coercion is exerted but not successful is equal to the voluntary transfer  $t_s$  and not lower. That is an extension that could be considered in an investigation of gifting with spite motives.

Combining equations (3.10) and (3.11) together, we can write the optimal coercion effort level as a function of the altruism link between  $B$  (coercive household) and  $A$  (coerced household).

$$s(\lambda) = \begin{cases} \frac{\lambda}{\beta}[(1 + \lambda) \ln \frac{\rho+1}{\lambda+1} + \lambda \ln \frac{\lambda}{\rho}] & \text{if } \lambda \leq 1/\rho \\ -\frac{(1-\lambda)\lambda \ln \lambda}{\beta} & \text{if } \lambda > 1/\rho \end{cases} \quad (3.12)$$

It is useful to plot the relationship between coercion effort and altruism. Figure 3.1 shows this relationship assuming  $\rho = 4$  and two levels of social norms of mutual-help: high ( $\beta = 1$  – light line) and low ( $\beta = 0.4$  – dark line). Recall that a lower  $\beta$  represents a lower cost of coercion effort (representing a society where request for gifts are socially acceptable). Intuitively, we observe the “dark” line always has higher coercion level than the “light” line.

However, both lines show similar patterns for the changes of coercion level with altruism. For low levels of altruism, the poor household  $B$  increases its coercion level on the giver  $A$  when the altruism link between them becomes stronger. This happens because the cost for a poor household to extract a gift decreases with the increasing altruism link. But as the altruism level further increases, the rise in coercion level stops at  $\lambda = 0.25 = 1/\rho$ . At higher levels of altruism, the receiver starts to decrease its level of coercion. This happens because concerns over the giver’s utility become sufficiently important to the receiver.

Our framework allows us to calculate the expected transfer  $\hat{t}$  from  $A$  to  $B$  under coercion:

$$\hat{t} = st_d + (1 - s)t_s \quad (3.13)$$

As coercion effort is non-differentiable at  $1/\rho$ , we again must consider two environments to calculate  $\hat{t}$ .

**Environment 1:** low altruism,  $\lambda \leq 1/\rho$ ,  $t_s = 0$ .

$$\hat{t}_1 = s_1 t_d \quad (3.14)$$

**Environment 2:** high altruism,  $\lambda > 1/\rho$ ,  $t_s = y_L \frac{\lambda^{\rho-1}}{1+\lambda}$ .

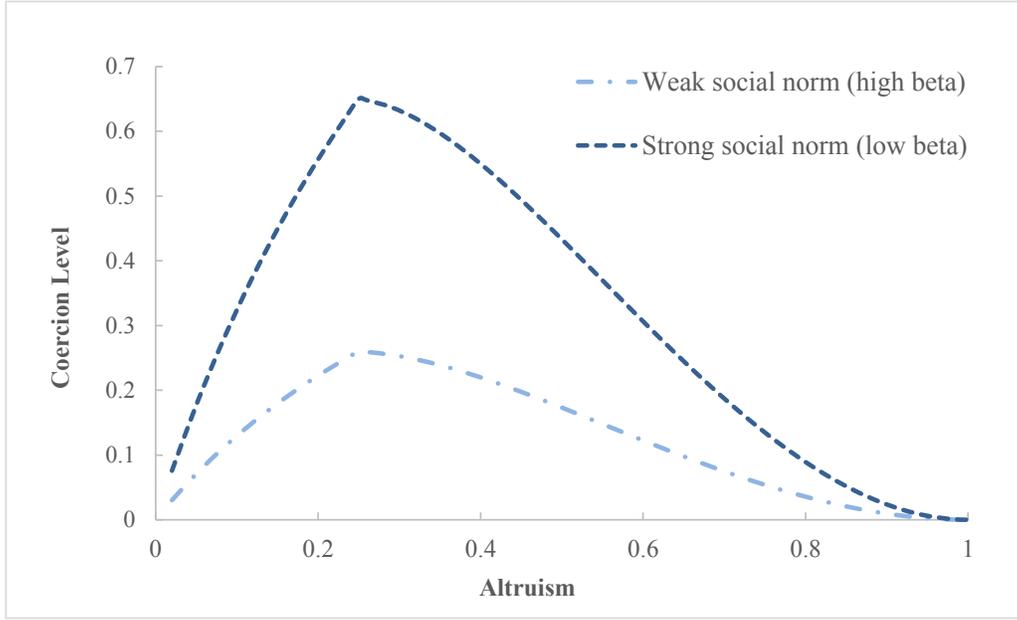


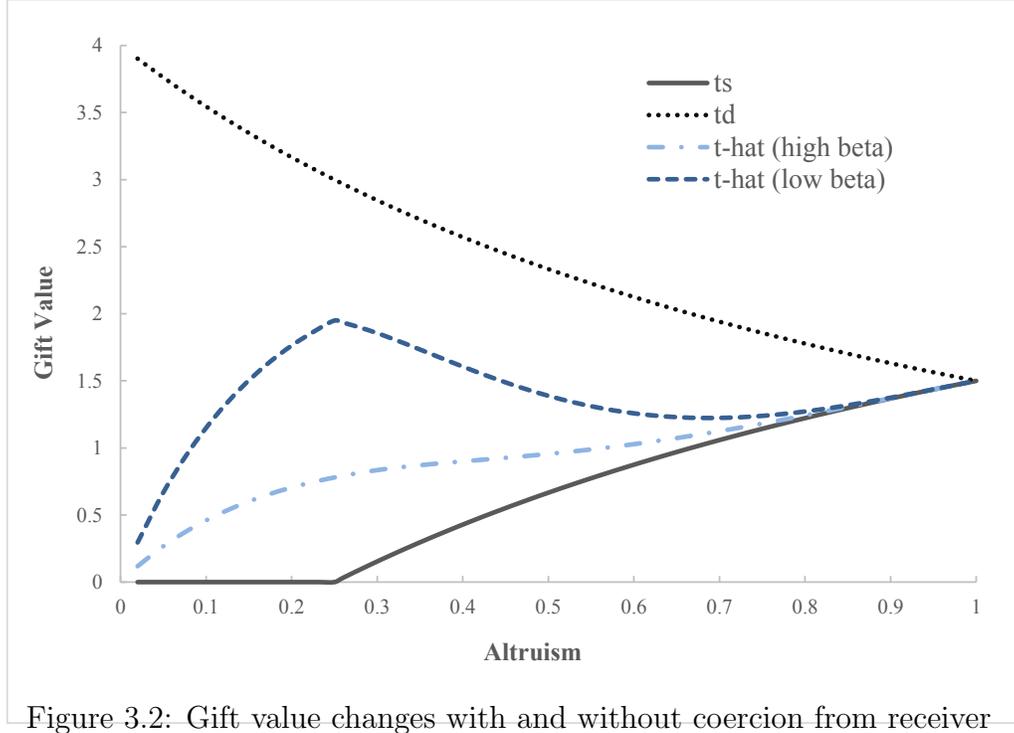
Figure 3.1: Graphical depiction of coercion effort choice as a function of altruism

$$\hat{t}_2 = s_2 t_d + (1 - s_2) t_s \quad (3.15)$$

The poor household  $B$ 's expected receiving gift value can be obtained by combining equations (3.14) and (3.15):

$$\hat{t}(\lambda) = \begin{cases} y_L \frac{\lambda(\rho-\lambda)}{\beta(1+\lambda)} [(1+\lambda) \ln \frac{\rho+1}{\lambda+1} + \lambda \ln \frac{\lambda}{\rho}] & \text{if } \lambda \leq 1/\rho \\ \frac{y_L}{1+\lambda} [-\frac{(\rho+1)(1-\lambda)^2 \lambda \ln \lambda}{\beta} + \lambda \rho - 1] & \text{if } \lambda > 1/\rho \end{cases} \quad (3.16)$$

Figure 3.2 shows the relationship between  $t_s$ ,  $t_d$ ,  $\hat{t}$  and the strength of the altruism link  $\lambda$  for  $\rho = 4$ . Recall that the  $t_s(\lambda)$  line represents the gift value that giver is willing to give without receiving any pressure. When the altruism link between the households is small ( $\lambda \leq 1/\rho = 0.25$ ), the giver does not care enough about the well-being of the receiver to gift. Above this threshold, however, the altruism link is strong enough and the rich household is willing to supply gifts (equation (3.7)). The  $t_d(\lambda)$  line represents the gift value that the receiver demands from the giver without exerting coercion on the giver. Again according to equation (3.7), the receiver's gift demand decreases with the kinship. It is easy to observe that when altruism is equal to 1 ( $\lambda = 1$ ), the voluntary gift supply is equal to the gift demand. This is because both the giver and the receiver fully internalize each other's material payoff.



The figure also shows the expected transfer from the rich household  $A$  to the poor household  $B$ . We plot  $\hat{t}$  assuming  $\beta = 0.4$  (strong social norm – dark line) and  $\beta = 1$  (weak social norm – light line). Not surprisingly, the expected value  $\hat{t}$  lies between  $t_d$  and  $t_s$ . In both the weak and strong norm cases, for a weak altruism link ( $\lambda \leq 1/\rho = 0.25$ ), the expected transfer rises with  $\lambda$ . This might seem like a counter intuitive result as both  $t_d$  and  $t_s$  are not increasing with  $\lambda$  at this range. Note, however, that this results is a function of the boosted coercion exerted by the poor household (see equation (3.13) and figure 3.1). In fact, when society strongly penalizes coercion (i.e. high  $\beta$  representing a weak mutual help norm – light line), the increase in  $\hat{t}$  is attenuated. For high levels of  $\lambda$ , however, the two lines show different trends reflecting interesting effects of different social norms on the expected transfer.

We finalize the discussion of our conceptual framework by highlighting an important result: coercion can be an effective mechanism for extracting rents. To see why, we define the expected gains from coercion as the difference between the expected transfer under coercion and the voluntary gift supply, i.e.  $\hat{t}_{\text{GAIN}} = \hat{t} - t_s$ . Naturally, these expected gains depend on the strength of the altruism link:

$$\hat{t}_{\text{GAIN}}(\lambda) = \begin{cases} s_1 t_d = y_L \frac{\lambda(\rho-\lambda)}{\beta(1+\lambda)} \left[ (1+\lambda) \ln \frac{\rho+1}{\lambda+1} + \lambda \ln \frac{\lambda}{\rho} \right] & \text{if } \lambda \leq 1/\rho \\ s_2(t_d - t_s) = \frac{y_L}{1+\lambda} \left[ -\frac{(\rho+1)(1-\lambda)^2 \lambda \ln \lambda}{\beta} \right] & \text{if } \lambda > 1/\rho \end{cases} \quad (3.17)$$

Again, we use plots to discuss the intuition behind gifts and altruism. Figure 3.3 shows the expected gains from coercion as a function of altruism under the two social norms of mutual help cases: weak norm ( $\beta = 1$  – light line) and high norm ( $\beta = 0.4$  – dark line). For low values of  $\lambda$ , both lines suggest that when the receiver is able to exert coercion on the giver, the receiver expects to receive higher values as the strength of altruism increases. The expected gains are maximized when  $\lambda = 1/\rho$ . Notice that at  $\lambda = 1/\rho$  coercion is also maximized (see figure 3.1). After reaching this threshold, expected gains decrease with altruism no matter at what levels of social norms.

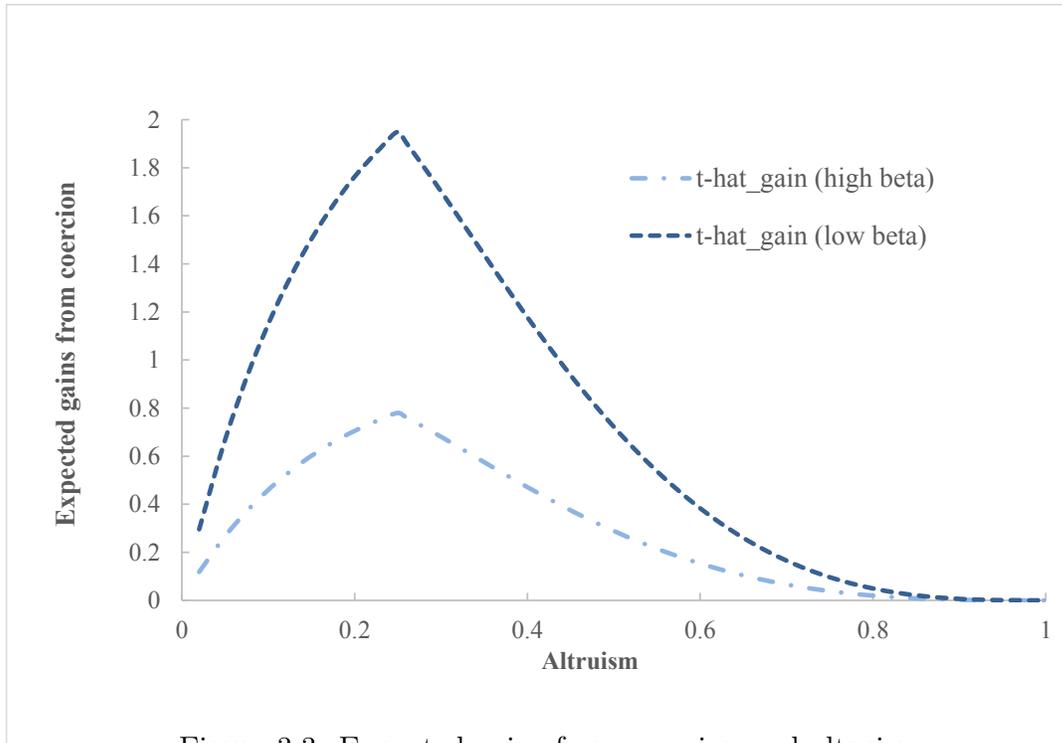


Figure 3.3: Expected gains from coercion and altruism

## 3.2 Hypotheses

The next objective of the paper is to empirically test the main relationships described in our conceptual framework. In our framework, when altruism is low ( $\lambda \leq 1/\rho$ ), both coercion and the expected transfer increase with altruism. For high levels of altruism ( $\lambda > 1/\rho$ ), coercion decreases with altruism. However, the relationship between the value and altruism can be increasing (low mutual-help norm) or decreasing/U-shaped (high mutual-help norm). Our data allows us to test three hypotheses under the perspective that coercion might be used as a tool to receive gift transfers:

**Hypothesis 1.** In general, gift values vary with the strength of the altruism link.

- 1a. When coercion is not present, the gift supply increases with altruism.
- 1b. When coercion is present, the expected transfer varies with altruism.

**Hypothesis 2.** Coercion has an inverted-U shape relationship with the strength of the altruism link.

**Hypothesis 3.** When coercion is present, the expected gains from coercion has an inverted-U shape relationship with the strength of the altruism link.

Note that these hypotheses match relationships graphically demonstrated above. For instance, when we examine the supply of gift in an environment *without* coercion, it presents a non-decreasing relationship with altruism. This is Hypothesis 1a and it is shown by the solid line ( $t_s$ ) of Figure 3.2. Hypothesis 1b refers to the dashed curves ( $\hat{t}$ ) in Figure 3.2. Hypothesis 2 indicates the relationship between the level of coercion effort and altruism which is shown in Figure 3.1. Hypothesis 3 suggests the relationship between expected gains and altruism which is shown in Figure 3.3.

# Chapter 4: Sampling and the Study Area

## 4.1 Survey Instrument

This research is part of a larger project named - Integrating Dairy Goat and Root Crop Production for Increasing Food, Nutrition and Income Security of Smallholder Farmers in Tanzania (CGP Tanzania). This project was undertaken with the financial support of the International Development Research Consortium (IDRC) and the Government of Canada, provided through Canadian International Development Agency (CIDA). The main purpose of the project is to promote participatory development of dairy goat and root crop systems to improve household income, food security, and the well-being of poor families in rural Tanzania.

Data used for this study was collected through a baseline survey in two Districts of Tanzania in 2014, Kongwa and Mvomero. The criteria for site collection focused on conditions that reflect the reality of rural Tanzania, specifically food insecurity. Nevertheless, the project also looked for the availability of land for root crops cultivation. The two sites have very distinct climatic conditions, with Mvomero having more favorable climate conditions.<sup>1</sup> The location of the two Districts is presented in Figure 4.1.

All 373 participating households were randomly selected from these districts. The location of the chosen households is presented in Figure 4.2. Households that participated in the survey were requested to answer a questionnaire eliciting general household demographic

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<sup>1</sup>Refer to section 4.3 for a discussion.

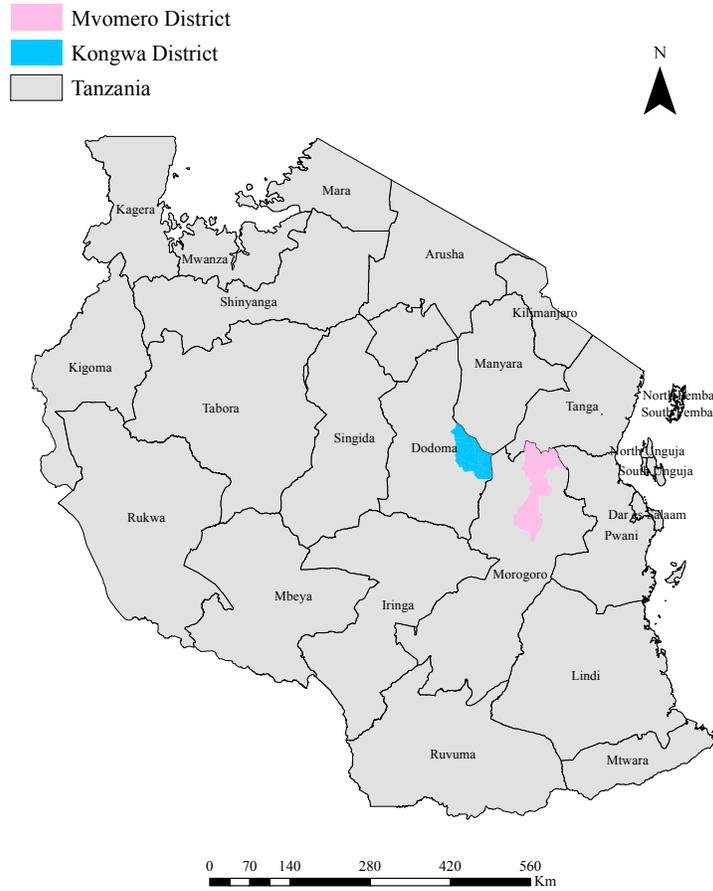


Figure 4.1: Tanzania map

information, asset information, income, expenditure, food security, crop inputs, and crop production. The survey also elicited information about gift transfers.<sup>2</sup>

## 4.2 Tanzania

Tanzania is one of the largest countries in Africa and has a total land area of 945,087 square kilometers. The population in Tanzania approached 53.5 million in 2015, with approximately 12 million Tanzanians living in extreme poverty, i.e. earning less than 0.60 US dollar per day (World Bank, 2017). In fact, Tanzania ranks among the world’s poorest countries.

Since the early 2000s, Tanzania has seen remarkable economic growth and a strong re-

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<sup>2</sup>A detailed discussion about the gifting data is presented in Chapter 5.

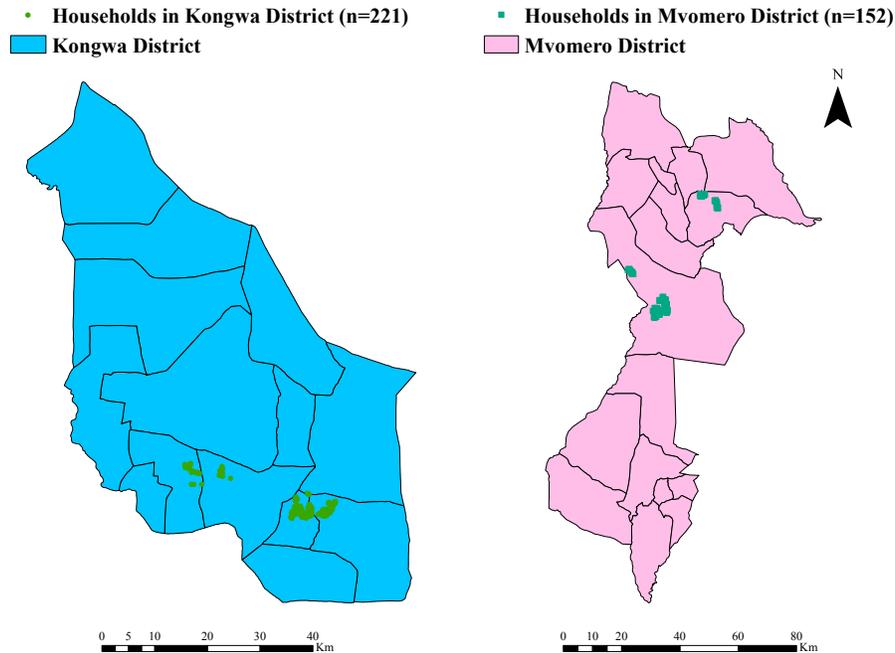


Figure 4.2: Households in two Districts of Tanzania

silience to external shocks. According to the World Bank (2017), the country has made great improvements in economic and structural reforms, which facilitated the relatively stable and high growth performance over the last decade (6.5 percent per annum). While the poverty rate has declined recently, from 33.3 % in 2007 to an estimated 28.2 % in 2011, the absolute number of the poor has not changed given the fast pace of population growth (over 3 percent per annum) (World Bank, 2017). The failure of economic growth to reduce poverty in Tanzania has attracted much debate. According to the Food and Agriculture Organization of the United Nations (FAO hereafter), agriculture is a key sector of Tanzania’s economy accounting for 30% of GDP and 85% of exports (FAO, 2014). Moreover, 76% of Tanzanians earns their living from agriculture (Heifer Tanzania, 2017). Smith (2011) argues that the failure of Tanzania’s rural agrarian economy to transform rapidly enough to keep up with population growth is an important development challenge. Smith also finds that the poorest ten percent are benefiting the least from the recent economic growth.

The FAO (2014) report offers detailed information about agricultural production in Tanzania. The crop production is mainly rain-fed and dominated by smallholder farmers. The

majority of households grow food crops for domestic consumption, with surplus for selling in villages. The average plot size is around 2.2 to 7.4 acres. Main food crops are maize, cassava, potatoes, sorghum, and rice. Around 45% of farmers use hand hoe to cultivate land areas, 20% use oxen, and only 10% use tractors. The low land productivity is mainly due to the use of poor technology and heavy dependence on weather conditions. Furthermore, farmers continue to suffer high post-harvest losses through diseases and pest infestation.

Our study area – Tanzania – offers an interesting setting for examining gifting behavior. This is due to two main factors. First, Tanzania is a country with limited access to formal insurance. Most households rely on agriculture and face all kinds of risks and shocks. These include: unexpected crop price movements, natural disasters, such as drought, and idiosyncratic shocks such as death or illness of members (Banerjee and Duflo, 2012; Smith, 2011). As discussed in our conceptual framework, gifting transfers may increase the wellbeing of households negatively affected by these shocks. Second, people in rural regions of developing and poor countries live in villages and have access to extensive social networks. These networks have been shown to be an important resource as they function as informal safety nets (Munshi and Rosenzweig, 2016; Johny et al., 2017).

### **4.3 Kongwa and Mvomero**

This section briefly compares the demographic, geographic, and economic characteristics of the two districts in our study area. Kongwa is one of seven districts in the Dodoma Region of Tanzania. According to the 2012 Tanzania National Census, the population of Kongwa District was 309,973, with the average household size of 5 persons (Population and Housing Census, 2013). Kongwa covers a total area of 4,041 square kilometers and around 80% of the area is suitable for agricultural farming. Mvomero is one of six districts in the Morogoro Region of Tanzania. Its total population is estimated to be 312,109, with average household size of 4.3 persons per household (Population and Housing Census, 2013). Mvomero covers a total area of 10,329 square kilometers with 64% of arable area.

The main economic activities in the two District are crop productions, including both cash and food crops (cash crops include sunflower and sugarcane, food crops include maize,

cassava, and sweet potato). These two districts have distinct climatic and agro-ecological conditions. Rainfall in Kongwa ranges between 400-800mm while in Mvomero ranges between 600-2000mm. In Kongwa, agricultural production mainly relies on rainfalls while both rainfall and some irrigation is used in Mvomero.

Table 4.1 provides summary statistics of basic economic variable for the two Districts. Household sizes in both Districts are greater than the recorded data in the 2012 Tanzania Population and Housing Census. For the crop plot size, both Districts' average plot size are within the Census range. There is a significant difference in crop yields and income between the two Districts, possibly due to different rainfall ranges and irrigation methods.

Table 4.1: Summary statistics by District

	Kongwa			Mvomero		
	Obs.	Mean	S.D.	Obs.	Mean	S.D.
Household size	221	6.38	2.84	152	5.61	2.40
Plot size (acre)	213	3.70	3.16	132	2.91	2.34
Production (Kg/acre)	213	102.93	92.60	132	278.66	231.25
Income (TZS)	200	600,391	1,273,060	136	2,206,769	3,853,947

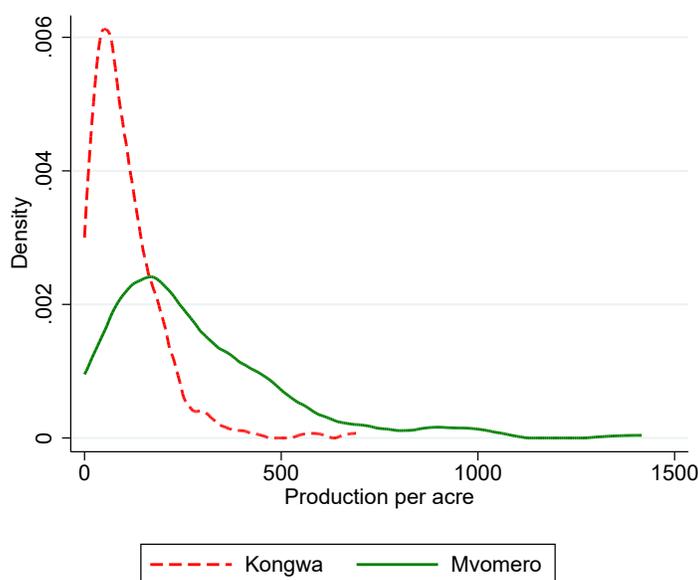


Figure 4.3: Distribution of crop yields by District

Finally, differences in production between the two Districts are further illustrated in Figure 4.3. The Figure shows the distribution of crop production per acre, by District. The yield distribution of Kongwa is relatively narrow around lower productivity levels while yields are significantly more unpredictable in Mvomero.

# Chapter 5: Empirical Analysis of Gifting in Tanzania

## 5.1 Data Overview

We empirically investigate the key relationships between gift value, altruism, and coercion (key components in the gifting model). Our survey instrument allows us to use gift level information to construct variables measuring the value of the gift, the strength of altruism between giver and receiver, and whether or not coercion was a factor during gifting.

Households were asked how often in the last three months “did you, or anyone in your household, *give* cassava, sweet potato, and other gifts.”<sup>1</sup> For every gift transfer, in the case of cassava and sweet potato, the survey instrument recorded gift quantities in kilograms. For other gifts, the survey recorded the monetary value of the gift (in Tanzania Shillings - TZS).<sup>2</sup> In order to empirically analyze all gifts, we calculate the monetary values of cassava and sweet potato using market price of cassava and/or sweet potatoes in 2014 (Food Prices in Tanzania, 2017). The survey instrument also collected information about gifts *received*. Hence, for each household, gifting activities consists of both gifts given and received, with information on both frequencies and values available for the empirical analysis under both the giving and receiving perspectives.

We define *gifting household* as a household that was involved in *at least one gifting transaction*, i.e. a household that either gave or received gifts. Table 5.1 shows summary statistics on gift transactions. Our survey recorded 462 gifting transactions, with 237 re-

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<sup>1</sup>Cassava and sweet potato are among the main crops of the region.

<sup>2</sup>The exchange rate in 2014 was 1 USD = 2260 TZS.

ported by givers and 225 reported by receivers. Gifting transactions are common in rural Tanzania and 51% (191 out of the 373) of households in our samples are involved in gifting. Most households (114 out of 191) both give and receive gifts while 51 households gave but did not receive and 26 received but did not give. Pooling together all data, 165 out of the 191 households are involved in gift giving at least once, and the average giving times and values (in TZS) for these households are 1.44 and 14,670, respectively. Also pooling all gifting data together, 140 out of the 191 households are involved in gift receiving at least once, and the average receiving times and values (in TZS) are 1.61 and 16,330, respectively.<sup>3</sup>

Table 5.1: Summary statistics: gift transactions

	Number of households	Total times	Average times	Average values (TZS)
All gifts	191	462	2.42	15,546
Households that gave <i>and</i> received gifts	114	354	3.11	17,121
Households that only gave gifts	51	68	1.33	18,062
Households that only received gifts	26	40	1.54	10,958
All given gifts	165	237	1.44	14,670
All received gifts	140	225	1.61	16,330

Similar to Marcoul et al. (2017), the strength of the altruism link is measured by the genetic relatedness between the giver and receiver. For each gift transaction, the survey instrument recorded three “types” of relationship between giver and receiver: 1) friends and extended family member (abbr: fr), 2) close family member (abbr: cf), and 3) parents/kids (abbr: pk). To measure the altruism link, we assume that the altruism strength increases as we move from category 1 to 3, hence, the ordering of these groups reflects the assumptions regarding the increasing levels of empathy between giver and receiver.<sup>4</sup> Our altruism measure reflects *kin altruism*, i.e. altruistic behavior whose evolution is driven by kin selection. This type of altruism has its foundation in Hamilton’s rule, that states that kin selection causes genes to increase in frequency (Hamilton, 1964a,b).

Another key variable of our analysis is coercion. Here, our empirical application faces

<sup>3</sup>One gifting observation reported a giving value of TZS 280,000.00, i.e. almost 20 times higher than the average gift value. We deemed this observation as an outlier and removed it from the analysis.

<sup>4</sup>We present summary statistics for altruism link in section 5.2.1.

a limitation. While coercion is conceptualized as a continuous variable in our theoretical framework, it is challenging to collect coercion proxies in such a continuous way. However, for each gift, the survey instrument records two indicators that capture whether or not coercion was a factor in the gifting transaction. The first indicator records gift *requests*. Under the giving perspective, respondents answered whether or not the gift was requested by the receiver. Under the receiving perspective, respondents answered whether or not they requested the received gift. The second indicator records whether or not the receiver household received the gift due to an *emergency*.<sup>5</sup> Under the giving perspective, this information was reported by the giver, and under the receiving perspective by the receiver. We assume that coercion exists if either factor is present in the gifting transaction.<sup>6</sup>

## 5.2 Gifting, Altruism, and Coercion

We empirically investigate the main relationships described in our conceptual gifting framework. Specifically, in the following subsections, we use our Tanzania data to examine the relationships between gifting and altruism (section 5.2.1) and gifting and coercion (section 5.2.2). We follow these analyses with an examination of gender effects (section 5.3.1) and gifting motives (section 5.3.2). Next, section 5.4 presents a comprehensive empirical analysis of gifting using a regression model.

### 5.2.1 Gift values and altruism

Table 5.2 shows the number of gifting occasions and the mean value of gifts (in TZS) for monetary, in-kind, and total gifts, where total represents the aggregation of money and in-kind gifts. In-kind gifts are more frequent than monetary gifts. This may be partially due to in-kind gifts being more common than monetary gifts for traditional ceremonies and religious events (Mitrut and Nordblom, 2010). In general, it seems that households are slightly more

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<sup>5</sup>In rural Tanzania, the word “*mchango*” which literally means “contribution” is used whenever farmers incur a shock that is beyond their control (e.g., poor harvest) and request a gift from a friend or family (?). Thus, it is regarded as a social obligation from the potential giver to make this gift. Of course, givers often feel coerced into giving whenever “*mchango*” is involved.

<sup>6</sup>We present summary statistics for coercion in section 5.2.2.

likely to report gift giving events than gift receiving events. 225 gifting occasions were recorded from the giving perspective, while only 211 from the receiving perspective. This is particularly true for gifts from and to close family members (107 giving and 95 receiving).

The table also shows that the mean values of in-kind gifts given are slightly higher than that of in-kinds gift received. This is a common finding in the literature and might be due to recall bias, where people tend to admit more easily that they have given than that they have received, and overstate their generosity (Kessler and Masson, 1989; Mitrut and Nordblom, 2010). However, for monetary gifts, reported values received exceed reported values given. A possible explanation is that part of these transfers might consist of remittances from individuals outside of our sampled villages. When we combine both money and in-kinds gifts, the difference between receiving and giving mean values is attenuated. All these descriptive evidences are consistent with what Mitrut and Nordblom (2010) found in Romania.

The mean values of monetary gifts are higher than that of in-kinds gifts. For both monetary and in-kind gifts, the highest mean value transferred are between parents and kids (both in the giving and receiving perspectives). The table shows that the mean gift value among close family are much lower, and it decreases further for gifts between friends and/or extended family. In fact, (two-sided) t-tests on total mean gift values between friends/extended family and parents/kids reject the null of no difference both under the giving ( $p < 0.004$ ) and receiving ( $p < 0.005$ ) perspectives.

Table 5.2: Gifts to and from individuals by relationship between giver and receiver

	Money		In-kind		Total	
	Times	Mean Value	Times	Mean Value	Times	Mean Value
Respondent is giving						
To friends/extended family	8	23,125	93	10,343	101	11,356
To close family	13	32,231	94	12,397	107	14,807
To their parents/kids	6	35,000	11	30,727	17	32,235
Respondent is receiving						
From friends/extended family	15	33,000	82	10,089	97	13,632
From close family	18	44,722	77	10,535	95	17,013
From their parents/kids	7	50,429	12	17,600	19	29,695

Another way to describe the information in Table 5.2 is to graphically present the results of kernel regressions of mean gift values on altruism. Figure 5.1 shows the predicted relationships, separating giving and receiving perspectives. We find that values increase with the strength of the altruism link, with a steeper slope from close family to parents/kids.

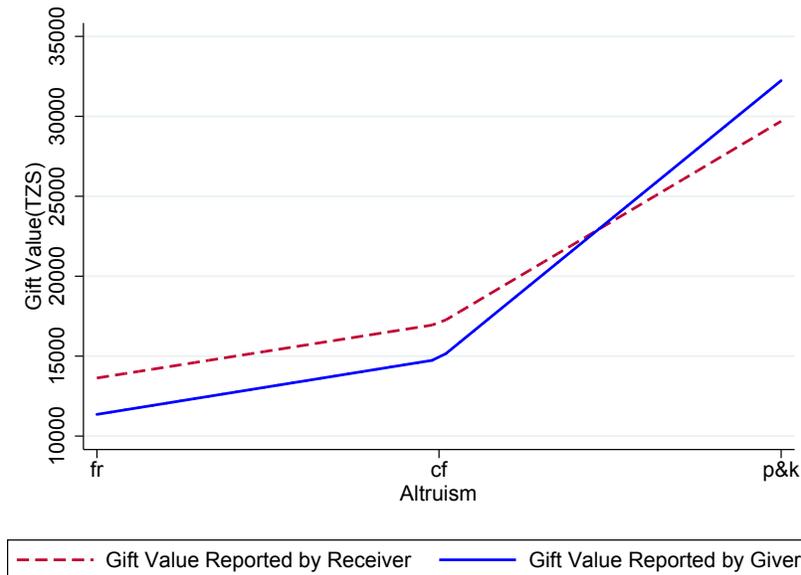


Figure 5.1: Gifting and altruism: receiving and giving perspectives

We also aggregate the gift-level data to the household level by averaging the values of the gifts and our measure of Altruism, pooling together both giving and receiving perspectives. This increases our sample size and allows us to obtain a more continuous variable of altruism, that only takes three discrete values (1, 2, and 3) in the gift-level dataset.<sup>7</sup> Figure 5.2 plots mean values of total gifts and altruism for the 191 gifting households in our sample, along with the linear prediction of their relationship. We again find that the value of gift transfers increase with altruism.

In summary, this section offers a range of empirical support to Hypothesis 1, namely that gift values vary with the strength of the altruism link. This result is in line with previous empirical findings that gifts to kin members are of greater value than those to friends/non-kin members (Belk, 1979; Caplow, 1982; Wolfinbarger, 1990; Saad and Gill, 2003). Next, we examine how gifts and altruism behave with and without coercion.

<sup>7</sup>For instance, if a household gave two gifts, one is from parents/kids and one is from close family, then the measure of altruism related to this household is 2.5. The altruism variable is discussed in section 5.1.

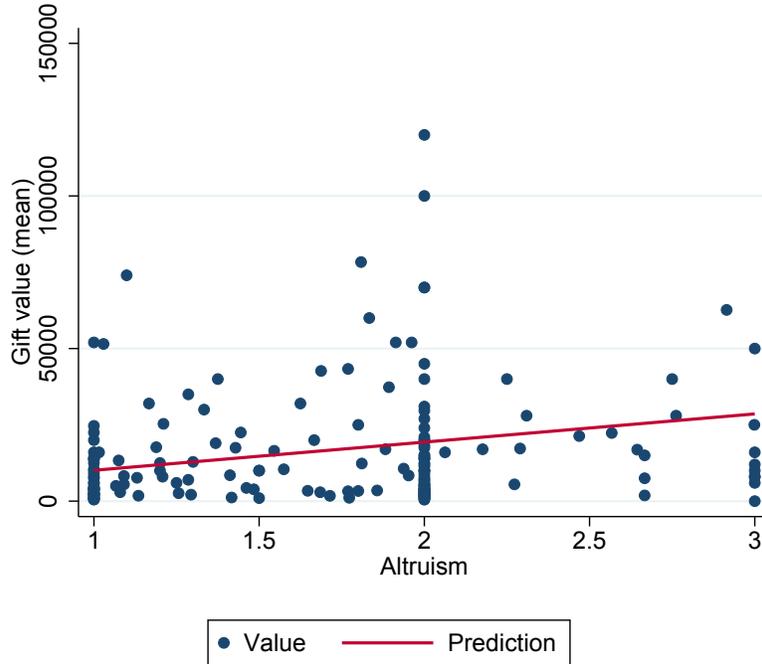


Figure 5.2: Gifting and altruism aggregated to the household level

### 5.2.2 Gift values and coercion

Table 5.3 shows a count of gift occasions and mean gift values, with and without coercion. When coercion is not present, gift values increase with altruism. From the giver’s perspective, values increase from TZS 12,078 for gifts between friends/extended family to TZS 34,125 for gifts between parents/kids ( $p < 0.006$ , two-sided t-tests). In the receiving perspective, values increase from TZS 13,797 for gifts between friends/extended family to TZS 31,513 for gifts between parents/kids ( $p < 0.005$ , two-sided t-tests). This finding is in line with Hypothesis 1a that the gift supply increases with altruism.

The right-hand side of Table 5.3 shows gifts when coercion is present. The mean values show a inverted-U shape relationship between gift values and altruism. In the giving perspective, values first increase from TZS 7,519 (friends/extended family) to TZS 11,273 (close family), and then decrease to TZS 2,000 (parents/kids). We find a similar result for the receiving perspective, where gift values are 14,911, 31,667, 20,000 (TZS) as altruism increases. Here, the small sample sizes deteriorate the power of t-tests and these differences are not statistically significant. Nevertheless, qualitatively, this finding is in line with Hypothesis

1b and is consistent with patterns from a high mutual-help norm (see Figure 3.2, t-hat, low beta curve).

Table 5.3: Gifting with and without coercion

	No coercion		Coercion	
	Times	Mean value	Times	Mean value
Respondents giving				
To friends/extended family	85	12,078	16	7,519
To close family	81	15,941	26	11,273
To their parents/kids	16	34,125	1	2,000
Respondents receiving				
From friends/extended family	88	13,797	9	14,911
From close family	83	14,894	12	31,667
From their parents/kids	16	31,513	3	20,000

The frequencies of coercive gifting offers support to Hypothesis 2, inverted-U shape relationship between coercion and altruism. To see this, note that gifting occasions under coercion increase from 16 – or 37% of occasions – (friends/extended family) to 26 – or 61% of occasions – (close family) and decreases to 1 – or 2% of occasions – (parents/kids), for the giving perspective. Tests of proportions reject the null that the first two proportions are the same (0.37 vs. 0.61, with  $p < 0.031$ ), and also reject that the last two proportions are the same (0.61 vs. 0.02, with  $p < 0.001$ ). Under the receiving perspective, we cannot reject the null that the difference in proportions from friends/extended family (9 out of 24, or 37.5%) to close family (12 out of 24, or 50%) is equal to zero ( $p < 0.3827$ ). However, with ( $p < 0.0051$ ), we reject the null that for difference in proportions between close family (12 out of 24, or 50%) and parents/kids (3 out of 24, or 12.5%).

As a final examination of the relationship between coercion and altruism, we again aggregate data to the household level. Using this data, our altruism variable ranges from 1 to 3.<sup>8</sup> To obtain a household-level measure of coercion, for all gifting households we measure the proportion of gifting occasions in which the receiver exerted coercion on the giver, pooling together the receiving and giving perspectives. Again, this approach has two advantages: it increases the sample size and; it generates a more continuous variable of coercion, that is

<sup>8</sup>See discussion of Figure 5.2 in the previous section.

captured as a dummy variable in the gift-level dataset. To capture the nonlinear relationship between coercion and altruism predicted by our theory, we use kernel regressions of the coercion proportion on altruism. Figure 5.3 shows a scatter plot of coercion and altruism, along with the nonlinear prediction of their relationship. The figure provides further evidence in favor of Hypothesis 2, showing coercion (measured in terms of proportion) as an inverted-U shape function of altruism.

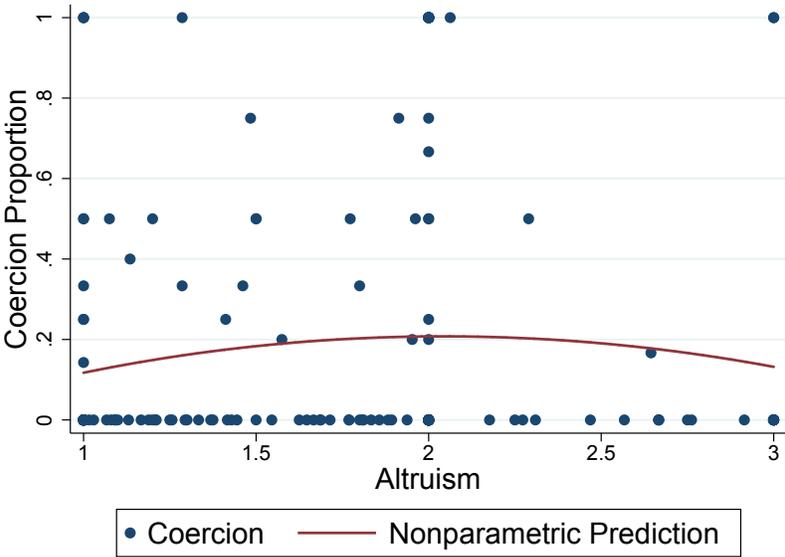


Figure 5.3: Coercion and altruism aggregated to the household level

Finally, we can examine whether or not receiving households benefit from exerting coercion. According to our framework (Hypothesis 3), expected gains from coercion are maximized at a ‘moderate’ level of altruism (see Figure 3.3). The economic intuition of this result follows from the assumption that households care about each other and material payoffs are connected. When the strength of this altruistic connection is low, coercion is very costly (for instance, it is harder to coerce strangers than friends). In this situation, gains from coercion are expected to be small. When altruism is high, however, the reduction in the material payoff of the giver significantly affects the receiver’s utility, hence, gains from coercion are also small.

We can test for this relationship using data presented on Table 5.3 by comparing mean gift values with and without coercion, holding altruism constant. Under the giving perspective,

mean gift values between friends/extended family are TZS 7,519 and TZS 12,078, with and without coercion, respectively. We cannot reject the null that this difference is equal to zero (two sided t-test,  $p < 0.4571$ ). We find a similar result for the receiving perspective (13,797 vs. 14,911, with  $p < 0.8419$ ). For our strongest level of altruism, i.e. gifts between parents and kids, we also do not find statistical evidence of increased gift values (or gains) from coercion (31,513 vs. 20,000, with  $p < 0.5799$ ).<sup>9</sup>

Interestingly, for our ‘moderate’ level of altruism, i.e. gifts between close family members, we find a statistically significant difference between gifts value received with and without coercion (31,667 vs 14,894, two sided t-test,  $p < 0.0483$ ). This difference is not statistically significant in the giving perspective. Nevertheless, the finding under the receiving perspective provides empirical support for Hypothesis 3.

## 5.3 Gifting, Gender, and Motivations

### 5.3.1 Gift values and gender

Previous studies have shown that gift giving is gender based, with women assuming primary responsibility for giving gifts (Caplow, 1982; Cheal, 1986; Fischer and Arnold, 1990). Our dataset allows us to explore how the gift occurrences and gift values vary by gender in Tanzania. Table 5.4 shows gifting data by gender. Women give gifts significantly more often than men. Our data shows that 69% (155 out of 225 given gifts) of gifts are given by females. Women also receive gifts more often than men (76%, or 161 out of 211 received gifts).<sup>10</sup> In both giving and receiving cases, we reject the null of equal proportions between male and female with  $p < 0.001$ .

Despite of giving and receiving more gifts, the value of gifts given and received by women are significantly lower than that of men’s. Table 5.4 shows that mean gift value given by women is TZS 10,538 against TZS 23,512 for men, a statistically significant difference of TZS 12,974 (two-sided t-test with  $p < 0.0004$ ). For gifts received, the difference is TZS 7,619 (two-sided t-test with  $p < 0.0607$ ).

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<sup>9</sup>Here, note that we can only test gains under the receiving perspective as there is only one observation for parents/kids giving under coercion.

<sup>10</sup>Note that we report 462 gifting occasions in Table 5.1. However, we only have gender information for 436 occasions.

Table 5.4: Descriptive statistics of the role of the giver and the receiver

Respondent is giving			Respondent is receiving		
Giver	Times	Mean Value	Receiver	Times	Mean Value
Male	70	23,512	Male	50	22,414
Father	66	22,967	Father	47	20,249
Son	4	32,500	Son	3	56,333
Female	155	10,538	Female	161	14,795
Mother	152	10,526	Mother	158	14,848
Daughter	3	11,167	Daughter	3	12,000

Our findings corroborate previous results reported in the literature. While most gifts are given by women, more expensive gifts are given by men (Caplow, 1982; Cheal, 1986; Fischer and Arnold, 1990). Several reasons have been reported for the gender differences in gift giving frequency between men and women. Cheal (1986) suggested that females are more involved in gift giving because gifts are a social reproduction of intimacy and gift giving is a way to express personal care. In other words, females are the gift givers because their social orientations are towards maintaining both their families and their personal relationships. It has also been reported that female-headed households are more likely to receive gifts (Lucas and Stark, 1985; Kaufmann and Lindauer, 1986; Cox and Jimenez, 1989; Cox et al., 2006), possibly due to longer life expectancy, compensation for labor market discrimination (Cox and Jimenez, 1989), or compensation for house/family work (Schultz and Strauss, 2008).

### 5.3.2 Gift values and motivations

We further explore how gift giving and receiving motivations (other than altruism) influence the value of the gifts. We construct three binary indicators to capture gifting motivations: obligation, reciprocity, and celebration. The obligation dummy is based on the question “Did the giver feel obligated to give?”, and this was asked to givers and receivers (with an answer of “yes” coded as one, zero otherwise).

Our reciprocity variable is designed to capture gifts (given or received) in anticipation of a gain or return in the future. It is based on two questions: “Did you give (receive) in return for a favor?” (‘receive’ used in the receiving perspective); and “For this gift given (received), did you receive (give) anything in return?” (‘received/give’ used in the receiving

perspective). The reciprocity indicator takes value of one if the answer to either one of these questions is “yes”, zero if both answers are “no”.

The last motivation variable is “celebration”. Gifting because of a celebration event is extremely common in Tanzania (Banerjee and Duflo, 2012). As this is a behavioral standard in Tanzanian villages, this gifting motivation can be thought of as giving due to social or cultural norms. The celebration indicator is based on the question “Is this a gift for a family celebration (e.g., marriage, birth)?”, asked to both givers and receivers. It takes the value of one if the respondent answered “yes” , zero otherwise.

Table 5.5 shows gifting data by motivations. We perform t-tests for statistically significant differences in mean gift values with and without each motivation. Several of these tests, however, indicate that we cannot reject the null of no difference in values, probably due to small sample sizes.<sup>11</sup> Nevertheless, in general, the table shows that gifts due to obligations are of lower value. This result is in line with previous findings by Goodwin et al. (1990); consumers spend more money in voluntary gifts (rather than obligatory ones). Mean gift values tend to be higher when gifts are motivated by reciprocity and again is consistent with literature. For instance, Leider et al. (2009) find that reciprocal giving is 24% higher than baseline giving in laboratory dictator games. Finally, we find mixed evidence about the effect of celebration on the gift values. For instance, for high altruism levels (parents/kids), we find that mean values for celebratory gifts are lower under the giving perspective, but slightly higher under the receiving perspective. Also, for low altruism levels (friends/extended family), celebratory gifts are of lower values under the giving perspective, but slightly higher under the receiving perspective. We find these results puzzling. Remarkably, with the exception of gifts *given* due to celebrations, all gift values monotonically increase with the strength of the altruism link. This further empirical evidence that altruism plays an important role in gifting in developing countries.

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<sup>11</sup>We return to this point in the next section where we use all data to test for motivation effects in a regression model.

Table 5.5: Gifting and motivations: obligation, reciprocity, and celebration

	No Obligation		Obligation	
	Times	Mean value	Times	Mean value
Respondents giving				
To friends/extended family	35	20,287	66	6,620***
To close family	51	20,380	55	9,886**
To their parents/kids	14	23,786	3	71,667
Respondents receiving				
From friends/extended family	57	15,353	40	11,180
From close family	46	23,652	48	10,588**
From their parents/kids	8	46,625	11	17,382**
	No Reciprocity		Reciprocity	
	Times	Mean value	Times	Mean value
Respondents giving				
To friends/extended family	98	11,295	3	13,333
To close family	103	14,537	3	27,667
To their parents/kids	17	32,235	0	†
Respondents receiving				
From friends/extended family	93	15,353	4	18,875
From close family	89	23,652	5	48,600***
From their parents/kids	19	46,625	0	†
	No Celebration		Celebration	
	Times	Mean value	Times	Mean value
Respondent is giving				
To friends/extended family	95	11,884	6	3,000
To close family	91	13,465	16	22,438
To their parents/kids	15	33,867	2	20,000
Respondent is receiving				
From friends/extended family	91	13,608	6	14,000
From close family	89	17,227	6	13,833
From their parents/kids	19	29,678	1	30,000 †

Stars indicate p-value of two-sided t-tests of value(no-motivation) against value(motivation).

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

† Statistical test is not possible due to insufficient of observations.

## 5.4 Regression Model of Gifting

This section builds a regression model to perform a comprehensive empirical analysis of gifting accounting for altruism, coercion, motivations, gender and other socio-economic variables. We estimate the following empirical model:

$$V_{ij} = \alpha + A'_{ij}\delta + C'_{ij}\beta + M'_{ij}\gamma + S'_h\varphi + \varepsilon_{ij} \quad (5.1)$$

where  $i$  indexes an individual in the household  $h$  giving (or receiving) gift  $j$ . The dependent variable is value of the gift,  $V$ .  $A$  is a vector that collects indicators for altruism levels, namely, friends/extended family and close family (parents/kids is the baseline). The vector  $C$  contains three interaction variables capturing coercion of friends/extended family, coercion of close family, and coercion of parents/kids. For each gift, the vector  $M$  captures motives, namely, obligation, reciprocity, and celebration. Socio-economic factors of the head of the household of the respondent are captured in  $S$ , such as education, gender, and age. Hence, we estimate two separate models, one with data on the household of the giver (giving model) and another using data on the household of the receiver (receiving model).  $\varepsilon$  is an error term.

Note that our empirical model includes both  $A$  (altruism) *and*  $C$  (interactions of coercion with altruism). Therefore, the coefficients in  $\delta$  represent marginal effects of altruism *without* coercion, and the coefficients in  $\beta$  capture how coercion shifts the relationship between gift values and altruism. In light of our conceptual framework, we expect the relationships estimated by  $\delta$  to reflect those illustrated by the gift supply curve  $t_s$  (see Figure 3.2), i.e. without coercion, gift values increase with altruism. In addition, we expect the coefficients in  $\beta$  to reflect gains from coercion. As our theory predicts that these gains from coercion depend on altruism, with ‘moderate’ altruism levels maximizing gains (see Figure 3.3).

Table 5.6 shows summary statistics of the variables of our two regression models. As we discussed above the information on gift values, altruism, coercion, and motivations, we focus here on summary statistics related to the socio-economic factors of the head of the household of the respondent (i.e. either a gift giver or receiver). *No education* is a dummy variable that takes a value of one if the head of the household has education level lower than primary

education, zero otherwise. *Female* is a dummy that captures the gender of the head. *Age* captures the age of the respondent's household head in years. In general, about 43% of the household heads have no primary education, around 30% of households are female headed, and the average age of the head is approximately 45 years.

Table 5.6: Summary statistics of regressions variables

RESPONDENT IS GIVING	Obs.	Mean	S.D.	Min	Max
<i>Gift value</i>	237	14,670	25,241	30	200,000
ALTRUISM					
<i>Friends/extended family</i>	225	0.449	0.498	0	1
<i>Close family</i>	225	0.476	0.501	0	1
COERCION					
<i>Coercion of friends/extended family</i>	225	0.711	0.258	0	1
<i>Coercion of close family</i>	225	0.116	0.320	0	1
<i>Coercion of parents/kids</i>	225	0.004	0.067	0	1
MOTIVATIONS					
<i>Obligation</i>	235	0.553	0.498	0	1
<i>Reciprocity</i>	236	0.025	0.158	0	1
<i>Celebration</i>	237	0.110	0.313	0	1
SOCIO-ECONOMIC FACTORS OF GIVER					
<i>No education</i>	236	0.432	0.496	0	1
<i>Female</i>	236	0.270	0.450	0	1
<i>Age</i>	232	46.155	13.925	24	86
RESPONDENT IS RECEIVING	Obs.	Mean	S.D.	Min	Max
<i>Gift value</i>	225	16,330	24,832	500	150,000
ALTRUISM					
<i>Friends/extended family</i>	211	0.460	0.500	0	1
<i>Close family</i>	211	0.450	0.499	0	1
COERCION					
<i>Coercion of friends/extended family</i>	211	0.043	0.203	0	1
<i>Coercion of close family</i>	211	0.057	0.232	0	1
<i>Coercion of parents/kids</i>	211	0.014	0.119	0	1
MOTIVATIONS					
<i>Obligation</i>	224	0.460	0.499	0	1
<i>Reciprocity</i>	224	0.040	0.197	0	1
<i>Celebration</i>	225	0.071	0.258	0	1
SOCIO-ECONOMIC FACTORS OF RECEIVER					
<i>No education</i>	225	0.431	0.496	0	1
<i>Female</i>	225	0.300	0.460	0	1
<i>Age</i>	222	45.212	14.035	24	83

Table 5.7 presents the estimates of the two empirical models. Let us start by discussing the estimates related to altruism. Gifts given to (received from) friends/extended family are TZS 15,211 (TZS 18,202) lower than those between parents/kids (baseline case). These results are statistically significant with  $p < 0.05$  and  $p < 0.01$  for the giving and receiving models, respectively. The effects for gifts to/from close family members are -12,736 ( $p < 0.1$ ) and -16,644 ( $p < 0.05$ ) for the giving and receiving perspectives, respectively. As the baseline is parents/kids, and the magnitude of close family is smaller than that of friends, we conclude that gifts to/from close family are higher than those to friends/extended family. Therefore, in both models, we find evidence in favor of Hypothesis 1a; without coercion, gift values increase with the strength of the altruism link.

The coercion interaction variables are not statistically significant in the giving model. However, coercion of close family members increases gift values received by TZS 13,974 ( $p < 0.1$ ). This represents a large gain from coercion as the mean value of received gifts is TZS 16,330, i.e. coercion almost doubles the gift value. This large gain from coercion at moderate levels of altruism offers empirical support to Hypothesis 3; when coercion is present, gains from coercion have an inverted-U shape relationship with the strength of the altruism link between giver and receiver.

Confirming our findings from previous sections, gifts due to obligation are of lower value. Specifically, the giving model estimates indicate that obligatory giving decreases the value of the gift given by TZS 10,021 ( $p < 0.01$ ). Moreover, the receiving model estimates suggest that obligation decreases the value of gifts received by TZS 12,479 ( $p < 0.01$ ). These results are not surprising as obligation to purchase a gift creates a negative purchase experience (Goodwin et al., 1990). The coefficient of *Reciprocity* is positive in both models, however, only statistically significant in the receiving model. In this model, reciprocity increases the value of received gifts by TZS 20,528 ( $p < 0.05$ ). As discussed above, this corroborates findings from laboratory experiments (Leider et al., 2009). Moreover, according to Benabou and Tirole (2006), prosocial behavior often reflects a mix of three feelings; altruism, self-interest, and social or self- image concerns. As our regression controls for altruism and celebration (a factor that captures social norms), our reciprocity variable may reflect self-interest motivations such as giving as an insurance mechanism. Again, we do not find

Table 5.7: Estimates of the empirical model

Dep. Var: <i>Gift Value</i>	Giving Model	Receiving Model
<b>ALTRUISM</b>		
<i>Friends/extended family</i>	-15210.696** (7258.527)	-18201.694*** (6915.096)
<i>Close family</i>	-12736.316* (7181.329)	-16643.761** (6826.855)
<b>COERCION</b>		
<i>Coercion of friends/extended family</i>	-3505.321 (7135.801)	226.492 (8561.744)
<i>Coercion of close family</i>	-3817.277 (5842.219)	13973.625* (8099.168)
<i>Coercion of parents/kids</i>	-25535.502 (26131.085)	-5811.181 (15430.822)
<b>MOTIVATIONS</b>		
<i>Obligation</i>	-10021.400*** (3575.901)	-12479.179*** (3490.110)
<i>Reciprocity</i>	7276.956 (10634.486)	20527.816** (9077.253)
<i>Celebration</i>	6173.703 (5706.599)	2208.040 (7091.977)
<b>SOCIO-ECONOMIC FACTORS OF GIVER</b>		
<i>No education</i>	-3242.870 (3593.491)	
<i>Female</i>	-3857.144 (4154.893)	
<i>Age</i>	244.109* (126.968)	
<b>SOCIO-ECONOMIC FACTORS OF RECEIVER</b>		
<i>No education</i>		321.539 (3705.340)
<i>Female</i>		6402.818 (3950.693)
<i>Age</i>		-49.862 (128.529)
Constant	24138.815*** (8953.680)	36974.516*** (9632.447)
N	218	206
R-squared	0.107	0.138

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

statistical evidence that gift values are influenced by celebratory motives.

In terms of socio-economic determinants, only the age of the household head of the giver significantly increases the value of the gift. This is in line with the idea that gift exchange is inter-generational and downward oriented, i.e. from elder to younger (Caplow, 1982; Cheal, 1986); however, a formal test of this hypothesis requires information about the receiver's age. A possible reason for the insignificant coefficients for most socio-economic variables is that survey respondents (i.e. givers and receivers) are not necessarily household heads, while the elicitation of socio-economic factors focused on heads. It could be the case that socio-economic characteristics of those *giving* and *receiving* gifts are important, as opposed to those of the head of the respondent's household.

# Chapter 6: Gifting Relationships and Implications for Well-being

Gift transfers in developing countries are often thought to play a key role in improving households' welfare. There are several reasons why gifting is important and studies have explored numerous functions of gift transfers, such as narrowing income inequality (Cox and Jimenez, 1989; Knowles and Anker, 1981), functioning as social security (Kazianga, 2006), offering assistance to cope with adverse events (Cox and Jimenez, 1998), to ease borrowing constraints (Cox and Jimenez, 1990), and to contribute to human capital investment in schooling and migration (Munshi, 2003).

Some studies in Tanzania also indicated the importance of gift transfers for local households. Lundberg et al. (2000) find that, on average, private transfers (rather than private borrowing or public assistance) provide the majority of assistance to the poor. Hussein and Kajiba (2011) find that inter-household transfers in Tanzania have a positive effect on poverty reduction. Therefore, the goal of this chapter is to estimate the effect of gifting on the well-being of households in rural communities of Tanzania.

## 6.1 Propensity Score Matching

Our statistical analysis is based on the literature of treatment effect estimation, specifically propensity scores methods developed in Heckman et al. (1997, 1998). We view gifting households as “*treated*” households, i.e. those that may benefit from gifting transfers.

A challenge for identification of the effect of being a gifting household on the household's well-being is that gifting households might be systematically different from autarkic (or non-gifting) ones. Therefore, simple comparisons of the well-being between the two groups of

households may lead to biased estimates of the effect of gifting because households in the control group (autarkic) are not necessarily a good benchmark to those in the treatment group (gifting). This happens when households “self-select” into gifting such that confounding factors (other than gifting) might be driving well-being.

To overcome this challenge, our statistical analysis relies on propensity score matching (PSM) approaches to estimate the average treatment effect (ATE), i.e. the average difference between the observed and potential outcomes for each household (in both treatment and control groups). The idea of propensity score matching is to match households in the treatment (control) group with households in the control (treatment) group that are likely similar to one another.

The propensity score matching method is implemented in two steps. First, we estimate a Logit regression model for the propensity of being a gifting household. We use our set of socio-economic factors as variables that affect the likelihood of being engaged in gifting to calculate propensity scores. The right-hand side variables of the logit regression are *No education*, *Age* ( $\geq 60$  years old)<sup>1</sup>, *Female*, and a dummy variable for the district of Mvomero (the more prosperous district).<sup>2</sup> These propensity scores represent an estimate of the probability of receiving treatment. Second, these scores are used to find matches for all households, i.e. find autarkic households to match gifting households, and find gifting households to match autarkic ones. The idea is that the propensity scores can be used to construct benchmark groups. Therefore, propensity scores help to find the best matches for each household, where “best” is determined by choosing households (one from each group) to minimize the difference in propensity scores. We specify the number of matches per observation to be 2, which reduces the variance of the PSM estimator when compared to the single nearest neighbor matching. Once matches are defined, we calculate the average treatment effect by computing the average difference in outcomes between gifting and autarkic households.

Our survey data allows us to estimate the effect of gifting on two types of well-being indicators: consumption indicators and production indicators. The first consumption indicator is the United Nation’s *Food Consumption Score* (United Nations World Food Programme,

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<sup>1</sup>A dummy variable that takes a value of one if the age of the household head is not less than 60, zero otherwise.

<sup>2</sup>Refer to discussion about Table 4.1 and Figure 4.3.

2008). This score is calculated by the sum of the weighted frequency of different food groups consumed different foods in the last seven days before the survey.<sup>3</sup> The larger the score of the household, the better is the household’s food security. *Clothes* is our second consumption indicator and it measures the household’s total expenditure (TZS) for buying clothes for the household members in the last 12 months. The final consumption indicator is *Utensil*; the household’s total expenditure (TZS) for buying household utensils (including cookware and bakeware) in the last 12 months.

We also examine three production indicators. First we consider crop production per acre (see Figure 4.3). Next, we consider *Livestock*, i.e. the total number of cattle, goat, sheep, chicken, and hogs for each household. Finally, as income diversification is an important determinant of livelihoods in rural areas of developing countries, we consider the number of income sources of each household as a final indicator.

## 6.2 Welfare Effects

Table 6.1 shows the estimates of the marginal effects (evaluated at the mean) of the PSM first stage regression. We find that female-headed households are 18.2% more likely to be engaged in gifting ( $p < 0.01$ ). This result was previously reported in the literature (Lucas and Stark, 1985; Kaufmann and Lindauer, 1986; Cox and Jimenez, 1989; Cox et al., 2006). Households with elder heads ( $\geq 60$  years old) are 12.4% less likely to be involved in gifting ( $p < 0.1$ )

Table 6.2 shows the estimates of the ATE on our six well-being indicators. We find important and statistically significant effects from engaging in gifting activities. First, in terms of consumption indicators, we estimate that the food consumption score of gifting household is, on average, 9.4 ‘points’ higher than that of autarkic households ( $p < 0.01$ ). This represents an improvement of 16% when compared to the mean score of the sample. Expenditures of gifting households are also higher than those of autarkic households. The increase is TZS 19,726 for clothes ( $p < 0.1$ ) and TZS 13,707 for utensils ( $p < 0.05$ ); large effects compared to the mean (26% and 48%, respectively).

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<sup>3</sup>Refer to United Nations World Food Programme (2008, page 8) for details.

Table 6.1: Determinants of gifting relationship

Dep. Var: Gifting households	Marginal effects
No education	-0.067 (0.058)
Female	0.182*** (0.061)
Age ( $\geq 60$ years old)	-0.124* (0.066)
Mvomero District	0.052 (0.057)
N	367

Logit regression includes a constant. Standard errors are in parentheses. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 6.2: PSM estimates of benefits from gifting

Well-being Indicators	ATE	Percentage of the mean
CONSUMPTION		
Food Consumption Score	9.369*** (2.781)	16.0%
Clothes	19,725.6* (11,761.3)	25.9%
Utensil	13,706.9** (5,887.6)	48.3%
PRODUCTION		
Crop Yield	65.493*** (15.785)	38.5%
Livestock	3.382** (1.677)	30.0%
Number of Income Sources	0.858*** (0.131)	37.4%

Robust standard errors are in parentheses.  
\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

We also estimate statistically significant effects of gifting on production indicators. Gifting is associated with an increase in yield of 65 kg/acre ( $p < 0.01$ ), an additional 3 units of livestock ( $p < 0.05$ ), and approximately one additional source of income for the household

( $p < 0.01$ ). In fact, these production effects hover between 30-40% of their respective sample means.

We find that gifting households have more diversified income source. A diversified portfolio helps households to minimize the effects of negative shocks. Policies often focus on injections of cash income to enable the poor to invest in diversified activities (Smith, 2011). For example, Smith argues that, in Tanzania, these cash injections enable very poor women to sell clothing or cooked food at local markets. Our results suggest that diversification is higher not only as a result of such policies, but maybe also as a result of gifting transactions.

We conclude that gifting is associated with several consumption and production improvements. Nevertheless, several individuals in developing countries do not participate in gifting and, as a result, do not benefit from mutual-help systems. This can be a serious issue because gifting can serve as a safety net in economies of developing countries where access to insurance and credit markets are limited, and social security systems may fail. It is not always the case that informal mechanisms like gifting are available, and the poorest of the poor can be constrained even in informal markets (Ravallion and Dearden, 1988; Ray, 1998; Yuan and Xu, 2015). Lundberg et al. (2000) find that rich households (those with more physical and human capital) benefit more from private assistance than poor households. This can be an issue in Tanzania. Although the district effect was not statistically significant, qualitatively, our first stage of PSM model estimates a higher probability of gifting in the richer district of Mvomero. This suggests that households in the Kongwa district may be subject to unequal opportunities for improving their well-being.

The findings of this chapter provide important policy implications. Autarkic households may be more vulnerable and should be the focus of local government and NGOs. In fact, households with weaker social networks are more likely to migrate from rural to urban sectors in a pursue of improving living standards (Munshi and Rosenzweig, 2016). Johny et al. (2017) suggest that social multipliers amplify policy effects as interventions propagate through networks of relationships. This might also be true for gifting, and societies with individuals strongly involved in gifting may also benefit from such ripple effects.

## Chapter 7: Concluding Remarks

Poor households typically face various risks such as production uncertainty, food insecurity, or serious illness risks, especially in countries with no adequate public safety nets. What can the poor do to cope with these risks without access to formal insurance market in developing countries? One way is to try to limit exposure to risk by implementing ex ante risk-reducing strategies or by building a diversified portfolio. Another way to deal with risk is to rely on inter-household transfers within a solidarity social network. A system of solidarity networks can work as a mutual insurance and help the poor to minimize the risks. However, what will the receiver do if he can not fully insure his risks from certain gift transfers? The receiver may exert coercion on the giver to gain more gifts. This behavior may be a way to increase the receiver's welfare.

To have a better understand of gifting behaviors among households, and especially how coercion effort from receiver influence gift values and well-being, this study uses a primary rich dataset collected from two Districts of Tanzania to examine the impact of altruism, coercion, gifting motivations, and demographic factors on gift values, and investigate the impact of gifting transfers on households' well-being.

Our first objective of this research is to develop a basic gifting model. The objective of the gifting model is to understand how altruism and coercion effort influence gift values. The model explored in this study helps understanding the mutual-help system, how individuals choose the coercion level, and the role played by coercion in increasing gift values.

Our second objective is to examine how various factors influence the gift giving values and gift receiving values separately, and use regression models to have a comprehensive analysis. In both the descriptive and empirical analyses, we find evidence to support the three hypotheses derived from the gifting model. The regression results show that the gift

monetary value is positively related to the altruism link between the giver and the receiver. Also, the receiving model suggests that when receivers exert coercion they receive gifts with higher values. Most importantly, receivers can obtain a significant higher amount of gifts when they exert coercion on their close family members. Except examining how altruism and coercion (main components in the gifting model) influence gift values, we further explore how gift giving motivations influence the value of the gifts. We find that gifts due to obligation are of lower values, and gifts due to reciprocity are of higher values. The overall conclusion, therefore, is that, motivations for giving are multifaceted, and can have different influence in giving gift values and receiving gift values. Thoroughly examining what determines the gifting values shed light on the existing mechanisms of insurance and emphasize the hidden influence of social networks.

Our last objective is to explore the effect of gifting on the well-being of households in Tanzania. We use propensity score matching approach to estimate the average treatment effect of involving in gifting. In order to explore the role that gifting plays in improving households' welfare, we use two types of well-being indicators including consumption indicators and production indicators. Through the analysis, we find that being involved in gifting indeed helps households to improve their consumption (e.g., food) and production levels (e.g., crop yields).

This study contributes to the literature that analyzes gift values by including the impact of coercion and various gifting motivations on gifting outcomes. Moreover, we find evidence that gifting works as a mutual insurance to the local people and improve their welfare in rural communities of Tanzania. Overall, the results presented in the paper reveal the hidden influence of social networks and provide policy implications to local government and NGOs.

## **7.1 Limitations**

This thesis encountered a number of limitations. First, although many transfers occur within rather than between households, all of our analyses are concerned with the gift transfers between households. Second, no observation recorded that a giver has originally not planned to give a gift to the receiver, but subsequently decided to give a gift due to the coercion

exerted by the receiver. Without these observations, empirical models that attempt to test how gift values are influenced by coercion can have biased results.<sup>1</sup> Third, a limitation encountered is not having the socio-economic information of each gift giver and receiver. As mentioned in previous section 5.4, using each household head demographic characteristics and average household level economic status is not accurate and can lead biased results.

## 7.2 Future Research

Future research can work on the relationship and interaction between public programs and private transfers in Tanzania. As mentioned by Smith (2011), several countries in Africa have recently implemented safety net programs. Smith (2011) states that this has occurred because policy makers in Africa begin to treat safety nets as core mechanism to reduce poverty. However, public programs are often overlaid on the top of the pre-existing private transfers, it is worth to worry whether these programs can simply displace or crowd out the pre-existing private gift transfers. Exploring this crowding-out effect in Tanzania can help local government to evaluate the efficacy of these public programs.

In our research, we only find evidences that coercion effort from receiver helps to gain more gifts, and involving in gifting transactions improves households' welfare. Then, future research can examine whether there is a direct causal relationship from coercion effort to households' welfare. Also, according to Marcoul et al. (2017), their empirical results suggested that compared to autarkic households (households not involved in gifting in the dataset), non-autarkic households' (households involved in gifting in the dataset) production efforts tend to lower when gifting is performed between households. This is because altruism potentially involves free-riding effect. In light of our newly developed model, it is plausible that the opportunity for the receiver to exert coercion may lead to more serious free-riding behaviors. Thus, future work can also try to explore whether this behavior (coercion) can act as disincentives for households' agricultural productivity, and affect households to implement ex ante risk reducing strategies.

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<sup>1</sup>Therefore, our analysis tends to minimize the impact of coercion for two reasons. First, all coercive activities do not necessarily give raise to gift because sometimes coercion fails to 'produce' a gift. Second, all gifts triggered by coercion are not always documented as such.

Moreover, in the dataset, it records the distance between each gift giver and receiver, future work can also try to explore how social distance and geographic distance work together to influence the gift values. Considering both the impact of social distance and geographic distance may potentially provide new empirical insights about the social networks.

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