



# **Land Tenure Formalisation in Dar es Salaam: Institutional Transition through Endogenous Social Interactions**

Martina Manara

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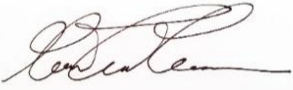
# Declaration

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## Statement of co-authored work

I certify that Chapter 4 of this thesis, '*Informal practices of formal property: local leaders and land formalisation in Dar es Salaam*', is co-authored with Dr Erica Pani and is part of a larger research project. I contributed 75% to the writing of this output in its current form.

I certify that Chapter 5 of this thesis, '*Eliciting demand for title deeds: lab-in-the-field evidence from urban Tanzania*', is co-authored with Tanner Regan and is part of a larger research project. I contributed 50% to the writing of this output in its current form.

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## Abstract

This thesis investigates the implementation of two land titling projects offering interim and full statutory property rights in Dar es Salaam, Tanzania. As in many other African cities, these projects encounter severe challenges of implementation and the land management remains predominantly informal. This work examines how local institutions, social relations and public authority affect the transition to formal property. The thesis is composed of four papers drawing on interdisciplinary literature and an innovative combination of methods. Papers 1 and 2 examine how social relations influence the demand for interim property rights. Using econometric analysis of administrative data, paper 1 finds evidence of *neighbourhood effects* suggesting that neighbours influence their early choices of formalisation. Through institutional analysis and primary survey data, paper 2 concludes that coordination is the result of an informal institution: a *descriptive norm* that prescribes formalisation conditional on the behaviour and advice of others. Papers 3 and 4 interrogate the role of the local public authority for the construction of and the transition to formal property. Based on in-depth interviews and ethnographic data, paper 3 shows that local leaders are essential to *legitimise and operationalise* the formal property apparatus, specifically the cadastral map and database. Drawing on two lab-in-the-field experiments, paper 4 suggests that leaders hold *accurate knowledge* on the local demand for full statutory rights, which could be leveraged to inform better pricing strategies. Overall, the thesis contributes to an institutional approach to land tenure formalisation by quantifying and qualifying how endogenous social interactions mediate the transition to formal property. In so doing, the study adds to literature on the implementation of urban land titling policies, the demand for land titles and the formality-informality nexus in developing cities. Furthermore, the thesis provides policy recommendations of current relevance as urban formalisation remains a key government priority.

# Table of contents

<b>1. Introduction</b> .....	<b>12</b>
1.1 Research framework .....	12
1.1.1 Policies of land tenure formalisation: challenges and open questions .....	12
1.1.2 An institutional approach to property rights .....	13
1.1.3 Overview of research objectives and questions .....	13
1.2 Research Context .....	14
1.2.1 The Tanzanian Land Law Reform .....	14
1.2.2 An incremental approach to tenure regularisation .....	18
1.2.3 The Certificate of Right of Occupancy .....	19
1.2.4 The Residential Licence.....	21
1.2.5 Dar es Salaam .....	23
1.3 Summary of PhD.....	25
1.3.1 Overview of chapters .....	25
1.3.2 Overview of study areas.....	27
1.3.3 Overview of main contributions .....	29
1.4 Ethical considerations .....	30
1.5 Limitations, related research, and ways forward .....	33
1.6 Figures .....	36
1.7 References.....	38
<b>2. Neighbourhood effects on uptake of interim title deeds in Dar es Salaam</b> .....	<b>43</b>
2.1 Introduction.....	43
2.2 Setting and framework .....	47
2.2.1 Land reform and the Residential Licence programme .....	47
2.2.2 Conceptual motivation for examining peer-effects in choices of formalisation .....	49
2.3 Data and descriptive statistics .....	51
2.3.1 Data sources .....	51
2.3.2 Sampling considerations and pairing strategy.....	52
2.3.3 Data descriptives .....	52
2.4 Empirical set-up .....	54
2.5 Results.....	59
2.5.1 Patterns of coordination in choices of formalisation.....	59
2.5.2 Peer-effects in choices of formalisation.....	60
2.5.3 Heterogeneity in peer-effects .....	62
2.6 Mechanisms .....	63
2.6.1 Frequent and salient interactions increase social learning .....	64
2.6.2 The proximity of titled plots increases non-private returns to formalisation.....	65

2.6.3 Other channels of peer-effects .....	66
2.7 Conclusion .....	67
2.8 Figures .....	69
2.9 Tables.....	73
2.10 References.....	88
<b>3. From policy to institution: a descriptive norm of tenure formalisation in Dar es Salaam's unplanned settlements.....</b>	<b>92</b>
3.1 Introduction.....	92
3.2 Unplanned settlements and land tenure formalisation in Dar es Salaam .....	93
3.3 Institutional <i>embeddedness</i> : from institution-in-form to institution-in-use .....	96
3.4 Analysing institutions-in-use: analytic framework .....	98
3.5 Survey design and sampling strategy.....	101
3.6 An institution-in-use of RL uptake and renewal.....	104
3.6.1 Normative beliefs and social expectations.....	104
3.6.2 Conditional preferences for uptake and renewal.....	104
3.6.3 What type of institution-in-use?.....	107
3.6.4 What motivates low compliance? .....	108
3.7 Conclusion .....	110
3.8 Figures .....	112
3.9 Tables.....	116
3.10 References.....	119
3.11 Appendix A. Vignettes Scripts (English).....	123
<b>4. Informal practices of formal property: local leaders and land formalisation in Dar es Salaam.....</b>	<b>127</b>
4.1 Introduction.....	127
4.2 Practices of state and law .....	129
4.3 Background.....	133
4.3.1 Tenure formalisation in Dar es Salaam.....	133
4.3.2 The role of local leaders.....	135
4.4 Methodology .....	137
4.5 Informal practices of formal property .....	138
4.5.1 Informalisation of the cadastre.....	138
4.5.2 Informalisation of the 'survey' map.....	141
4.5.3 Structural constraints to informal practices.....	145
4.6 Conclusion .....	145
4.7 Figures .....	148



4.8 References.....	154
<b>5. Eliciting demand for title deeds: Lab-in-the-field evidence from urban Tanzania .....</b>	<b>159</b>
5.1 Introduction.....	159
5.2 Context and setting .....	163
5.2.1 Conceptual motivation for extracting willingness-to-pay .....	163
5.2.2 Experimental setting .....	164
5.3 Data collection .....	166
5.3.1 Sampling .....	166
5.3.2 Other information sessions.....	167
5.3.3 Owner survey and price elicitation .....	168
5.3.4 Leader survey and experiment .....	169
5.4 Data and sample descriptives .....	170
5.4.1 Summary statistics and balance .....	170
5.4.2 Demand for CROs.....	171
5.4.3 Leader predictions and placebos .....	171
5.5 Results.....	172
5.5.1 Leader predictions of aggregate willingness-to-pay .....	172
5.5.2 Leader ability to distinguish willingness-to-pay across owners.....	173
5.5.3 Property characteristics to distinguish willingness-to-pay across owners .....	174
5.5.4 Can willingness-to-pay cover project costs?.....	176
5.6 Follow-up study .....	177
5.6.1 Post-experiment interviews with leaders .....	177
5.6.2 Further steps in the title acquisition process .....	178
5.7 Policy implications of research findings .....	179
5.8 Conclusion .....	183
5.9 Figures .....	185
5.10 Tables.....	190
5.11 References.....	196
5.12 Appendix A: BDM Scripts (English).....	199
5.13 Appendix B: Leader Experimental Scripts (English).....	203
5.14 Appendix C: Research Ethics .....	208

# List of Figures

## Chapter 1

Figure 1.	Study areas.....	36
Figure 2.	Residential Licence programme phase II (started 2019).....	37

## Chapter 2

Figure 1.	Residential Licence programme phase I (2004-2006).....	69
Figure 2.	Example of cadastral map of plots under the RL programme.....	69
Figure 3.	Interviews per year.....	70
Figure 4.	Uptake of RL per year.....	70
Figure 5.	Peer-effects in RL adoption.....	71

## Chapter 3

Figure 1.	Residential Licence programme phase I (2004-2006).....	112
Figure 2.	Residential Licence programme phase II (started 2019).....	112
Figure 3.	Sampling strategy.....	113
Figure 4.	Example of meridians and buffers.....	114
Figure 5.	Example of clusters along one meridian.....	114
Figure 6.	Histogram of threshold values.....	115
Figure 7.	Threshold values and social empirical expectations.....	115

## Chapter 4

Figure 1.	Examples of Sale Agreement from the mtaa office.....	148
Figure 2.	Example of a Residential Licence document.....	149
Figure 3.	Residential Licence programme phase I (2004-2006).....	150
Figure 4.	Residential Licence programme phase II (started 2019).....	150
Figure 5.	Picture of one mtaa office.....	151
Figure 6.	Picture of one Municipal Residential Licence office.....	152
Figure 7.	Example of one mtaa map.....	153

## Chapter 5

Figure 1.	Example of an invoice for a CRO.....	185
Figure 2.	Location of the study area in Dar es Salaam.....	186
Figure 3.	Project timeline.....	187
Figure 4.	Example of a plot aerial picture (for BDM practice round).....	187
Figure 5.	BDM elicited CRO demand and elasticity.....	188
Figure 6.	Leader elicited CRO demand.....	189

# List of Tables

## Chapter 2

Table 1.	Summary statistics of individual plots' characteristics.....	73
Table 2.	Summary statistics of selected pairwise variables.....	74
Table 3.	Spatial correlation in the uptake of RL.....	75
Table 4.	Balancing test on selected variables.....	76
Table 5.	Patterns of coordination in choices of formalisation.....	77
Table 6.	Robustness: different reference groups.....	78
Table 7.	Robustness: sample restrictions on plots' geometry and density.....	79
Table 8.	Peer-effects in RL adoption.....	80
Table 9.	Peer-effects in RL adoption. Robustness Part I.....	81
Table 10.	Peer-effects in RL adoption. Robustness Part II.....	82
Table 11.	Heterogeneity for old and new settlers.....	83
Table 12.	Channel 1: supporting evidence.....	84
Table 13.	Channels. Social learning and complementarities.....	85
Table 14.	Channel 2: supporting evidence Part I.....	86
Table 15.	Channel 2: supporting evidence Part II.....	87

## Chapter 3

Table 1.	Framework for institutional analysis.....	100
Table 2.	Survey round 1: summary statistics.....	116
Table 3.	Survey round 2: balancing.....	117
Table 4.	Vignettes.....	118

## Chapter 5

Table 1.	Owners and leaders summary and balance.....	190
Table 2.	Leader predictions and placebos.....	192
Table 3.	Leaders' ability to distinguish variation in willingness-to-pay.....	193
Table 4.	Using observable characteristics to distinguish variation in willingness-to-pay.....	194
Table 5.	Title acquisition process.....	195

# Chapter 1

## Introduction

### 1.1 Research framework

#### 1.1.1 Policies of land tenure formalisation: challenges and open questions

With roughly 1 billion people living in unplanned settlements worldwide, over forty international organisations and many developing countries promote land registration to alleviate poverty and enable urban development. Economic theory predicts that formal titles will stimulate private and public investment by enabling land and credit markets (De Soto, 2000). In dense urban areas, formal property rights might be necessary to coordinate land use planning and infrastructural provision (Bryan et al., 2019). Other studies illuminate wider potential benefits of formal tenure, for example in relation to gendered land inequality (Dancer, 2015). However, these policies are controversial and complex to implement. First, they pursue conflicting goals producing tensions between actors with diverse interests (Boone, 2019). Second, formalisation initiatives often find low demand, fail to achieve their intended outcomes, and end up exacerbating pre-existing inequalities (Payne et al., 2009). In fact, critical urban theory underscores the exclusionary effects of private property (Harvey, 2013). In much of the Global South, the production of private property is the main cause of dispossession and displacement of the poor (Ghertner, 2014).

Land registration is not a panacea for urban development and poverty alleviation. Prior studies have defined and contributed to four main areas of research on formalisation policies. First, why is there low demand for land titles in much of urban Africa? Depending on contexts, choices of formalisation might be the result of cost-benefit considerations, whereby the costs of formalisation are too high compared to perceived benefits. Yet, there might be more complex motivations beyond a mere cost-benefit calculation (e.g. low information, social norms, peer-effects, behavioural responses). Second, challenges of programme implementation, which are both technical and political. These arise at all levels of politics, from the local to the national government and above. Third, outcomes of formalisation programmes. I note that these might be difficult to study as many titling projects have failed in the implementation phase or have not sufficiently scaled up. Fourth, what forms of property rights fit specific contexts? Most titling projects propose one-size-fits-all solutions: land titles designed on the Western model of private freehold or leasehold. This limited view might obfuscate alternative options to improve informal tenure and its existing functions.

### **1.1.2 An institutional approach to property rights**

“Land tenure regimes are property regimes that define the manner and terms under which rights in land are granted, held, enforced, contested, and transferred. In all political economies, property rights lie at the confluence of the political-legal order and the economic order” (Boone, 2014: 4).

Understood as a system of rules, norms, and strategies of behaviour, property rights are institutions regulating social life by defining expectations about other people’s behaviour (Bicchieri, 2006). Indeed, numerous scholars have looked at property rights reform and land titling projects from an institutional perspective, including, for example, the seminal work of Ostrom (2005). Some features of property rights institutions are worth noticing. First, as mentioned in the quote above, property rights establish and regulate relations: social relations of access and use of resources, economic relations of production and distribution of wealth, and political relations between the claimers and the enforcers of rights (Boone, 2014: 5). Second, they exist in a variety of forms, including written laws or oral traditions. Thus, the “absence of familiar property institutions ... does not mean absence of institutions” (Boone, 2018: 65). From this perspective, unplanned settlements are not ‘institutionless’. In fact, they may be governed through ‘social contracts’ or “ententes that stabilised around rules and procedures” (p. 67). Third, property rights are locally embedded and not easily transferable across contexts. As Peters (2009: 1322) famously put it, land tenure cannot be separated from its social, cultural and political-economic matrices. Indeed, land tenure institutions emerge and evolve endogenously through forces inherent to both state and social structures (Boone, 2018). In response to any intended ‘institutional fix’:

“[the] context will go far in shaping the practical meanings, uses and effectiveness of new regulatory structures and laws” (Boone et al., 2019: 216).

Thus, land tenure institutions are the product of conflict and negotiation between central rulers, elites and ordinary people. This underscores the need for well-functioning formalisation policies to fit to contexts and meet the local demand for specific functions and forms of property rights.

### **1.1.3 Overview of research objectives and questions**

Drawing on the notions above, this PhD understands formalisation policies as moments of institutional transition mediated by the local context of implementation. These policies do not occur in an institutional vacuum, and rather promote institutional shifts, from the local social contract to formal law. Along this process, pre-existing institutions affect the pace and the mode of transition to formal property. Indeed, formalisation policies trigger interactions and tensions between new and old institutions. Because institutions are defined, monitored and enforced

through social interactions (Bicchieri, 2006), these will negotiate the institutional transition to, and the construction of, formal property.

The pilot programmes of regularisation and formalisation of Dar es Salaam in Tanzania, which are described below in sections 1.2.3 and 1.2.4, present some common challenges of titling programmes, in that they have registered moderate uptake of Certificates of Right of Occupancy (CRO) and Residential Licences (RL) respectively. Even if the government has eased access to land titles by coordinating processes of plot identification, town planning and surveying at scale, we observe relatively low demand for statutory property rights in Dar es Salaam. This thesis will investigate how social relations with the local community and the public authority affect choices and processes of tenure formalisation in this context.

Thus, this thesis pursues two main objectives. First, it identifies, quantifies and qualifies the role of social interactions in the transition to formal property. Second, it examines whether social interactions can be leveraged to improve the current projects of formalisation.

This thesis is comprised of four independent papers that as a whole address the following questions:

1. Is formal tenure socially accepted? To what extent has it embedded in the local context?
2. Do social interactions mediate choices of formalisation? If so, how and to what extent?
3. Do social interactions mediate the process of formalisation? If so, how and to what extent?
4. How can social interactions help to improve the current formalisation projects?

In the remainder of this chapter, I will present the research context starting with an overview of the Tanzanian land law reform. This will be followed by details on the incremental approach to tenure regularisation through the issuance of full and interim property rights. I will then illustrate the dynamics of urbanisation and unplanned settlements development in Dar es Salaam, comparing this context to other cities in Tanzania and Sub-Saharan Africa. Next, I will provide a summary of this PhD including overviews of individual chapters, fieldwork areas, and contributions. Finally, I will discuss the ethical considerations of this research. The chapter will conclude by underscoring the limitations of this work and by outlining related research and ways forward.

## **1.2 Research Context**

### **1.2.1 The Tanzanian Land Law Reform**

Modern-day land tenure in Tanzania cannot be understood outside its historical roots. Under German colonisation, all land was vested in the Empire except for private or community land

where ownership could be proved. The 1895 Imperial Ordinance effectively alienated ‘un-owned’ lands, centralising its control to the colonial Governor who granted freeholds to largely European and non-native settlers, whilst natives were granted ‘permissive rights of occupation’. Since native rural land was considered ‘un-owned’ it became property of the colonial state, whereas in urban Dar es Salaam, natives were easily removed since few could prove ownership. Continuing the urban/rural and native/non-native divides imposed under German rule, British colonisation from 1919 “fleshed out” a ‘dual system’ of land tenure and land administration (Mercer, 2021) wherein settlers were governed by imported British law while natives were subject to *customary law* overseen by native authorities (Mamdani, 1996). The 1923 Land Ordinance declared all land ‘public’, except for existing freeholds. Statutory land tenure was available to all urban dwellers through ‘*granted rights of occupancy*’ and freeholds. A 1928 amendment extended ‘*deemed rights of occupancy*’ to natives in rural areas, under customary law.

Although this was apparently done for “the common benefit... of the natives” (URT, 1994), Kironde (1994) argues that, despite their statutory status, *deemed rights* were inferior, effectively excluding natives from granted and private property rights – particularly in urban areas. Crucially, the British felt that tribal Africans were rural dwellers, not adaptable to urban life. Thus, their occupation of townships was strongly resisted (Burton, 2005). In Dar es Salaam, racial zoning segregated natives to outside the city centre to where ‘native-style’ dwellings were permitted. Furthermore, Government housing provision never attempted to keep pace with native rural-urban migration, deeming it a waste of money (ibid). Thus, although it was legally possible for natives to acquire urban land and housing, it was practically implausible (Kironde, 1994).

At independence, and for almost thirty years thereafter (1961-1990), there was little drive to land reform, as in much of sub-Saharan Africa (Lipton, 2009). The post-independence government effectively replaced the colonial ruler as the owner of the land, which was vested in the President and declared ‘public’, except for freehold land. With the 1967 Arusha Declaration, also the latter was nationalised and converted into leasehold (McAuslan, 2013). The post-independence government adopted explicitly anti-urban policies and continued to systematically under-supply housing and services, causing the uncontrolled growth of urban unplanned settlements in Dar es Salaam (Kironde, 1994; Kironde, 2006; Lupala, 2002). In fact, the masterplan of 1968 proposed slum clearance strategies through the demolition of dilapidated settlements and resettlement. However, the approach found scarce implementation due to popular resistance, and during the 1970s it was replaced by a more “humane approach” (MLHHS, 2007). In 1979, a second masterplan incorporated existing unplanned areas into the city’s official land use fabric as residential areas. Thus, given the new emphasis on upgrading

and sites-and-services programmes, “Dar es Salaam of the 1970s onwards [could] rightly be called the city of squatters and planning schemes” (Kironde, 1994: 350). The programmes involved modest demolition of existing buildings and in-situ provision of basic services. Overall, however, all these approaches presented several shortfalls, including the displacement of people and their livelihood activities (MLHSD, 2007). Furthermore, lack of stakeholder participation led to poor maintenance of upgraded settlements. Limited government resources, dependence on external funding, and lack of effective cost recovery mechanisms constituted obstacles to the scaling-up of upgrading initiatives. Finally, settlement upgrade did not systematically involve processes of land registration. Thus, these approaches failed to eradicate the issues of unplanned settlements or curb their growth. By the late 1990s, large swathes of urban land had been occupied and developed under informal, customary, or quasi-customary tenure arrangements.

Modern-day land reform is the product of a debate initiated in the 1990s, when the President engaged a national Commission on land matters. This investigation resulted in the so-called Shivji report (URT, 1994), which focused on rural land issues concerning over 80% of the population, while urban tenure received less consideration. Important influences came from the World Bank, the UK’s DFID and, later, the Institute for Liberty and Democracy directed by Hernando De Soto (Manji, 2006). However, national politics also played a central and leading role in shaping land reform policy. For example, while Pedersen (2016) notes no evidence of direct interference by the World Bank in dictating the form or mode of delivering land reforms (for instance, through poverty reduction strategy conditionalities), Patrick McAuslan (2010) describes power struggles between the Ministry of Lands and the Presidential Commission, with the former insisting on the use of *its* Land Policy in writing the Land Acts rather than the Commission’s *Land Matters* report (URT, 1994). Thus, on the one hand, Tanzania constitutes an exemplar of the ‘new wave land reform’ of Sub-Saharan Africa in the 1990s, with multi-lateral organisations, foreign donors and consultants variously promoting land reform as an essential tool for development through the marketisation, privatisation and formalisation of land (Manji, 2006). Yet, on the other, it also underscores the ‘polycentric’ nature of land governance in Tanzania involving *a range* of government actors at *several levels* seeking to influence what is ultimately a highly contingent and contextualised process: i.e. access to land (Pedersen, 2016).

The land reform of Tanzania culminated in the National Land Policy (NLP) of 1995 and the Land Acts of 1999. The NLP is based on six principles: to use and manage land in the national interest; to provide security of tenure and title to all citizens; to ensure transparency and accountability in the exercise of public power over land; to create the conditions for an efficient and equitable land market; to provide an appropriate legal framework for the settlement of land



disputes; and to increase the involvement of citizens in land management (McAuslan, 2013: 97). Crucially, the NLP stipulates that customary tenure is recognised in rural areas and shall be registered through Customary Certificates of Right of Occupancy. Conversely, all urban and peri-urban land holders shall have their property recognised and registered under statutory rights by the relevant land allocating authority. Accordingly, the Land Act provides a framework for the formalisation and regularisation of unplanned urban settlements, and the issuance of short and long-term leases: Residential Licences and Certificates of Rights of Occupancy respectively.

Most scholars understand the international push to privatisation and regularisation of rights as an effort to homogenise the African national land laws based on the Anglo-American legal model with the purpose of facilitating an international land market. Indeed, land reforms of different countries present homogenising traits. For example, McAuslan (2013) has analysed and compared land reform in several East African countries. He argues that the land reform of Tanzania aligns with others, e.g. Kenya, Mozambique, Rwanda and Uganda, for two main reasons. First, it facilitates the development and the operations of land markets through the Land Acts making provisions on sales, leases, mortgages, easements and co-ownership. Second, it promotes the centralisation of government control over land management by giving the Commissioner of Lands a central role in land administration. Indeed, scholars have criticised the excessive centralisation of authority and bureaucratisation of land management, which increases the risk of abuse and corruption (Knight 2010; Roughton, 2007; Shivji, 1998; Sundet, 2005).

On the other side, the land reform of Tanzania differs from others in its recognition of pre-existing tenure institutions, including customary rights in rural areas. African countries have variously recognised and integrated customary tenure in their land reforms (Alden Wily, 2018). For instance, while customary rights find relatively strong support in Tanzania, Uganda, Kenya and Mozambique, other countries like Burundi, Eritrea, Rwanda and Somalia provide minimal to no support to customary tenure. Thus, Knight (2010) concluded that, “in the balance, the Village Land Act [of Tanzania] is arguably one of the best in Africa in its careful, solid and repeated protections of the land rights of vulnerable groups in the context of both customary and statutory law” (p. 211). While some scholars praise this progressive and innovative effort (see also Roughton, 2007), others warn that state-led land registration threatens the basis of legitimacy and functioning of customary tenure, which will inevitably be compromised over time (McAuslan, 2013).

Furthermore, the Tanzanian land reform is quite unique in its explicit mention of urban matters within the Land Acts, whereas other East African countries concentrated predominantly on rural tenure (McAuslan; 2013). First, the Land Act prescribes that regularisation should encompass

processes to both register ownership and to physically upgrade the unplanned settlements. Second, the Land Act promotes a participatory approach to regularisation through the involvement of residents and community organisations, which was a novelty in Anglophone Africa. Finally, the Tanzanian land law enables an ‘incremental’ process of regularisation in urban areas through the provision of both short and long-term leases, as will be discussed in the next section. Regarding the latter, I note that this approach to tenure regularisation is not unique to Tanzania. Other sub-Saharan countries have adopted incremental steps to regularisation, by offering one or several types of interim titles as evidence of ownership in advance, or in place of, longer-term leases or freeholds.

Interim titles are usually attached to specific conditions relative to the recognising authority, technology of plot identification, provision of rights, temporal validity and renewability of titles. In some cases, this evidence might be the last step of land registration. In others, interim titles are meant to convert into longer-term leases or freeholds, subject to conditions. For instance, the laws of Mozambique (Hull et al., 2019; Van den Brink, 2008) and the DRC (Mpoyi, 2013; World Bank, GLTN, and UN-Habitat, 2016) allow for interim titles – provisional rights or rental contracts respectively – with the purpose of enabling land holders to develop their land before the acquisition of full property rights. In the DRC, the legal procedure for registering rights to land includes three steps: the rental contract, concession contract, and registration certificate. The former is a short leasehold granted by the local government in the unplanned areas, which allows plot holders seven years to carry out land development before accessing a concession title. Another example is offered by the Flexible Land Tenure system of Namibia, which provides two types of title for individuals living in urban unplanned settlements: the starter title and land hold title (Christensen, 2005; MLR, 2016; Otto, 2009). Compared to freehold, these offer different bundles of rights; for example, the starter title cannot be mortgaged. Furthermore, interim titles are group-based: each holder has their own individual rights within a block of land that is owned under freehold by the state or a private individual or a group of individuals.

### **1.2.2 An incremental approach to tenure regularisation**

The incremental approach of Tanzania distinguishes between processes of regularisation and formalisation (MLHHS, 2007). In a nutshell, both aim to facilitate the recording, adjudication, classification and registration of the occupation and use of land by its plot holder(s) (URT, 2001: 59). However, only regularisation requires processes of town planning ensuring compliance with minimum planning standards with regards to plot size, road network, open and public space. In practice, infrastructure is not provided (e.g. water pipes or electricity lines), but it must be considered within the town plan. After town planning and surveying, individual plots

are registered in the cadastre and issued long-term leases – Certificates of Right of Occupancy (CRO) – by the Ministry of Lands, Housing and Human Settlements Development (MLHSD). Regularisation is the approach of choice for unplanned areas in their infancy or consolidated stage, that is, when settlements are sparsely or moderately built, such as in the urban periphery (Lupala, 2019).

Conversely, formalisation does not entail the stages of town planning and surveying. In this case, individual plots are adjudicated and recorded within a register for their ‘status-quo’, without any land adjustment. They are issued short-term leases – Residential Licence – by the relevant Municipality. Settlements qualify for formalisation if they are at saturated stage, with high-density construction, poor quality building and infrastructure. In Dar es Salaam, these settlements tend to be located in the ‘inner ring’ of the city, from around two to twenty kilometres from the centre. Thus, embedding the principle of incremental regularisation, formalisation extends the benefits of tenure security and legal recognition where regularisation is too challenging and unaffordable. First, overcrowding complicates processes of land adjudication and adjustment, town planning and surveying in these areas. Second, the socio-economic profile of these settlements is characterised by poor land holders, who cannot easily afford longer-term leases.

Importantly, the government introduced formalisation as a steppingstone to regularisation (Kironde, 2006). First, it was foreseen that formalisation would stop processes of land subdivision, thereby preventing further unplanned growth in the already saturated unplanned settlements. Second, following the economic theory on private property rights, the government expected that tenure security and access to credit would unlock investment in housing and infrastructure conditions. Third, formalisation would provide a register of information and a stream of revenue through land rents. These would contribute to future regularisation schemes.

### **1.2.3 The Certificate of Right of Occupancy**

The Certificate of Right of Occupancy (CRO) is a long-term leasehold, valid for 33, 66 or 99 years (typically 66 years for residential use). It is authorised and issued by the MLHSD on planned and surveyed land. From a legal perspective, it provides the highest protection by law in the country. Whilst the government maintains the right to expropriate plot owners with statutory rights to land, a CRO secures higher compensation compared to unregistered land.<sup>1</sup> Furthermore, a CRO documents the plot holders’ identity and the exact plot boundaries through a survey plan, thereby mitigating potential conflict with third parties, and offering statutory

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<sup>1</sup> By law, also unregistered land must be compensated in case of expropriation. However, in practice, receiving compensation is easier and more secure if the land is registered. Furthermore, a CRO generally guarantees higher compensation.

protection in the case of double sale, boundary, and inheritance disputes. The ownership and transfer of CROs are recorded in cadastral registers, which enable official searches. This is meant to ease land markets, by reducing the need for informal means of verification (i.e. verbal validation of the rightful owner by local leaders and neighbours), which are less secure and do not guarantee state protection in case of scamming. For the same reasons, the CRO is the most secure form of collateral for banks. In fact, plot holders pledging a CRO can access larger size loans and are subject to more favourable conditions compared to unregistered ownership documents (sale agreement) (Manara and Pani, 2020a, see below).

Processes to acquire CROs have been cumbersome and expensive in practice. By the early 2000s, it was common practice for plot owners to take individual initiatives to regularise their plots. This was problematic because of scale economies in processes of town planning and surveying, which are less expensive and cumbersome if they involve a neighbourhood instead of the single plot. For instance, Nuhu and Kombe (2021) estimate that planning and surveying a standalone plot may cost around 2-3 million TSh, while for large scale projects involving more than 1,000 plots the average cost does not exceed 0.2 million TSh. Thus, it is little surprising that most urban areas had remained predominantly informal. Indeed, in 2002 aerial imagery of Dar es Salaam showed that unplanned settlements accommodated some 400,000 housing units, equivalent to 80% of all residential buildings (Kironde, 2006: 83). Magigi and Majani (2006) document the exceptional case of Ubungo Darajani, where residents engaged in the preparation of settlement-wide land use plans and executed a joint cadastral survey. These processes were lengthy and difficult; for instance, the phase of plot demarcation took about three and a half years and a total of sixty-four trips to the relevant offices (within the Municipality and the MLHSD). Eventually, the survey plan was submitted and approved in late 2004, seven years after the project inception. At this point, plot owners had yet to apply and pay for land titles.

To address such challenges and facilitate access to CROs, the government has promoted large-scale regularisation schemes, in particular through the ten-year strategy 2013-2023 (Lupala, 2019).<sup>2</sup> Starting from 2016/2017, pilot programmes were conducted in seven Municipalities (MLHSD, 2016a, 2018).<sup>3</sup> Drawing on World Bank funds, the MLHSD carried out a pilot regularisation scheme in the Kimara Ward of Dar es Salaam, a more middle-class suburb located about twelve kilometres from the city centre along the Morogoro Road (**Figure 1**), with the ambitious goal of issuing 6,000 CROs in three months (Kusiluka and Chiwambo, 2018; Omar, 2017). This project embedded the participatory approach enshrined by the Land Act 2007

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<sup>2</sup> Early regularisation schemes were conducted in Dar es Salaam (Temeke) and Mwanza between 2008 and 2013, with World Bank funds.

<sup>3</sup> Beyond Dar es Salaam, these include Kigoma-Ujiji, Lindi, Musoma, Singida, Sumbawanga, Tabora, where unplanned settlements covered on average 36% of the city area (from 57% in Musema to 8% in Singida) (MLHSD, 2018: 5).

and the latest ten-year strategy, whereby land holders were responsible for demonstrating their plot boundaries and agreeing land adjustments for the provision of road access and infrastructure (MLHHS 2018). Ubungo Municipality demarcated about 4,800 plots and invoiced their plot holders for the acquisition of CROs (World Bank, 2019: 75-77). Two years into the programme, 1,482 invoices had been issued in the communities of Kilungule A and B. However, only 13% of plot holders had acquired their title deed, even though 28% had been invoiced over two years earlier, and only 3% within the last six months.

This outcome is representative of other projects, where “generally the rate of applying and paying for land titles was low” (Kusiluka and Chiwambo, 2018: 284). Learning from this project and its challenges of low uptake, the government has adopted further strategies to encourage the proliferation of large-scale titling projects and increase uptake of CRO. These include encouraging a private market of regularisation services by private companies, loosening planning standards to ease town planning and surveying processes, and applying price ceilings to reduce the costs of regularisation. In fact, such strategies have been successful in increasing the supply of regularisation projects in Dar es Salaam. However, many of these projects are still incomplete, and in most cases plot holders have yet to pay for CRO acquisition.

#### **1.2.4 The Residential Licence**

The provision of the Residential Licence (RL) is regulated by Section 23 of the Land Act. This is an interim statutory right embedding the principles of an incremental approach to land tenure. It can be granted on unplanned and un-surveyed land in urban areas. The MLHHS selects specific areas for formalisation schemes and issuance of RL. Government officers involve local leaders and neighbours to verify the identity of the plot holders and their plot boundaries. If the plot lies outside of hazardous areas, the Municipality issues a RL, which can be acquired for a moderate fee. Buying or renewing a RL requires a fixed payment of 5,600 TSh (approximately 2.5 USD) and a variable annual land rent calculated on land area and use (ranging 0.25-\$9 USD). Instead, the costs of CRO acquisition might be tenfold those of the RL. For instance, the mean fees in the Kimara regularisation scheme described above were 526,000 TSh. The uptake of RL is not compulsory, and sanctions are not imposed on plot holders who decide to not take up. However, plot holders who take up a RL are obliged to pay a small annual land rent and keep the document renewed, as set out on the RL document.

On paper, the RL makes the same provisions of a longer-term lease (i.e. the CRO discussed above). In fact, it grants the right to occupy land for recognised uses. Furthermore, the RL offers the same level of compensation in case of government expropriation.<sup>4</sup> It is enforceable within

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<sup>4</sup> Conditional on the RL having been held for at least three years.

formal tribunals in case of ownership, boundary and inheritance disputes with third parties. It is legally transferable and collateralisable providing access to formal land markets and formal credit organisations (e.g. mainstream banks). However, the RL differs from a CRO in three important respects. First, it has a shorter temporal validity, currently limited to five years (renewable). In fact, all Municipalities have continued to allow renewals since the RL program began. Second, contrary to a CRO, the RL is not attached to a proper survey plan. Instead, the plot boundaries are drawn by hand on aerial pictures in the field then transferred into GIS, and the plot layout is printed on the RL without coordinate references and linear measurements. Third, as said above, under formalisation a plot is registered for its 'status-quo'. Because formalisation does not require conformance with town planning standards, there is no need of land adjustment. Finally, thanks to the deployment of low-cost technology and the absence of town planning, acquiring a RL is considerably cheaper and easier, even considering the recently reduced costs of surveying and CRO acquisition and the simplified processes of large-scale regularisation projects.<sup>5</sup> Thus, embedding the principles of incremental regularisation, formalisation extends the benefits of tenure security and legal recognition to many low-income land holders who cannot afford regularisation and longer-term leases.

Under the auspices of the MLHSD in collaboration with the municipal governments of Dar es Salaam, a pilot formalisation project started in earnest in 2004, targeting about 200,000 plots located in areas considered to have reached a 'saturated' stage of development (Kironde, 2006). These were selected for the first phase of the RL programme extending from the city centre to the periphery, across all Municipalities of Dar es Salaam: Ilala, Kindoni and Temeke (**Figure 1**).<sup>6</sup> Processes of plot identification in the field took about two years until December 2006, and the first RL was issued in May 2005. Uptake was concentrated in the early years of the programme. Around 50% of eligible plot owners have taken up a RL. However, only 12.5% currently have an active RL as a result of limited new uptake and low renewal. In response to such low demand and limited financial returns, the second phase of the programme was suspended until 2019 (Sheuya, 2010).

In April 2019, the Minister of Lands delivered a public speech explaining that too many plot holders continued to experience difficulties in accessing long-term titles (CRO) especially due to financial hurdles causing issues of affordability and severe delays in the execution of regularisation projects by private companies.<sup>7</sup> For this reason, the government retrieved the RL programme targeting another 500,000 plots in Dar es Salaam to provide them easier access to

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<sup>5</sup> In addition to the phases of planning and surveying, the issuance of CRO can take several months. For example, in Kimara, it can take longer than eighteen months after the payment of fees.

<sup>6</sup> Since 2015, the Municipalities are five, including Ubungu and Kigamboni, which are detachments of Kinondoni and Temeke respectively.

<sup>7</sup> [https://www.youtube.com/watch?v=T1YqAvx1\\_3o](https://www.youtube.com/watch?v=T1YqAvx1_3o)

tenure security (**Figure 2**). In this case, the government staff, including many students specialising in surveying and geomatics at the Ardhi Institute in Morogoro, adopted digital tools to demarcate plot boundaries and record plot holders' details. The deployment of low-paid staff and low-cost technology enabled speedy data collection and kept the RL price at 5,000 TSh. In fact, 60,000 plots were identified in the first month. By January 2020, information had been collected for about 134,000 new plots. Just under 26,000 plot holders had been billed and 21% of those had paid for their RL. Declaring this programme a success, the government has plans to formalise another 1 million urban plots, including outside of Dar es Salaam, under the Land Tenure Improvement Project (World Bank, 2020).

### 1.2.5 Dar es Salaam

The context of this thesis is the city of Dar es Salaam, where the pilot programmes of formalisation and regularisation described above have taken place. The urbanisation of Dar es Salaam has been relatively swift. Its origins can be traced to the 17th century when elite African and Persian traders settled around Mzizima, a small fishing village on Dar's Mrima coast. By 1862 its harbour and economy had developed enough that the Sultan of Zanzibar declared it a 'new town', solidifying its success as a commercial centre. In 1891 it was declared the seat of German Colonial administration: a move that possibly sealed its fate as the country's fastest growing urban centre (Brennan et al., 2007). Like many other developing countries, Tanzania has a high urbanisation rate, driven primarily by population growth and sustained rural to urban migration: today, about a third of the population lives in urban areas (World Bank, 2020: 4). It is estimated that Dar es Salaam is home to more than 7 million inhabitants and has an annual population growth rate of about 8 percent (World Population Review, 2021).<sup>8</sup> Not only is it the most populous city in East Africa: with a projected population of over 10 million, it will become one of the continent's megacities by the early 2030s (World Bank, 2020: 5). Given the deficiencies of formal land supply and urban planning, urbanisation dynamics are governed by informal institutions of land access, use and development (Kombe and Kreibich, 2000; Panman, 2020). Crucially, they provide relatively high levels of tenure security. Local leaders are key figures of informal land institutions. The mtaa chairman (*mwenyekiti*) is an unpaid elected political figure, supported by a government appointed executive officer holding a bureaucratic position. The chairman selects and works closely with street leaders and their assistants (*wajumbe*). Working both within and outside of formal government structures, these leaders typically engage in processes of informal land transfer and dispute arbitration, despite not having a formal mandate to administer land matters.

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<sup>8</sup> <https://worldpopulationreview.com/world-cities/dar-es-salaam-population/>

Because of its historical and current trajectory, Dar es Salaam is not entirely comparable to many other Tanzanian urban contexts. First, it is a primate city in Tanzania. Based on the last Census data (2012), its 4.4 million inhabitants constituted approximately 10% of the national population and one third of all urbanites in the country (32.8%).<sup>9</sup> Conversely, the second and third largest cities, Mwanza and Mbeya, had population sizes under 1 million. Second, Dar es Salaam has a distinctive economic profile compared to other Tanzanian cities. Its major harbour on the Indian Ocean attracts commerce and transportation activities oriented to the global market. Thus, it is the country's largest commercial city and engine of economic growth (MLHSD, 2016b: 42). Third, the coverage of unplanned settlements is much higher in Dar es Salaam than other cities. With massive influx of people and a severe deficit of formal housing, informal land markets have become very lively in Dar es Salaam (Kombe and Kreibich, 2000; Magina et al., 2020). Whilst, as noted above, in the early 2000s, 80% of Dar es Salaam was occupied by unplanned settlements, this was a much higher rate compared to Mwanza, Mbeya and Arusha (World Bank, 2019). For these reasons, some dynamics such as rising competition for urban land, increasing land values, contrasting land uses, expanding peripheries and co-existing formal and informal institutions of land management, which might be common to other Tanzanian cities, certainly scale up in the context of Dar es Salaam. For instance, there is an intensification of land conflict in the proliferating peri-urban areas (Wolf et al., 2018; World Bank, 2020). Thus, responses to formalisation and regularisation programmes might differ here from other Tanzanian cities.

For many aspects, Dar es Salaam might be well representative of other large cities in Sub-Saharan Africa with exceptionally lively dynamics of urbanisation, dense unplanned areas, sprawling peripheries, informal land markets, evolving land institutions and legal dualism. For instance, Nairobi in Kenya is also amongst the most populous cities of Africa. Growing by 50% in the ten years between 1999 and 2009, Nairobi reached over 3 million inhabitants by the last 2009 Census (Bird et al., 2017). Like Dar es Salaam, there is a severe undersupply of formal housing in Nairobi, which has forced incoming residents to establish themselves in slums. Similarly, local chiefs play an important role in the informal allocation and management of land (Joireman and Vanderpoel, 2011). Furthermore, Kenya also inherited a colonial dual system of land tenure and, as noted in section 1.2.1, it embarked on a post-independence land reform presenting several similarities with Tanzania (McAuslan, 2013). As Dar es Salaam, Nairobi hosts some projects of unplanned settlements regularisation and upgrade (e.g. the KISIP project).<sup>10</sup> However, informal land institutions, actors, relations, and processes are substantially different in this context. For instance, in Nairobi, most slum dwellers pay rents to slum

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<sup>9</sup> Author's calculation, based on Tanzania Census Dashboard (NBS, 2012). Retrieved from [dataforall.org/dashboard/tanzania/](http://dataforall.org/dashboard/tanzania/)

<sup>10</sup> Kenya Informal Settlements Improvement Programmes.



landlords, typically government officials and politicians, even if land is not privately owned (Gulyani and Talukdar, 2008). Local chiefs are appointed by the Provincial Administration and they are regularly rotated around the city. They exercise power and abuse, for example by favouring the residents of the same ethnicity in the rental market (Marx et al., 2019). Relatedly, land access is associated with a long history of government corruption and waves of violence (Cheeseman, 2008; Southall, 2005), whereas the same levels of patronage, corruption, and violence are not documented in Dar es Salaam. Finally, it is important to note that in Kenya land can be held as freehold, while interim titles are not provided, and ownership registration is always subject to planning and surveying. In sum, despite of similar trajectories of urbanisation and land reform, Dar es Salaam presents important context specific traits.

### **1.3 Summary of PhD**

#### **1.3.1 Overview of chapters**

Chapter 2 ‘Neighbourhood effects on uptake of interim title deeds in Dar es Salaam’ studies whether peer-effects play a role in explaining households’ short- and long-term choices of formalisation with intermediary property rights (Residential Licence). It utilises administrative cadastral data and a pseudo-diff-in-diff strategy to study the propensity for plot owners to take-up the land title following the behaviour of their proximate neighbours. The paper finds evidence of peer-effects in the initial stage of the programme, when the uncertainty about the perceived relative benefits from formalisation is higher. Furthermore, peer-effects occur among adjacent neighbours. Compared to any other pair living 50 meters apart, adjacent neighbours are 25% more likely to uptake in the same month, and 14% more likely to uptake within six months of one another. Results are robust across multiple definitions of neighbourhood and restrictions on plot geometry and density. A balancing test demonstrates that there is no sorting within very small neighbourhoods. My analysis shows that peer-effects are not heterogenous across old and new settlers. This chapter further examines some potential mechanisms for peer-effects among adjacent neighbours. I propose that frequent and salient interactions around land tenure strengthen social learning among contiguous plot owners. Furthermore, I suggest that non-private returns to formalisation increase with spatial proximity and motivate coordination in uptake. Primarily, the paper contributes to literature on the determinants of demand for formal titles and the substitutability of formal and informal property rights. It also adds to prior studies examining social learning in the adoption of development policies, and neighbourhood effects in urban areas.

Chapter 3 ‘From policy to institution: a descriptive norm of tenure formalisation in Dar es Salaam’s unplanned settlements’ further explores the role of interdependencies in plot owners’ decisions to uptake interim titles, as observed in Chapter 2. This chapter examines if an informal

institution – i.e. rule or norm of behaviour – motivates collective choices of formalisation, thereby driving patterns of coordination in the neighbourhood. Analysing primary data that we collected from two surveys with 1,363 and 243 respondents across Dar es Salaam’s unplanned settlements, this chapter finds that the policy has embedded into an institution-in-use: a descriptive norm determining interdependent preferences for formalisation. In fact, plot owners have positive normative beliefs concerning the formalisation policies (85%), but they uptake and renew conditional on the behaviour and advice of their neighbours (64%) and local leaders (57%), because these provide essential information as to the real benefits and the process of acquiring the Residential Licence. However, plot owners know few others who have or endorse the licence; thus, they have scarce social incentives to formalise, including from local leaders. Overall, the paper demonstrates that the Residential Licence policy rallies considerable social support as plot owners conform to an institution-in-use that prescribes formalisation, despite of low actual uptake. This chapter adds to the previous one by confirming that social learning is the main mechanism of peer-effects. Further, it contributes to literature on the demand for formal titles by demonstrating that low uptake is not necessarily the result of low social support. Finally, it offers an important methodological contribution to measure the social embeddedness of formalisation policies in specific spatial-temporal contexts.

Chapter 4 ‘Informal practices of formal property: local leaders and land formalisation in Dar es Salaam’ (co-authored) further unpacks the role of local leaders for the construction of, and the transition to, formal property. This chapter draws on extensive qualitative research, including in-depth interviews that we conducted with over seventy local leaders, municipal officers, lawyers and bank officers. It examines the situated practices that make land into formal property and explores how this is negotiated by multiple actors within, at the interface, and outside of the state. Local leaders are neighbourhood chairmen, executive officers, and other community representatives with formal and informal mandates to govern land in the unplanned settlements. Chapter 3 argued that they are key figures in the community, and plot owners would follow their advice to make choices of formalisation. This chapter (4) demonstrates that local leaders are also essential to legitimise and operationalise the instruments of formal property in the making: the cadastral database and the ‘survey’ map. Thus, the formalisation process incorporates – instead of replacing – informal dynamics of mutual recognition of public authority and property. This chapter adds to the previous one by arguing that the lowest level of government mediates the transition to formal property both for non-state and state actors. Indeed, it concludes that the central government cannot construct and manage a formal property apparatus without the support of the local public authority and informal practices of property recognition. By implementing informality as a lens to deconstruct state and law into their contingent and individualised practices, this chapter contributes to arguments on the informality-formality nexus, the co-constitution of rights and authority, and the informalisation

of the state. Furthermore, it adds to research on processes of formalisation suggesting that titling projects cannot possibly impose an idealised model of property upon society.

Chapter 5 ‘Eliciting demand for title deeds: Lab-in-the-field evidence from urban Tanzania’ (co-authored) turns to study a pilot programme offering full property rights (Certificate of Right of Occupancy) in two neighbourhoods of Dar es Salaam. With only 13% uptake in two years, academic literature and interview material suggest that the costs of registration exceed demand, making full statutory rights unaffordable and socially exclusive. This chapter measures the local demand for titles and proposes leveraging the knowledge of local leaders to inform a better pricing strategy. We conduct two lab-in-the-field experiments with 90 local leaders and 146 property owners. We first elicit their demand for titles through the Becker-DeGroot-Marschak (BDM) method, finding that roughly 40% of plot owners in our sample are willing to pay fees equal to the monthly income of a typical household. Thus, demand is substantial, while largely below current fees. We then ask if local leaders can help predict this demand ex-ante. Results show that they have accurate information about the aggregate demand curve in their neighbourhoods and they can distinguish variation in willingness-to-pay across plot owners. An incentive scheme of cash prizes can correct for inaccuracy or misreporting. This chapter adds to the previous ones by further demonstrating that there is a demand for formal titles in Dar es Salaam and local leaders could effectively support the transition to formal property. Indeed, they can inform a pricing strategy that raises the uptake of titles and covers the project costs by lowering prices across the board and by price discriminating across high and low willingness-to-pay plot owners. The chapter contributes to literature studying the use of non-state agents to target subsidies or collect revenues, and prior work eliciting willingness-to-pay for non-market goods.

### **1.3.2 Overview of study areas**

The study areas are illustrated in **Figure 1**. Chapters 2 to 4 of this thesis focus on the first phase of the RL programme, which was presented in section 1.2.4. This programme extended across approximately 160 *mitaa* (sub-wards), from the city centre to the urban periphery. Chapter 2 uses administrative data of all 220,000 plots eligible for the uptake of RL under this programme from 2004 to 2017. Data presented in Chapter 3 are the result of representative surveys of 1,363 and 243 plot holders in fifty-two *mitaa* eligible for the uptake of RL across the city. In these *mitaa*, we conducted interviews with local leaders and ethnographic observation of their activities, which constitute the empirical material of Chapter 4. Thus, data collection occurred in diverse unplanned settlements, which are representative of the whole area under the RL programme of Dar es Salaam, as explained in the methodology section of Chapter 3.

Settlements under the RL programme present a wide variety of characteristics. First, they are situated in distinct administrative units (Municipalities) within Dar es Salaam and at various distances from the CBD (from two to nineteen kilometres). This is reflected in different land values and market access, depending on both distance to CBD and transport network quality. For example, looking at current government land values in the unplanned settlements eligible for RL in Ilala, they range from 50,000 TSh to 120,000 TSh per square meter (Gongolamboto and Miembeni, respectively). Some settlements were located along the new Bus-Rapid-Transport (BRT) lines, and easily accessible. Others required two hours on the local *daladala* (small bus) and a *bajaj* (auto rickshaw) drive for us to reach them. On the other side, these settlements present different characteristics of plot density and size, housing and infrastructure quality, occupation, tenure, and socio-economic profile of plot holders. These are influenced by distance from CBD, morphology and soil, proximity to hazardous land, the presence of local leaders and many other factors.

For example, closer to the CBD, in Kinondoni Municipality, Manzese is one of the most saturated unplanned settlements of Dar es Salaam. This is visible in the dense, overcrowded, and low-quality building construction, lack of open space, and very limited infrastructure provision. In Temeke, Keko Mwanga and Keko Machungwa represent pockets of informality amidst highly developed industrial land. Here, the expectation of imminent acquisition by the formal sector influences land investment and attitudes to formalisation. Also, Ilala Municipality offers a wide variety of settlement conditions. At the border with the formal city, Malapa has higher rates of two-storey buildings and a lively rental market. A little further from the CBD, Kombo and Miembeni were involved in the City Infrastructure Upgrade Programme,<sup>11</sup> and received some infrastructure and service upgrades. In proximity to the Msimbazi river, which is responsible for frequent and devastating flooding, the quality of housing and infrastructure is very poor. Houses are built of bricks and corrugated iron sheets. Dirt roads are severely impaired. The Municipality is crossed by the Nyerere Road, which connects the airport to the city centre. Mogo, Stakishari, Uwanja wa Ndege and other settlements along this artery are relatively richer. Plots are larger, with lower density housing and some green space. Moving towards the peri-urban, such as in Gongolamboto, it is possible to find walled or fenced properties, with beautiful habitations and internal courtyards. These traits are typical of the rising middle class, who relocate from the city centre to the expanding suburbs in search of their rural idyll and investment opportunities (Mercer, 2017).

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<sup>11</sup> The City Infrastructure Upgrade Programme (CIUP) was divided in two phases (2005-2008; 2008-2011) that covered 31 communities of Dar es Salaam delivering infrastructural upgrades and services in the unplanned settlements.

Chapter 5 focuses on regularisation with full property rights, studying the uptake of CRO in two *mitaa* of the Kimara Ward, Kilungule A and B, where the government started a pilot project of regularisation in 2016, as explained in section 1.2.3. This area locates along the Morogoro Road and is easily accessible by BRT. Whilst further away from the CBD (approximately 12 kilometres), Kilungule A and B border the unplanned settlements included in the first phase of the RL programme (e.g. Ubungo Kibo and Msewe). In fact, they present similar characteristics compared to the peripheral settlements discussed above. For example, the typical income of Kilungule A and B is between 160,000 TSh and 200,000 TSh, just like one of its neighbouring *mtaa*, Ubungo Msewe, under the RL programme. Indeed, the communities of Kilungule A and B are, to a large extent, middleclass. This is reflected in relatively larger plot size and good quality housing. The urbanisation of this area did not start until the 2000s, when first residents purchased farm or forest land informally, converting the local landscape into a residential neighbourhood. In this context, processes and outcomes of regularisation might differ from saturated areas where a longer history of urbanisation has produced overcrowding, low quality housing, lack of infrastructure, and rising land conflicts. However, Kilungule A and B are representative of most unplanned settlements in the expanding suburbs of Dar es Salaam at infancy or consolidated stage. In fact, they provide a unique opportunity to study the uptake of CROs within a large-scale regularisation scheme in the city.<sup>12</sup>

### **1.3.3 Overview of main contributions**

Engaging with an inter-disciplinary literature, this research offers several contributions to academic knowledge, as articulated in each individual chapter. In terms of research methodology, this PhD demonstrates that different methods can be combined to probe and enrich knowledge on formalisation policies and their challenges of implementation in specific spatial-temporal contexts. For example, econometric modelling in Chapter 2 describes broad patterns of behaviour in choices of formalisation, while the institutional analysis of survey data in Chapter 3 provides a more nuanced understanding of their underlying mechanisms. In-depth interviews in Chapter 4 enable us to identify the key role played by local leaders during the formalisation process, and the experimental approach of Chapter 5 allows us to test one hypothesis regarding how their local knowledge could be leveraged to raise the uptake of titles. Overall, this endeavour responds to a lively epistemological and methodological debate in urban geography (e.g. Roy, 2016; Scott and Storper, 2015), attempting to address the challenge of producing both generalisable and context-specific knowledge.

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<sup>12</sup> The pilot in Kimara triggered numerous regularisation initiatives by private companies, starting with the Goba project. However, these projects are still incomplete, so that it is not possible to study the uptake of CROs in these areas.

To briefly address the research questions outlined in section 1.1.3 above, this work finds that first, formalisation policies rally considerable social support in Dar es Salaam, despite low uptake. This underscores the need to differentiate between observed demand and social support for formalisation policies in research and policy making. Second, relative to the demand for formalisation, the PhD demonstrates that choices of formalisation with Residential Licences are interdependent in the population, mediated by social interactions. From this perspective, low demand might be the result of scarce social incentives for formalisation. Third, social interactions mediate the process of formalisation. Specifically, informal dynamics of property recognition by local leaders and neighbours are essential to legitimise and enable the formal property apparatus. Indeed, formalisation policies are negotiated in their local context of implementation. Fourth, the PhD concludes that it is possible to leverage social interactions to improve the current formalisation programmes. In this respect, the research provides some policy recommendations.

Concerning the Residential Licence programme, my study suggests that plot owners need clearer and updated information on the continuation of this programme, its processes and costs. Indeed, social learning is the main driver of coordination in choices of formalisation to compensate for scarce and uncertain information from the government. Whilst more research is needed to test the most effective policy instruments, the general take-away is that well-designed formalisation policies should include social incentives for uptake and renewal. For example, in areas where plot owners underestimate the local rate of uptake, formalisation could be raised by updating their social expectations on other people's behaviour. In most cases, periodic information campaigns could increase the rate of formalisation, especially if realised locally through the capillary action of the lower level public authority in the smallest neighbourhood units. Relative to Certificates of Right of Occupancy, the research highlights the need to lower the monetary costs of formalisation and implement a better pricing strategy leveraging the knowledge of local leaders. In a context where formalisation policies rally considerable social support, formalisation projects should be designed in order to meet the local demand by making statutory property rights affordable and socially inclusive. More generally, I recommend that key actors of informal institutions are not left behind in the transition to formal property. In fact, their public authority is constitutive of both informal and 'more formal' practices of property recognition.

#### **1.4 Ethical considerations**

Throughout my PhD, all research and data collection was subject to rigorous ethics approval at the LSE, ensuring that it was carried out in accordance with six central principles: i.e. to maximise social benefit while minimising risk and harm; to respect people's rights and dignity;

to offer informed consent to voluntary participants; to maintain integrity and transparency throughout; to take responsibility for my research and dissemination with clear lines of accountability; and to ensure research independence throughout. Further, we obtained approval and permits from the appropriate Tanzanian authorities including the Commission for Science and Technology; the Regional Office of Dar es Salaam; the Municipalities of Kinondoni, Ubungu, Ilala and Temeke; and every ward and *mtaa* (sub-ward) involved in the study.

The research took place across Dar es Salaam's unplanned settlements in three phases consisting of two field surveys, in-depth interviews, and a lab-in-the-field experiment. For the surveys and interviews, our sample of *mitaa* followed three major road arteries (Morogoro, Nyerere and Kilwa), stretching from the CBD to about twenty kilometres from the city centre. Necessarily, the sampling strategy took account of accessibility by public transport (*daladala* and BRT) and by foot, but in no way did this influence our findings (at times we travelled more than two hours to reach our destination).

During my fieldwork, I was affiliated to Ardhi University, which afforded us the opportunity to work with final year students and graduates, whom we trained as our enumerators and research assistants. Apart from ensuring their skills in delivering the questionnaires and interviews accurately, it was vital that they understood their own positionalities, learning how to facilitate a safe and open research environment by enabling respondents to co-own and co-shape the research process. As such, I worked with them constantly in the field, acting as their mentors, supervisors and colleagues, whilst helping to build local capacity.

Importantly, all research was carried out with adults who were capable of making their own choices regarding participation. In all cases, we sought written or verbal informed consent. Participants were provided an information sheet in Swahili. This included a clear statement on: the research purpose and design, what their participation would involve, that their data would be stored safely on the LSE's server and used for academic purposes only, and on their right to anonymity and confidentiality – all of which was read to them aloud. It was also stressed that their participation was voluntary, and they were free to withdraw at any point. For the surveys, completion of the questionnaire was considered proof of consent. For the interviews, consent was given in writing or digitally recorded – again with the participants' consent.

To undertake the surveys, local leaders introduced us to households in their neighbourhoods. This was essential given local customs and helped build initial trust with potential respondents. However, it was vital that the leaders did not act as 'gatekeepers' and that plot-owners felt free to opt out. As such, we implemented a strict randomised selection process that identified

clusters of potential respondents on a map before going to the field, thereby significantly reducing local leaders' capacity to pick and choose.

Importantly, each research phase passed the LSE review process at the Departmental level. However, the research in Chapter 5 required additional approval from the LSE Ethics Committee, which was successful. Briefly, our project included a willingness-to-pay elicitation exercise through the Becker-DeGroot-Marschak (BDM) method, which exposed participants to a lottery process, and provided monetary incentives in the form of subsidies to title deed acquisition. These issues raised important ethical concerns, which we addressed through careful research design and implementation. First, we sampled a pool of plot holders who had already been invoiced for the acquisition of a CRO: thus, we did not interfere with their capacity to acquire the title deed at the invoiced price, during or after the study. Second, we recognised that the lottery distributing discounts may cause distress in the form of anxiety or distrust, and we put in place adequate mechanisms to minimise this. For instance, we organised information and training sessions for all potential participants to ensure they could make informed individual choices regarding their participation in the study. In the interest of transparency and trust, we illustrated the mechanisms of the lottery process several weeks ahead of the research sessions. Furthermore, we conducted the lottery process in an open environment, where it could be observed by the local leaders. During the research sessions and just before the lottery process, we explicitly asked participants if they would like to drop from the study. Respondents understood that this would have no negative consequences to them and would not affect their capacity to acquire a title deed outside of the research project, should they wish to do so. As stated above, our research was undertaken on the foundations of informed consent and transparency, engaging with capable adult respondents who could withdraw from the study at any time. Therefore, we proved the ethical solidity of our research by demonstrating that: a) respondents had the capacity to foresee and manage the expected distress; c) respondents were capable of informed individual choices concerning their exposure to distress; and d) the potential benefits from the research exceeded the potential distress caused by the lottery process. More details can be found in section 5.14.

Finally, all phases of research were conducted independently. Certainly, we received funding from the World Bank, IGC and the RGS-IBG (Slawson Award). Further, in Tanzania, I collected data from the MLHSD and the Municipalities. However, none of these actors was a research 'partner' in that they had no involvement in, or influence upon, the research questions or design. Indeed, I have disseminated my research findings to these actors, always in an open and ethical way.



## **1.5 Limitations, related research, and ways forward**

Despite its important contributions, this work presents several limitations. First, its scope is limited to a predominant urban focus and a defined geographical area. As discussed in section 1.2.5, Dar es Salaam is one of the fastest urbanising cities of Africa. Land markets and urban investments are livelier here than in other areas, which may affect responses to formalisation policies. Thus, caution is needed when generalising context specific findings and policy recommendations to rural settings, other cities, or countries. Second, this work provides little insight into the geographical differences within the city, essentially treating Dar es Salaam as one homogenous context. Whilst the research design of most chapters (except Chapter 5) allowed the capture of within-city variation, this aspect is hardly discussed because results were found relatively homogenous across locations, at least relative to the objectives of this PhD. This does not preclude more geographically disaggregated analysis in the future. Other relevant aspects are not included in this PhD: some are developed into companion papers; others will be the subject of further research.

With regards to research outputs that are not included in this PhD, Manara and Pani (2020b) discuss the urban land policy of Tanzania with a focus on its incremental approach to land tenure regularisation. We identify and illustrate key strategies that the government adopted to widen access to ownership registration, for example by lowering planning standards for regularisation schemes, fostering a private market of regularisation services, and setting a price ceiling to planning and surveying. Another of these strategies is the provision of interim land titles, through formalisation and the issuance of RLs. We offer a detailed analysis of the potential implications and shortcomings of such incremental approaches to tenure regularisation. For example, the loosening of planning standards has long-term consequences in terms of unplanned settlements' upgrade. Policy changes create a high degree of unpredictability in the private market for regularisation affecting supply and project outcomes. The presence of overlaying and competing formal institutions of tenure constrains demand for interim land titles and their legitimacy in the eyes of credit organisations. In sum, incremental steps may introduce several layers of complexity in the trajectory to tenure security. The paper concludes that incremental approaches to tenure regularisation are supported by political interests aiming to raise consensus and revenues.

Another research output (Manara and Pani 2020a) digs further into the implementation of RLs and CROs by credit organisations. A controversial tenet underpinning policies of land tenure regularisation is that the registration of ownership enables credit markets by allowing banks to avoid or manage risk associated with the collateralisation of unregistered land. This contrasts with empirical evidence showing that land tenure regularisation has failed to boost credit

markets in many developing countries, including Tanzania. Thus, formal institutions of property are neither necessary nor sufficient for the urban poor to access credit. We add to this literature by introducing new empirical evidence and by understanding this problem through the theoretical concept of institutional complementarity. We interview nine of the largest financial organisations in Dar es Salaam and collect information on their credit institutions: rules and conditions of access to loans, loan types and sizes associated to each category of collateral (i.e. unplanned and unregistered land, interim or full property rights). The paper demonstrates that financial organisations react to a complex and evolving land policy by producing and adjusting credit institutions to be complementary with a wide array of property institutions. As a result, banks are able to accept unregistered collateral with relatively low risk, and interim property rights provide scarce benefits of access to credit as they have limited legitimacy compared to full property rights.

Most empirical chapters of this PhD explore issues related to the demand for RL and CRO in Dar es Salaam. However, they do not explicitly deal with the cost-benefit calculations of plot holders when they decide whether to uptake (or renew) a title document. Indeed, this PhD focuses on endogenous interactions within local communities and how they mediate the institutional transition to formal tenure. I investigate the perceived costs and benefits of land tenure registration and how they affect demand for RL and CRO respectively in other papers. Drawing on the administrative Household Survey conducted at the beginning of the RL programme, Manara and Pani (2020c) describe how key plot and plot holder characteristics correlate with choices of formalisation. We test economic assumptions relative to the drivers of demand for formalisation based on the plot holder's gender, length of tenure, proximity to CBD, property value, distance from hazard, and local incidence of land disputes. Furthermore, the paper uses primary survey data from the Land Tenure Survey conducted as part of this PhD to examine plot owners' assessments of the RL vis-à-vis the unregistered proof of ownership (sale agreement) and the longer-term lease CRO. In fact, plot holders believe that the CRO confers the highest benefits and wish they could take part in regularisation schemes providing CROs. Thus, the paper finds evidence of competing institutions reducing the perceived benefits from the RL.

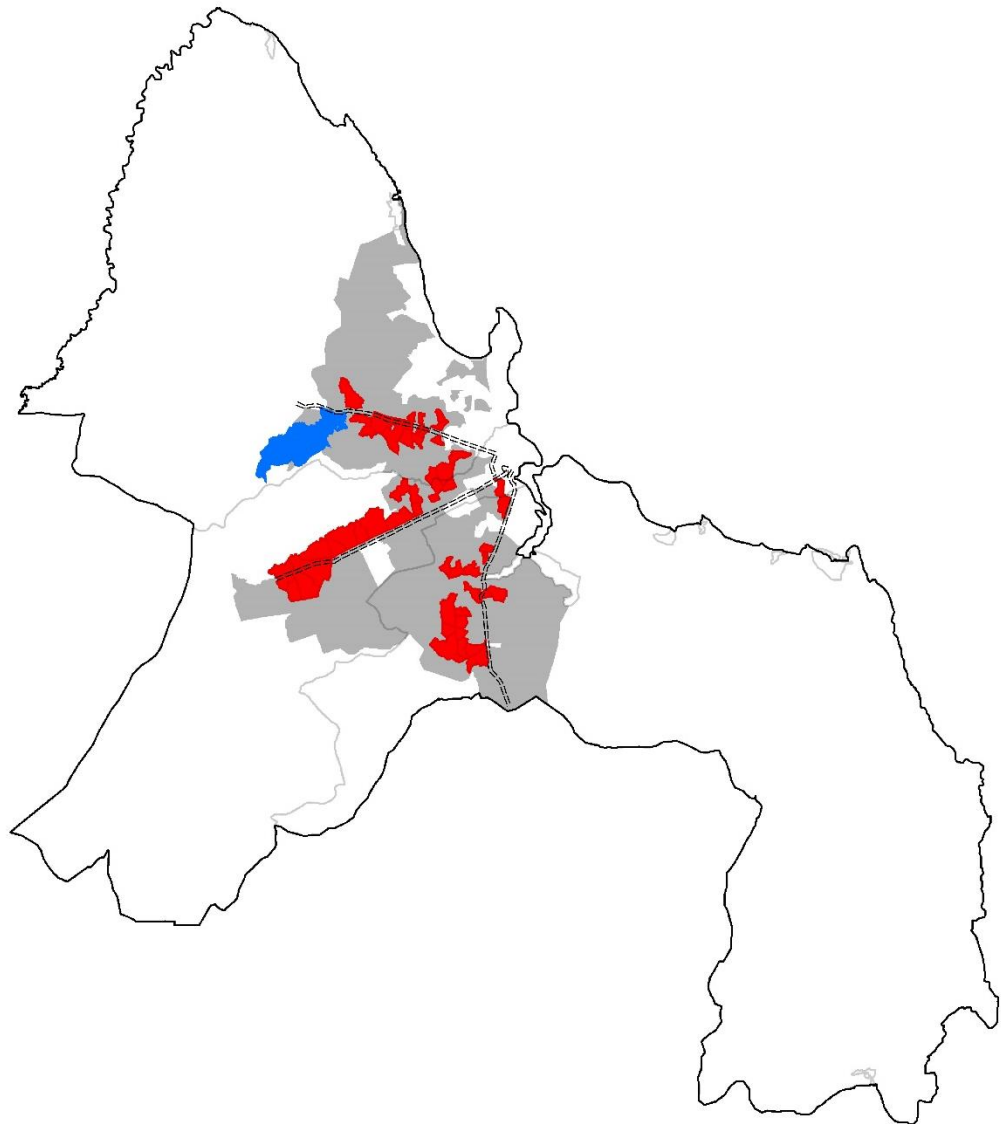
Finally, Manara and Regan (2020) explore the determinants of demand for full property rights (CRO) drawing on in-depth interviews realised during the lab-in-the-field experiment described in Chapter 5 of this thesis. All study participants revealed their willingness-to-pay for a CRO through the Becker-deGroot-Marschak (BDM) method in conjunction with a lottery process, and a subsample were interviewed on the expected costs and benefits from a title deed and their impacts on willingness-to-pay. We find that most plot holders associate the title deed with important private and public returns, which explains substantial demand for regularisation in the

study area. Expected benefits pertain primarily to security of tenure and, to a lower degree, access to credit. Low uptake is the result of three factors. First, the price of CRO exceeds willingness-to-pay for most respondents. Second, the survey process provides considerable benefits by enhancing tenure security, which reduces the need for title deed acquisition. Third, the title deed is not associated with immediate benefits, beyond those already provided by the survey stage. Thus, there is a tendency to delay and postpone uptake to later times when one of three things arises: the household budget, cash availability, or an immediate need for the title deed. The paper emphasises the importance of empirically grounded research investigating the determinants of demand for land titles (or lack thereof), including returns to different stages of the regularisation process, and short versus long-term perceived benefits.

To conclude, this project has taken a necessarily limited approach to the problems of land tenure formalisation in developing cities, where several open questions require rigorous research relative to the social support, outcomes, design and implementation challenges of formalisation programmes. Specifically, in this thesis I focused on the demand for current policies offering RL and CRO in Dar es Salaam, and their implementation processes at the local level. However, I did not explore other important questions, for instance, relative to the political processes underpinning policy design and implementation. Furthermore, I did not question the design of formal land titles in comparison with pre-existing institutions of informal tenure. That is, what functions do the CRO and RL provide, in practice, on top of informal institutions, if any? I plan to expand this PhD into further research, for example, by conducting an ‘institutional archaeology’ (Ho, 2018) of the unplanned settlements to analyse the existing structure of informal institutions of land ownership, management and markets. With this analysis I aim to understand which functions they provide, which ones can be retained, and which ones must be disregarded or complemented. Alternative forms of property rights might be designed that are not tailored on the Western model and work in combination with pre-existing institutions. Another strand of future research will examine the outcomes of current formalisation policies, particularly in relation to rising wealth and gender inequality, both in urban Tanzania and through cross-country comparative studies.

## 1.6 Figures

**Figure 1.** Study areas



The outer boundary is Dar es Salaam divided in three Municipalities (nowadays five): Kinondoni (west) Ilala (central), and Temeke (east). They are crossed by three main roads (dashed lines): from top to bottom, Morogoro, Nyerere and Kilwa Road, which we used to access the study areas. About 160 *mitaa* or sub-wards (grey) were included in the Residential Licence programme phase I, from two to twenty kilometres from the city centre. The research analyses administrative data covering all these *mitaa*. Further data was collected in fifty-two of these sub-wards (red), through two rounds of survey and interviews with local leaders. The blue area represents the Kimara Ward, where the government conducted a pilot programme of regularisation with Certificates of Right of Occupancy, which is also studied in this thesis.

**Figure 2.** Residential Licence programme phase II (started 2019).



Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence programme phase II (started 2019). *Mitaa* boundaries have changed over time.

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## Chapter 2

# Neighbourhood effects on uptake of interim title deeds in Dar es Salaam

### 2.1 Introduction

Land tenure formalisation policies underpin multiple – sometimes conflicting – rationales (Boone, 2019). On the one hand, economists argue that secure, legally enforceable and marketable land rights are a prerequisite for the development of unplanned settlements in developing countries (Collier et al., 2017; Lall et al., 2017). From this perspective, institutional frictions due to weak property rights and legal pluralism cause inefficient land and housing markets, resulting in private and public underinvestment (Bryan et al., 2019; Henderson et al., 2020; Bird and Venables, 2020). Conversely, land titles can ease land markets, increase private investment in housing,<sup>13</sup> and raise state capacity for coordinated land use planning and infrastructural provision. On the other hand, formal titles and land markets can promote inclusive urban development, for example protecting women from gendered inequalities concerning land access, ownership and control (Doss et al., 2015). Indeed, property registration and land markets still disadvantage women in Tanzania (Ali et al., 2016; Wineman and Liverpool-Tasie, 2017). In this respect, enhanced land rights can generate wide positive outcomes, for example increasing female participation in household decision-making (Meinzen-Dick et al., 2019) and labour markets (Peterman, 2011).

Yet, in many African cities land titling projects encounter important challenges and end up exacerbating inequality, legal pluralism and financial wastes (Ali et al., 2014). Among other major issues, the demand for formal titles remains low (*ibid.*). Because titling projects normally require large-scale state-led interventions through plot owners' identification, land demarcation and surveying, scarce uptake entails massive financial losses and prevents the potential benefits of formalisation. This is observed in Dar es Salaam, Tanzania, where formalisation programmes offering interim and full property rights register low uptake (e.g. Kusiluka and Chiwambo, 2018, 2019). Investigating the determinants of formalisation choices is important to design registration programmes that meet local demand. In Dar es Salaam, as in many African cities, informal land tenure arrangements rely on local social relations at the neighbourhood level. These may generate interdependent preferences and social disincentives for formalisation, resulting in suboptimal uptake or multiple equilibria. Thus, this paper studies peer-effects in the

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<sup>13</sup> Empirical evidence is found in Latin America (Field, 2005; Galiani and Scharfrodsky, 2010).

adoption of an interim property right – the Residential Licence (RL) – examining whether neighbours influence one another’s choices of formalisation. Ultimately, the paper aims to understand if policies introducing social incentives for uptake could increase the rate of formalisation in urban Tanzania.

In 2002, the Ministry of Lands, Housing and Human Settlements Development (MLHHSD) estimated that unplanned settlements housed 80% of residential buildings and the urban population (Kironde, 2006). Based on aerial photographs, some areas were classified as ‘saturated’ and were selected for formalisation. The programme was meant to target the whole of the unplanned settlements – about 420,000 plots – in two phases with the following objectives: i) to enhance security of tenure by issuing RL; ii) increase government revenues through land rents; iii) create a registry facilitating land administration; and iv) curb the growth of unplanned areas (ibid.). It was foreseen that RLs would unlock private investment in housing, public revenues and institutional capacity for settlements upgrade. Therefore, in the longer term, formalised areas would be surveyed and planned, thereby becoming eligible for full statutory rights (ibid.). Phase I started in 2004 with the identification of around 220,000 plots across three Municipalities (**Figures 1 and 2**).<sup>14</sup> Conditional on occupying non-hazardous land, plot owners could apply for a RL at their local Municipal office from May 2005. **Figures 3 and 4** show the histograms of interviews and RLs issued per year, respectively. Uptake was concentrated in the early years of the programme. Around 50% of eligible plot owners have taken up a RL. However, only 12.5% currently have an active RL as a result of drops in uptake and low renewal.<sup>15</sup> In response to such low demand, phase II was suspended until 2019 (Sheuya, 2010). Since then, another 130,000 plots have become eligible for the RL programme, but demand remains low.<sup>16</sup> As the government plans to further extend the programme to 500,000 urban plots over the next few years, understanding the causes of low-demand is timely and policy-relevant.

To identify peer-effects in the adoption of the RL, I study whether more proximate neighbours have a higher propensity to coordinate compared to more distant pairs of plot owners in small neighbourhoods. Section 2.5.1 explores patterns of coordination finding that three relationships of spatial proximity – first order contiguity, rank of proximity, and linear distance between plots – correlate with a higher propensity to coordinate in the early choices of formalisation (e.g. uptake). Thus, peer-effects are sizeable when there is higher uncertainty about the relative benefits of formal versus informal tenure, whereas later choices of formalisation (e.g. renewal) are more interdependent. To further investigate this preliminary evidence, section 2.5.2 deploys

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<sup>14</sup> Nowadays five: Ilala, Kigamboni, Kinondoni, Ubungo and Temeke. However, Kigamboni has recently stopped the programme in some areas.

<sup>15</sup> Data from Temeke Municipality. Out of 78,896 eligible plots, 20.6% had taken up and renewed at least once; 12.5% still had an active RL in 2017.

<sup>16</sup> By May 2019, 12% of eligible plot owners had acquired the RL.

a causal pseudo diff-in-diff strategy identifying if the uptake of one plot owner causes the uptake of their neighbours in the early stages of the programme, and the timing of peer-effects. This section finds that the propensity to coordinate is higher for adjacent plots, while other measures of spatial proximity have non-significant effects. For example, compared to any other pair living 50 meters apart, adjacent neighbours are 25% more likely to uptake in the same month; and 14% more likely to uptake within six months of each other. These results are validated by a balancing test, ruling out the hypothesis of sorting among adjacent neighbours conditioning on small reference groups, and several robustness checks. Section 2.5.3 illustrates that peer-effects are not heterogeneous across old and new settlers. Section 2.6 turns to discuss and examine some potential mechanisms for peer-effects among adjacent neighbours. I propose that adjacent neighbours have a higher propensity to coordinate because of frequent and salient interactions pertaining to land tenure. Furthermore, I suggest that peer-effects among them might be driven by non-private returns to formalisation increasing with spatial proximity. Other plausible channels are only discussed but remain unexplored due to data limitations.

Prior studies on the demand for land titles estimated the price elasticity of demand in some African cities (Bezu and Holden, 2014). Manara and Regan (2020) – Chapter 5 of this thesis – find that demand for full statutory rights (Certificate of Right of Occupancy, CRO) is substantial in Dar es Salaam, although it does not meet current prices. We elicit willingness-to-pay for CRO from a sample of plot holders in two communities of the Kimara Ward, where the government has initiated a pilot programme of regularization. Despite of low uptake of CRO (less than 13% in two years), demand is substantial: roughly 40% of plot owners are willing to pay fees equal to the monthly income of a typical household. However, there is an issue of affordability as the average price for a CRO is more than 2.7 times higher than mean willingness-to-pay in our sample.

Beyond few studies describing demand for land titles, the determinants of demand for formalisation remain largely underexplored in quantitative research. Related literature addresses the issue of an informal social contract pre-existing formalisation programmes, which might cause low demand for titles if formal tenure fails to substitute for informal institutions. In fact, empirical work demonstrates that social and ethnic links have an important role in informal rental markets (Macours, 2014; Marx et al., 2019). Further, the age, the established nature of a community, and the presence of a squatter organiser increase *perceived* tenure security (Lanjouw and Levy, 2002). In this case, informal property rights can effectively substitute for formal titles (ibid.).

Going back to the work of Platteau (1996) among others, this argument has found recent developments. For example, Letrouit and Selod (2020) propose a model where, in the presence

of asymmetric information on the levels of tenure security associated with formal and informal tenure, bilateral trusted relationships can substitute for costly registration. In a study closely related to mine, Collin (2020) estimated that a 10% increase in the percentage of co-ethnic neighbours correlates with a 6% decrease in the probability of acquiring interim property rights (RL) in Dar es Salaam. Thus, he concludes that ethnic links can substitute for statutory property rights by generating high levels of *perceived* tenure security. Similarly, Panman (2020) argues that strong informal institutions can provide the same security as formal titles in this context.

Overall, these studies suggest that informal institutions and social interactions can produce social incentives (or disincentives) for formalisation, mediating the demand for statutory property rights. In fact, Collin (2017) found that the probability that a plot owner acquires full property rights (CRO) in Dar es Salaam increases by 14-15 percentage points with each neighbour who takes up. This effect is large (equivalent to a 50 percent price discount) and dependent on geographic proximity. Peer-effects run through the physical distance of plots rather than social networks of acquaintance. For the author, this evidence points towards a complementarity channel, whereby individuals follow the behaviour of others because the risk of eviction reduces with the number of titled plots.

The primary contributions of this paper are to literature on the demand for formal titles. Adding to Collin (2017, 2020), first this paper documents peer-effects in the adoption of interim property rights, as opposed to full property rights. Second, my analysis examines peer-effects along several relations of spatial proximity, beyond linear distance between plots or ethnic links. Specifically, I discuss channels of peer-effects among adjacent neighbours, including complementarities and social learning. Fourth, this paper studies peer-effects in short and long-term choices of formalisation with RL, which are equally crucial because formalised plots often revert to an informal status (Galiani and Schargrotsky, 2016; Gutierrez and Molina, 2020). Finally, my causal identification draws on an administrative dataset including all parcels eligible for the RL programme across the city. This eliminates concerns over the generalisability and scalability of results.

Additionally, this paper contributes to other strands of literature. First, it adds to literature on peer-effects in the adoption of development technology (e.g. Bandiera and Rasul, 2006; Conley and Udry, 2010) by offering new evidence on the primary role of social learning. Second, it contributes to study neighbourhood effects in urban areas (Topa and Zenou, 2015) by providing a new application of the empirical strategy proposed by Bayer et al. (2008), which uses geographical distance as a proxy for social relations. Third, it contributes to illustrate the role of social relations in the informal land administration and land markets of urban Tanzania (e.g.

Kombe and Kreibich, 2002; Panman, 2020) by demonstrating that social interactions also mediate the demand for formalisation.

The paper proceeds as follows: section 2.2 introduces the paper's setting and framework discussing the context of the RL programme and the conceptual motivation for the study. Section 2.3 presents the dataset used in this paper and some descriptive statistics. Section 2.4 explains the identification strategies for empirical analysis. Section 2.5 illustrates the empirical findings on patterns of coordination and peer-effects in choices of formalisation. Potential channels are discussed in section 2.6. Section 2.7 concludes.

## **2.2 Setting and framework**

### **2.2.1 Land reform and the Residential Licence programme**

The National Land Policy of Tanzania, approved by the Parliament in 1995 and operationalised through the Land Acts in 1999, is considered an exemplary case of land tenure reform having pioneered a model for another twenty African countries (Manji, 2006). Its innovation was to acknowledge pre-existing systems of land law including customary rights in rural areas and informal rights in unplanned urban areas (McAuslan, 2002) by defining three types of property rights: Certificate of Customary Right of Occupancy (CCRO) in rural areas; Certificate of Right of Occupancy (CRO) and Residential Licence (RL) in urban areas. Compared to the CRO, which establishes a lease valid for 33, 66 or 99 years, the RL constitutes an interim property right, valid for up to just 5 years, after which it needs renewal.<sup>17</sup> In 2004, the MLHSD initiated the first phase of the RL programme in Dar es Salaam, which is the focus of this paper.

Whilst both are typically obtained as part of large-scale formalisation efforts involving one or more neighbourhoods, acquiring a RL is cheaper and easier than a CRO. Indeed, the RL was specifically designed as an affordable option for the poor living in the unplanned settlements,<sup>18</sup> where the average monthly household income was 60,000 TSh (approximately 26 USD) in the early 2000s.<sup>19</sup> Buying or renewing a RL requires a fixed payment of 5,600 TSh (approximately 2.5 USD)<sup>20</sup> and a variable annual land rent (calculated on land area and use) ranging from 568 TSh and 20,512 TSh (0.25-\$9 USD). Instead, the costs of CRO acquisition might be tenfold those of the RL.<sup>21</sup> As a CRO can only be issued for planned or regularised land, it requires

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<sup>17</sup> Until 2009, the validity was only for two years.

<sup>18</sup> The RL can be more affordable than the informal Sale Agreement (bill of sale). Typically, this requires a payment to the local leader equivalent to 10% of the transaction value (author's interviews).

<sup>19</sup> Conversions use 2018 exchange rate. In 2018, the median household income was just above 100,000-150,000 TSh per month (Land Tenure Survey, see details in Manara, 2020 – Chapter 3 of this thesis).

<sup>20</sup> The costs for a RL have never accrued since they were first issued in 2005.

<sup>21</sup> The costs for a CRO are variable, depending on the number of plots surveyed under the same project. For example, in Ali et al. (2016) the price of survey, town planning and application fees is 100,000 TSh (\$44) per plot. In Manara and Regan (2020) – Chapter 5 of this thesis – the mean total price, including

processes of cadastral survey, urban planning and further bureaucracy taking several months or years.<sup>22</sup> Conversely, the process of identifying plots under the RL programme is more expedient: they are not surveyed or planned, but simply identified and registered for their ‘status quo’.<sup>23</sup> After identification, plot owners can immediately apply for a RL, which is normally issued within thirty to sixty days.<sup>24</sup>

On paper, the RL offers the same benefits of a CRO. In case of eviction, a three-year RL can provide the same level of compensation (Kironde, 2006). Additionally, the RL is legally transferable and collateralisable. However, because of its shorter validity, the advantages from RL are limited compared to a CRO. First, the RL can only decrease the *perceived* risk of imminent eviction and guarantee temporary tenure security.<sup>25</sup> Second, for several years, most credit organisations were reluctant to accept the RL as collateral, and today still apply unfavourable terms for loans pledged against the RL compared to the CRO. For instance, drawing on interviews with nine of the largest financial organisations in Dar es Salaam, Manara and Pani (2020a) find that the RL provides modest benefits in terms of access to credit compared to other collaterals. Financial organisations produce and adjust credit institutions to reduce risks associated with diverse collaterals (e.g. unregistered land, short and long-term leases), based on their *de jure* and *de facto* security. In fact, they also accept unregistered land as a valid collateral. Furthermore, they deem interim rights less secure than full property rights; therefore, they apply ceilings and unfavourable terms for loans pledged against the RL, whereas loans pledged against the CRO are virtually uncapped and more favourable.<sup>26</sup>

Indeed, the RL is rarely used for the purposes of mortgaging or transferring land.<sup>27</sup> As with numerous titling projects (Payne et al., 2009), there are important gaps between the on-paper and the de-facto benefits from the RL (Collin et al., 2015; Kusiluka and Chiwambo, 2019; Parsa

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survey, town planning and acquisition fees, is 500,000 TSh per plot. These papers report data from different formalisation projects, occurring at distant locations in the city (where plot sizes are likely to vary) and almost ten years apart.

<sup>22</sup> Manara and Regan (2020) – Chapter 5 of this thesis – find that the issuance of a CRO can take longer than eighteen months after the payment.

<sup>23</sup> The process is expedient especially for plots identified during fieldwork activities, which stopped in December 2006. For other plots, the process can be cumbersome in terms of monetary and opportunity costs, because the plot owner must undertake an interview by the MLHSD and arrange a visit of Municipal land officers to their plot. However, most plots were identified by 2006 (**Figure 3**) and this paper’s analysis focuses on those.

<sup>24</sup> Whilst it was initially announced that the acquisition process would take seven days maximum, power shortages and other technical issues often caused delays so that the process frequently took one or two months (Kironde, 2006; Kusiluka and Chiwambo, 2019).

<sup>25</sup> In fact, the government could revoke the renewal option and suspend the RL programme, as has happened in Kigamboni Municipality.

<sup>26</sup> In practice, also in this case a maximum loan amount is defined by the bank single borrower limit and the collateral value.

<sup>27</sup> For example, in Temeke Municipality, approximately 2,000 RLs were collateralised and 2,400 RLs were legally transferred from 2005 to 2017 (out of 78,896 plots eligible for RL).



et al., 2011; Sheuya and Burra, 2016). Thus, the *perceived* and effective gains from formalisation might be low, especially in a context characterised by strong informal institutions of land ownership and lack of trust in the formal system (Panman, 2020).

In 2018, we conducted a Land Tenure Survey of 1,363 plot owners in 138 survey clusters across the informal settlements eligible for RL (for more detail on survey design and implementation, see Manara, 2020 – Chapter 3 of this thesis). Plot owners who have ever acquired the RL (n=663) indicated the following predominant motivation: first, securing government compensation in case of eviction (51%); second, securing the plot from boundary conflicts (21%), third, ease inheritance (10%).<sup>28</sup> Therefore, the main motivations pertain to tenure security, despite low *perceived* risk of government eviction. Rates of land disputes were around 10%, both at the time of the RL project commencement and in 2018.<sup>29</sup> Conversely, motivations for non-uptake of RL include: lack of information and awareness (52%); actual or expected hurdles in the processes of acquisition and renewal (44%); and the monetary costs (36%), particularly in terms of long-term commitment to land rents and renewal fees. Thus, the main deterrents to uptake are the uncertainty regarding the relative benefits of formality versus informality, and the bureaucracy for RL acquisition and renewal. Indeed, the government only provided information in the early stages of the programme, during the phase of plot-identification in the field.

### **2.2.2 Conceptual motivation for examining peer-effects in choices of formalisation**

In Dar es Salaam, as in many African cities, land and housing markets rely on informal institutions enforced through social relations at the neighbourhood level. As Kombe and Kreibich (2002: 8) put it:

“‘Social recognition’ of an individual’s rights on land by other settlers, especially the adjoining landowners, by local leaders and relatives or friends is the key factor guaranteeing security of tenure”.

In a context where social interactions are key to defining and validating informal tenure arrangements, individual choices of uptake can generate interdependent preferences, social incentives or disincentives for formalisation, resulting in peer-effects. On one side, social learning may compensate for asymmetric information on the relative gains from formalisation versus informality. In this case, observing others taking up provides a positive signal on the relative benefits and costs of formalisation. On the other, there might be strategic

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<sup>28</sup> Only 7% of respondents indicated accessing formal credit as their predominant motivation.

<sup>29</sup> According to the Household Socio-Economic Survey, land disputes involved 9.2% of plots interviewed in the period 2004-2006. Similarly, the Land Tenure Survey found around 9.7% plots with pending disputes in 2018.

complementarities in choices of formalisation, associated to non-private returns from formal titles. In this case, any additional uptake increases the benefits of formalisation and/or the costs of informality. For example, related to the predominant motivations for uptake indicated above, the risk of eviction decreases as the number of titled plots increases.<sup>30</sup> Furthermore, any anticipated infrastructural upgrade will only occur if a critical mass of plot owners contributes via land rents and other forms of participation (e.g. cash, labour).

Notably, in urban Tanzania the informal contract of ownership involves the plot owner, their adjacent neighbours and their local leaders as external enforcers, including the *mtaa* chairman, executive officers, and *wajumbe*. The *mtaa* is the lower level administrative unit (sub-ward), comprised of a few thousand plots. Chairmen and executive officers belong to the government structure. The *mtaa* chairman is a political figure, elected by residents. The *mtaa* executive officer is a bureaucrat appointed by the government. Other leaders, called *wajumbe*, administer a few hundred plots (*shina*) with the help of some assistants. These leaders do not belong to the government apparatus. Their mandate and their practices can be deemed informal.

Together local leaders and neighbours know the history of the plot and provide essential witnesses validating the informal contract to third parties (Manara and Pani, 2020b – Chapter 4 of this thesis). For example, they are involved in the informal arbitration of land disputes. The government hears them during processes of formalisation and eviction. Middlemen, prospective buyers, and loan officers collect from them essential information regarding the plot and the plot holder before deciding to purchase or pledge land. Thus, adjacent plot owners define one another's informal social contract and determine its validity to third parties, impacting on the risks, costs and benefits of informality.<sup>31</sup>

It follows that peer-effects may be higher among adjacent neighbours. First, adjacent neighbours can be more effective at updating information on the *perceived* relative benefits of formalisation versus informality. On the one side, frequent and salient interactions pertaining to land matters increase the opportunity to exchange information on choices, experiences and expectations concerning land tenure. On the other, the tenure security levels of adjacent neighbours are strongly correlated; for example, they have similar risks and costs of eviction and land disputes.<sup>32</sup> Thus, the information provided by adjacent neighbours is more relatable. For these reasons, social learning might be higher among adjacent neighbours.

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<sup>30</sup> Land titles will increase compensation costs and disincentivise the government from eviction.

<sup>31</sup> For example, there are several accounts of plot owners losing part of their plot due to adjacent neighbours validating the double purchase or encroachment of this land by illegitimate occupiers.

<sup>32</sup> Often eviction occurs at the micro-scale (e.g. to create or enlarge a road). Similarly, factors affecting compensation are likely to correlate for adjacent plot owners. Furthermore, these have similar risks of land disputes, depending on the predisposition of proximate neighbours to encroach on other plots.

Second, non-private returns to formalisation might increase with spatial proximity. For instance, plot owners will have higher returns from land titles if private and public investment increases in the vicinity of their plots; notably, through the government providing public goods locally.<sup>33</sup> In addition, there are further non-private returns to formalisation when it comes to adjacent neighbours who are part of one another's informal contract. In this case, the adjacent neighbour who takes up the RL effectively revokes the social contract and undermines its validity for all parties involved. This increases the risks and costs of informality for the plot owner who remains untitled. For example, the informal process of dispute arbitration might become ineffective in case of encroachment by adjacent neighbours with statutory protection, thereby raising the risks of informal tenure.

## 2.3 Data and descriptive statistics

### 2.3.1 Data sources

From the MLHHS, I collected the GIS map of parcel layouts (**Figure 2**) and the Household Socio-Economic Survey fielded during the early stages of the RL programme. A map of plots eligible for the programme was produced through a collective exercise of boundary identification involving the Ministry officer, plot owner, local leaders and adjacent neighbours as witnesses. Plots' contours were initially drawn by hand on areal pictures in the field and then transferred to GIS without the support of coordinates, which caused numerous mistakes. However, it was possible for plot owners to have them amended afterwards (author's interviews).<sup>34</sup> The Household Socio-Economic Survey is the most extensive database of the unplanned settlements in Dar es Salaam. For all plots in *mitaa* under the RL programme, it records micro-data on plots' occupation and development, including information on buildings and infrastructure. Challenges in the use of this data include accuracy and missing values. Indeed, surveyors could not visit the same plot repeatedly, and sometimes interviewed a household member instead of the plot owner. For the main analysis, I use variables that are widely populated and accurate, either extrapolated from the plots' shapefile, or observed directly by the surveyor (e.g. road access).<sup>35</sup> Field interviews ceased in December 2006 (**Figure 3**). Subsequently, plot owners could go to the MLHHS to undertake the interview. From the Municipalities of Ilala, Kinondoni, Ubungo and Temeke,<sup>36</sup> I obtained records of Residential Licence payments detailing choices of formalisation, including the date of RL acquisition. Data

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Finally, adjacent neighbours share the same local leaders, determining the probability and costs of land dispute resolution.

<sup>33</sup> Community taps, paved roads, and drainage systems increase the property value more if located in the proximity of the property.

<sup>34</sup> This imposed an additional process and extra opportunity costs to plot owners.

<sup>35</sup> Other variables include data on income and employment, not used in this paper due to many missing values.

<sup>36</sup> Ubungo's records are kept at the Kinondoni Municipal Office. The fifth Municipality of Dar es Salaam (Kigamboni) has stopped the RL programme in some areas.

on land rent payment and RL renewal are only available at Temeke Municipality. As other Municipalities maintain manual and non-systematic records of these transactions, long-term choices of formalisation will be studied on a smaller sample of plots in Temeke.

### 2.3.2 Sampling considerations and pairing strategy

There are 220,829 unique plot identifiers matching across the GIS map and the Household Socio-Economic Survey. Roughly 188,568 plot owners were identified and interviewed by 2017; if in non-hazardous areas, these are eligible for the RL. For this paper, I sampled 158,204 plots eligible for formalisation since the beginning of the programme (non-hazardous, identified and interviewed in the field by December 2006).<sup>37</sup> Because I am interested in studying the heterogeneity of peer-effects for old and new settlers, I restrict the sample to plot owners with observed *year of arrival* and I remain with a dataset of 130,006 individual plot observations.<sup>38</sup> For the analysis, plots are paired to create reference groups according to four definitions: for fixed radius neighbourhoods, I pair all plots within 50 meters or 100 meters distance. For fixed-n neighbourhoods, I match each plot with their 15 or 60 closest observable neighbours. Using survey data from a central neighbourhood in Dar es Salaam, Collin (2020) finds that plot owners tend to know their neighbours living within 50 meters. I also adopt the 100 meters radius to account for the lower density of peripheral locations and, more generally, to test for the robustness of results. The thresholds for the fixed-n neighbourhoods were chosen because 15 and 60 represent the fifty percentile of the number of neighbours within 50 meters and 100 meters respectively. A matrix of rook contiguity was created using the GeoDa. This relationship captures the boundary relationship that I am interested in studying (differently from queen contiguity). Other spatial relationships of interest include second order rook contiguity, rank of proximity, and linear distance between plots' centroids.

### 2.3.3 Data descriptives

Summary statistics for sampled plots are presented in **Tables 1 and 2**, describing individual and pairwise characteristics respectively. From **Table 1**, most interviews occurred in 2005 (83%) and in Temeke Municipality (42%). The mean year of arrival is 1993; 83% of plots owners have completed construction, 91% live on their plots, 37% have tenants. Plot area and building value are about 280 sqm and 7,200,000 TSh respectively. On average, there are 2 households and 7.6 people per plot. Some plots have road access (47%), electricity (39%), a system of waste collection (35%), and some source of water provision (29%), including private connection, well,

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<sup>37</sup> This restriction excludes self-selected plot owners, who went to the Ministry to undertake the interview since 2007.

<sup>38</sup> Applying this sample restriction enables me to use the same sample for the main and the heterogeneity analyses. For robustness I repeat the main analysis on the full sample, finding similar results.

or community tap.<sup>39</sup> The vast majority indicated one or more priorities for neighbourhood upgrading activities (91%); 60% are willing to share the costs of upgrades (with labour or cash), suggesting some cooperative attitude and the intention to invest in the area. In fact, 40% are ready to contribute cash. Of the sampled plots, 44% have taken up their RL by August 2007, and, for those, the mean number of days between their interview and their application for RL is 211 (equivalent to 7 months). In Temeke Municipality, 30% paid the first-year's land rent and 16% renewed their RL two years after uptake. Here, 13% have active RL by August 2017. From **Table 2**, the baseline propensity to coordinate on uptake by August 2007 is, on average, 54% across different reference groups.<sup>40</sup> The mean number of days between two uptakes is 93 (roughly 3 months). In Temeke, the baseline propensity to coordinate on the first-year's land rent payment, the second-year renewal, and having an active RL by August 2017 are, on average, 59%, 73% and 77% respectively, across different reference groups. Around 20 percent of paired plots are rook adjacent in the smaller reference groups, while about 5 percent are rook adjacent in the larger reference groups.

$$u_i = \alpha \bar{u}_{ji} + \beta \bar{a}_{ji} + x'_{pi} \gamma + \lambda_{yi} + \lambda_{mi} + \varepsilon_{mi} \quad (1)$$

**Table 3** shows results from descriptive OLS regressions of the form above (1), where  $u_i$  is an indicator equal to 1 if plot owner  $i$  has taken up the RL by August 2007. The regressor of interest is  $\bar{u}_{ji}$  defined as the mean uptake of plot owners  $j$  neighbours to  $i$  (either first order adjacent, within 50 meters or 100 meters distance). Controls include the neighbours' mean year of arrival,  $\bar{a}_{ji}$ ; a vector of plot characteristics (listed in **Table 1**) related to plot owner  $i$ ,  $x'_{pi}$ ;  $i$ 's interview year and sub-ward (mtaa) fixed effects. Errors are clustered at the mtaa level. On average across all specifications, an increase of one standard deviation in the plot owner's year of arrival (equivalent to 11.4 years) correlates with a 5% increase in their propensity to uptake. To understand the magnitude of this coefficient, I note that a 10% increase in property value raises the likelihood of uptake by 1% (not shown). This suggests that newcomers might have higher incentives for formalisation, for example associated with lower tenure security, as argued in the literature (Lanjouw and Levy, 2002). Whilst plot owners' choices of formalisation do not correlate with their neighbours' mean year of arrival, I find evidence of spatial correlation in uptake. For example, the plot owner is 11% more likely to acquire the RL when the mean uptake of their adjacent neighbours increases by one standard deviation, equivalent to 33% (column 2), and 15% more likely if the mean uptake of their neighbours within 100 meters increases by one standard deviation, equivalent to 14% (column 4). Overall, this descriptive evidence supports the hypothesis that there is coordination in choices of formalisation, as this

<sup>39</sup> The remaining 71% purchase drinking water.

<sup>40</sup> Paired plot owners are said to coordinate if both or none have taken up by a certain threshold date.

paper investigates in sections 2.5.1 and 2.5.2. Furthermore, this evidence suggests that plot owners' choices are influenced by their length of tenure. In fact, if newcomers are particularly uncertain about their tenure security and the gains from formalisation, they might be more inclined to follow the behaviour of their peers. Heterogeneity in peer-effects is discussed in section 2.5.3.

## 2.4 Empirical set-up

The causal estimation of peer-effects is complicated by several challenges to identification (Manski, 1993; Moffitt, 2001). In fact, collective behaviour could be caused by the spatial correlation of observable and unobservable characteristics (sorting) or local shocks (correlated effects). For example, uptake might be higher in wealthier neighbourhoods because plot owners are relatively better off, independently of peer-effects. Similarly, local shocks such as natural hazards, neighbourhood infrastructure or community leaders might affect the local rate of uptake, regardless of peer-effects. Another issue is simultaneity, whereby it is challenging to identify the direction of peer-effect (who influences whom). Solutions to these problems include experimental or quasi-experimental approaches introducing a source of exogenous variation in the behaviour of selected neighbours (treatment) or the structure of the neighbourhood (De Giorgi et al., 2010; Gibbons and Overman, 2012; Gibbons et al., 2013).

One quasi-experimental approach is formulated in Bayer et al. (2008).<sup>41</sup> In the absence of actual observations of individual networks, their paper draws on census data to estimate referral effects in the labour market. Their strategy uses pairs of residents in large neighbourhoods, defined as the Census Block or the Ten Closest Blocks. Depending on the definition of neighbourhood used, their pairs are either symmetric and transitive, or asymmetric and non-transitive. For the Census Block definition, if B belongs to the neighbourhood of A, then A is included in the neighbourhood of B (symmetry). If B and C belong to the neighbourhood of A, then C belongs to B's neighbourhood and B belongs to C's (transitivity). For the Ten Closest Blocks definition, if B belongs to the neighbourhood of A, the latter might be excluded from the neighbourhood of B (asymmetry). If B and C belong to the neighbourhood of A, C can be excluded from B's neighbourhood and B can be excluded from C's (intransitivity). In all cases, two individuals living in the same block will always belong to the same neighbourhood and will be paired with the same individuals.

To identify referral effects, Bayer et al. (2008) compare the propensity to work in the same block for: i) pairs living in the same block, and ii) pairs living in the same neighbourhood (but

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<sup>41</sup> Later applications and developments of this empirical approach are found in Hellerstein et al. (2014), Helmers and Patnam (2014), Patacchini and Zenou (2012a, b) and Schmutte (2015).

not in the same block). Thus, the variable of interest is a spatial relationship of living in the same block, which enables the authors to identify referral effects based on two assumptions. First, that geographical distance proxies for social relations. That is, pairs living in the same block are more likely to have social relations compared to others. Second, that there is a random allocation of individuals to blocks within neighbourhoods. That is, residents may sort to neighbourhoods, but not to specific blocks, due to the thinness of land markets. Therefore, if pairs living in the same block have a higher propensity to work in the same block, this will be caused by referral (peer-effects) and not by sorting. Furthermore, as individuals appear in multiple pairs, this strategy allows the authors to control for two individual fixed effects, absorbing the individuals' idiosyncratic behaviour and unobservable characteristics.

I adopt a similar strategy to study peer-effects in choices of formalisation with RL. Specifically, I will describe the propensity to coordinate for more versus less proximate pairs in small neighbourhoods, defined by alternative criteria of fixed-radius distance or fixed-number of neighbours. As one important difference from Bayer et al. (2008), I have detailed individual locations, which has two advantages. First, for each individual in my dataset, I can construct a specific reference group around their location. This reinforces the assumption that geographical distance proxies for social relations. Second, I can control the spatial extent of the reference groups, therefore defining very small neighbourhoods where the assumption of randomness is sounder. Furthermore, I note that my pairing strategy generates intransitive pairs; for each A and B, there can be one or more C included in A's reference group, but not in B's. Depending on the definition of neighbourhood used, pairs are either symmetric (fixed-radius distance) or asymmetric (fixed-number of neighbours).

I estimate equation (2),

$$Y_{ij} = \alpha Proximity_{ij} + x'_{ij} \beta + \lambda_i + \lambda_j + \varepsilon_{ij} \quad (2)$$

where  $Y_{ij}$  is one of five pairwise outcomes: first,  $Same\ Uptake_{ij,2007}$  is an indicator equal to 1 if both plot owners have made the same choice of uptake (or lack thereof) by August 2007. Second,  $ln\Delta days_{ij}$  is the natural logarithm of the number of days occurring between two uptakes. This outcome variable allows me to study the time between choices of formalisation. Other outcomes are  $Same\ Rent_{ij}$  and  $Same\ Renewal_{ij}$ , which are indicators equal to one if both titled owners have made the same choice regarding paying the land rent or renewing the RL, one and two years after their uptake, respectively. Last,  $Same\ Uptake_{ij,2017}$  is an indicator equal to 1 if both, or neither, of the plot owners have an active RL by August 2017 (ten years after our initial outcome measurement).  $Proximity_{ij}$  measures alternative relationships of

spatial proximity, as defined below. In the presence of peer-effects, I expect that more proximate pairs have a higher propensity to coordinate on choices of formalisation (positive  $\alpha$ ).  $Rook_{ij}$  is a dummy for plots sharing a boundary (first-order contiguity). Other measures of spatial proximity include  $Rook2_{ij}$ , a dummy for second order contiguity;  $Rank_{ij}$ , an ordinal rank of proximity;<sup>42</sup> and  $Distance_{ij}$ , the distance between two plots' centroids in linear and log form. These relations of spatial proximity are either symmetric –  $Rook_{ij}$ ,  $Rook2_{ij}$  and  $Distance_{ij}$  – or asymmetric –  $Rank_{ij}$ .  $x'_{ij}$  is a vector of controls including the difference between interview dates and a dummy for different sub-ward (mtaa). These capture some local shocks such as the local roll-out of the programme or the local politics of the lower level government.<sup>43</sup> Some specifications control for additional pairwise characteristics. The equation includes two individual fixed effects for  $i$  and  $j$ ,  $\lambda_i$  and  $\lambda_j$ . Errors are clustered at the pair level,  $\varepsilon_{ij}$ . Robustness checks apply some sample restrictions to minimize potential sources of bias due, for example, to plot geometry and density.

Although the identifying assumption that there is a quasi-random allocation of plot owners in small geographical areas is intuitively sound, following Bayer et al. (2008) I perform a balancing test to verify that there is no correlation of observable characteristics for proximate plot owners compared to the larger reference group. I test for the correlation in neighbours' observable characteristics, using the equation below:

$$X_{ji} = \alpha Proximity_{ji} + \lambda_i + \varepsilon_{ji} \quad (3)$$

where  $X_{ji}$  is one of several plot characteristics relative to plot owner  $j$  neighbour to  $i$ : year of arrival, plot area, plot development (complete construction), building value, plot occupation (by owner and/or tenants), number of resident households and people, willingness to participate in upgrading activities (labour or cash), and willingness to contribute cash.<sup>44</sup> The spatial relationship used is  $Rook_{ji}$ . Because adjacent neighbours are the most proximate, this relationship provides the sharpest balancing test. I capture individual fixed effects for  $i$  ( $\lambda_i$ ) and test whether the characteristics of interest are different for adjacent versus non-adjacent plots ( $\alpha$ ) in small neighbourhoods surrounding  $i$  (50- or 100-meters radius). To avoid the possibility that the same individuals are observed both as plot owners  $i$  and neighbours  $j$  (ibid.), the balancing test is performed on a subsample of plots selected through a raster grid method so that

<sup>42</sup> With 1 being the closest plot, 15 being the 15<sup>th</sup> closest plot, etc.

<sup>43</sup> The difference between interview dates is important because plot owners are not eligible to uptake until they undertake the interview. The politics of the lower level government (mtaa) may influence choices of formalisation as local leaders normally administer the informal land management. They are key figures in a community, and plot owners tend to listen to their advice on land matters, including choices of formalisation (Manara, 2020 – Chapter 3 of this thesis).

<sup>44</sup> Area characteristics are not included because variance is minimal in small neighbourhoods.



they appear in the matrix either as plots  $i$  or  $j$ . Specifically, a raster grid of 150 by 150 meters was overlaid with a layer of plots' centroids (for plots with non-missing data). For each grid point, I selected the closest plot as  $i$ , and their neighbours within 50 or 100 meters as  $j$ . This enables me to construct neighbourhoods around plot owners  $i$  and to control that these are not simultaneously observed in the neighbourhoods of other plot owners. Results are presented in **Table 4**. Only a few characteristics are statistically significant: plot area, number of households, and people residing on plot. As most observables are balanced, it can be assumed that there is no correlation of unobservables between rook-adjacent neighbours, conditioning on the larger reference groups.

The estimation approach of equation (2) enables me to detect patterns of coordination in choices of formalisation. To causally identify peer-effects and explore their heterogeneity and channels, I adopt a pseudo diff-in-diff approach, observing pairs  $i$ - $j$  over time.<sup>45</sup> Implementing equation (4), I study the behaviour of plot owner  $i$  following the uptake of their neighbour  $j$  and estimate whether more proximate pairs have a higher propensity to coordinate compared to the baseline propensity of pairs in the larger reference group. This identification also enables me to capture the timing of coordination, that is, when  $i$  is more likely to uptake following  $j$ .

$$Uptake_{im(i)j} = \alpha + \beta Period_{jm(j)} + \gamma Period_{jm(j)} \times Proximity_{ij} + \delta Proximity_{ij} + x'_{ij} \zeta + \lambda_i + \lambda_{m(i)} + \varepsilon_{im(i)j} \quad (4)$$

$Uptake_{im(i)j}$  is 1 if plot owner  $i$ , neighbour to  $j$ , has taken up a RL in calendar month  $m$ , comprised between May 2005 (first issuance of RL) and August 2007.<sup>46</sup>  $Period_{jm(j)}$  is a categorical variable with values from  $t-1$  to  $t+n$ , capturing the timing of  $j$ 's uptake. It is equal to  $t$  in the month of  $j$ 's uptake (event);  $t-1$  one month before;  $t+1$  one month after, etc. Pairs  $i$ - $j$  are sampled if  $i$  had not taken up before  $j$ ,<sup>47</sup> and they are observed until  $i$  takes up, for a maximum of  $n$  months after the event.<sup>48</sup> The coefficient  $\beta$  estimates monthly changes in the propensity to uptake for any  $i$  in the reference group (neighbourhood baseline). The coefficient of interest  $\gamma$ , on the interaction term  $Period_{jm(j)} \times Proximity_{ij}$ , estimates the difference in the propensity to uptake for more versus less proximate  $i$ .  $Proximity_{ij}$  and  $x'_{ij}$  are defined as above, measuring alternative relationships of spatial proximity and other pairwise characteristics. I control for

<sup>45</sup> Patterns of coordination described by results from equation (2) suggest that peer-effects influence the early choices of formalisation, but not the later choices. Therefore, the remainder of the analysis will focus on uptake only, as opposed to also considering choices of land rent payment or RL renewal.

<sup>46</sup> That is, from the month of first issuance of RL (May 2005) to the month of our first outcome measurement (August 2007) in equation (2).

<sup>47</sup> By sample restriction,  $i$  must take up at least one day after  $j$  or never. Note, this restriction eliminates simultaneity enabling me to capture the direction of peer-effects (the influence of  $j$  on  $i$ ).

<sup>48</sup> A pair-observation is dropped when both plots have taken up, as  $i$  stops having a choice of uptake. Thus, a pair might be observed less than  $n$  months following  $j$ 's uptake.

individual fixed effects on  $i$ ,  $\lambda_i$ , and monthly time trends,  $\lambda_{m(i)}$ . Errors are clustered at the pair level,  $\varepsilon_{im(i)j}$ . I perform a battery of robustness checks as for equation (2). To measure heterogeneity in peer-effects, I estimate the same equation (4) on different subsamples of old settlers and newcomers, as explained in section 2.5.3.

Finally, the last section of the paper explores some possible mechanisms of peer-effects among proximate neighbours. Some channels are discussed and examined, using a combination of quantitative and qualitative evidence, including descriptive statistics<sup>49</sup> and interviews with key government officials. For the quantitative analysis, I adopt a variant of identification (4), as described below (5), to study whether peer-effects among proximate neighbours result from higher social learning (channel 1) or from increased non-private returns to formalisation (channel 2). To examine these channels, I estimate:

$$\begin{aligned}
 Uptake_{im(i)j} = & \alpha + \beta Period_{jm(j)} + \gamma Period_{jm(j)} \times Proximity_{ij} + \delta Proximity_{ij} \\
 & + \eta Period_{jm(j)} \times Z_{ji} + \mu Period_{jm(j)} \times Proximity_{ij} \times Z_{ji} + \varphi Z_{ji} \\
 & + \mathbf{x}'_{ij} \zeta + \lambda_i + \lambda_{m(i)} + \varepsilon_{im(i)j}
 \end{aligned} \tag{5}$$

where  $Z_{ji}$  is 1 if alternatively, plot owner  $j$  neighbour to  $i$  is an absentee landlord or is willing to contribute to neighbourhood upgrading activities. First,  $j$  is an absentee landowner if they do not occupy their plot (i.e. rented property). Second, willingness to contribute to neighbourhood upgrading activities is measured from a widely populated variable of the Household Socio-Economic Survey, indicating whether plot owners would like to give time and/or cash towards their top three priority improvements.<sup>50</sup> These variables proxy for the frequency and the saliency of information exchanges between  $i$ - $j$ , or the expected returns to formalisation. I note that while the presence of an absentee landlord is likely exogenous, the willingness to contribute to local upgrade might be endogenous to  $i$ . In fact, each plot owner  $i$  has a negligible impact on their neighbours' choices to occupy their plots versus being an absentee landlord. Instead, there might be spatial shocks creating correlation in the willingness to contribute to neighbourhood upgrade, which can bias the results. The coefficient of interest is  $\mu$  measuring whether  $Z_{ji}$  introduces differentials in peer-effects. In practice, I only use one definition of spatial proximity,  $Rook_{ij}$ , because results from equation (4) showed that peer-effects occur among first-order adjacent neighbours. Last, studying heterogeneity in peer-effects, I also estimate a version of

<sup>49</sup> From the Household Socio-Economic Survey described in the previous section of this paper, and primary survey data collected from this author and her colleague (Land Tenure Survey, see details in Manara, 2020 – Chapter 3 of this thesis).

<sup>50</sup> Specifically, plot owners were asked, “do you see a need for neighbourhood upgrade?”; “Rank up to three upgrade priorities from this list” – options included water source, local roads, drainage system, solid waste collection, environmental safety; etc.; “Are you willing to contribute to those, either through labour or cash?”

(5), where  $Z_{ji}$  is a variable for newcomer, on two subsamples of old and new settlers. Several definitions of  $Z_{ji}$  are adopted: a dummy indicating if neighbour  $j$  has arrived in the last five or two years; or the number of years stayed in continuous and log form.<sup>51</sup>

## 2.5 Results

### 2.5.1 Patterns of coordination in choices of formalisation

**Table 5** reports results from equation (2) including basic sample restrictions and controls.<sup>52</sup> Looking first at Panel A, where the indicator for spatial proximity is a dummy for first order rook adjacent plots, we find patterns of coordination in the early choices of formalisation. Two years into the programme, by August 2007, the propensity that plot owners have made the same choice of uptake is 2.6% higher for rook adjacent plots compared to the reference group (column 1). Moreover, the number of days between two applications for RL is 12% shorter for rook adjacent plots compared to others (column 2). Further, these plots are 2.3% more likely to either both pay or not pay the first-year's land rent (column 3). This is suggestive of coordinating behaviour between adjacent plots concerning both the choices and the timing of first uptake. Conversely, there is milder evidence of coordination on subsequent choices of formalisation. In fact, the propensity that rook adjacent plots make the same choices of first-time renewal is 0.5% higher than the baseline in the reference group (column 4). Similarly, the propensity to coordinate on holding an active RL by 2017 is 0.4% higher (column 5). Therefore, later choices of formalisation are more likely influenced by independent factors (e.g. individual experience of the RL).

In the next panels, I study other relationships of spatial proximity and include controls for other pairwise characteristics. Coefficients on first order rook adjacency remain statistically significant after controlling for second order adjacency (Panel B), rank of proximity (Panel C), linear distance between plots (Panel D), and other pairwise plots' characteristics (Panel E), despite some drop in magnitude, particularly when the linear distance between plots is controlled for. Notably, coefficients on the rank of proximity and linear distance are statistically significant for the early choices of uptake (columns 1-2). When distance increases by one standard deviation (11 meters) the propensity to coordinate on early uptake decreases by 0.8% and the number of days between applications increases by 3%. Similarly, the effects of a one standard deviation increase in rank (equivalent to 7.5 positions) are -0.6% and +2%

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<sup>51</sup> The two-years dummy implies that  $j$  arrived after the programme announcement and/or commencement. Results are only shown for the five-years' definition.

<sup>52</sup> Sample restrictions: plot area between 60 and 3,000 sqm, number of rook adjacent between 1 and 7, roughly corresponding to the 1<sup>st</sup> and 99<sup>th</sup> percentile of the variables' distribution. Further, the number of rook neighbours must be smaller than the number of non-rook neighbours in the reference group. Basic controls include the number of days between the two plots' interviews and a dummy for different mtaa.

respectively. Overall, this table suggests that: first, the propensity to coordinate remains the highest for first order rook adjacent neighbours; second, there is virtually no difference between second order rook adjacent neighbours and any other pairs in the reference network; and third, more generally, coordination is higher for closer neighbours compared to more distant ones. This suggests that peer-effects are higher for neighbours sharing a boundary but persist in the larger reference network decaying with distance.

### *Robustness*

Robustness checks on identification (2) verify that results are not driven by the reference group definition (50 meters radius) or by outlier plots, with specific features (e.g. plot area) determining either too few or too many neighbours.  $Rook_{ij}$  is the spatial relation of interest. In **Table 6**, each panel adopts a different reference group: 15 closest neighbours, 100 meters radius, and 60 closest neighbours. Results are robust in all definitions of reference group and for all outcome variables. As it should be expected, there are slight magnitude increases when conditioning on the larger reference groups, because rook adjacent plots are now compared to more distant neighbours. **Table 7** uses the 50 meters radius reference group. Each panel applies sample restrictions to minimize the potential bias associated with plots' geometry and density. Indeed, attributes like the area and shape of plots determine the number of rook and non-rook neighbours per plot owner and potentially affect the coefficient of interest. Broadly, restrictions in panels A, B and D cut the lowest and upper ten percentiles of the variables' distribution. Panel A reduces the sample to plots with areas between 100 and 1,000 sqm. Panel B selects plots with 2 to 5 rook adjacent neighbours. Panel C restricts each plot's reference group to an equal number of rook and non-rook neighbours. Panel D includes only plots with 6 to 27 neighbours in the 50 meters radius. In all cases, the coefficients remain substantially unaltered demonstrating the robustness of my main results.

### **2.5.2 Peer-effects in choices of formalisation**

To further explore my preliminary evidence of coordination in the early choices of formalisation, this section deploys a causal empirical strategy described by equation (4). This enables me to estimate whether the uptake of  $j$  causes the uptake of  $i$ , measuring the effect for rook plots compared to others in the larger reference group. Further, I can determine the timing of peer-effects and whether this differs for rook versus non-rook neighbours. I start by adopting the smaller reference group, 50 meters radius. Results from the main specification are shown in **Table 8** column 1 and **Figure 5a**. For all plot owners  $i$  who have not taken up before  $j$ , the propensity to uptake increases sharply after this event, particularly in the same or the following month. This suggests that: first,  $j$ 's uptake is associated with a rise in the overall neighbourhood uptake. Second, this increase is steeper in the immediate aftermath of  $j$ 's uptake. Third, this rise

is higher for rook adjacent neighbours compared to others. To understand the magnitude of this effect, for each time period I compare the propensity to uptake for rook versus non-rook neighbours (the latter provides a baseline of the local trend). The propensity to uptake in the same month is 25% higher for neighbours  $i$  adjacent to  $j$ . One month after the event, the propensity to uptake is, for rook neighbours, 18% higher than the baseline. In the subsequent periods, this effect drops smoothly, reaching 14% in  $t+6$ . I note that the constant term on  $Rook_{ij}$ , describing the behaviour of adjacent plot owners at time  $t-1$ , is negative. This occurs across all specifications (including in **Tables 9** and **10**). Preliminary investigations reveal that this is mechanical and due to the fixed-effects estimation strategy.

Columns 2-4 introduce other spatial relationships: second order adjacency ( $Rook2_{ij}$ ), rank of proximity, and linear distance between plots, respectively. Importantly, these do not affect the outcome variable, nor the coefficients of  $Rook_{ij}$ . Indeed, they are not statistically significant, or their magnitude is zero (linear distance). This suggests that boundary relationships explain a large part of peer-effects in small neighbourhoods, as opposed to simple word-of-mouth or plot owners gathering in the local public meetings. In fact, in these cases, we would observe negative coefficients on distance (assuming that word-of-mouth decreases smoothly with spatial distance) or no peer-effects at all (because most neighbours attend the same meetings, there should not be peer-effects among adjacent neighbours).

### *Robustness*

In **Tables 9** and **10** I conduct several robustness checks. **Table 9** column 1 adopts a fixed- $n$  reference group ( $n=15$ ). Broadly speaking, coefficients describe a similar pattern with peer-effects reaching a peak one month after  $j$ 's uptake. However, peer-effects are relatively smaller in size compared to my main results: from 20% in  $t$  to 6% in  $t+6$ . Columns 2 and 5 cut the bottom and top 10<sup>th</sup> percentiles of plot area and neighbourhood density respectively, leading to minor drops in peer-effects for adjacent neighbours. In column 4, for each plot we consider an equal number of rook and non-rook neighbours. Restricting the reference group reduces peer-effects for rook neighbours compared to others, as should be expected. In column 3, I consider plots with 2 to 5 adjacent neighbours.<sup>53</sup> For those, the propensity to uptake increases to 27% and 18% of the baseline in  $t$  and  $t+6$  respectively.

In **Table 10**, I change some features of the sampling strategy. In column 1, all pairs are observed at all time periods, instead of dropping if  $i$  takes up.<sup>54</sup> Thus, I am capturing the

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<sup>53</sup> Corresponding to the 10<sup>th</sup> and 90<sup>th</sup> percentiles of the distribution.

<sup>54</sup> In the main specification, a pair drops from the sample after  $i$ 's uptake because  $i$  ceases to have a choice of uptake.

cumulative peer-effects (**Figure 5b**) confirming that the propensity to uptake is higher for rook neighbours at all periods after the event. In column 2, I remove the sampling restriction imposing that  $i$  must be interviewed before  $t-1$ .<sup>55</sup> Peer-effects remain higher for rook neighbours, suggesting that  $j$ 's uptake may push their adjacent neighbours to first take the interview and then the RL. Column 3 observes pairs where  $j$  takes up between January and June 2006. Whilst the pattern is similar, peer-effects increase compared to my main specification: for rook neighbours the propensity to uptake after  $j$  is between 36% and 22% higher than the baseline. Finally, column 4 extends observations to twelve time periods, suggesting that the pattern described by my main specification continues over time (**Figure 5c**).

To conclude, despite some variation in the size of the effects, this section provides evidence that the uptake of  $j$  causes an increase in the uptake of their rook adjacent plot owners compared to others. All specifications suggest that peer-effects are more sizeable soon after the event. Beyond period  $t+1$ , a plateau is reached. Whilst the rise in the overall neighbourhood uptake might be the result of sorting or correlated effects (e.g. the area having recently become eligible for RL), the difference between rook and non-rook neighbours is evidence of peer-effects. It is also suggestive of boundary channels for peer-coordination.

### 2.5.3 Heterogeneity in peer-effects

My highlight finding is that there are peer-effects in RL adoption, especially in the early choices of formalisation. In the remainder of this section, I will examine heterogeneity in peer-effects for old and new settlers. The literature suggests that informal plot owners have an idiosyncratic level of *perceived* tenure security, which increases with the number of years spent on the land. Similarly, the established nature of a community also contributes to a *perception* of tenure security (Lanjouw and Levy, 2002). On the one side, descriptive results in section 2.3.3 suggested that newcomers are more likely to uptake the RL, regardless of what their peers do. Consistent with the literature, this might result from higher *perceived* tenure insecurity related to their length of tenure. On the other side, increased insecurity may cause newcomers to be more responsive to peer behaviour. In the absence of reliable information on the returns from formalisation, they will update their *expectations* based on the behaviour of others who know the informal land management system better, including its risks and costs. In this case, we would observe higher peer-effects for plot owners who are new to the area. Yet, because these forces might go in the opposite direction, for example when the local uptake is low, in practice it might be hard to capture heterogeneity in peer-effects.

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<sup>55</sup> In the main specification, a pair is sampled conditional on  $i$  having been interviewed before  $j$ 's uptake. This restriction ensures that  $i$  was already eligible for RL before the event, and therefore their lack of uptake constituted a choice.

My empirical analysis does not provide evidence of heterogeneity. First, I implement equation (4) on two subsamples of plot owners who arrived either by 1987 or from 2002, corresponding to the first and last quartile of the distribution of length of tenure. Results are presented in **Table 11**, columns 1 and 2. Both old and new settlers coordinate with their proximate neighbours more than others. Indeed, peer-effects are similar in size to our main specification in **Table 8** column 1, and they are not statistically different across subsamples. Second, I implement a version of equation (5) where  $Z_{ji}$  is a dummy for newcomer (arrived in the last five years) on the same subsamples.<sup>56</sup> Results are shown in **Table 11**, columns 3 and 4. In this case, I measure whether old and new settlers have different propensities to take up following a newcomer. The signs of the coefficients suggest that old settlers are less likely (column 3), while new settlers are more likely (column 4) to coordinate with newcomers. However, the confidence intervals are large. Thus, despite the reasoning above, empirical evidence illustrates that length of tenure does not determine heterogeneity in peer-effects.

## 2.6 Mechanisms

This final section turns to discuss and examine some potential mechanisms of peer-effects. If those resulted from word-of-mouth occurring randomly or local public meetings, we would not observe higher peer-effects among adjacent neighbours (conditioning on small reference groups of 50 meters or 15 closest neighbours). Instead, peer-effects have a preferential boundary channel. Testing for the correlation of observable characteristics in small neighbourhoods, results in **Table 4** demonstrated that peer-effects among adjacent neighbours cannot be driven by sorting mechanisms. I consider two alternative channels, drawing on the discussion in Section 2.2.2. First, social learning might be higher among adjacent neighbours as an effect of frequent and salient interactions concerning land matters. From this perspective, the adjacent neighbour's uptake is more effective at updating information on the expected relative benefits of formalisation versus informality. Second, there are non-private returns from neighbours' uptake, which increase with spatial proximity. That is, the plot owner receives the highest returns to formalisation when their most proximate neighbours have taken up too. To study these mechanisms, I will use primary survey data collected by this author and her colleague in 2018 (Land Tenure Survey, detailed in the next Chapter of this thesis), as well as the Household Socio Economic Survey (2004-2006) presented in section 2.3.1. The last paragraph draws on interviews with key government officials to suggest why neighbours might be more prone to coordinate also on the timing of uptake, whereby one takes up in the immediate aftermath of the other.

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<sup>56</sup> Results are robust to other measurements of newcomer, including a dummy for 'arrived in the last two years', and number of 'years stayed' in continuous and log form (available upon request).

### 2.6.1 Frequent and salient interactions increase social learning

The first channel of peer-effects proposes that adjacent neighbours have a higher propensity to coordinate because they have more frequent and salient interactions compared to other pairs in small neighbourhoods. On the one side, the occurrence of daily and random interactions between adjacent neighbours is likely magnified in a context where the indoor spaces are small, overcrowded and poorly ventilated; thus, households spend a great deal of time and perform housekeeping tasks outdoors nearby their houses. On the other, adjacent neighbours are part of one another's informal social contract. As elaborated in section 2.2.2, they are often involved as witnesses in the informal processes to arbitrate disputes, sell or pledge land, leading to salient interactions pertaining to land ownership. Frequent and salient interactions increase the opportunity to discuss perceptions, choices and experiences relative to informal tenure and the process of formalisation. Indeed, this is supported by descriptive evidence from the 2018 survey, presented in **Table 12**. On average, respondents often meet and engage in conversation with 5 out of 9 close neighbours: mostly their adjacent neighbours and the local leader (column 1).<sup>57</sup> Further, knowing well one additional neighbour increases their capacity to predict the local rate of uptake correctly (column 2).<sup>58</sup>

I examine the proposed channel using a version of equation (5) where  $Z_{ji}$  is a dummy for absentee landlord. I expect to observe no peer-effects in this case, because the frequency and saliency of social interactions with absentee landlords decrease to the level of any other neighbour, if not below. Results are in **Table 13**. In column 1, local trends and their interactions with the rook dummy remain similar to my main specification in **Table 8** column 1. That is, there are peer-effects among adjacent neighbours. However, in column 2, all interactions with the dummy for absentee landlord have negative signs. The first set of interactions,  $Period_{jm(j)} \times Z_{ji}$ , are not statistically significant, suggesting that plot owners are similarly inclined to follow the local trend, regardless of their neighbours' status (present or absentee). Instead, the triple interactions,  $Period_{jm(j)} \times Proximity_{ij} \times Z_{ji}$ , are statistically significant, suggesting that peer-effects are lower when the adjacent neighbour who takes up is an absentee landlord. Coefficient sizes vary across time periods. For example, at time  $t$ , plot owners are 16% less likely to uptake following an absentee adjacent neighbour, compared to one living locally. At time  $t+6$ , the differential is 19% lower than the baseline. The lowest peak is found at  $t+2$  (-4%), although the coefficient is not significant. In sum, plot owners have a higher propensity to coordinate with their adjacent neighbours living locally. This evidence lends credibility to the hypothesis that

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<sup>57</sup> Respondents were interviewed in clusters of ten including their local leader (survey cluster). They were shown a list with their names and nicknames. They were asked "Which ones do you know *well*, meaning you often meet and entertain in conversation with, including on important issues?"

<sup>58</sup> Following the question above, respondents were asked "How many of them do you think have ever taken up a RL?"



the channel of peer-effects resides in the frequency and the saliency of social interactions increasing social learning between adjacent neighbours.

### 2.6.2 The proximity of titled plots increases non-private returns to formalisation

The second channel proposes that adjacent neighbours have a higher propensity to coordinate because of non-private returns from formalisation increasing with spatial proximity. That is, the plot owner receives the highest returns to formalisation when their most proximate neighbours have taken up too. For example, property values increase with the quality of adjacent properties and infrastructure. Thus, local private and public investment can result in higher compensation, lower risk of eviction, and enhanced *perceived* tenure security.<sup>59</sup> **Table 14** reports descriptive statistics from the Household Socio-Economic survey. Around 91% of plot owners identified some need for infrastructural upgrade and ranked among their top three priorities: water supply (90%), local roads (63%), drainage system (61%), solid waste collection (31%) and environmental improvements (20%). Relatedly, **Table 15** shows that community or on plot water taps, road access, waste collection, and security from hazards are internalised in the property values estimated by Municipal officers.<sup>60</sup> This evidence confirms that infrastructural improvements could increase the returns to formalisation by further raising property values. In fact, community taps, paved roads, and drainage systems increase the property value more if located in the proximity of the property.

I examine this proposed channel with a specification of equation (5) where  $Z_{ji}$  is 1 if the neighbour is willing to contribute to upgrade activities (via cash or labour). In this case, we should observe higher peer-effects because the expected returns to formalisation increase with the number of contributors raising the likelihood of local upgrade. In fact, the provision of public goods depends on revenues (i.e. land taxes including RL payments) as well as other contributions (i.e. cash or labour participation in upgrade activities). Results are reported in **Table 13**. In column 3, time trends and propensities to coordinate with adjacent neighbours remain statistically significant and similar in size to my main specification in **Table 8** column 1. In column 4, the interactions  $Period_{jm(j)} \times Z_{ji}$  are always positive, large – with magnitude comparable to peer-effects – and statistically significant. Similarly, coefficients on the triple interactions,  $Period_{jm(j)} \times Proximity_{ij} \times Z_{ji}$ , are positive, of similar size and mostly significant, although standard errors are larger. This evidence suggests that first, at the neighbourhood level, plot owners are more likely to uptake following others who are willing to contribute to upgrade. Second, if these are adjacent neighbours, they are even more inclined to

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<sup>59</sup> Because eviction becomes more expensive for the government.

<sup>60</sup> During the phase of plot identification for the RL programme, Municipal officers also estimated their property values.

coordinate. For example, at time  $t$ , the plot owner is 18% more likely to uptake following their adjacent neighbour who is willing to contribute (compared to unwilling). This effect drops to 7.5% in period  $t+6$  and finds its lowest peak in period  $t+5$  (+2%), although this coefficient is not significant. Thus, peer-effects are the highest if the neighbour who takes up is rook adjacent and willing to contribute to upgrade, thereby raising the chances of local infrastructural improvements. This evidence is consistent with the proposed channel suggesting that non-private returns to formalisation increase with the spatial proximity of titled neighbours.

### 2.6.3 Other channels of peer-effects

Other plausible channels remain unexplored due to data limitations. Importantly, I note that the tenure security levels of adjacent neighbours are strongly correlated. In fact, except from the risk of inheritance dispute, which is idiosyncratic to the household, adjacent plots have similar, if not identical, risks of eviction and land disputes, as well as similar probabilities of compensation and dispute resolution. In fact, large-scale evictions are infrequent in Dar es Salaam. More often, evictions occur at the micro-scale to create or enlarge roads for infrastructure. Thus, *perceived* risks of eviction are local. Similarly, factors affecting compensation are likely to correlate for adjacent plots, as discussed in the prior paragraph. Furthermore, adjacent neighbours have similar risks of land disputes depending on the predisposition of proximate neighbours to encroach on contiguous plots. Finally, adjacent neighbours share the same local leaders and other witnesses, which determine similar probabilities and costs of informal dispute resolution. This has twofold implications. First, social learning might be higher among adjacent neighbours because their informal status is more relatable. Second, there are further non-private returns to formalisation, beyond those already discussed in section 2.6.2. Specifically, the adjacent neighbour who takes up the RL effectively revokes the social contract of informal ownership and undermines its validity for all parties involved. This increases the risks and costs of informality for the plot owner who remains untitled. For example, the informal process of dispute arbitration might become ineffective in case of encroachment by adjacent neighbours with statutory protection. In this case,  $i$  cannot invoke the statutory protection of the Municipality unless they have a RL too, whilst  $j$  could refuse to accept an informal arbitration. For  $i$ , this might increase the *perceived* risk of  $j$  encroaching on their plot.

Concerning the timing of peer-effects, one plausible explanation is offered by interviews with municipal officers. Making sense of my results, they suggested that peer-effects at the neighbourhood level might be caused by referrals on the opportunity costs of the RL acquisition process. They explained that in the early stages of the programme when demand was higher, Municipalities were severely underequipped and unable to service all customers efficiently.

Anecdotally, just a few months into the programme, some offices had already run out of official government paper and had to stop issuing RL documents for several weeks, until the Ministry provided a new supply. A plot owner who had managed to successfully acquire the RL would then encourage their neighbours that the process was running and reasonably easy to navigate. This is certainly one plausible explanation of peer-effects in small neighbourhoods, especially in a context where plot owners worry about the process of RL acquisition, as mentioned in section 2.2.1. Adding to the mechanisms presented above, this interpretation might also illuminate why neighbours have a higher propensity to uptake in the immediate aftermath of one another, when the process of acquisition is likely to have remained smooth.

## **2.7 Conclusion**

This paper set out to examine peer-effects in the adoption of formal titles studying the RL programme in Dar es Salaam, Tanzania. Whilst the programme offered interim property rights to approximately 180,000 households, accounting for half of the estimated plots in the city's unplanned settlements, the uptake rate is modest and concentrated in the early stages of the programme. Around 50% of eligible plot owners have taken up a RL. However, only 12.5% currently have an active RL as a result of drops in uptake and low renewal. In a context of scarce information and high uncertainty on the relative benefits of formalisation versus the social contract of informal tenure, it is plausible that the behaviour of some plot owners has functioned as a signal for others. In fact, the paper found spatial patterns of coordination in choices of formalisation, especially concerning the early choices and the timing of uptake. Furthermore, the paper provided evidence of peer-effects among adjacent plot owners. These are large in magnitude: for example, the propensity to uptake in the same month is 25% higher for adjacent neighbours compared to other pairs in small neighbourhoods. It is suggested that peer-effects are not heterogeneous across old and new settlers. Exploring two plausible mechanisms, I proposed that adjacent neighbours have a higher propensity to coordinate because of frequent and salient interactions pertaining to land tenure. Furthermore, I presented empirical evidence consistent with the hypothesis that non-private returns to formalisation increase with spatial proximity. Thus, higher social learning and strategic complementarities might explain peer-effects among adjacent neighbours. Other channels have remained unexplored for data limitations and warrant further investigation.

Overall, these findings are policy relevant and suggest avenues for academic research. On the one hand, policy makers should be aware of the social multiplier effect of formalisation choices. Literature demonstrates that careful policy design can intervene on coordinated behaviour, when this is found to impinge upon the realisation of individual preferences or positive collective outcomes (Bicchieri, 2006). On the other hand, to inform well-designed policy instruments,

more empirical research is needed, investigating the causes of peer-effects and whether they effectively prevent the realisation of desirable outcomes in the private and public interest. Finally, this paper highlighted that formalised plots often revert to an informal status. It emerged that later choices of uptake and renewal are driven by independent motivations, which deserve further investigation.

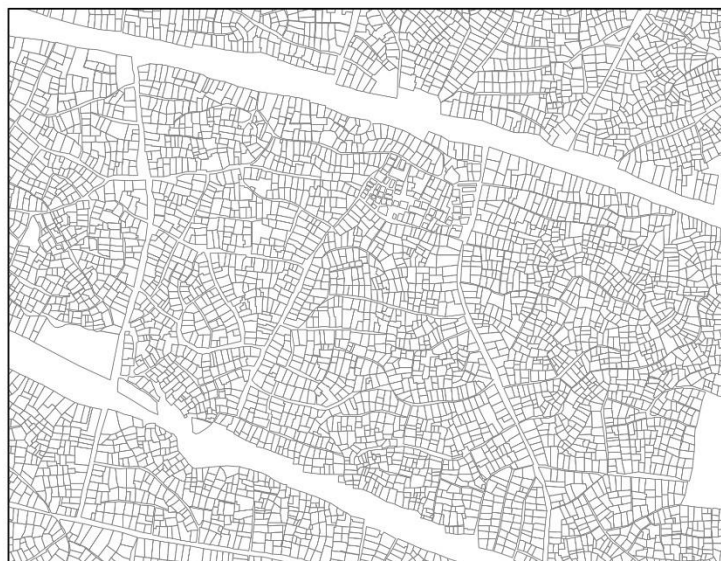
## 2.8 Figures

**Figure 1.** Residential Licence programme phase I (2004-2006).

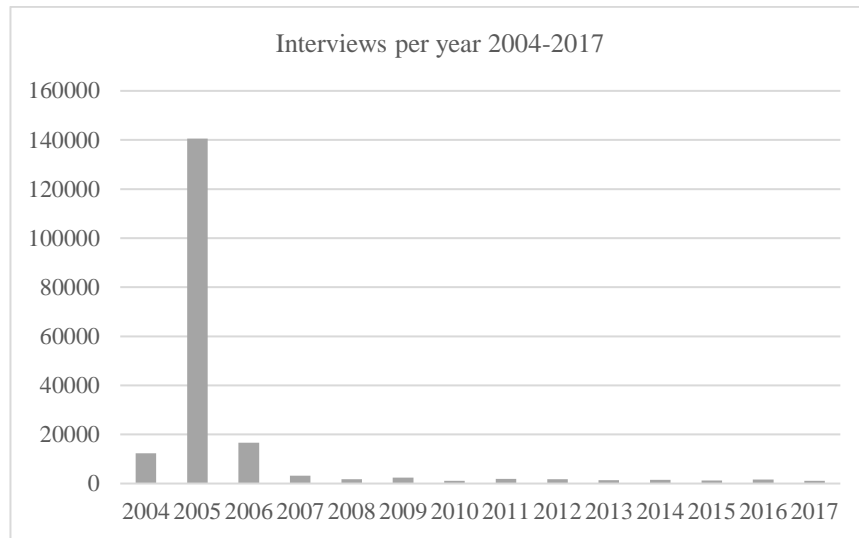


Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence program phase I.

**Figure 2.** Example of cadastral map of plots under the RL programme.

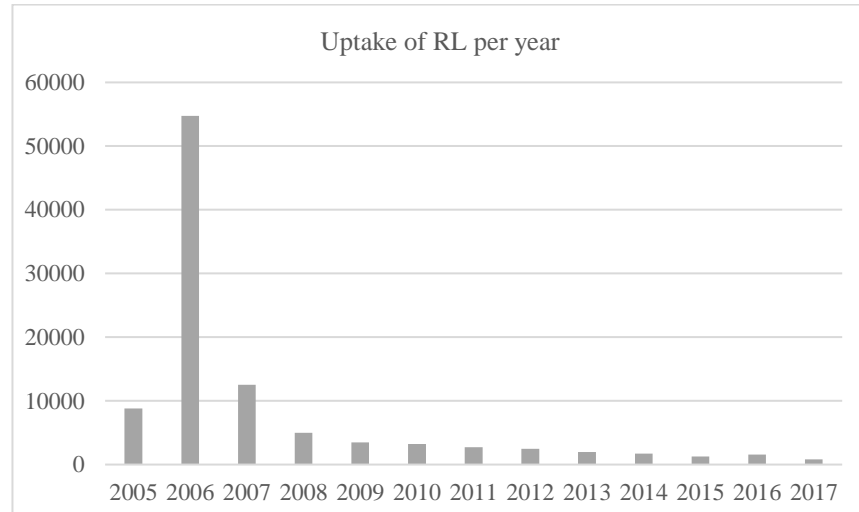


**Figure 3. Interviews per year.**



Notes: Histogram of number of plots identified and interviewed per year (2004-2017).

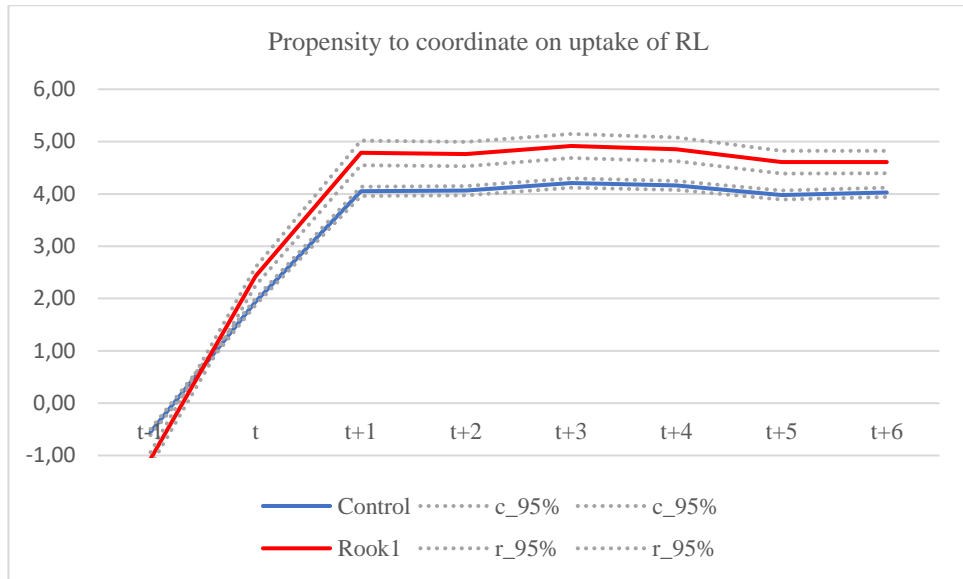
**Figure 4. Uptake of RL per year.**



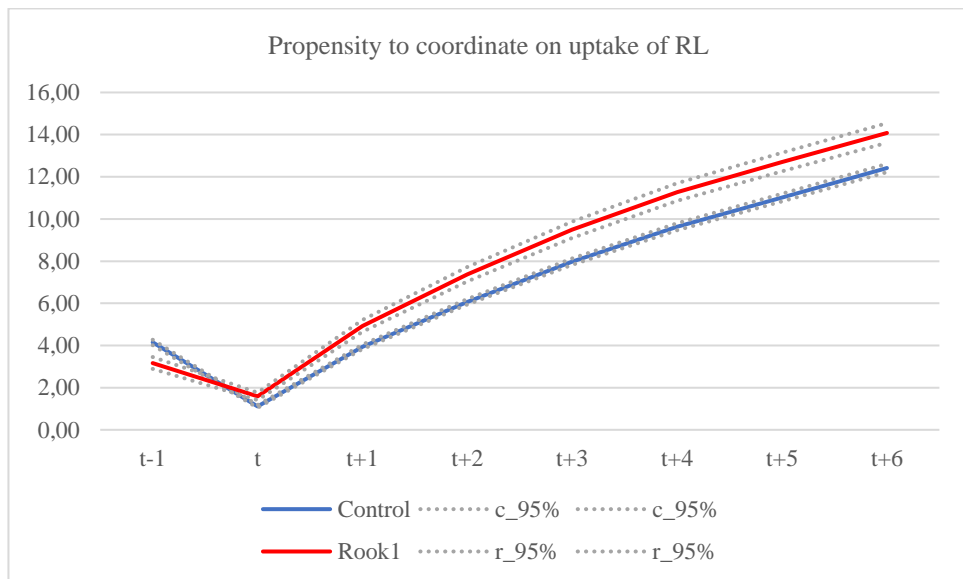
Notes: Histogram of number of RLs issued per year (2005-2017).

**Figure 5. Peer-effects in RL adoption.**

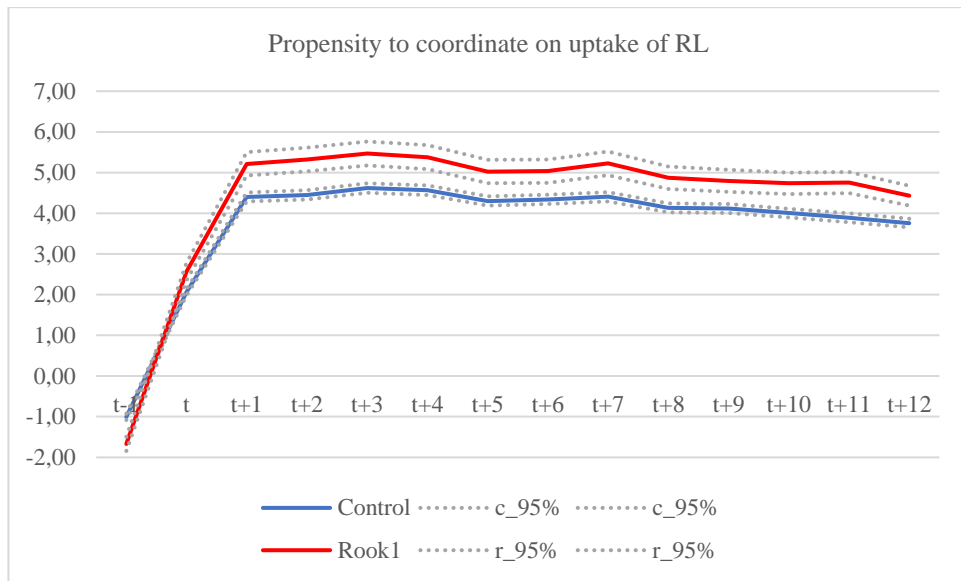
(a)



(b)



(c)



Notes: **Figure 5** plots results from equation (4), with 95% confidence bands. Adopting a pseudo diff-in-diff approach, I observe the behaviour of plot owner  $i$  following the uptake of their neighbour  $j$  and estimate whether more proximate  $i$  (Rook1) have higher propensity to coordinate compared to the baseline propensity of any  $i$  in the larger reference group (Control). On the vertical axis, coefficients are multiplied by 100. The horizontal axis represents monthly time periods from  $t-1$  to  $t+n$ . Time period  $t$  corresponds to the month of  $j$ 's uptake. A pair  $i-j$  is sampled if the plot owner  $i$  had not taken up before  $j$  (by period  $t$ ). The pair is dropped if  $i$  takes up and has no longer a choice of uptake. The blue line (Control) describes the local trend, that is, the propensity to uptake at the neighbourhood level. The red line (Rook1) describes the propensity to uptake for first order adjacent neighbours. Gaps between the lines must be interpreted as differences in the propensity to uptake for adjacent versus non-adjacent plot owners  $i$ . **Sub-figure 5a** reports results from my main specification in **Table 8** column 1, defined as above. **Sub-figures 5b** and **5c** change some features of the sampling strategy. In **Sub-figure 5b**, all pairs are observed at all time periods, instead of dropping if  $i$  takes up. Thus, it illustrates the cumulative peer-effects (**Table 10** column 1). In **Sub-figure 5c**, observations are extended over twelve time periods after  $t$ , instead of six (**Table 10** column 4).



## 2.9 Tables

**Table 1.** Summary statistics of individual plots' characteristics.

Variable	Obs	Mean	Std. Dev.
<b><i>Panel A</i></b>			
Interview Year			
2004	130,006	0.08	0.27
2005	130,006	0.83	0.37
2006	130,006	0.09	0.29
Municipality			
Ilala	130,006	0.27	0.44
Kinondoni/Ubungo	130,006	0.31	0.46
Temeke/Kigamboni	130,006	0.42	0.49
Uptake by 2007	130,006	0.44	0.50
DaysUptake- Interview (ln)	56,052	5.35	1.15
Paid land rent	21,070	0.30	0.46
Paid renewal	21,070	0.16	0.37
Active by 2017	55,175	0.13	0.34
Plot area (ln)	130,006	5.64	0.70
Distance CBD (m)	130,006	8647.39	3139.59
Distance hazard (m)	130,006	214.94	212.40
Year Arrival	130,006	1993.33	11.40
<b><i>Panel B</i></b>			
Plot developed	126,952	0.83	0.38
Property value (ln)	110,460	15.79	1.05
Owner lives on plot	124,982	0.91	0.28
Has tenants	124,982	0.37	0.48
No. resident households	124,750	2.10	1.89
No. resident people	122,323	7.58	4.76
Has road access	126,903	0.47	0.50
Has water provision	125,550	0.29	0.46
Has electricity	118,774	0.39	0.49
Has waste collected	119,977	0.35	0.48
Willing to contribute	130,006	0.60	0.49
Willing to pay cash	124,669	0.40	0.49

Notes: Panel A summarises data from the municipal cadastral database covering the full selected sample of plots eligible for RL (n=130,006). Panel B summarises data from the Socio-Economic Survey undertaken during the phase of plot identification. In the latter, observations vary due to missing data.

**Table 2.** Summary statistics of selected pairwise variables.

(1) Rook adjacent 1st order	(2) Uptake_2007 Same Choice	(3) Uptake_2007 $\Delta$ days(ln)	(4) Land Rent Same Choice	(5) Renewal Same Choice	(6) Active_2017 Same Choice
<i>Panel A. Fixed radius neighbourhood: 50 meters</i>					
.2076 (.4054)	.5385 (.4985)	4.5165 (1.331)	.5888 (.4921)	.7354 (.4411)	.7780 (.4156)
<i>Panel B. Fixed radius neighbourhood: 100 meters</i>					
.0581 (.2337)	.5294 (.4991)	4.5784 (1.2748)	.5839 (.4929)	.7334 (.4422)	.774 (.4182)
<i>Panel C. Fixed number neighbours: 15</i>					
.2179 (.4127)	.5441 (.4981)	4.4795 (1.3337)	.5854 (.4926)	.7308 (.4436)	.7727 (.4191)
<i>Panel D. Fixed number neighbours: 60</i>					
.0575 (.2327)	.5321 (.499)	4.5442 (1.2766)	.5827 (.4931)	.7311 (.4434)	.7709 (.4202)

Notes: Plots in the dataset are paired to create reference groups according to four definitions. For fixed radius neighbourhoods, I pair all plots within 50 meters or 100 meters distance. For fixed-n neighbourhoods, I match each plot with their 15 or 60 closest observable neighbours. Column 1 describes the mean and standard deviation of first order rook adjacent pairs in these neighbourhoods. Columns 2-6 summarise the mean and standard deviation of pairwise choices of formalisation. These are used to study patterns of coordination in choices of formalisation (**Tables 5-7**).

**Table 3.** Spatial correlation in the uptake of RL.

Uptake 2007	(1)	(2)	(3)	(4)
Year Arrival	.0021*** (.0002)	.0021*** (.0002)	.0019*** (.0002)	.0020*** (.0002)
Mean Year Arrival (rook1)		.0000 (.0003)		
Mean Year Arrival (50m)			.0007 (.0005)	
Mean Year Arrival (100m)				.0006 (.0007)
Mean Uptake (rook1)		.1462*** (.0084)		
Mean Uptake (50m)			.3068*** (.0145)	
Mean Uptake (100m)				.4638*** (.0215)
Controls	Yes	Yes	Yes	Yes
Mtaa FE	Yes	Yes	Yes	Yes
Obs	82,072	76,401	81,606	82,063
R <sup>2</sup>	.1023	.1109	.1128	.1111

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: Results from OLS regressions, equation (1). The dependent variable is an indicator equal to 1 if plot owner *i* has taken up the RL by 2007, two years into the programme. The table shows the coefficients of selected regressors of interest. These include mean year of arrival and mean uptake in *i*'s neighbourhood. Column 2 uses only first order rook adjacent neighbours. Columns 3 and 4 use the 50 meters and 100 meters neighbourhoods, respectively. All models control for *i*'s plot characteristics: plot area, distance to CBD, distance to hazard, plot development, property value, owner occupancy, has tenants, number of resident households, number of resident people, road access, water provision, electricity, waste collection, is willing to contribute to upgrade, is willing to pay cash for upgrade. Fixed effects for *i*'s interview year and mtaa (sub-ward) included in all models. Robust standard errors clustered at the mtaa level in parentheses.

**Table 4.** Balancing test on selected variables.

(1) Dependent variable	(2) 50m radius	(3) 100m radius
Year of arrival	-.2416* (.1301)	-.2141* (.1298)
Plot area (ln)	.0885*** (.0071)	.0761*** (.0078)
Plot developed	-.0011 (.0049)	-.0024 (.0048)
Property value (ln)	.02 (.0141)	.0184 (.0143)
Owner lives on plot	.0004 (.0038)	-.0019 (.0038)
Has tenants	.0031 (.0062)	.0117* (.0062)
No resident households	.0472* (.0251)	.0768*** (.0259)
No resident people	.0972 (.0619)	.1443** (.0624)
Willing to contribute (upgrade)	.0047 (.0061)	.0009 (.006)
Willing to pay cash (upgrade)	.0051 (.0062)	.0056 (.0064)
FE ( <i>i</i> )	Yes	Yes
N <i>i</i>	3,318	2,313
Obs	40,662	115,637

\* $p \leq 0.1$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

Notes: Results from balancing test, equation (3). Observations are neighbours  $j$  of plot owner  $i$ . I test whether adjacent neighbours present statistically different characteristics compared to non-adjacent neighbours surrounding  $i$ . Each coefficient in the table corresponds to one regression, which uses  $j$ 's characteristic as the dependent variable. Column 1 shows the characteristic used. The regressor is a dummy equal to 1 if neighbour  $j$  is rook adjacent to  $i$  ( $Rook_{ij}$ ). Columns 2 and 3 use neighbours  $j$  within 50 meters and 100 meters from  $i$ , respectively. Fixed effects for individual  $i$  included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 5.** Patterns of coordination in choices of formalisation.

	(1) Uptake_2007 Same Choice	(2) Uptake_2007 Δdays(ln)	(3) Land Rent Same Choice	(4) Renewal Same Choice	(5) Active_2017 Same Choice
<i>Panel A</i>					
Rook adjacent	.014***	-.1295***	.0138***	.0033	.0032***
1 <sup>st</sup> order	(.001)	(.0056)	(.0036)	(.0023)	(.0007)
Obs	1,961,516	427,268	113,140	113,140	762,519
R <sup>2</sup>	.2251	.3986	.5188	.7475	.7344
<i>Panel B</i>					
Rook adjacent	.0145***	-.135***	.0147***	.0049*	.003***
1 <sup>st</sup> order	(.001)	(.0061)	(.004)	(.0026)	(.0008)
Rook adjacent	.0012	-.0121**	.002	.0033	-.0005
2 <sup>nd</sup> order	(.001)	(.005)	(.0036)	(.0023)	(.0007)
Obs	1,961,515	427,268	113,140	113,140	762,519
R <sup>2</sup>	.2251	.3986	.5188	.7475	.7344
<i>Panel C</i>					
Rook adjacent	.0103***	-.1078***	.0114***	.0029	.0026***
1 <sup>st</sup> order	(.0011)	(.0065)	(.0044)	(.003)	(.0009)
Rank position	-.0004***	.0022***	-.0003	-.0000	-.0001
	(.0001)	(.0004)	(.0003)	(.0002)	(.0001)
Obs	1,961,515	427,268	113,140	113,140	762,518
R <sup>2</sup>	.2252	.3987	.5188	.7475	.7344
<i>Panel D</i>					
Rook adjacent	.0062***	-.08***	.0077	.001	.0021**
1 <sup>st</sup> order	(.0013)	(.0074)	(.005)	(.0035)	(.001)
Distance (m)	-.0004***	.0025***	-.0003	-.0001	-.0001
	(.0000)	(.0003)	(.0002)	(.0001)	(.0000)
Obs	1,961,516	427,268	113,140	113,140	762,519
R <sup>2</sup>	.2252	.3988	.5188	.7475	.7344
<i>Panel E</i>					
Rook adjacent	.0093***	-.1036***	.0115**	.0004	.0028***
1 <sup>st</sup> order	(.0011)	(.0068)	(.0047)	(.0031)	(.0009)
Additional controls	Yes	Yes	Yes	Yes	Yes
Obs	1,788,206	390,970	101,209	101,209	689,041
R <sup>2</sup>	.2294	.4060	.5302	.7525	.7380

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: Results from equation (2). Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from each other. The dependent variables describe choices of formalisation by  $i$  and  $j$ . The dependent variables are: an indicator equal to 1 if both or none have taken up the RL by August 2007 (Column 1); the natural logarithm of the number of days between  $i$ 's and  $j$ 's uptakes (Column 2); an indicator equal to 1 if both or none have paid the first-year's land rent (Column 3); an indicator equal to 1 if both or none have renewed their RL two years after uptake (Column 4); an indicator equal to 1 if both or none have active RL by August 2017 (Column 5). Summary statistics of dependent variables are illustrated in **Table 2**. The regressors of interests measure the spatial proximity of  $i$  and  $j$ . Panel A uses an indicator equal to 1 if they are first order adjacent (sharing a boundary). Panel B uses indicators for first and second order adjacent plots. Panel C uses an indicator for first order adjacent plots and a rank of proximity. Panel D uses an indicator for first order adjacent plots and the linear distance between plots. Panel E includes additional controls: pairwise plot characteristics listed in **Table 1**. All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individuals  $i$  and  $j$  are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 6.** Robustness: different reference groups.

	(1) Uptake_2007 Same Choice	(2) Uptake_2007 $\Delta$ days(ln)	(3) Land Rent Same Choice	(4) Renewal Same Choice	(5) Active_2017 Same Choice
<i>Panel A. Fixed radius neighbourhood: 100 meters</i>					
Rook adjacent	.0201***	-.1591***	.0148***	.0069***	.0039***
1st order	(.0008)	(.0049)	(.0029)	(.0019)	(.0006)
Obs	7,085,999	1,535,378	420,188	420,188	2,787,601
R <sup>2</sup>	.1276	.2513	.3499	.6647	.7034
<i>Panel B. Fixed number neighbours: 15</i>					
Rook adjacent	.0148***	-.1301***	.0166***	.0043*	.0037***
1st order	(.0009)	(.0055)	(.0035)	(.0023)	(.0007)
Obs	1,779,454	383,803	118,916	118,916	758,965
R <sup>2</sup>	.2498	.4376	.5193	.7448	.7249
<i>Panel C. Fixed number neighbours: 60</i>					
Rook adjacent	.0208***	-.1615***	.014***	.0066***	.004***
1st order	(.0008)	(.0049)	(.0029)	(.0019)	(.0006)
Obs	6,725,340	1,436,953	454,226	454,226	2,939,529
R <sup>2</sup>	.1364	.2621	.3372	.6558	.6973

\*p $\leq$ 0.1, \*\* p $\leq$ 0.05, \*\*\* p $\leq$ 0.01.

Notes: Robustness of results from equation (2). Observations are pairs of plot owners  $i$ - $j$ . The dependent variables describe choices of formalisation by  $i$  and  $j$ . For the definitions of the different dependent variables, see notes to **Table 5**. The regressor of interest is an indicator equal to 1 if  $i$  and  $j$  are first order adjacent (sharing a boundary). Panel A samples all pairs living 100 meters from each other. Panels B and C use pairs created by matching each plot owner  $i$  with their 15 or 60 closest neighbours, respectively. All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individuals  $i$  and  $j$  are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 7.** Robustness: sample restrictions on plots' geometry and density.

	(1) Uptake_2007 Same Choice	(2) Uptake_2007 $\Delta$ days(ln)	(3) Land Rent Same Choice	(4) Renewal Same Choice	(5) Active_2017 Same Choice
<i>Panel A</i>					
Rook adjacent	.0135***	-.1282***	.0115***	.0045*	.0031***
1st order	(.0001)	(.0059)	(.0037)	(.0024)	(.0007)
Obs	1,722,271	378,881	104,986	104,986	703,475
R <sup>2</sup>	.2309	.4098	.5234	.7504	.7350
<i>Panel B</i>					
Rook adjacent	.0166***	-.1404***	.0148***	.0079***	.0022***
1st order	(.0011)	(.0069)	(.0044)	(.0029)	(.0009)
Obs	1,355,498	292,160	76,372	76,372	526,645
R <sup>2</sup>	.2463	.4305	.5565	.7726	.7451
<i>Panel C</i>					
Rook adjacent	.0114***	-.1019***	.0164***	-.0043	.0024***
1st order	(.0012)	(.0079)	(.0056)	(.0039)	(.0009)
Obs	752,716	147,624	39,646	39,646	316,020
R <sup>2</sup>	.4081	.6290	.7094	.8376	.7875
<i>Panel D</i>					
Rook adjacent	.0136***	-.1265***	.0154***	.0035	.0032***
1st order	(.001)	(.0064)	(.0037)	(.0025)	(.0007)
Obs	1,438,943	305,682	104,099	104,099	692,175
R <sup>2</sup>	.2498	.4317	.5228	.7477	.7356

\*p $\leq$ 0.1, \*\* p $\leq$ 0.05, \*\*\* p $\leq$ 0.01.

Notes: Robustness of results from equation (2). Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from one another. The dependent variables describe choices of formalisation by  $i$  and  $j$ . For the definitions of the different dependent variables, see notes to **Table 5**. The regressor of interest is an indicator equal to 1 if  $i$  and  $j$  are first order adjacent (sharing a boundary). Panel A restricts the sample to plots with area between 100 and 1,000 sqm. Panel B selects plots with 2 to 5 rook adjacent neighbours. Panel C restricts each plot's reference group to an equal number of rook and non-rook neighbours. Panel D includes only plots with 6 to 27 neighbours in the 50 meters radius. All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individuals  $i$  and  $j$  are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 8.** Peer-effects in RL adoption.

	(1)	(2)	(3)	(4)
t	0.0194*** (0.0003)	0.0194*** (0.0003)	0.0194*** (0.0003)	0.0194*** (0.0003)
t+1	0.0405*** (0.0005)	0.0405*** (0.0005)	0.0405*** (0.0005)	0.0405*** (0.0005)
t+2	0.0406*** (0.0005)	0.0406*** (0.0005)	0.0406*** (0.0005)	0.0406*** (0.0005)
t+3	0.0421*** (0.0005)	0.0421*** (0.0005)	0.0421*** (0.0005)	0.0421*** (0.0005)
t+4	0.0416*** (0.0004)	0.0416*** (0.0004)	0.0416*** (0.0004)	0.0416*** (0.0004)
t+5	0.0398*** (0.0004)	0.0398*** (0.0004)	0.0398*** (0.0004)	0.0398*** (0.0004)
t+6	0.0403*** (0.0004)	0.0403*** (0.0004)	0.0403*** (0.0004)	0.0403*** (0.0004)
rook1	-0.0051*** (0.0004)	-0.0051*** (0.0004)	-0.0053*** (0.0004)	-0.0054*** (0.0004)
t#rook1	0.0049*** (0.0006)	0.0049*** (0.0006)	0.0049*** (0.0006)	0.0049*** (0.0006)
t+1#rook1	0.0073*** (0.0007)	0.0073*** (0.0007)	0.0073*** (0.0007)	0.0073*** (0.0007)
t+2#rook1	0.0070*** (0.0007)	0.0070*** (0.0007)	0.0070*** (0.0007)	0.0070*** (0.0007)
t+3#rook1	0.0071*** (0.0007)	0.0071*** (0.0007)	0.0071*** (0.0007)	0.0071*** (0.0007)
t+4#rook1	0.0069*** (0.0007)	0.0069*** (0.0007)	0.0069*** (0.0007)	0.0069*** (0.0007)
t+5#rook1	0.0063*** (0.0007)	0.0063*** (0.0007)	0.0063*** (0.0007)	0.0063*** (0.0007)
t+6#rook1	0.0058*** (0.0007)	0.0058*** (0.0007)	0.0058*** (0.0007)	0.0058*** (0.0007)
Rook2		0.0000 (0.0001)		
Rank			0.0000 (0.0000)	
Distance(m)				0.0000** (0.0000)
Controls	Yes	Yes	Yes	Yes
N i	99,730	99,730	99,730	99,730
N j	50,812	50,812	50,812	50,812
Obs	4,151,357	4,151,357	4,151,357	4,151,357
R <sup>2</sup>	0.2052	0.2052	0.2052	0.2052

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: Results from equation (4). Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from one another. Pairs are observed over eight time periods, from  $t-1$  to  $t+6$ , corresponding to calendar months from May 2005 to August 2007. Time period  $t$  corresponds to the month of  $j$ 's uptake. A pair  $i$ - $j$  is sampled if plot owner  $i$  had not taken up before  $j$  (by period  $t$ ). I observe the behaviour of  $i$  for a maximum of seven months after  $j$ 's uptake. The pair is dropped from the sample if  $i$  takes up and has no longer a choice of uptake. The dependent variable is an indicator equal to 1 if plot owner  $i$  has taken up a RL in the time period of interest. Time periods are interacted with an indicator equal to 1 if  $i$  and  $j$  are first order adjacent (sharing a boundary). Coefficients on time periods capture the neighbourhood trends of uptake. Coefficients on the interaction terms estimate the difference in the propensity to uptake for rook versus non-rook plot owners  $i$  (peer-effects). Additional measures of spatial proximity are included in models 2-4: an indicator for second order adjacent plots (Column 2); a rank of plots' proximity (Column 3); and the linear distance between plots (Column 4). All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individual  $i$  and monthly time trends are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.



**Table 9.** Peer-effects in RL adoption. Robustness Part I.

	(1)	(2)	(3)	(4)	(5)
t	0.0201*** (0.0003)	0.0197*** (0.0003)	0.0193*** (0.0004)	0.0210*** (0.0005)	0.0196*** (0.0004)
t+1	0.0415*** (0.0005)	0.0411*** (0.0005)	0.0403*** (0.0005)	0.0450*** (0.0007)	0.0401*** (0.0005)
t+2	0.0423*** (0.0005)	0.0416*** (0.0005)	0.0406*** (0.0005)	0.0460*** (0.0007)	0.0412*** (0.0005)
t+3	0.0438*** (0.0005)	0.0429*** (0.0005)	0.0423*** (0.0005)	0.0474*** (0.0007)	0.0423*** (0.0005)
t+4	0.0436*** (0.0005)	0.0425*** (0.0005)	0.0418*** (0.0005)	0.0480*** (0.0007)	0.0422*** (0.0005)
t+5	0.0418*** (0.0004)	0.0405*** (0.0005)	0.0400*** (0.0005)	0.0462*** (0.0007)	0.0402*** (0.0005)
t+6	0.0422*** (0.0004)	0.0411*** (0.0005)	0.0404*** (0.0005)	0.0461*** (0.0007)	0.0406*** (0.0005)
rook1	-0.0033*** (0.0004)	-0.0048*** (0.0004)	-0.0060*** (0.0004)	-0.0022*** (0.0004)	-0.0047*** (0.0004)
t#rook1	0.0041*** (0.0006)	0.0048*** (0.0006)	0.0052*** (0.0007)	0.0031*** (0.0007)	0.0044*** (0.0007)
t+1#rook1	0.0062*** (0.0008)	0.0071*** (0.0008)	0.0078*** (0.0009)	0.0039*** (0.0009)	0.0073*** (0.0008)
t+2#rook1	0.0051*** (0.0007)	0.0065*** (0.0008)	0.0082*** (0.0009)	0.0035*** (0.0009)	0.0065*** (0.0008)
t+3#rook1	0.0049*** (0.0007)	0.0063*** (0.0008)	0.0084*** (0.0009)	0.0039*** (0.0009)	0.0066*** (0.0008)
t+4#rook1	0.0041*** (0.0007)	0.0062*** (0.0007)	0.0079*** (0.0008)	0.0028*** (0.0009)	0.0064*** (0.0008)
t+5#rook1	0.0033*** (0.0007)	0.0057*** (0.0007)	0.0073*** (0.0008)	0.0020** (0.0008)	0.0059*** (0.0008)
t+6#rook1	0.0027*** (0.0007)	0.0053*** (0.0007)	0.0073*** (0.0008)	0.0023*** (0.0008)	0.0050*** (0.0007)
Controls	Yes	Yes	Yes	Yes	Yes
N <sub>i</sub>	103,548	92,636	79,919	83,934	83,805
N <sub>j</sub>	51,306	47,426	41,193	49,675	42,144
Obs	3,711,805	3,648,237	2,861,657	1,568,154	3,001,407
R <sup>2</sup>	0.2103	0.2069	0.2074	0.2261	0.2093

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: Robustness of results from equation (4). Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from one another (except for Column 1). The main sample, dependent variable and explanatory variables are described in notes to **Table 8**. In this table, column 1 adopts a fixed- $n$  reference group ( $n=15$ ), instead of the 50 meters radius. Column 2 restricts the sample to plots with area between 100 and 1,000 sqm. Column 3 restricts the sample to plots with 2 to 5 adjacent neighbours. In column 4, for each plot I sample an equal number of rook and non-rook neighbours. Column 5 samples plots with 6 to 27 neighbours in the 50 meters radius. All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individual  $i$  and monthly time trends are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 10.** Peer-effects in RL adoption. Robustness Part II.

	(1)	(2)	(3)	(4)
t	0.0111*** (0.0003)	0.0192*** (0.0003)	0.0147*** (0.0005)	0.0206*** (0.0004)
t+1	0.0394*** (0.0005)	0.0414*** (0.0004)	0.0352*** (0.0007)	0.0440*** (0.0006)
t+2	0.0607*** (0.0007)	0.0419*** (0.0004)	0.0344*** (0.0007)	0.0445*** (0.0006)
t+3	0.0798*** (0.0008)	0.0436*** (0.0005)	0.0358*** (0.0007)	0.0462*** (0.0006)
t+4	0.0963*** (0.0009)	0.0435*** (0.0004)	0.0350*** (0.0007)	0.0456*** (0.0006)
t+5	0.1102*** (0.0009)	0.0417*** (0.0004)	0.0298*** (0.0007)	0.0430*** (0.0006)
t+6	0.1242*** (0.0010)	0.0421*** (0.0004)	0.0284*** (0.0007)	0.0434*** (0.0006)
t+9				0.0412*** (0.0006)
t+12				0.0376*** (0.0005)
rook1	-0.0098*** (0.0008)	-0.0054*** (0.0003)	-0.0064*** (0.0006)	-0.0066*** (0.0005)
t#rook1	0.0048*** (0.0006)	0.0050*** (0.0006)	0.0051*** (0.0009)	0.0050*** (0.0007)
t+1#rook1	0.0099*** (0.0009)	0.0074*** (0.0007)	0.0086*** (0.0012)	0.0081*** (0.0009)
t+2#rook1	0.0131*** (0.0011)	0.0075*** (0.0007)	0.0102*** (0.0012)	0.0087*** (0.0009)
t+3#rook1	0.0151*** (0.0012)	0.0074*** (0.0007)	0.0085*** (0.0012)	0.0085*** (0.0009)
t+4#rook1	0.0164*** (0.0013)	0.0070*** (0.0007)	0.0078*** (0.0012)	0.0082*** (0.0009)
t+5#rook1	0.0168*** (0.0013)	0.0071*** (0.0007)	0.0080*** (0.0011)	0.0072*** (0.0009)
t+6#rook1	0.0166*** (0.0014)	0.0067*** (0.0007)	0.0083*** (0.0011)	0.0070*** (0.0009)
t+9#rook1				0.0068*** (0.0008)
t+12#rook1				0.0068*** (0.0007)
Controls	Yes	Yes	Yes	Yes
N i	99,731	107,207	83,310	94,766
N j	50,812	50,950	22,813	35,953
Obs	4,522,379	4,594,084	1,933,047	4,949,402
R <sup>2</sup>	0.5433	0.1974	0.2372	0.1913

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: Robustness of results from equation (4). Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from one another. The main sample, dependent variable and explanatory variables are described in notes to **Table 8**. This table adopts different samples. In column 1, pairs are observed at all time periods, instead of dropping if  $i$  takes up. In column 2, I remove the sampling restriction imposing that  $i$  must be interviewed before  $t-1$ . Column 3 observes pairs where  $j$  takes up between January and June 2006. Column 4 extends observations to twelve time periods after  $j$ 's uptake. All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individual  $i$  and monthly time trends are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 11.** Heterogeneity for old and new settlers.

	(1) <i>i</i> old settler	(2) <i>i</i> new settler		(3) <i>i</i> old settler $Z_{ji} = 1$ if <i>j</i> is newcomer	(4) <i>i</i> new settler $Z_{ji} = 1$ if <i>j</i> is newcomer
			$Z_{ji}$	0.0028*** (0.0008)	-0.0019** (0.0009)
t	0.0183*** (0.0005)	0.0202*** (0.0007)	t# $Z_{ji}$	-0.0020* (0.0011)	0.0005 (0.0012)
t+1	0.0386*** (0.0008)	0.0409*** (0.0009)	t+1# $Z_{ji}$	-0.0046*** (0.0016)	0.0014 (0.0017)
t+2	0.0381*** (0.0008)	0.0417*** (0.0009)	t+2# $Z_{ji}$	-0.0036** (0.0015)	0.0034** (0.0016)
t+3	0.0394*** (0.0008)	0.0426*** (0.0009)	t+3# $Z_{ji}$	-0.0050*** (0.0015)	0.0035** (0.0017)
t+4	0.0387*** (0.0007)	0.0430*** (0.0009)	t+4# $Z_{ji}$	-0.0034** (0.0014)	0.0028* (0.0016)
t+5	0.0363*** (0.0007)	0.0418*** (0.0009)	t+5# $Z_{ji}$	-0.0015 (0.0014)	0.0009 (0.0016)
t+6	0.0371*** (0.0007)	0.0414*** (0.0009)	t+6# $Z_{ji}$	-0.0014 (0.0014)	0.0040** (0.0016)
rook1	-0.0045*** (0.0006)	-0.0063*** (0.0008)	rook1# $Z_{ji}$	0.0028* (0.0017)	-0.0021 (0.0016)
t#rook1	0.0042*** (0.0010)	0.0049*** (0.0012)	t#rook1# $Z_{ji}$	-0.0051** (0.0026)	0.0034 (0.0025)
t+1#rook1	0.0077*** (0.0014)	0.0088*** (0.0016)	t+1#rook1# $Z_{ji}$	-0.0098*** (0.0033)	0.0023 (0.0033)
t+2#rook1	0.0067*** (0.0013)	0.0070*** (0.0016)	t+2#rook1# $Z_{ji}$	-0.0025 (0.0034)	0.0060* (0.0033)
t+3#rook1	0.0055*** (0.0013)	0.0100*** (0.0015)	t+3#rook1# $Z_{ji}$	-0.0025 (0.0033)	0.0058* (0.0032)
t+4#rook1	0.0054*** (0.0012)	0.0083*** (0.0015)	t+4#rook1# $Z_{ji}$	-0.0027 (0.0032)	0.0024 (0.0031)
t+5#rook1	0.0042*** (0.0012)	0.0081*** (0.0015)	t+5#rook1# $Z_{ji}$	-0.0073** (0.0030)	0.0027 (0.0031)
t+6#rook1	0.0051*** (0.0012)	0.0063*** (0.0014)	t+6#rook1# $Z_{ji}$	-0.0052* (0.0031)	0.0039 (0.0030)
Controls	Yes	Yes	Controls	Yes	Yes
N <i>i</i>	26,846	24,933	N <i>i</i>	26,846	24,933
N <i>j</i>	36,423	41,889	N <i>j</i>	36,423	41,889
Obs	1,278,819	894,251	Obs	1,278,819	894,251
R <sup>2</sup>	0.2038	0.2068	R <sup>2</sup>	0.2038	0.2068

\*p<0.1, \*\* p<0.05, \*\*\* p<0.01.

Notes: Columns 1-2 present results from equation (4) estimated on two subsamples of old and new settlers. Observations are pairs of plot owners *i-j* living within 50 meters from one another. The main sample, dependent variable and explanatory variables are described in notes to **Table 8**. Column 1 samples plot owners *i* arrived by 1987 (lowest quartile of length of tenure). Column 2 samples plot owners *i* arrived from 2002 (upper quartile of length of tenure). Columns 3-4 present partial results from equation (5) estimated on the same subsamples of old (Column 3) and new settlers (Column 4). Time trends and interactions with rook indicators are not reported in this table. I report the interactions of these variables with an indicator equal to 1 if neighbour *j* is a newcomer (arrived in the last five years). Coefficients on the triple interactions measure differences in peer-effects, that is, the propensity of plot owner *i* to uptake following the behaviour of rook newcomers versus other adjacent neighbours. All models control for the difference between *i*'s and *j*'s interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individual *i* and monthly time trends are included in all models. Robust standard errors clustered in *i* and *j* in parentheses.

**Table 12.** Channel 1: supporting evidence.

	(1) Summary Statistics	(2) OLS Y= Correct Prediction (rate of first uptake)
Neighbours known well (out of 9)	5.08 (2.6)	.0121** (.0050)
Correct Prediction (rate of first uptake)	.27 (.44)	
Controls	-	Yes
Obs	1,363	1,363
R <sup>2</sup>	-	0.3593

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01.

Notes: As part of the Land Tenure Survey, respondents were interviewed in clusters of ten including themselves, their local leader, and eight neighbours (survey cluster). They were shown a list with their names and nicknames. They were asked “Which ones do you know *well*, meaning you often meet and entertain in conversation with, including on important issues?”; “How many of them do you think have ever taken up a RL?” Column 1 shows mean and standard deviation of their responses. Column 2 presents coefficients of correlation from an OLS regression where the dependent variable is an indicator equal to 1 if the respondent predicts the rate of first uptake correctly. The regressor is the number of neighbours known well. Regressions control for the respondent’s status (leader or plot owner), gender, age, year of arrival, education level and pending land disputes. Fixed effects for the survey cluster included. Robust standard errors clustered at the survey cluster level.

**Table 13.** Channels. Social learning and complementarities.

		$Z_{ji} = 1$ if $j$ is absentee landlord				$Z_{ji} = 1$ if $j$ is willing to contribute	
		(1)	(2)			(3)	(4)
		$Z_{ji}$	0.0018** (0.0007)			$Z_{ji}$	-0.0029*** (0.0005)
t	0.0196*** (0.0003)	t# $Z_{ji}$	-0.0011 (0.0010)	t	0.0164*** (0.0005)	t# $Z_{ji}$	0.0016** (0.0006)
t+1	0.0408*** (0.0005)	t+1# $Z_{ji}$	-0.0024* (0.0012)	t+1	0.0355*** (0.0007)	t+1# $Z_{ji}$	0.0030*** (0.0009)
t+2	0.041*** (0.0005)	t+2# $Z_{ji}$	-0.0018 (0.0012)	t+2	0.0357*** (0.0007)	t+2# $Z_{ji}$	0.0023*** (0.0009)
t+3	0.0424*** (0.0005)	t+3# $Z_{ji}$	-0.0013 (0.0012)	t+3	0.0366*** (0.0007)	t+3# $Z_{ji}$	0.0037*** (0.0009)
t+4	0.0419*** (0.0005)	t+4# $Z_{ji}$	-0.0019 (0.0012)	t+4	0.0371*** (0.0007)	t+4# $Z_{ji}$	0.0026*** (0.0009)
t+5	0.0400*** (0.0005)	t+5# $Z_{ji}$	-0.0013 (0.0012)	t+5	0.0345*** (0.0007)	t+5# $Z_{ji}$	0.0041*** (0.0008)
t+6	0.0407*** (0.0005)	t+6# $Z_{ji}$	-0.0024** (0.0012)	t+6	0.0354*** (0.0007)	t+6# $Z_{ji}$	0.0038*** (0.0009)
rook1	-0.0053*** (0.0004)	rook1# $Z_{ji}$	0.0034*** (0.0012)	rook1	-0.0032*** (0.0007)	rook1# $Z_{ji}$	-0.0023*** (0.0009)
t#rook1	0.0051*** (0.0006)	t#rook1# $Z_{ji}$	-0.0039** (0.0019)	t#rook1	0.0021** (0.0011)	t#rook1# $Z_{ji}$	0.0033** (0.0014)
t+1#rook1	0.0077*** (0.0008)	t+1#rook1# $Z_{ji}$	-0.0062** (0.0026)	t+1#rook1	0.0038*** (0.0014)	t+1#rook1# $Z_{ji}$	0.0039** (0.0018)
t+2#rook1	0.0069*** (0.0008)	t+2#rook1# $Z_{ji}$	-0.0017 (0.0026)	t+2#rook1	0.0044*** (0.0014)	t+2#rook1# $Z_{ji}$	0.0040** (0.0018)
t+3#rook1	0.0074*** (0.0008)	t+3#rook1# $Z_{ji}$	-0.0050** (0.0025)	t+3#rook1	0.0053*** (0.0014)	t+3#rook1# $Z_{ji}$	0.0022 (0.0018)
t+4#rook1	0.0075*** (0.0007)	t+4#rook1# $Z_{ji}$	-0.0065*** (0.0024)	t+4#rook1	0.0032** (0.0013)	t+4#rook1# $Z_{ji}$	0.0041** (0.0017)
t+5#rook1	0.0067*** (0.0007)	t+5#rook1# $Z_{ji}$	-0.0044** (0.0023)	t+5#rook1	0.0047*** (0.0013)	t+5#rook1# $Z_{ji}$	0.0009 (0.0016)
t+6#rook1	0.0065*** (0.0007)	t+6#rook1# $Z_{ji}$	-0.0091*** (0.0022)	t+6#rook1	0.0038*** (0.0013)	t+6#rook1# $Z_{ji}$	0.0029** (0.0017)
		Controls	Yes			Controls	Yes
		N i	99,125			N i	62,245
		N j	49,050			N j	49,560
		Obs	4,036,387			Obs	2,736,345
		R <sup>2</sup>	0.2057			R <sup>2</sup>	0.1988

\*p<0.1, \*\* p<0.05, \*\*\* p<0.01.

Notes: Columns 1-2 report results from one specification of equation (5) where  $Z_{ji}$  is equal to 1 if  $j$  is an absentee landlord. Columns 3-4 report results from one specification of equation (5) where  $Z_{ji}$  is equal to 1 if  $j$  is willing to contribute to neighbourhood upgrade. Observations are pairs of plot owners  $i$ - $j$  living within 50 meters from one another. The sample, dependent variable and explanatory variables are described in notes to **Table 8**. Time and rook indicators are further interacted with  $Z_{ji}$ . Coefficients on the triple interactions estimate differences in peer-effects. In Column 2, they measure the propensity of plot owner  $i$  to uptake following the behaviour of rook absentee landlords compared to other adjacent neighbours living on their plot. In Column 4, they measure the propensity of plot owner  $i$  to uptake following the behaviour of rook neighbours willing to contribute to upgrade compared to other adjacent neighbours (unwilling to contribute). All models control for the difference between  $i$ 's and  $j$ 's interview dates and a dummy for different mtaa (sub-ward). Fixed effects for individual  $i$  and monthly time trends are included in all models. Robust standard errors clustered in  $i$  and  $j$  in parentheses.

**Table 14.** Channel 2: supporting evidence Part I.

Ranked in top 3 priorities for upgrade	
	Mean
Water supply	0.90
Local roads	0.63
Drainage system	0.61
Solid waste collection	0.31
Environmental safety	0.20
Street lights	0.02
Public toilet	0.01
Obs	171,829

Notes: As part of the Household Socio-Economic Survey, plot owners were asked: “Do you see a need for neighbourhood upgrade?”; “Rank up to three upgrade priorities from this list”. Overall, 91% of respondents indicated at least one priority. The table reports the mean of each infrastructural improvement ranked within the top three priorities.

**Table 15.** Channel 2: supporting evidence Part II.

OLS	
Y= Property Value (ln)	
Water supply (baseline = buys)	
On plot tap	.2652*** (.0272)
Neighbour tap	-.0176 (.0192)
Community tap	.1299*** (.0463)
Water well	-.0306 (.0263)
Has road access	.1619*** (.0133)
Has waste collection	.1207*** (.0147)
In hazardous area	-.0574** (.0259)
Toilet system (baseline= none)	
Pit latrine	.3065*** (.0585)
WC	.6198*** (.0646)
Electricity	.2175*** (.0195)
Constant	13.20*** (1.035)
Controls	Yes
Mtaa FE	Yes
Obs	46,982
R <sup>2</sup>	0.2533

\*p<0.1, \*\* p<0.05, \*\*\* p<0.01.

Notes: Results from OLS regression. The dependent variable is the property value in log form (from the Household Socio-Economic Survey). The table shows selected regressors of interest and their coefficients of correlation. Controls include distance from CBD, plot area, land use, state of construction (complete, under construction, vacant), building footprint and materials (roof and walls). The sample is restricted to plots with non-missing data. Fixed effects for mtaa (sub-ward) included. Robust standard errors clustered at the mtaa level.

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## Chapter 3

# From policy to institution: a descriptive norm of tenure formalisation in Dar es Salaam's unplanned settlements

### 3.1 Introduction

With around 1 billion people living in unplanned settlements world-wide (UN-Habitat, 2020), international organisations and governments promote land tenure reforms aiming to replace non-statutory tenure with “secure, legally enforceable and marketable land rights” (Collier et al., 2017: 2). According to economic theory (ibid.), statutory rights will stimulate private and public investment in land by increasing tenure security and access to formal credit. Furthermore, formalisation will enable governments to raise revenues, plan and provide for public services. Yet, formalisation programmes are controversial and present numerous challenges of implementation (Boone, 2019; Payne et al., 2009). For example, the demand for formal titles remains low in many African cities (e.g. Kusiluka and Chiwambo, 2018). This paper explores the motivations for low demand of interim statutory property rights – the Residential Licence (RL) – in Dar es Salaam, Tanzania. Since 2005, about 180,000 plot owners have been eligible to obtain this temporary document, which needs renewing every five years. However, rates of uptake and renewal have been moderate to low: 50% and 12.5% respectively. As the programme will be extended to another 630,000 plots over the next few years,<sup>61</sup> understanding the drivers of low demand is both timely and policy relevant.

A growing literature argues that social *embeddedness* is key for the successful implementation of titling policies (e.g. Peters, 2009) as institutions cannot be designed and enforced exogenously (Ho, 2016a). Rather, they are perceived, practiced and they evolve through endogenous social interactions (ibid.). Thus, the social support of communities is necessary for statutory rights to become operational, otherwise formalisation risks producing ‘low-credibility’ or ‘empty’ institutions with little effect on social actors’ behaviour (Ho, 2016b). Adding to this literature, this paper adopts an institutional analytical approach to investigate the level of social support rallied by the RL policy. Precisely, I examine if the policy prescription has ‘materialised’ in the endogenous social interactions of communities, *embedding* from an institution-in-form to an institution-in-use, from paper to practice. To address this question, I apply the analytic framework developed by Cristina Bicchieri (2017) to elicit plot owners’

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<sup>61</sup> Of which, 130,000 plots have already been identified in 2019.

social expectations and preferences on formalisation. Data was collected through a survey in two rounds with 1,363 and 243 respondents respectively.

The paper finds that, despite their actual choices of formalisation, plot owners conform to an institution-in-use that prescribes uptake and renewal of the RL. In fact, they have positive normative beliefs regarding the RL: they think it is *good* and one *should* uptake and renew. However, plot owners have conditional preferences for formalisation, based on the behaviour and advice of their neighbours and local leaders. This suggests that the policy rallies a high degree of social support, and yet the rate of formalisation is low because plot owners lack social incentives to comply with the institution-in-use. Notably, many plot owners underestimate the local rate of uptake. In fact, they rarely talk about their choices or opinions on formalisation with one another and with their local leaders. Thus, the policy “fail(s) to materialise in actors’ endogenous interactions” (Ho, 2016b: 1149) beyond some threshold levels providing the perception that the institution-in-use is enforced or shared. Hence, the RL policy presents the characteristics of an ‘empty’ institution.

Crucially, the paper provides evidence advancing an on-going debate on the importance of *social embeddedness* for the success of formalisation policies in specific spatial-temporal contexts. Additionally, it responds to the growing interest of property rights scholars and geographers for novel empirical methods to study institutions and institutional change in field settings. The paper proceeds as follows: section 3.2 presents the background of land tenure formalisation in Dar es Salaam with a focus on the RL programme. Section 3.3 discusses the issue of institutional *embeddedness* and frames the research problem. Section 3.4 describes the analytic framework and outlines the paper’s key contributions. Section 3.5 illustrates the data collection process. Results and conclusions are discussed in sections 3.6 and 3.7.

### **3.2 Unplanned settlements and land tenure formalisation in Dar es Salaam**

Founded in the second half of the 19<sup>th</sup> century as an administrative and commercial centre under German rule, Dar es Salaam is a relatively young city, characterised by a rapidly increasing urbanisation rate and a pattern of sprawling low-density development (Brennan et al., 2007; Kironde, 1994; Lupala, 2002). Colonial and post-independence governments adopted explicitly anti-urban policies and systematically under-supplied housing and infrastructure, thereby causing the uncontrolled growth of unplanned settlements in Dar es Salaam. This led to the development of an informal land management system, compensating for the deficit of formally registered and serviced land by providing housing to the urban poor and the incoming migrants (Kombe and Kreibich, 2000, 2001).

During the 1960s, the first post-independence government nationalised all land and attempted a slum clearance strategy in Dar es Salaam through the eviction and resettlement of squatters occupying settlements inconsistent with the 1968 masterplan. However, this strategy was hardly implemented due to popular resistance. Instead, by the early 1970s the government decided to recognise and upgrade the unplanned settlements incorporating them in the new 1979 masterplan. Whilst this spurred numerous upgrading schemes, they were not scaled up to meet demand. Thus, unplanned settlements continued to shape the city's development. In fact, in 2003/2004, just before the start of the Residential Licence programme, it was estimated that unplanned settlements accommodated some 400,000 housing units, equivalent to 80% of all residential buildings (Kironde, 2006: 83).

Importantly, the urban planning policies mentioned above did not address the issue of land tenure. Indeed, this was first regulated by the 1995 National Land Policy and the 1999 Land Act declaring that, "residents in unplanned settlements shall have their rights recorded and maintained by the relevant land allocating authority" (URT, 1995: 19). The country's land reform was strongly impacted by international development policy advice, with the Tanzanian government becoming an exemplary proponent of neoliberal development (Green, 2014). In fact, important influences from the World Bank and De Soto's Institute for Liberty and Democracy promoted urban formalisation policies as a tool to enable land and credit markets (e.g. Briggs, 2011).

Crucially, the land reform established diverse types of property rights in urban and rural areas (e.g. Gastorn, 2010). In order to receive full statutory rights in urban areas, plot owners must apply for a Certificate of Right of Occupancy (CRO), corresponding to a leasehold of 33, 66, or 99 years. Furthermore, the Land Act (URT, 1999, Section 23) enables and regulates the provision of the Residential Licence (RL), a derivative statutory right allowing for incremental land tenure formalisation in urban areas. The RL grants to any person without another formal title (i.e. CRO), the right to occupy non-hazardous land for a limited period, currently five years, which can be renewed.

Overall, the RL programme has three main objectives (Kironde, 2006): first, to widen access to formal tenure in the unplanned settlements under regularisation schemes; second, to collect cadastral information and raise revenues to support upgrading activities making unplanned settlements eligible for CRO in the longer term; and third, in alignment with the Poverty Reduction Strategy (1998), to empower lower income residents, providing them with a legal document to access formal credit.

In the early 2000s, the Ministry of Lands, Housing and Human Settlements Development (MLHSD), designated Dar es Salaam for a pilot programme in two phases. Phase one targeted the consolidated unplanned settlements characterised by the highest density dwellings and the poorest quality infrastructure. This phase covered about 220,000 plots, roughly half of the informal buildings in the city (**Figure 1**). Since 2005, eligible plot owners in these areas can choose – but they are not obliged to – uptake the RL.<sup>62</sup> Yet, conditional on uptake, they must renew the document every five years. Whilst considerably cheaper,<sup>63</sup> on paper the RL offers the same benefits as full leasehold (CRO): compensation in case of eviction,<sup>64</sup> and statutory protection in case of ownership, boundary and inheritance disputes with third parties. Further, it enables the legal transfer and the collateralisation of land with mainstream banks.

Nonetheless, the RL programme had moderate uptake, approximately 50%, concentrated in the first two years. Whilst the uptake rate decreased in time, a minority kept renewing their RL, so that only 12.5% of plot owners currently have an active RL. In 2018, our survey of the unplanned settlements covered by the RL programme (see details in section 3.5) found that 2.6% of plot owners hold CRO, 31.5% have unregistered documents (i.e. Sale Agreement), whilst 11.9% rely on verbal validation from neighbours and local leaders. Due to scarce success, phase two of the programme was halted until 2019 (**Figure 2**).

Considering the low rate of formalisation in urban Tanzania (Kusiluka and Chiwambo, 2018), some scholars suggest that formal titles may not provide perceived or actual benefits (e.g. Briggs, 2011). In fact, there are relevant gaps between the *on-paper*, the *de facto*, and the *perceived* benefits of the RL. For example, this property right offers limited advantage in terms of accessing formal credit from mainstream banks (Manara and Pani, 2020a;<sup>65</sup> Parsa et al. 2011). Thus, some studies look at the expected benefits and costs of the RL to explain choices of formalisation, or lack thereof (Kironde, 2006; Kusiluka and Chiwambo, 2019; Sheuya and Burra, 2016). Overall, they suggest that plot owners formalise primarily to enhance their *perceived* tenure security. Instead, those who do not formalise lack financial resources, key information, or immediate needs for formalisation.

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<sup>62</sup> Plot owners are eligible for a RL conditional on being identified as the rightful owners by their local leaders and neighbours, and occupying plots in non-hazardous areas (n=177,052 by August 2017).

<sup>63</sup> The mean fees for a RL are about 5,600 TSh, plus annual land rent. Instead, in a recent project the mean costs of surveying and titling a plot with CRO are 538,000 TSh, plus annual land rent (Manara and Regan, 2020 – Chapter 5 of this thesis).

<sup>64</sup> By law, a RL held for a minimum of three years provides the same level of compensation of a CRO (URT, 1999, Section 23).

<sup>65</sup> In summary, drawing on interviews with nine of the largest financial organisations in Dar es Salaam, we find that the RL is neither necessary nor sufficient for the urban poor to access credit. On the one hand, banks also accept unregistered land as a valid collateral. On the other, they deem interim rights less secure than full property rights; therefore, they apply ceilings and unfavourable terms for loans pledged against the RL, whereas the CRO is attached to relatively better conditions.

Other studies contend that choices of uptake and renewal are impacted by group characteristics and social relations. Notably, Collin (2020) demonstrates that plot owners belonging to ethnic enclaves are less likely to formalise. This might depend on ethnic ties generating higher levels of *perceived* tenure security in the neighbourhood. Based on quantitative analysis of administrative cadastral data, Manara (2020) – Chapter 2 of this thesis – found spatial patterns of coordination in choices of formalisation arguing that adjacent neighbours influence each other in the initial stages of the programme. It is proposed that this is the result of social learning. In a context of scarce information and high uncertainty on the relative benefits of formalisation versus the social contract of informal tenure, the behaviour of some plot owners may have functioned as a signal for others. This study has two implications: first, by showing that social relations impact on plot owners’ choices, it underscores the importance of examining wider motivations for formalisation, beyond a mere calculation of expected costs and benefits. Second, evidence of coordination suggests that plot owners might be conforming to an institution driving choices of formalisation at the community level, as this paper will further investigate.

### **3.3 Institutional *embeddedness*: from institution-in-form to institution-in-use**

Formalisation policies are controversial and divisive because on one side, they are motivated by contrasting visions and conflicting goals, such as market-enhancing and market-constraining strategies (Boone, 2019). On the other, empirical work on land titling projects has illuminated struggles of implementation and enforcement, demonstrating that the outcomes of land reform depend on contextual factors (Boone, 2019; Bromley, 2009; Sikor and Müller, 2009). In fact, in many instances, titling projects have found low demand, failed to deliver the expected outcomes, or produced unintended consequences (e.g. Benjaminsen et al., 2009; Gilbert, 2012; Payne et al., 2009).

Importantly, some scholars suggest that the social validation of local communities is key to operationalise property rights (Payne, 2002; Platteau, 1996). In fact, “land tenure is a social relation...*embedded* in social relations”: property cannot be separated from its cultural, political and social matrices (Peters, 2009: 1318). Thus, for Ho (2016a) “a developing country can only hope to strengthen property rights...inasmuch as these newly desired institutions are perceived as credible by actors on the ground” (p. 1128). Ho’s broader critique focuses on the inadequacy of the neo-liberal and neo-classical postulates underpinning formalisation: first, that formal, private and secure rights have a causal effect on economic growth and development; second, that institutions can be designed and enforced exogenously (p. 1123-1125).



In response to these critiques, he argues that there is no demonstrated correlation between institutional form and performance across contexts. Moreover, institutions emerge endogenously and unintentionally, through the continuous interactions of multiple agents in given spatial-temporal contexts. As Ho (2014: 16) puts it:

“Social actors’ game is not one in which institutions can be *intentionally* formed by an external agency, such as a ministry... Contrarily, the game knows no external agency because *all* are in the game, be they state, civic or corporate actors, while the institutions that govern the game are the *autonomous* results of *endogenous* power differences and interactions between actors” (emphasis in original text).

The Credibility Thesis on property rights, as proposed by Ho (2014, 2016a, 2018, 2020) and further developed by several scholars (see special issues TJPS, 2016; LUP, 2018; LUP, 2020), posits that institutions are performed and persist if they are functionally adapted to contexts and therefore credible. Credibility depends on the perception that an institution is common or jointly shared. Thus, credibility does not refer to the individuals’ acceptance of an institution, but to the individuals’ expectations that other actors abide by that institution and will act accordingly. In this sense, social relations and expectations are central to credibility. ‘Non-credible’ institutions may emerge when some actors, in a higher position of power (e.g. the central ruler) attempt to design and enforce new institutions, which do not match the functions of the pre-existing arrangements (Ho, 2016b). In this case, a new institution with no or little credibility will be characterised by social contestation and rising conflict. It will either “fail to materialize in actors’ endogenous interactions”, disappear or change over time (p. 1149). In fact, social actors can reinterpret and adapt institutions to their own context (Dopfer et al., 2004; Morgan and Olsen, 2011; Streeck and Thelen, 2005).

On the contrary, ‘empty’ institutions emerge when, by “tacit agreement”, the government does not enforce the new institution, tolerating the institutional status-quo in order to avoid conflict (Ho, 2016: 1148). Therefore, empty institutions are “socially accepted, little contested and, in effect, to a certain degree *credible*” (p. 1147, emphasis in original), but they are neither enforced nor perceived as common. Thus, they will remain ‘symbolic’, ‘ineffective’ or ‘ignored’: “a paper agreement or a hollow shell with little or even negative impact on the behaviour of social actors” (Ho, 2014: 14-15). It follows from the discussion above that social *embeddedness* is key for the implementation of institutions. In fact, institutions are perceived, practiced and they evolve through endogenous social interactions.

Whilst a growing scholarship convincingly articulates the importance of social *embeddedness* for the success of titling projects in specific contexts, there is a need to experiment and consolidate methods to ‘unpack institutions’ (Ho, 2016a) and assess the social support rallied by

policies promoting institutional fixes in their contexts of implementation. Adopting a new methodological approach, this paper proposes that the credibility of an institution can be measured by testing whether the corresponding policy has materialised in the endogenous social interactions of local communities, thereby translating from an institution-in-form to an institution-in-use, from paper to practice.

To be clear, by institutions I do not mean agents or organisations: that is, the public authority designing or enforcing institutions exogenously (e.g. Ministry, Municipality). Instead, this paper adopts a definition of institutions as rules, norms and strategies: shared linguistic statements describing “opportunities and constraints that prescribe, permit or advise actions or outcomes” (Ostrom, 2005: 138). For example, institutions might be defined by policy prescriptions, laws or practices on property rights. From Ostrom (ibid.), I borrow the distinction between institution-in-form and in-use. The former is designed and codified in policies or laws, but not necessarily enforced nor followed in practice. Instead, the latter is practiced through endogenous social interactions.

In this paper, the policy prescription that eligible plot owners should uptake and must renew the RL is an institution-in-form. This paper examines if the RL policy has *embedded* into an institution-in-use performed through social interactions, its content (whether it prescribes or proscribes formalisation) and the conditions of compliance with it. The low rate of formalisation with the RL suggests that this property right might be perceived as a ‘non-credible’ or ‘empty’ institution, failing to meet the social values and the functions of pre-existing land tenure arrangements. To explore this issue, I will adopt an innovative analytic framework described in the next section.

### **3.4 Analysing institutions-in-use: analytic framework**

Across disciplines, scholars involved with institutional analysis (e.g. Voigt, 2018), formalisation of property rights (e.g. Ho, 2016a) and geographical studies (e.g. Rodríguez-Pose, 2013) agree that a major challenge of institutional analysis is making theoretical notions operational for empirical research. This is especially difficult when testing for and analysing institutions-in-use in field settings. First, unlike laws and policies, institutions-in-use cannot be inferred from written text. Precisely, the focus must be placed on institutional practices, instead of institutional design or coding. Second, institutions-in-use cannot be inferred from observed behaviour and inductive reasoning. In fact, the observed behaviour might result from occasional disobedience or systematic violation of the institution-in-use. Third, it is challenging to have respondents state their institutions-in-use. Indeed, individuals might be unwilling or incapable to openly identify which institutions they conform to.

In this paper, I do not infer institutions from written text, observed behaviour or respondents' reporting, therefore avoiding the methodological hurdles mentioned above. Instead, I adopt the analytic framework developed by the philosopher Cristina Bicchieri (2006, 2017), which allows the identification and measurement of institutions-in-use in field settings. Importantly, Bicchieri proposes some operational definitions of institutions that can be used to examine institutions empirically with survey and interview data. For this distinctive feature, her framework is quite unique. In the field, it has found some application, including Bicchieri's own work in developing contexts on the motives for child marriage (Bicchieri et al., 2014) and practices of open defecation (Bicchieri et al., 2018).

As mentioned above, Manara (2020) – Chapter 2 of this thesis – argued that plot owners coordinated on choices of formalisation with RL suggesting that an institution-in-use might drive the uptake of the RL. In fact, a pattern of behaviour might simply be a *habit* (not an institution), caused by personal factual and/or normative beliefs, which happen to be common in the population (Bicchieri, 2017: 16). In this case, based on independent prudential, rational or moral reasons, individuals make unconditional choices converging into patterns.

Instead, institutions are social constructs crafted to create predictability and order in social life by regulating expectations of other people's behaviour and beliefs. Individuals conforming to institutions make choices based on their social expectations of what others do (empirical expectations) or think ought to be done (normative expectations) (p. 19; 35). Thus, institutions generate conditional preferences for actions and outcomes resulting in interdependent choices and patterns of behaviour. Institutions include rules, social and descriptive norms. Descriptive norms like fads, fashions and conventions create regularities of behaviour by signalling what is appropriate, good, praised. Hence, individuals coordinate as an effect of learning from one another. Conversely, social norms incentivise coordination through social sanctions, for instance, internal and external emotional payoff, pride and guilt, approval and disapproval, or social ostracism. Finally, rules incentivise coordination through regulated sanctions, such as fines and penalties.

For example, considering the observed pattern of behaviour, let us hypothesise that plot owners conform to a proscriptive institution of the type *one must/should not uptake and renew the RL* (in content, contrary to the institution-in-form). This statement might be simple advice expressing rational or prudential concerns about the RL (e.g. *costs exceed benefits; there is no need for it; the process is cumbersome*). Alternatively, it might be a proscription combined with disincentives for uptake and renewal (i.e. *unregulated or regulated sanctions*). If the pattern of behaviour is a habit, plot owners make independent choices based on their personal beliefs only. If an institution drives behaviour, plot owners do not uptake and renew *because others do*

*and/or advise that*. If the institutional statement is a descriptive norm, *they learn* from the behaviour and advice of others that the RL is bad and it is in their best interest to not formalise. Finally, if the institution is a social norm or a rule, coordination is not primarily motivated by social learning. In this case, plot owners follow the behaviour and advice of others because *they fear sanctions for choosing otherwise*. They will be ashamed, ridiculed, isolated if the institution is a social norm. They will receive fines, penalties or other regulated sanctions if the institution is a rule.

	<b>Preference for behaviour conditional on:</b>	<b>Pattern of behaviour motivated by:</b>	<b>The deontic <i>must/should not</i> expresses:</b>
<b><i>HABIT</i></b>	personal beliefs	common personal beliefs	advice
<b><i>DESCRIPTIVE NORM*</i></b>	social expectations	self-interest in coordination	advice
<b><i>SOCIAL NORM</i></b>	social expectations	sanctions (unregulated)	incentive
<b><i>RULE</i></b>	social expectations	sanctions (regulated)	incentive

**Table 1.** Framework for institutional analysis. I use the terms in Bicchieri (2016). \* Alternative definition: *shared strategy*.

The key concepts guiding the empirical analysis of this paper are illustrated in **Table 1**. Following Bicchieri (2017), I will examine the personal beliefs and social expectations of plot owners as the ‘building blocks’ of their choices. What are the benefits and costs of acquiring the RL (personal factual beliefs)? Should one uptake and renew, and under what conditions (personal normative beliefs)? How many others do they expect have an active RL (social empirical expectations)? What do they expect others think ought to be done (social normative expectations)?

Notably, an institution is a shared statement. Therefore, first I will test for the correspondence of social normative expectations in the population. Second, I will examine whether plot owners’ preferences for uptake and renewal are conditional on social expectations (what others do and/or think ought to be done). If plot owners’ choices are unconditional, that is, insensitive to social expectations, I will conclude that the pattern of behaviour is a habit, motivated by rational or prudential independent reasons only (personal beliefs). Conversely, if preferences for uptake and renewal change with social expectations, I will conclude that an institution-in-use drives the observed pattern of behaviour. Third, I will scrutinise the social incentives connected with uptake and renewal in order to distinguish which institution-in-use regulates behaviour, that is, rule, social or descriptive norm. Finally, I will problematise issues of legitimacy and compliance to examine why the institution-in-use does or does not influence behaviour.

Before discussing the findings of this paper, I outline its key contributions. Firstly, the paper adds to literature on land tenure formalisation, particularly to studies concerned with the failures of titling projects, namely the low demand for titles (e.g. for the case of Dar es Salaam, Kironde, 2006; Kusiluka and Chiwambo, 2018, 2019; Sheuya and Burra, 2016). My findings will illustrate that, despite of moderate uptake and low renewal rates, the RL policy rallies considerable social support. In fact, it has *embedded* into an institution-in-use that prescribes formalisation. However, scarce social interactions around the RL suggest that the institution is not enforced nor shared (empty). Thus, social interactions influence social expectations and drive the observed pattern of behaviour (low uptake and renewal rates). By analysing the social support of one specific titling policy in its context of implementation, the paper contributes to the Credibility Thesis of property rights, which rejects any normative positions that a-priori promote or condemn policies of tenure formalisation (e.g. Ho, 2016). Importantly, my endeavour is akin to the call of geographers for studies investigating how macro-political agendas and policies are ‘embedded’ and ‘transformed’ in their ‘downstream’ sites of adoption (e.g. Peck and Theodore, 2012).

Secondly, the paper offers an important methodological contribution by implementing a novel method to address some challenges of empirical institutional research. Calls for methods to operationalise institutions, particularly institutions-in-use in field settings, are increasingly frequent across disciplines. For scholars studying the formalisation of property rights, the method adopted in this paper provides an alternative to other frameworks measuring institutional credibility. For example, the FAT framework that compares Formal, Actual and Targeted institutions (e.g. Krul and Ho, 2020; Nor-Hisham and Ho, 2016; Sun and Ho, 2020). For planners and geographers, this method will prove useful to investigate how institutions and institutional change are made and performed by organisations and individual agents from the bottom-up (e.g. Etzold et al., 2012; Gertler, 2018; Jessop, 2001; Peck, 2013; Rodríguez-Pose, 2013; Sotarauta, 2017).

### **3.5 Survey design and sampling strategy**

We conducted a survey in two rounds to elicit plot owners’ personal beliefs around the RL and their social expectations concerning the behaviour and beliefs of others in the community.<sup>66</sup> Furthermore, the survey presented hypothetical scenarios and vignettes manipulating the social expectations of a fictional character in order to explore how preferences for uptake and renewal change conditionally on social expectations. Whilst we designed hypotheticals and vignettes closely following Bicchieri (2017), our survey is composed of short and long format

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<sup>66</sup> For example, we asked, “How many plot owners on this list of your neighbours do you think have an active RL?”; “How many out of 100 neighbours in your mtaa do you think believe that one should have an active RL?”

questionnaires including open questions in the latter. A combination of closed and open questions enabled respondents to follow-up and elaborate on their responses, informing a more precise and nuanced interpretation of the findings. The scripts of the vignettes used for this study can be found in Appendix A.

We conducted the first survey round between October and December 2018, interviewing 1,363 plot owners with the short format questionnaire and pilot vignettes. In August 2019, we returned for a second survey round to field a longer questionnaire of closed and open questions, including the vignettes in Appendix A. The latter was administered to a subsample of 243 respondents. Both questionnaires were delivered in Swahili by local university students.

Several strategies were adopted to ensure the highest quality data collection: pilot questionnaires were tested in the field prior to both survey rounds, surveyors received extensive training, they worked in pairs and moved in groups under the supervision of the principal investigators (myself and another colleague) who attended each day of fieldwork. Furthermore, we made several contacts with the local government authorities before and on the day of the survey. To ensure rigour, random back-checks of questionnaires were done by telephone. When appropriate, we utilised a reward system assigning points to correct answers in order to incentivise accurate responses and address concerns typical of survey techniques, such as social desirability bias, experimenter demand effect or self-image maintenance. For example, respondents were rewarded if they could estimate how many neighbours have or approve of the RL (as according to our empirical data), which encouraged them to reflect carefully on their social expectations. Respondents received an allowance to compensate for their time on the second questionnaire, which took between one and two hours to complete.

Our sampling strategy ensured that our sample is representative of the whole area eligible for the RL across the four municipalities of Ilala, Kinondoni, Temeke and Ubungo. As illustrated in **Figures 3-5**, we generated twenty-four geographical strata corresponding to buffers around meridians. By randomly selecting a fixed number of plots per buffer, we pulled a total of 138 plots. During preliminary site visits, we identified the selected plot owners and formed clusters of ten respondents composed of the selected plot owner, the most proximate plot owners eligible for the RL and their local leader.<sup>67</sup> The cluster is one of the reference networks proposed in the questionnaire when eliciting social expectations. The other is the *mtaa*, or sub-ward, that is, an administrative unit comprising up to several thousand plots.

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<sup>67</sup> During site visits, we dropped absentee landlords as the questionnaire focussed on the local knowledge of neighbours' behaviour and their normative positions relative to the RL.

Summary statistics in **Table 2** demonstrate that the sample is representative of the population eligible for the RL concerning the rates of uptake and renewal. In terms of demographics, almost 48% of our respondents are female; 5% are 30 years old or younger, whilst 35% are 60 or older; 64% have primary education, whilst only 8% studied above secondary level. Concerning basic economic characteristics, 58% work in the informal economy; 12% have household monthly income in the lowest category (50,000 TSh or lower) while an equal share is in the highest category (500,000 TSh or higher). Furthermore, almost 39% arrived on their plot after the 2000s, that is, relatively close to the start of the RL programme.

For the second questionnaire, we set out to draw a random subsample of two plot owners per cluster (276). A subsample was selected only if it was balanced ( $t\text{-test} < 1.96$ ) alongside key characteristics of the original sample as listed in **Table 3** column 1. Otherwise it was disregarded, and the computer proceeded with another draw until a balanced subsample was found. Because of time constraints, there were few opportunities to reschedule interviews for the second survey round. We therefore needed to replace the unavailable respondents with suitable reserves. After attrition, 243 respondents undertook the second questionnaire. Nonetheless, the final subsample is representative of the original population's state of uptake and renewal, gender, year of arrival on plot, education and household monthly income, although it includes a higher proportion of leaders (+4%) and a relatively older population (**Table 3** column 2).

Importantly, the empirical discussion of this paper focuses on selected aspects of the survey, such as normative beliefs, social expectations, and conditional preferences for formalisation to test for the presence of an institution-in-use. A companion paper discusses further empirical material from the survey, focusing on the rational or prudential reasons for formalisation (or lack thereof) (Manara and Pani, 2020b). This paper describes how key plot and plot holder characteristics correlate with choices of formalisation over time (e.g. plot holder's gender, length of tenure, proximity to CBD, property value, distance from hazard, and local incidence of land disputes). Furthermore, it explores plot owners' assessments of the RL benefits vis-à-vis the unregistered proof of ownership (sale agreement) and the longer-term lease CRO. Crucially, plot holders believe that the CRO confers the highest benefits and wish they could take part in regularisation schemes providing CROs. The presence of a competing institution (CRO) influences perceptions on the RL, thereby affecting demand for this interim title.

Finally, any geographical reference is omitted in the present discussion. In fact, relative to this paper's aims, findings are surprisingly homogenous across geographical areas (i.e. different Municipalities and central versus peripheral locations).

### 3.6 An institution-in-use of RL uptake and renewal

#### 3.6.1 Normative beliefs and social expectations

Despite the observed pattern of behaviour (moderate uptake and low renewal rates), our data shows that there is considerable social support for formalisation. In fact, in the first survey, a striking majority (over 85%) affirmed that they and most of their neighbours in the survey cluster deem it *good* to have an active RL and *bad* not to. The second survey confirmed that the majority have positive normative beliefs on formalisation as they think that plot owners in their *mtaa* (sub-ward) *should* uptake and renew the RL (83%). Such beliefs are accompanied with positive social expectations that most neighbours think the same (81%).

Indeed, elaborating on the motivations for which the RL is *good* and *should* be taken up, respondents explained that this document provides “legal recognition” – “the right to own” – thereby generating feelings of “security” and “freedom”. Among its *perceived* benefits, the RL is deemed to lower the risks of government eviction and land disputes with third parties (i.e. boundary and inheritance conflicts). These were indicated as the primary motivations for uptake and renewal. Furthermore, asked about the functions of different proofs of ownership, the vast majority associated formal titles to increased land values, larger compensation in case of eviction and access to larger loans. In sum, the RL seems to provide important functions over and above the unregistered Sale Agreement.

Crucially, we found that choices of formalisation encounter positive social sanctions at the community level. Almost all respondents would approve of a neighbour acquiring the RL, either tacitly (10%) or openly (88%), for example by making positive comments or congratulating the holder of the RL. A striking 75% believe that most neighbours would also react in a positive way. Indeed, no respondent expected disapproval to be the predominant reaction and half of the respondents did not expect any disapproval at all. Thus, a large social consensus for formalisation suggests that plot owners conform to the prescription: *one must/should uptake and renew the RL*.

#### 3.6.2 Conditional preferences for uptake and renewal

To understand whether this prescription constitutes an institution, we analysed plot owners’ preferences for uptake and renewal. Utilising the vignettes in Appendix A, we asked respondents to imagine the behaviour of a fictional character attending a public meeting during which the issue of formalisation is raised. *Would he take up and renew after finding out that the majority of other plot owners in the mtaa (defined as 50% or above) have or have not an active RL* (vignettes A1-A2); *approve or disapprove of uptake and renewal* (vignettes B1-B2)? Results are presented in **Table 4** columns 1-4. One in three respondents think that the fictional



character will follow the majority: he will uptake and renew only if at least half in the neighbourhood do so (30%) or approve of the RL (33%), but not otherwise. This suggests that a large share of the population have conditional preferences for uptake and renewal based on their social empirical and normative expectations of other people's behaviour and normative beliefs.

Respondents were asked to specify *how many plot owners need to take up and renew before the fictional character decides likewise*. At the opposite sides of the distribution in **Figure 6**, 34% and 3% of respondents provide evidence of unconditional preferences: they think that the fictional character will *always* or *never* have an active RL respectively, regardless of peer behaviour. Conversely, roughly two respondents in three (64%) believe that individual preferences for uptake and renewal are conditional on the behaviour of at least some others.

Most respondents described a mechanism of social learning as they explained that the fictional character will follow the choice and recommendations of his fellow plot owners because they provide essential information, namely on the actual importance, benefits and needs for the RL. As one respondent put it, "*whenever the majority follows on something, it must be advantageous*" (ILA/GBT/C9). Thus, the fictional character "*would be strongly motivated by seeing that many people have taken up. This will prove that the RL is important*" (TMK/KNY/A5). Similarly, "*since the community approves those having the RL, Mr X will be one hundred percent sure that it is good to have it. Then he will take up*" (TMK/KBG/B1).

Primarily, the fictional character will learn from his peers about the consequences of uptake and renewal. For example, if the majority do not have an active RL, he will doubt that the RL has any real benefits or there is an actual need for it; thus, he will not want to "waste his money" on the licence. Additionally, the behaviour of the majority might signal that the government is scarcely committed to the project, as there is no "enforcement" and "follow-up". "*Mr X will realise that those who haven't taken up still get all the necessary services and nothing has been done to them in terms of penalties. Thus, he will not be motivated to take up*" (KND/MNM/B7).

Furthermore, some respondents added that the fictional character would coordinate with other plot owners in order to please them (social sanctions). In fact, "*Mr X will not want to be different from the majority*" (KND/MNM/B8). If they have not taken up and renewed, Mr X will "feel stupid" for doing the opposite; he will fear being "enquired" or "shamed" or even "segregated as a betrayer". Conversely, if the majority have an active RL, "*Mr X will take up in order to be socially acknowledged in the mtaa as one among those contributing to the development of the neighbourhood*" (TMK/KZG/A2). In so doing, he will avoid feeling "guilty", "weird" or "isolated".

Even respondents with low sensitivity to social expectations (on the left side of **Figure 6**) provided evidence of a social learning mechanism. For example, some explained that the fictional character will take up and renew regardless of the behaviour and advice of most peers, because by attending the meeting he will get enough information from the minority who have an active RL or approve of it. From this perspective, the fictional character will then become a “role model” for the majority who are “lost”, “ignorant” or simply “scared” and need to be led by example.

To further investigate if preferences are conditional on social normative expectations, we asked *what the fictional character will choose when his local leaders either disapprove or approve of the RL* (vignettes C1-C2). Because of the local government structure, each household normally refers to their elected mtaa leaders (*street* leaders) and wajumbe (*branch* leaders) for a variety of reasons, including to verify the personal identity of residents and their ownership of land for the purposes of issuing and renewing the RL, sorting land disputes, selling or collateralising land formally and informally. Thus, local leaders are prominent figures in a community (see Manara and Pani, 2020c – Chapter 4 of this thesis).

Results are presented in **Table 4** columns 5-6. Indeed, a staggering 57% of respondents provided evidence of conditional preference for uptake and renewal based on the normative expectations from leaders. Described by respondents as “those who lead”, “the point of reference”, “the most influential”, leaders affect preferences more than peers (intended as at least half of the plot owners in the mtaa).

First, the fictional character will trust that leaders “stand for the people”: they want their best and know how to achieve it, exactly as parental figures or role models. Thus, the plot owner will learn a great deal of information from the leaders’ advice, including on the importance, benefits and costs of the RL. Second, the fictional character will consider that leaders are the link between the central government and the people. Thus, their approval or disapproval must signal that the government has decided to either enforce or revoke the RL programme. Last, some explained that leaders “are the government”: they “rule” the people who are supposed to implement their advice. Yet, very few made mention of social sanctions, that is, the fictional character following his leaders’ advice in order to please or secure their support.

Finally, we presented respondents with vignettes B3 and C3, manipulating the normative and empirical expectations of the fictional character in the opposite direction: *if the fictional character were to observe that most neighbours or leaders approve of the licence, whilst the local uptake and renewal rates are low, what would he choose to do?* In fact, the first survey round revealed that in real life plot owners receive conflictual signals from their peers (and

possibly their leaders), whereby many approve of uptake and renewal even when they do not have an active RL. We therefore proposed a similar choice setting for two reasons. Empirically, it is the most relevant to the case-study. Theoretically, it provides an entry point to investigate non-compliance with the prescription *one should uptake and renew*. In fact, literature finds that non-compliance with norms might result from a conflict between normative and empirical expectations. For example, informed that the majority support – but do not adopt – some pro-social behaviour, lab subjects follow the predominant self-serving behaviour instead of the pro-social injunction (Bicchieri and Xiao, 2009).

**Table 4** column 7 shows that, for 95% of respondents, the fictional character prefers to take up and renew when most neighbours approve of the RL, regardless of the predominant behaviour. Similarly, in column 8, 98% of respondents think that the fictional character will take up and renew following the advice of his local leaders, independently of peer behaviour. In fact, respondents tended to justify the majority who do not uptake and renew, imagining that external constraints, namely low income, would prevent them from doing so. Instead, free from such constraints (as it was specified in all vignettes), the fictional character will be able to follow the advice received at the meeting. This suggests that positive normative expectations are strong motivators of uptake and renewal, even if empirical expectations conflict with the prescription.

In summary, the analysis of conditional preferences suggests that choices of uptake and renewal are largely interdependent. Whilst plot owners have different levels of sensitivity to social expectations (**Figure 6**), only one in three have unconditional preferences, meaning that they would uptake and renew independently from peer behaviour. Moreover, plot owners' preferences are conditional on the advice of local leaders. Based on this evidence, I argue that plot owners conform to an institutional statement which *prescribes* uptake and renewal, as was discussed in the previous section. In the remainder, I will address two further questions: what type of institution-in-use? And, what motivates low compliance?

### 3.6.3 What type of institution-in-use?

Most respondents contend that eligible plot owners *must* uptake and renew (78%) or they *may* uptake if they wish but *must* renew subject to acquiring the RL (11%). Yet, despite of the deontic *must* expressing a strong sense of obligation, the institution-in-use is not a rule, because respondents do not have consistent expectations nor shared understandings of regulated sanctions applying to plot owners who do not uptake and renew. First, almost a quarter are completely unaware on the issue of sanctions suggesting that they are not overly concerned about it (22%). Secondly, the rest imagine penalties in the form of monetary fines by the government but ignore the amount and terms of enforcement. Thirdly, only three respondents

ever had direct or indirect experience of fines for not renewing. Instead, many make assumptions by comparing the RL to the property tax system. Thus, because there is no shared expectation or even understanding of regulated sanctions specific to the prescription one *must/should uptake and renew*, this institution-in-use is not a rule.

In order to distinguish whether it is a social or descriptive norm, I look at the role of social sanctions: if they motivate behaviour, the institution-in-use is a social norm. In fact, earlier I discussed that our respondents expect choices of uptake and renewal to receive positive social sanctions at the community level. Further, over 90% of them legitimise these reactions. At first sight, this might suggest that the institution-in-use is a social norm, accompanied with social sanctions.

However, statistical evidence and thematic analysis of open responses to vignettes suggest that social sanctions do not motivate conditional preferences for formalisation. Indeed, presented with some multiple choice questions, approximately 81% of respondents indicated that the fictional character will follow his peers and his leaders because he learns from them, whereas only around 31% indicated that the fictional character will seek to please them.<sup>68</sup> In fact, only 6% of respondents raised the issue of social sanctions in the open questions. Instead, the vast majority explained that learning is the primary channel of conditional preferences. To reiterate, the fictional character follows the behaviour and advice of others primarily because these are the vehicle of relevant information on the RL and the level of government enforcement. Whilst uptake and renewal might generate positive social sanctions, the latter do not motivate choices of formalisation. Thus, I conclude that the institution-in-use is a descriptive norm, not a social norm.

### **3.6.4 What motivates low compliance?**

Whilst respondents conform to a descriptive norm that prescribes formalisation with the RL, they clearly do not comply with it. As demonstrated, this is not the result of low social support. In fact, there is a large consistency of personal and social normative beliefs that *eligible plot owners must/should take up and renew*, including from respondents with an expired RL or no RL at all. However, as shown, many plot owners have conditional preferences for formalisation, based on the behaviour and advice of their neighbours and local leaders. It is therefore possible that their conditions of compliance are not fulfilled, and they lack the necessary social incentives to formalise. **Figure 7** indicates that about half of the respondents with conditional preferences for formalisation have social empirical expectations below their threshold levels. In

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<sup>68</sup> The fictional character will follow the behaviour of his peers because he learns from them (86%); because he wants to be approved of or avoid their disapproval (28%). For peers' advice: learning (79%); approval/disapproval (36%). For leaders' advice: learning (79%); approval/disapproval (30%).

practice, this means that the fraction of plot owners that they expect to have an active RL is lower than the threshold after which they would themselves uptake or renew. Thus, their conditions of compliance are not met.

This suggests that the institution-in-use does not materialise in the endogenous interactions of communities beyond some threshold levels, which provide the perception that the institution is enforced or shared. Indeed, plot owners have low *revealed* social expectations. I define *revealed* social expectations as those generated by actual experience. For example, 37% of respondents were never told by anyone that they had taken up or renewed their RL, while 50% were told by three people or less. As a result, among the population, there is a tendency to underestimate the local rate of uptake. In fact, only 27% of respondents can correctly estimate how many of their ten closest neighbours have ever taken up the RL and one out of three predict uptake to be 30% lower than the actual rate. This might disincentivise choices of formalisation for plot owners with conditional preferences.

Furthermore, plot owners have low *revealed* normative expectations. Vignettes suggested that these are of primary importance as the fictional character will follow the advice of his neighbours and leaders, regardless of the local rate of formalisation (B3 and C3). Yet, plot owners rarely exchange normative inputs – beliefs and recommendations – on the RL. In fact, 17% affirmed that they have never been advised to take up and renew, while 50% were advised on five occasions or less during the fifteen years of the programme.<sup>69</sup>

Overall, this evidence suggests that compliance with the institution-in-use could be raised by triggering more social interactions around the RL, thereby updating the social expectations of plot owners on how many have the RL and recommend formalisation. Importantly, local leaders could be instrumental to this process. Indeed, respondents indicated that, at the beginnings of the programme, leaders were the most valuable source of information and the stronger influence on their choices of formalisation. However, nowadays local leaders lack the means to conduct appropriate campaigns and provide useful advice to plot owners. In fact, Municipalities only involved them in the early stages of the programme in order to identify plot owners and their boundaries, but their engagement has considerably decreased in time, as many leaders complained. Instead, as demonstrated in this paper, public meetings and social interactions around formalisation with the RL could generate and consolidate the *perception* that the policy prescription is enforced or shared. This could raise the rate of uptake and renewal among those – *the majority* – with conditional preferences for formalisation.

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<sup>69</sup> Nobody reported having ever been advised against formalisation.

Before concluding, it is perhaps worth noting that the relevant social network is not limited to local leaders and neighbours. In fact, issues of formalisation are also discussed within the household and the extended family. Specifically, our respondents were advised by their household (63%), leaders (60%), other plot owners (48%) and more distant family members (40%). After the local leaders' advice, respondents rated the household's advice as the second most influential. Many suggested that their household would express "happiness", "gratitude" and "relief" in the case of formalisation, thinking that the RL will help the family secure compensation and avoid land conflicts. Some added that their household members would also assist with the bureaucracy and the renewal payments. Such positive social sanctions and practical help further confirm that the policy has embedded into an institution-in-use raising a considerable level of social support.

### **3.7 Conclusion**

Since 2005, the Residential Licence programme has encountered low demand with moderate uptake and low renewal rates. However, this paper has demonstrated that, despite the observed pattern of behaviour, plot owners conform to an institution-in-use that prescribes formalisation. Indeed, I found that the policy rallies a considerable degree of social support and has *embedded* from an institution-in-form to an institution-in-use, from paper to practice. Yet, I have also shown that the policy "fail(s) to materialise in actors' endogenous interactions" (Ho, 2016b: 1149) beyond some threshold levels, which might provide the perception that the institution-in-use is enforced or shared. Hence, the policy prescription presents the characteristics of an empty institution. Whilst it is "socially accepted, little contested and, in effect, to a certain degree *credible*" (p. 1147, emphasis in original), it remains 'symbolic', 'ineffective' or 'ignored', and has little effect on the actual rate of formalisation.

I constructed this argument through an institutional analysis approach, demonstrating that personal and social normative beliefs around the RL are positive and consistent in the population. Furthermore, plot owners' preferences for uptake and renewal are conditional on social empirical and normative expectations on the behaviour and advice of their neighbours and local leaders. Adding to Manara (2020) – Chapter 2 of this thesis – this paper has concluded that the institution-in-use is a descriptive norm because coordination on choices of formalisation is motivated by social learning, not by fear of social sanctions. Yet, as shown, many plot owners underestimate the local rate of uptake and rarely receive normative inputs encouraging compliance with the norm. Thus, I have suggested that low demand for the RL is the result of scarce social interactions, which could provide essential information about the costs and benefits of the RL, the level of government enforcement, and the level of actual compliance with the institution-in-use.

In this context where the social consensus for formalisation is high, it would be possible to raise the rates of uptake and renewal in two ways. First, my study suggests that plot owners need clearer and regularly updated information on the continuation of the RL programme, its processes and costs. Indeed, coordination results from social learning to compensate for scarce and uncertain information from the government. In this respect, I recommend that the government organises periodic information campaigns through the capillary action of local leaders in small neighbourhoods. Second, I suggest triggering more social interactions around the RL and providing social incentives for formalisation. On the one hand, if local leaders endorsed the programme during public meetings, more plot owners with conditional preference for formalisation would likely choose to uptake and renew. On the other, in areas where plot owners underestimate the local rate of uptake, formalisation could be raised by updating their social expectations on other people's behaviour. Whilst more research is needed to test the most effective policy instruments, the general take-away is that a better policy design should provide regular information and include social incentives for uptake and renewal.

Using Dar es Salaam as its case-study, the paper has contributed to scholarship on land tenure formalisation in developing cities by focussing on one common challenge of implementation – the low demand for formal titles – and advancing an on-going debate on the importance of *social embeddedness* for the success of formalisation policies. Indeed, the paper has demonstrated that social expectations and interactions affect the demand for formal titles. Moreover, the behaviour of agents is not an accurate indicator of their consensus for formalisation. This underscores the need to examine the social support rallied by specific formalisation policies in given spatial-temporal contexts and with appropriate institutional methodologies, instead of adhering to normative positions that a-priori either promote or condemn titling projects.

Finally, the paper has offered an important methodological contribution measuring the social support of an institution-in-form by testing for a corresponding institution-in-use and by analysing the latter with survey data on social expectations and conditional preferences. This approach provides an alternative to other methods to study institutional credibility, for example, by proxies or with the FAT framework (e.g. Ho, 2016a). More generally, it responds to the growing interest of property rights scholars and geographers for novel empirical methods to study institutions and institutional change in field settings.

### 3.8 Figures

**Figure 1.** Residential Licence programme phase I (2004-2006).



Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence programme phase I.

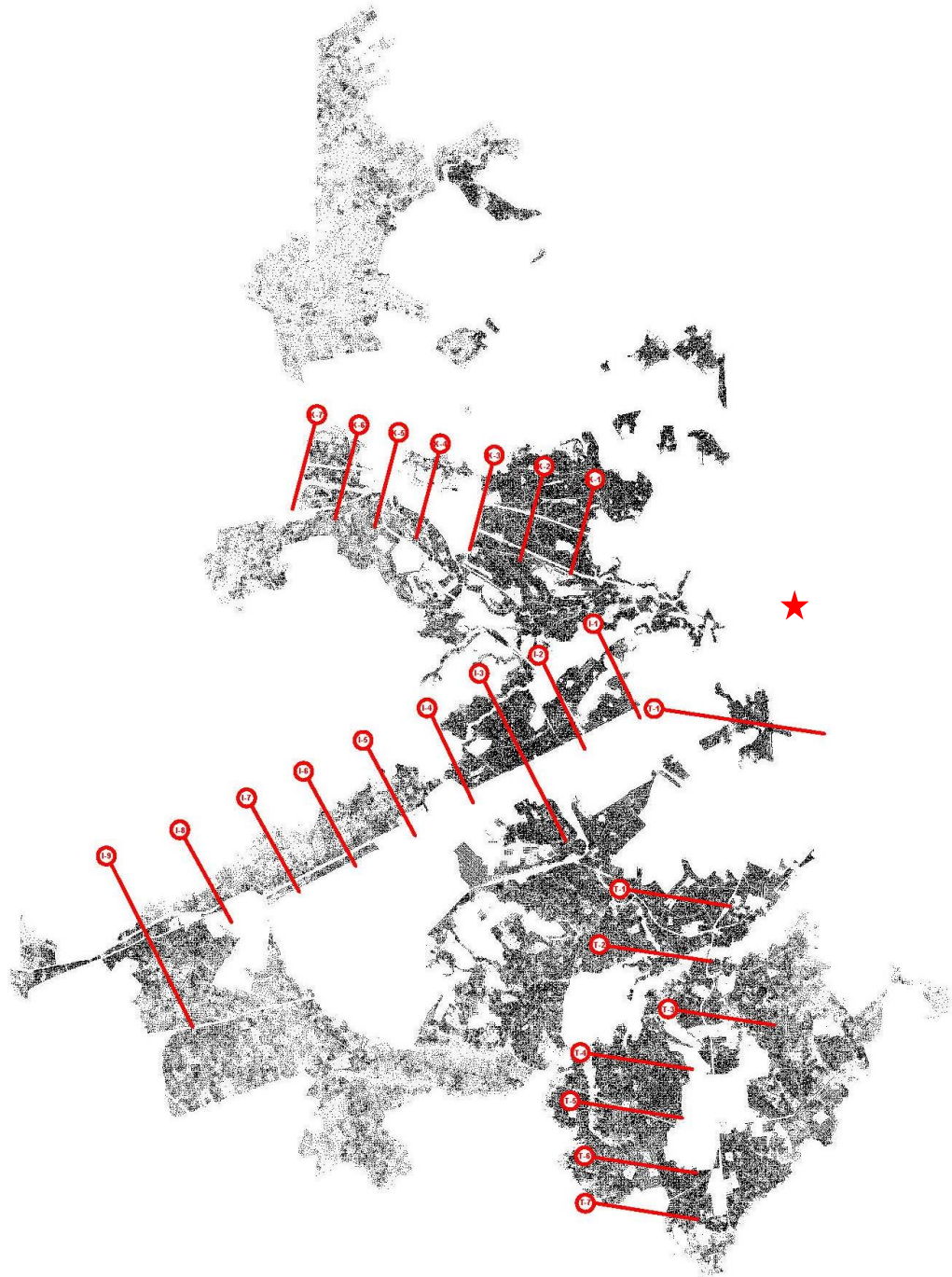
**Figure 2.** Residential Licence programme phase II (started 2019).



Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence programme phase II (started 2019). *Mitaa* boundaries have changed over time.

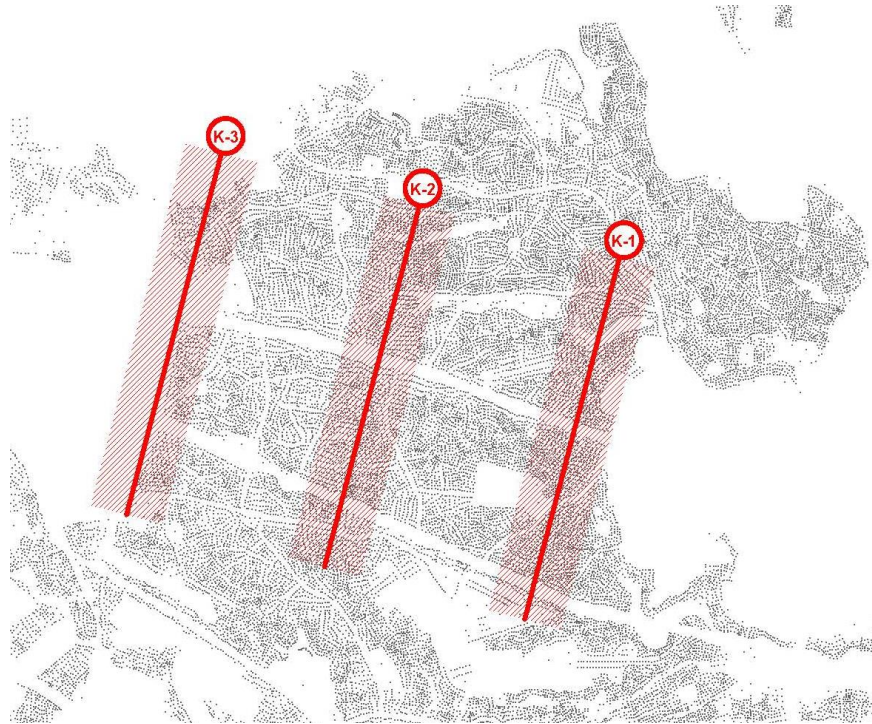


**Figure 3.** Sampling strategy.



Notes: Starting from the border with the planned city centre (CDB represented by the star), we drew meridians every 1.3 kilometres on average; we offset each meridian by 200 meters creating a buffer of 400 meters around the meridian (**Figure 4**, below); from each buffer, we randomly selected four to eight plots proportional to the length of the meridian (**Figure 5**, below). Our sampling strategy ensured that our sample is representative of the whole area eligible for the RL across the four municipalities of Ilala, Kinondoni, Temeke and Ubungo. Note, for pragmatic reasons, meridians were set out to cover areas accessible by public transport. Meridians are differently spaced across Municipalities to sample the highest possible number of *mitaa*.

**Figure 4.** Example of meridians and buffers.



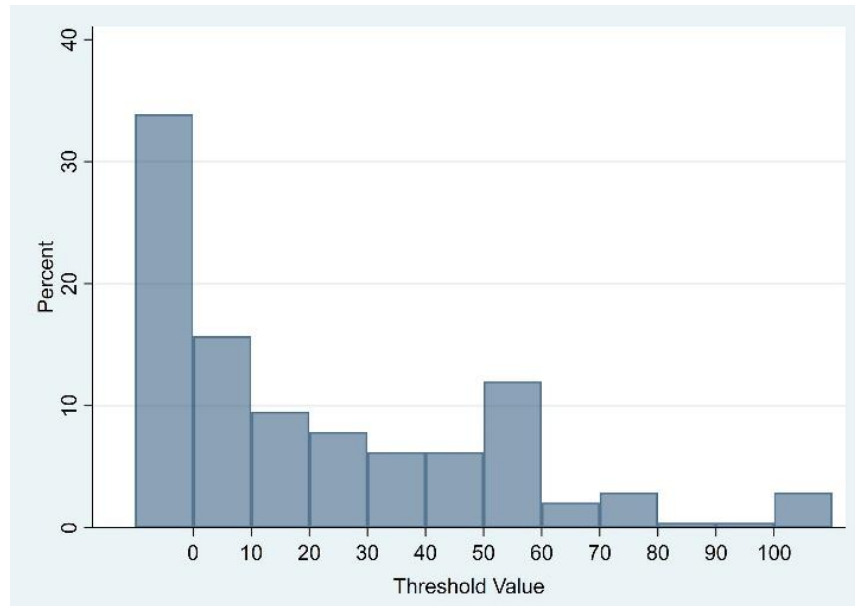
Notes: We offset each meridian by 200 meters creating a buffer of 400 meters around the meridian.

**Figure 5.** Example of clusters along one meridian.



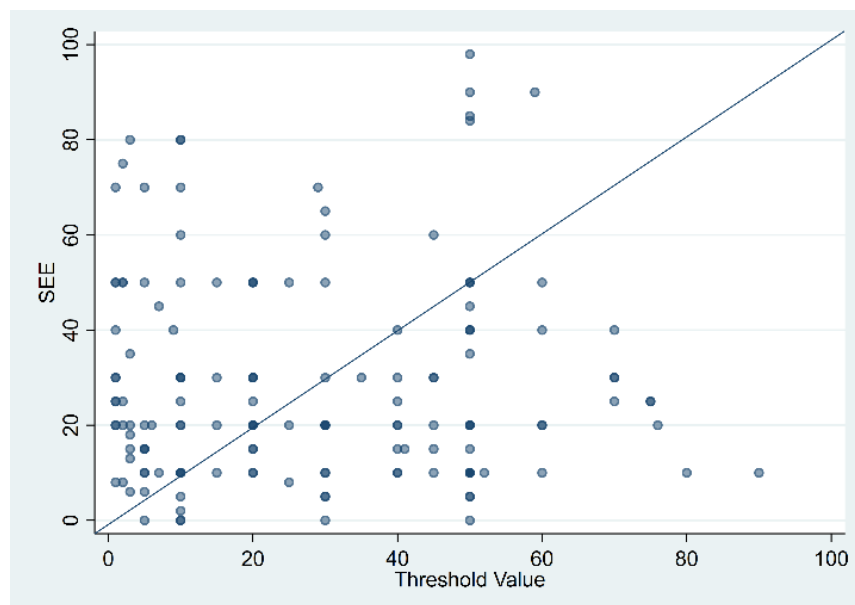
Notes: Within each buffer (red hatchings), we randomly selected four to eight plots (triangles) proportional to the length of the meridian. During preliminary site visits, we identified the selected plot owners and formed clusters of ten respondents composed of the selected plot owner, the most proximate plot owners eligible for the RL and their local leader (circles).

**Figure 6.** Histogram of threshold values.



Notes: Respondents were asked to specify *how many plot owners need to take up and renew before the fictional character decides likewise*. Threshold values represent their responses. Negative responses indicate that the fictional character will always take up, regardless of other people’s behaviour (left side bar). Similarly, responses above 100 indicate that the fictional character will never take up (right side bar). A threshold value between 50 and 60 means that the fictional character will choose to formalise if between 50% and 60% of their peers have already done so. Bar heights represent percentages of respondents with the indicated threshold values. For example, roughly 12% of respondents have a threshold value between 50 and 60.

**Figure 7.** Threshold values and social empirical expectations.



Notes: Observations (dots) in the scatterplot correspond to respondents with conditional preferences for formalisation. On the horizontal axis, I plot their threshold values, as described in notes to **Figure 6**. On the vertical axis, I plot their social empirical expectations, that is, *how many neighbours they expect to have an active RL (out of 100 in the same mtaa)*. For all observations on the line and below, social expectations are lower than or equal to threshold values. In these cases, conditions of compliance are not met (52% of respondents).

### 3.9 Tables

**Table 2.** Survey round 1: summary statistics.

Variable	Cadastre	Survey Data	
	(1) Mean	(2) Mean	(3) Std. Dev.
RL issued	0.49*	0.486	
Has RL			
yes- expired	0.365**	0.312	0.463
yes- renewed	0.125**	0.175	0.380
Municipality			
Kinondoni		0.176	0.381
Ubungo		0.124	0.330
Temeke		0.420	0.494
Leader		0.092	0.290
Female		0.478	0.500
Age			
30-39		0.113	0.317
40-49		0.241	0.428
50-59		0.243	0.429
60 plus		0.353	0.478
Arrival in DSM			
before 1960		0.032	0.175
1960s		0.107	0.309
1970s		0.168	0.374
1980s		0.168	0.374
1990s		0.117	0.321
2000s		0.046	0.210
within 5 years		0.003	0.054
Arrival on plot			
before 1960		0.006	0.076
1960s		0.046	0.210
1970s		0.090	0.286
1980s		0.157	0.364
1990s		0.259	0.438
2000s		0.357	0.479
within 5 years		0.019	0.137
within 2 years		0.012	0.108
Owns other plot in DSM		0.293	0.456
No residents		9.154	5.704
Has tenants		0.528	0.499
Has disputes		0.097	0.296
Education			
pre-primary		0.002	0.047
primary		0.639	0.480
secondary		0.172	0.377
advanced secondary		0.010	0.097
diploma		0.045	0.208
bachelor		0.026	0.158
postgraduate		0.012	0.108
Employment sector			
formal		0.190	0.392
not in employment		0.228	0.420
Household Monthly Income (1,000TSh)			
50-100		0.219	0.414
100-150		0.156	0.363
150-200		0.110	0.314
200-300		0.131	0.338
300-500		0.148	0.355
500-1m		0.086	0.281
1m or more		0.034	0.181
No income earners		1.660	0.964
No dependent children		2.872	2.375
Obs		1363	

Notes: Summary statistics of the sample in the first survey round (n=1,363). Column 1 reports cadastral data on uptake and renewal of the RL. Column 2 and 3 report mean and standard deviation of selected survey data. \*Data for all Municipalities; \*\* Data for Temeke Municipality only.

**Table 3.** Survey round 2: balancing.

Variable	(1)	(2)
Has RL		
yes- expired	0.312 [0.463]	-0.012 (0.024)
yes- active	0.175 [0.380]	-0.026 (0.029)
Leader	0.092 [0.290]	0.084** (0.036)
Female	0.478 [0.500]	-0.038 (0.021)
Age		
40-60	0.483 [0.500]	0.087*** (0.030)
60 plus	0.353 [0.478]	0.079*** (0.031)
Arrival on plot		
1990s	0.259 [0.438]	0.024 (0.027)
2000s or later	0.388 [0.487]	-0.008 (0.024)
Education		
primary	0.639 [0.480]	-0.064 (0.036)
secondary	0.181 [0.385]	-0.065 (0.041)
above secondary	0.083 [0.276]	-0.058 (0.049)
Household Monthly Income (1,000TSh)		
50-100	0.219 [0.414]	-0.012 (0.038)
100-200	0.267 [0.442]	-0.029 (0.037)
200-500	0.279 [0.449]	0.033 (0.036)
500 or above	0.120 [0.325]	0.048 (0.043)
Obs	1363	1363

\*\*p-value < 0.05; \*\*\*p-value < 0.01.

Notes: Column 1 reports summary statistics of the sample in the first survey round, as in **Table 2**. Column 2 shows results from a balancing test. For each variable I run one OLS regression where the dependent variable is 1 if the plot owner has been selected in the subsample for the second survey round (n=243). Standard deviation in square brackets. Robust standard errors in round brackets.

**Table 4. Vignettes.**

	A1-A2		B1-B2		C1-C2		B3	C3
	if most neighbours		if most neighbours		if local leaders		if most neighbours	if local leaders
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	have not active RL	have RL	disapprove of RL	approve of RL	disapprove of RL	approve of RL	approve of RL but majority has not RL	approve of RL but majority has not RL
No	80	7	86	4	145	5	12	5
Yes	163	236	157	239	98	238	231	238
Obs	243	243	243	243	243	243	243	243

Note: Respondents were asked if a fictional character will choose to formalise under different conditions, as described in the table. No: “the fictional character will not formalise”. Yes: “he will formalise”.

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### 3.11 Appendix A. Vignettes Scripts (English)

SCENARIO A. Please imagine a fictional character Mr X living in your mtaa who has no land disputes with his neighbours. Mr X has enough money to pay the uptake and renewal fees of the RL, but he has never taken up or he stopped renewing some years ago. In any case, currently he does not have an up-to-date (active) RL.

<b>22</b>	VIGNETTE A1: Mr X joins a public meeting during which the issue of the RL is raised. <b>He hears that most plot owners in his mtaa (that is, <u>more than 50%</u>) have NOT taken up and renewed.</b>	
<b>22.1</b>	<b><i>In your opinion, <u>will</u> Mr X take up and renew after hearing this?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X <u>most likely</u> to do?		
<b>22.2</b>	<b><i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No

<b>23</b>	VIGNETTE A2: Mr X joins a public meeting during which the issue of the RL is raised. <b>He hears that most plot owners in his mtaa (that is, <u>more than 50%</u>) have taken up and renewed.</b>	
<b>23.1</b>	<b><i>In your opinion, <u>will</u> Mr X take up and renew after hearing this?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X <u>most likely</u> to do?		
<b>23.2</b>	<b><i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No

<b>24</b>	<b><i>In your opinion, out of 100 plot owners in the same mtaa, how many must take up and renew the RL before Mr X decides he will do the same? Please, complete the following sentence:</i></b>	
<b>24.b</b>	I think that Mr X will take up or renew the RL when at least ...% of plot owners in his mtaa do it.	<input type="text"/>
Surveyor: If the respondent thinks Mr X will always take up and renew enter 0%; will never take up and renew enter 101%.		
<b><i>Can you confirm the following sentence?</i></b>		
<b>24.1</b>	[FOR ANY RESPONSE in RANGE (1% to 100%)]	You think that if the number of plot owners who take up and renew is (...% -1%) or lower, Mr X will NOT take up or renew.
<b>24.2</b>	[FOR RESPONSE (0%)]	You think that Mr X will <u>always</u> take up and renew, no matter what his neighbours do.
<b>24.3</b>	[FOR RESPONSE (101%)]	You think that Mr X will <u>never</u> take up and renew, no matter what his neighbours do.
Surveyor: Proceed only if the respondent has responded "YES": Otherwise, take him back to question above.		

<b>25</b>	In vignettes A you have responded that Mr X: <i>(tick one)</i>	
<b>25.1</b>	If 22.1 & 23.1: Yes	Will take and renew the RL in all cases, regardless of what others do.
<b>25.2</b>	If 22.1 & 23.1: No	Will never take and renew the RL, regardless of what others do.
<b>25.3</b>	If 22.1: No & 23.1: Yes	Will decide based on what most other plot owners do.

26	Why? [Prompt: referring to vignettes A1, A2]
26.1	What role does the public meeting play in his decisions? [If not discussed above]

TABLE APPLICABLE IF 22.1: No & 23.1: Yes					
27	Why do you think Mr X will follow the behaviour of his neighbours?				
27.1	[how about]	Because he learns from them	No	Yes: some	Yes: much
27.2	[how about]	Because he wants to please them	No	Yes: some	Yes: much
27.3	[how about]	Because he fears they might tease or punish him	No	Yes: some	Yes: much

SCENARIO B. Now I am going to ask you to imagine a different scenario. Just to remind you:

- Mr X is a fictional character living in your mtaa who has no land disputes with his neighbours.
- He has enough money to pay the uptake and renewal fees of the RL.
- Currently he does not have an up-to-date (active) RL.

28	VIGNETTE B1: Mr X joins a public meeting during which the issue of the RL is raised. He hears that <b>most people in his mtaa</b> (that is, <b>more than 50%</b> ) <b>DISAPPROVE</b> of plot owners who have the RL. It is <b>NOT</b> known if most plot owners have the RL or not, but the majority of people think it is bad to have one.				
28.1	In your opinion, will Mr X take up and renew after hearing this?			Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X most likely to do?					
28.2	Personally, do you think Mr X <u>should</u> take up and renew after hearing this?			Yes	No

29	VIGNETTE B2: Mr X joins a public meeting during which the issue of the RL is raised. He hears that <b>most people in his mtaa</b> (that is, <b>more than 50%</b> ) <b>APPROVE</b> of plot owners who have the RL. It is <b>NOT</b> known if most plot owners have the RL or not, but the majority of people think it is good to have one.				
29.1	In your opinion, will Mr X take up and renew after hearing this?			Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X most likely to do?					
29.2	Personally, do you think Mr X <u>should</u> take up and renew after hearing this?			Yes	No

30	VIGNETTE B3: Now imagine that at a public meeting Mr X hears that <b>most plot owners in his mtaa</b> (that is, <b>more than 50%</b> ) have <b>NOT</b> taken up and renewed their RL. However, <b>most people in the mtaa</b> <b>APPROVE</b> of those plot owners who have an active RL. They think it is good to have one.				
30.1	In your opinion, will Mr X take up and renew after hearing this?			Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X most likely to do?					

<b>30.2</b>	<b><i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i></b>	Yes	No
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<b>31</b>	In vignettes B you have responded that Mr X: <i>(tick one)</i>		
<b>31.1</b>	If 28.1, 29.1 & 30.1: Yes	Will take and renew the RL in all cases, regardless of what others think.	
<b>31.2</b>	If 28.1, 29.1 & 30.1: No	Will never take and renew the RL, regardless of what others think.	
<b>31.3</b>	If 28.1: No & 29.1: Yes & 30.1: Yes	Will decide based on what most other plot owners think.	

<b>32</b>	<b><i>Why?</i></b> [Prompt: referring to vignettes B1, B2, B3]
<b>32.1</b>	<b><i>What role does the public meeting play in his decisions?</i></b> [If not discussed above]

TABLE APPLICABLE IF 28.1: No & 29.1: Yes & 30.1: Yes					
<b>33</b>	<b><i>Why do you think Mr X will follow the advice/thoughts of his neighbours?</i></b>				
<b>33.1</b>	[how about]	Because he learns from them	No	Yes: some	Yes: much
<b>33.2</b>	[how about]	Because he wants to please them	No	Yes: some	Yes: much
<b>33.3</b>	[how about]	Because he fears they might tease or punish him	No	Yes: some	Yes: much

<b>34</b>	<b><i>How will Mr X understand the situation described in vignette B3 where most plot owners in the mtaa have NOT taken up and renewed their RL even though many people think it is good to have one?</i></b>

SCENARIO C. Now I am going to ask you to imagine a different scenario. Just to remind you:

- Mr X is a fictional character living in your mtaa who has no land disputes with his neighbours.
- He has enough money to pay the uptake and renewal fees of the RL.
- Currently he does not have an up-to-date (active) RL.

<b>35</b>	VIGNETTE C1: <i>Mr X joins a public meeting during which the issue of the RL is raised. He hears that the leaders (chairman, executive officer and wajumbe) DISAPPROVE of plot owners who have the RL. It is NOT known if most plot owners have the RL or not, but the leaders think it is bad to have one.</i>		
<b>35.1</b>	<b><i>In your opinion, will Mr X take up and renew after hearing this?</i></b>	Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X <u>most likely</u> to do?			
<b>35.2</b>	<b><i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i></b>	Yes	No

<b>36</b>	VIGNETTE C2: <i>Mr X joins a public meeting during which the issue of the RL is raised. He hears that the leaders (chairman, executive officer and wajumbe) APPROVE of plot owners who have the RL. It is NOT known if most plot owners have the RL or not, but the leaders think it is good to have one.</i>		
<b>36.1</b>	<i>In your opinion, will Mr X take up and renew after hearing this?</i>	Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X <u>most likely</u> to do?			
<b>36.2</b>	<i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i>	Yes	No

<b>37</b>	VIGNETTE C3: <i>Now imagine that at a public meeting Mr X hears that <u>most</u> plot owners in his mtaa (that is, <u>more than 50%</u>) have NOT taken up and renewed their RL. However, the leaders (chairman, executive officer and wajumbe) APPROVE of those plot owners who have an active RL. They think it is good to have one.</i>		
<b>37.1</b>	<i>In your opinion, will Mr X take up and renew after hearing this?</i>	Yes	No
Surveyor: Obviously, the respondent cannot be 100% sure, but what is Mr X <u>most likely</u> to do?			
<b>37.2</b>	<i>Personally, do you think Mr X <u>should</u> take up and renew after hearing this?</i>	Yes	No

<b>38</b>	In vignettes C you have responded that Mr X: <i>(tick one)</i>		
<b>38.1</b>	If 35.1, 36.1, 37.1: Yes	Will take and renew the RL in all cases, regardless of what leaders think.	
<b>38.2</b>	If 35.1, 36.1, 37.1: No	Will never take and renew the RL, regardless of what leaders think.	
<b>38.3</b>	If 35.1: No & 36.1: Yes & 37.1: Yes	Will decide based on what leaders think.	

<b>39</b>	<i>Why?</i> [Prompt: referring to vignettes C1, C2, C3]		
<b>39.1</b>	<i>What role does the public meeting play in his decisions?</i> [If not discussed above]		

TABLE APPLICABLE IF 35.1: No & 36.1: Yes & 37.1: Yes					
<b>40</b>	<i>Why do you think Mr X will follow the advice/thoughts of his leaders?</i>				
<b>40.1</b>	[how about]	Because he learns from them	No	Yes: some	Yes: much
<b>40.2</b>	[how about]	Because he wants to please them	No	Yes: some	Yes: much
<b>40.3</b>	[how about]	Because he fears they might tease or punish him	No	Yes: some	Yes: much

<b>41</b>	<i>How will Mr X understand the situation described in vignette C3 where most plot owners in the mtaa have NOT taken up and renewed their RL even though the leaders think it is good to have one?</i>				

## Chapter 4

# Informal practices of formal property: local leaders and land formalisation in Dar es Salaam.

### 4.1 Introduction

Ananya Roy's (2005, 2009a, b, 2011) account of informality as the by-product of the state has profoundly influenced recent scholarship on urban informality. She suggested that the state and its formal apparatus, including the planning system, produce informality by rendering the law "open-ended and subject to multiple interpretations and interests" (2009b: 80). This view has contributed to bring forward one particular interpretation of informality as a powerful "heuristic device (...) to deconstruct the very basis of state legitimacy and its various instruments: maps, surveys, zoning and, most importantly, the law" (Roy, 2011: 233; see also McFarlane, 2012). Despite its key contributions, such literature on urban informality has been characterised by a one directional perspective whereby the formal apparatus produces informality (Boanada-Fuchs and Fuchs, 2018). Instead, recent scholarship suggests that empirical research should also examine how informality influences or constitutes the formal apparatus of state and law. A special issue of the *International Journal of Urban and Regional Research* (2019, volume 43, number 3) investigates the informality-state nexus through the notion of informality and five conceptual allies: governance, agency, legitimacy, sovereignty and legality. Importantly, this collection understands both informality and the state as relational processes (Boudreau, 2019). The state is an inconsistent, fragmented and negotiable organisation, an "institutionalised amalgamation of individual agencies" (Haid and Hilbrandt, 2019: 557). Informality emerges through flexibility and discretionary decision-making in governance practices, contingent and contested processes of legitimation, translations of the law, and everyday practices. As such, the state is not the backdrop against which informal activities are defined. Rather "informality is embedded in the constitution of states" (Haid and Hilbrandt, 2019: 552). In other words, the putative *formal* is constituted of informal practices.

This paper explores how formal property is constructed and managed in Dar es Salaam, Tanzania, through informal practices involving local leaders, the lowest level government who normally register and supervise informal arrangements on land. Spurred by the 1999 Land Act, the Residential Licence programme made around 180,000 plot owners eligible for interim statutory property rights, therefore promoting shifts of public authority and rule of law over

property relations: from the lowest to higher levels of government (i.e. Municipalities), from the informal social contract to formal law. Yet, fifteen years into the programme, local leaders remain centrally involved in recognising property relations through informal practices that help to legitimise and operationalise the formal instruments of property: the cadastral database and the ‘survey’ map. This demonstrates that formalisation and formal property are themselves informalised, constructed upon the local authority of leaders and the socially embedded rule of law. In fact, Municipalities and formal law cannot adequately replace those in the recognition of property relations.

By contributing to deconstruct state and law into their contingent and individualised practices, the paper adds to literature on the formal-informal nexus and the informalisation of the African state. Particularly, we fill an empirical gap in this literature by looking at one underexplored set of state practices: the construction and management of urban formal property. Illuminating the inherently relational and contingent nature of formal property in-the-making, we demonstrate that formalisation cannot simply impose an idealised model of property upon society. Rather, property is actively negotiated and translated in and through specific enactments of state and law, which deserve more empirical and theoretical attention. Thus, the paper sheds new light onto practices of ‘boundary work’ in Dar es Salaam (Mercer, 2020) and ultimately underscores the need to theorise formalisation *from* the Global South. As Ghertner (2020) recently argued about non-privatised land tenure, we suggest that formalisation processes and formalised tenure also warrant further theorisation.

The paper proceeds as follows. In the next section, we problematise notions of public authority and rule of law. Subsequently, we provide details on land tenure reform in Tanzania with a focus on the Residential Licence programme implemented in Dar es Salaam. We also present local leaders and their political and administrative tasks in urban contexts. Upon illustrating the methodology, the paper discusses the empirical material demonstrating that the construction of formal property incorporates informal dynamics of mutual recognition of public authority and property. The last section reflects on the paper’s conclusions. Occasionally, we utilise the word *institution* to refer to actors and organisations that promote, enforce, and embody sets of rules and norms, thereby governing social interactions. We do so in accordance with other scholars discussed in the paper in order to avoid any ambiguity, whereas typically we would conform to a stricter definition of institutions as rules and norms of behaviour (instead of the actors implementing them) (see for example, Manara, 2020 – Chapter 3 of this thesis).



## 4.2 Practices of state and law

Against a pathological approach to the African state, seen as collapsed, weak and fragile, recent scholarship has proposed alternative ways to conceptualise state and public authority in Africa (e.g. Bierschenk and Olivier de Sardan, 2014; Hagmann and Péclard, 2010). This literature challenges the idea that states are well-defined and homogenous entities, external to society. Instead, it is argued, states are in-the-making and heterogeneous, composed of multiple actors. No single institution is state as such. Crucially, informality or practical norms are entrenched in the practices of the state, especially – but not exclusively – at the level of local government or street bureaucracy (Olivier de Sardan, 2014). Further, it is proposed that public authority does not exist prior to rights. Rather, it emerges through the conferment of rights, including to land and property (Boone, 2014; Lund, 2006, 2016; Lund and Boone, 2013). That is, “when an institution authorises, sanctions or validates certain rights, the respect and observance of these rights by people constitutes recognition of the authority of that particular institution” (Lund, 2006: 676). Therefore, public authority and rights are mutually constitutive.

From this perspective, a wide variety of “twilight” (ibid: 678) institutions within, at the interface, and outside of the formal state apparatus become public authority through day-to-day social relations generating “social” or “practical contracts of recognition” (Lund, 2016: 1209). For example, African cities are dominated by several state and non-state actors constituting alternative forms of public authority in a shifting relationship of competition, negotiation and cooperation (Auerbach et al., 2018). Empirical studies illustrate the agency of civil servants, residents’ organisations, social networks, and leaders as they engage in the governance of unplanned settlements by providing access to land, urban services and land use regulation, among others (e.g. Andersen et al., 2015a, b; Paller, 2019; Stacey, 2019; Stacey and Lund, 2016). Similarly, the emergence and evolution of property rights are integrally linked to both state and social structures (Boone, 2018). Local state and non-state actors promote, monitor, and enforce the ‘everyday social contract of informality’,<sup>70</sup> providing essential welfare functions in the unplanned settlements (Davy and Pellissery, 2013).

In many cities, community leaders are central to the local dynamics of recognition of rights and authority. They exercise important political, administrative and regulatory functions (Béni-Gbaffou and Katsaura, 2014; Drivdal, 2016). For instance, they supervise and protect land tenure arrangements by informally validating land transactions and keeping registers of property (Earle, 2014). Depending on context, leaders might be part of the state apparatus, as local government, or receive some form of state protection. Yet, often they operate through semi-

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<sup>70</sup> Alternatively defined as ‘social order’ (Andersen et al., 2015a, b), ‘social contract’ (Stacey and Lund, 2016), ‘social regulation’ (Kombe and Kreibich, 2001), or ‘context-developed code of conduct’ (Drivdal, 2016). ‘Social contracts’ are “ententes that stabilised around rules and procedures” (Boone, 2018: 67).

formal or informal practices. Legitimacy is the attribute that transforms power into authority generating voluntary compliance with the rule-of-law; it is situated and relational, continuously constructed through contingent social relations (Connelly, 2011; Connelly et al., 2006). Thus, in order to be recognised as public authority, local leaders need to constantly negotiate legitimacy with other statutory agents, political parties and communities (Bénit-Gbaffou and Katsaura, 2014). For example, they gain legitimacy by negotiating with, and obtaining resources from, external government actors (pragmatic legitimacy); protecting the culturally ingrained and socially accepted values and beliefs (normative legitimacy); and enabling the taken-for-granted practices of communal life (cognitive legitimacy).<sup>71</sup>

As for the state, the notion of a statutory law separated from social practices is a metaphysical effect, whereas the law is always practiced – performed by local agents producing contingent and individualised enactments (Blomley, 2014). As Mitchell (1991: 94) put it, “the mundane details of the legal process, all of which are particular social practices, are so arranged as to produce the effect that ‘law’ exists as a sort of abstract, formal framework, superimposed above social practice”. Against such “ideological rendering of the rule of law as formal, objective and depersonalised”, Kusiak (2019: 595) notes that the law is inherently ambiguous and needs translation by specific individuals negotiating between the text of the law, the social values underpinning the law and the real-life situation. Thus, crucially, legitimate applications of the law require translations drawing from “non-formalised implicit rules” or “common sense knowledge” (ibid.: 592). In fact, these configure the “socially embedded rule of law” (ibid.). Conversely, law that is applied without some degree of translation and in-formalisation – “*bare legality*” – might be perceived as illegitimate (ibid.).

For Blomley, (2008, 2013, 2014, 2015, 2016) the law is not disembedded from society in a Polanyian sense.<sup>72</sup> In fact, the law appears distinct and detached from society because it operates through bracketing: that is, through the production of legal categories naming entities and constraining sets of permissible activities. If on one side bracketing extricates or disentangles entities from their social relations, on the other, legal brackets are complex and contingent rearrangements of social relations. Indeed, legal brackets attempt to “stabilise and fix a boundary within which interactions take place more or less independently of the surrounding context” (Blomley, 2014: 135). Yet, a network of external social relations is necessary to legitimise and operationalise legal practices. For example, the legal fiction of a formal land transaction postulates three entities – the buyer, the seller, and the plot – disentangled from any social relations inherent to their forms. However, some external agents beyond the buyer and the

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<sup>71</sup> Referring to Suchman’s (1995) distinction of sources of legitimacy.

<sup>72</sup> Referring to Karl Polanyi’s theory of social *embeddedness* in *The Great Transformation* (1944).

seller (e.g. their spouses, neighbours or leaders) must believe that the land transaction is legitimate and behave accordingly for it to be effective.

Furthermore, legal bracketing can be exemplified by a process of land surveying. In fact, in its rendering of the legal parcel, a survey ideally severs land from its constitutive relations of society, ecology, history, indigeneity, etc. At the same time, the survey re-entangles the parcel in “dense networks” (ibid.: 140) of property registration, dispute resolution and markets involving complex reiterative enactments and sociotechnical processes (Blomley, 2013, 2015). Resonating with Blomley, Li (2014) notes that the survey as a new mode of inscription does not transform something concrete (land) into something abstract (legal parcel), but re-arranges the social relations with which land is entangled and extends the network of actors and devices connected to it.

Importantly, these understandings of state, public authority, law and formal property prompt a re-orientation of empirical research on processes of land tenure formalisation in the Global South. Formalisation policies are often heavily criticised for imposing a Western model of statutory law, which does not fit the social contract of unplanned settlements (Peters, 2009; Sikor and Müller, 2009). Here, some commentators have spoken of “alien tenure models” (Bruce and Knox, 2009: 1360) presented as “simple solutions to complex problems” (Bromley, 2009: 20). These critiques underscore the socially disembodied character of formalised property, suggesting that this explains challenges of policy implementation, including the low demand and the failing outcomes of many titling projects (e.g. Gilbert 2012; Payne et al., 2009). Indeed, in many contexts, formalisation has encountered scarce social support with formal property remaining a non-credible or empty institution (Ho, 2014). Conversely, it is argued that pre-existing informal rights persist over time as a result of their welfare functions – e.g. economic affordability and perceived security – producing high levels of social support (ibid.; see also Ghertner, 2020).

Whilst providing important insights, these critiques do not challenge the misconception that an idealised model of formal property *actually exists* and can be imposed upon society. Instead, formal property is always – to some extent – informalised. Notably, the Western model of formal property emerged historically through contingent social practices (Blomley, 2013; Griffin, 2010). Still today, it is constantly translated and re-entangled into a socially embedded rule of law. For example, research on the Global North demonstrates that property owners resort to the legal system after their informal arrangements have fallen apart (Blandy et al., 2018). Furthermore, courts privilege the informal arbitration of disputes and may consider the unwritten informal contract between neighbours in their deliberations (ibid.; see Gillespie, 2011, for similar cases from the Global South). Thus, whilst a model of formal, private and secure

property may become ‘true’ and produce real consequences (Blomley, 2014), as the very emphasis on formalisation policies demonstrates, it will always manifest through contingent and individualised enactments as a result of informal practices deserving empirical and theoretical attention.

From this perspective, it is misleading to believe that formal property may be imposed upon society or rejected altogether. More often, it will be implemented into some negotiated enactment of the model. Ultimately, critical legal scholarship argues that institutional fixes are necessarily limited. “In any given setting...[the] context will go far in shaping the practical meanings, uses and effectiveness of new regulatory structures and laws” (Boone et al., 2019: 216).

For instance, Ho (2018) conceptualises institutional change as a continuous and conflicting endogenous process, determined by the interaction of multiple actors. The government’s institutional design is “constrained, altered and cast into different institutional forms” dependent on actors’ interactions within and outside the state (p. 872). As a result, formal and informal institutions often co-exist in countless combinations (Ho, 2020). On the one side, pre-existing formal structures and veto players within the state can influence the unravelling of land law (Boone et al., 2019). On the other, decentralisation and local governance affect the implementation of land reforms (Pedersen, 2012). Furthermore, Cleaver (2002) has famously described processes of bricolage, whereby formal and informal institutions and rule of law combine and complement into hybridised forms. In this case, the pre-existent informal bestows legitimacy onto bureaucratic (formal) institutions making them legitimate and effective. Thus, in the transition from informal to formal institutions, a socially embedded rule of law emerges different from any idealised model of property.

Precisely, our empirical material contributes to illuminate how a formal model of property is actively negotiated by multiple actors – within, at the interface, and outside of the state – through contingent and individualised enactments that translate the law and re-arrange social relations around property. Focusing on two instruments of formal property, the cadastral database and ‘survey’ map, we will demonstrate that processes of formalisation incorporate pre-existent informal dynamics of recognition of public authority and property revolving around local leaders. Crucially, these help to legitimatise and operationalise the formal property apparatus by informalising it.

### 4.3 Background

Land law reform occupies an important place in the history and development trajectory of Tanzania. The shift from a colonial to a post-independence government has marked the beginning of a “rare example of a statist land tenure regime” in Africa (Boone and Nyeme, 2015: 71). Whilst the colonial administration functioned through indirect rule by appointing chiefs to govern over ethnic territories outside of towns, post-independence expanded statist institutions and state agents, such as executive officers, development committees and other related offices (ibid.). Major changes in the land tenure regime, for example land nationalisation, the socialist turn and then neoliberalisation, led to reformulate both property rights and authority rules (Boone, 2018). Some scholars have criticised the evolution of Tanzania’s land law as excessively centralising, legalistic and bureaucratic (Shivji, 2006). Conversely, others suggest that statutory property rights have been incrementally inserted into and incorporated within pre-existing socio-cultural relations and practices of land use and ownership (McAuslan, 2002). In the remainder of this section, we will outline the development of tenure formalisation policies and the role of the local government in land administration, with a focus on contemporary Dar es Salaam.

#### 4.3.1 Tenure formalisation in Dar es Salaam

As Pedersen (2016) notes, whilst a definitive shift towards private property rights in Tanzania can be traced to its agricultural policy of 1982-83<sup>73</sup>, it was not until the turn of the millennium that a ‘new wave’ of land ownership and governance reforms was introduced under the Land Act and Village Land Act of 1999. Seen by Manji (2006: 44) as ‘an exemplar’ of land reform processes in Africa, the Acts, although ‘market friendly’, were not simply designed to promote land markets through a system of legible property rights. Rather, they concomitantly aimed to enhance tenure security by providing legal recognition to existing interests and tenure arrangements (Pedersen, 2016). Notably, the reform recognised customary rights in rural areas, and the informal occupation of ‘squatters’ in urban areas, recommending that both would be registered and formalised under statutory rights. As Kironde (2006: 13) notes, land tenure in Tanzania currently involves a complex mix of statutory, customary, quasi-customary and informal arrangements, wherein the ‘cut-off’ between statutory and other institutions is often ‘tenuous’ and arbitrary, especially in the peri-urban.

Our survey of 1,363 households in the informal settlements covered by the Residential Licence programme across Dar es Salaam (for more detail, see Manara, 2020 – Chapter 3 of this thesis) showed that, as their most secure proof of ownership, 2.6% of plot owners have full statutory

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<sup>73</sup> The agricultural policy (1982-83) sought to increase economic growth and reduce food shortages by encouraging commercial investment in agricultural production.

rights (Certificate of Right of Occupancy, CRO), 48.6% hold interim short-term statutory rights (Residential Licence, RL), 31.5% have informal documents (Sale Agreement, SA), whilst 11.9% just rely on verbal validation of neighbours and local leaders.<sup>74</sup> For clarity, the SA is an unregistered document signed by the buyer, the seller and some witnesses, either the sub-ward leader (mtaa leader) or the lawyer (**Figure 1**). It is often referred to as an informal proof of ownership precisely because it is not registered within a cadastre and the central government. Despite this, the SA can be enforced to sort out disputes in land tribunals (Dancer, 2015) or to access loans with mainstream banks (Manara and Pani, 2020a),<sup>75</sup> therefore offering some degree of tenure security and other benefits.

Conversely, the CRO and RL are registered documents providing statutory property rights. The CRO grants the highest tenure security, issued on planned, surveyed land and valid for either 33, 66 or 99 years. As this land is rarely supplied de-novo by the planning authorities, in most cases the CRO is offered retroactively, after the formalisation of informal settlements. Sitting between the two is the RL (**Figure 2**), an interim property right brought into being through the 1999 Land Act. The RL is offered in the unplanned urban and peri-urban areas under regularisation schemes. Although valid for just five years, it is renewable at less than 10% the cost of a CRO, making it broadly accessible to the city's lower-income population.

Under the auspices of the Ministry of Lands, Housing and Human Settlements Development (MLHSD) and the Municipal authorities, the RL programme began in earnest in 2004, covering around 220,000 plots: roughly half of Dar es Salaam's informal housing units at that time. Particularly, phase I of the programme was implemented in the most consolidated unplanned settlements with the highest density and the poorest quality infrastructure (**Figure 3**). Phase II targeted another 130,000 plots starting in 2019 (**Figure 4**). The programme aimed to assemble cadastral information and collect revenues from the RL fee and annual land rent in order to facilitate upgrading and make these settlements eligible for formalisation with CRO over the long run. In principle, the RL offers similar benefits to the CRO: compensation in case of eviction, statutory protection against boundary and inheritance disputes, and the possibility to legally transfer and collateralise land. The *perceived* and *de facto* costs and benefits of the RL, as well as plot-owners' motivations to formalise or not, are examined in other papers by these

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<sup>74</sup> Among RL (48.6%), only 17.4% were renewed. Among SA (31.5%), 21.3% were issued by the mtaa office, 8.1% by the wajumbe (this form of SA is discouraged by the government nowadays), 2.1 % by the advocate.

<sup>75</sup> In summary, drawing on interviews with nine of the largest financial organisations in Dar es Salaam, we find that formal land titles are neither necessary nor sufficient for the urban poor to access credit. Banks also accept unregistered land as a valid collateral. In the absence of official searches within a registry or a cadastre, they rely on the oral witnesses of local leaders and neighbours to collect relevant information on the rightful plot owner and the plot boundaries.

and other authors (Kusiluka and Chiwambo; 2019; Manara and Pani, 2020b;<sup>76</sup> Parsa et al.; 2011; Sheuya and Burra; 2016). See also Manara (2020) – Chapter 3 of this thesis.

### 4.3.2 The role of local leaders

Since the country gained independence in 1961, its various attempts at decentralisation have sought to create diverse local administrative units aimed at extending key authorities and functions of government from the centre to the grass-roots level, thereby enabling community participation in decision-making (e.g. Decentralisation Policy, 1972; Local Government Authorities Acts, 1982). There are several differences in the structure of the local government and its involvement in land administration across rural and urban areas. Importantly, the Land Acts of 1999 created a hierarchy of formal land tribunals, from the village up to the ward and above. This provided formal channels to access higher levels of the state apparatus instead of relying on neocustomary institutions for the adjudication of land disputes and related matters (Boone and Nyeme, 2015).

Yet, despite the bringing forward of statist land institutions, local leaders – operating within, at the interface and outside of the state apparatus – remain key figures in the land administration system of unplanned settlements, even though they have no formal role (Kombe and Kreibich, 2000). In contemporary Dar es Salaam, below the municipal authority level, local urban governance occurs at both the ward and the sub-ward level. Otherwise known as ‘streets’, the *mitaa* (sub-wards) of Dar es Salaam are the smallest geographical units of urban governance, each with its own chairperson or ‘*mtaa leader*’ (*mwenyekiti wa mtaa*), a committee of six local representatives, an executive officer, and a number of ‘ten-cell leaders’ (*wajumbe*) who, alongside their assistants, keep watch over their *washina* or ‘branches’ (usually comprised of 50-200 households). Whilst the executive officer is a paid employee of the government, the *mwenyekiti* and *wajumbe* are un-salaried political actors, motivated by the interests of community development, the chance of career advancement in the party and economic returns from individuals, in the form of informal gifts or payments. Leaders gain their legitimacy in two important ways. First, they are elected democratically by local residents.<sup>77</sup> Second, through their

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<sup>76</sup> Drawing on the administrative Household Socio-Economic Survey collected at the beginning of the RL programme, this paper describes how key plot and plot holder characteristics correlate with choices of formalisation over time. For example, the propensity to uptake is higher for newcomers who have occupied their plots for fewer years, and for plots with higher property value. Furthermore, we explore the prudential or rational motivations for RL uptake, embedded in the calculation of expected costs and benefits. We find that plot holders perceive substantial benefits from the RL, higher and above the unregistered proof of ownership (sale agreement). However, the long-term lease CRO is deemed to confer the highest benefits. We conclude that the presence of a competing institution (CRO) affects demand for RL.

<sup>77</sup> For the position of *mtaa* chairperson, individual *mtaa* residents apply to their own political party and one is selected for the local elections run by the National Election Committee every five years. For the position of *mjumbe*, residents may apply either through the *mtaa* office or the party office. Up to six are

administrative tasks, local leaders supervise and enforce the social contract of communities.

The wajumbe have a long history of community-state-party representation dating back to the single party system (1964-1992) during which they were considered the local ‘eyes and ears’ of central government (Cross, 2013: 45). Whilst certainly diminished and relegated outside of the formal government apparatus, their position is still deemed useful, for example, in resolving land, community and family disputes, ensuring security (both physical and environmental), and providing vital links between residents, mtaa and political party.

The mtaa system was set up just before the multi-party elections of 1995, but the functions of the mtaa chairman were defined in the 2000 revision of the Local Government Act (1982). Their contemporary role is vital in bridging central-local relations. For example, they liaise with the ward government and maintain records of residents and their properties on behalf of Tax Revenue Authority or other specific projects. Further, they issue letters of identification, for instance, to banks, schools and police offices. Crucially for this paper, they intervene in local land disputes and refer those beyond their capacity to the ward or Courts of Law. In sum, they act as senior administrators of “just about everything at the mtaa level” (interviewee, 2018), including the supply, exchange, development and regulation of informal land and services (Kombe and Kreibich, 2000). Importantly, some of these activities are informally mandated or regulated. Thus, it can be argued that mtaa leaders administer both the lower level formal government and the informal social contract of communities.

Problematising the push towards land formalisation, Kombe and Kreibich (2000: 231-232) note that, similar to many other Sub-Saharan countries, Tanzania faced two contradictory challenges: “the increasing need for land management and the provision of infrastructure resulting from rapid urban growth, and the decreasing financial and administrative resources of the public sector”. For these authors, the ever-widening gap between the two meant that highly centralised actors, law, practices and standards of top-down urban management would not be sufficient to overcome such a ‘structural dilemma’. Instead, for building state’s capacity, they argued for ‘reconciling’ and integrating formal and informal institutions, actors and processes. Particularly, each would draw on their relative legitimacies to help legitimise one another (ibid.; see also Kironde, 2006).

Indeed, in the early stages of the RL programme, local leaders were involved in two important ways. First, municipalities mandated them to provide essential information, both through public

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chosen to stand for election by fellow residents of the specific shina (branch), who must be registered with the party. Yet, wajumbe are no longer recognised within the formal election system. Instead, their election is confined to processes within the mtaa and the party (interviewee, 2020).



meetings and door-to-door, to plot owners regarding the RL and how to acquire it. Second, mtaa leaders and wajumbe accompanied municipal surveyors to every plot, identifying the owners and verifying their boundaries with the adjacent neighbours before witnessing the boundary agreement in writing. Since the rollout stage, their involvement has considerably decreased. Yet, for plot owners and many other parties, local leaders remain key sources of authority and legitimacy in processes of formalisation. For instance, Manara (2020) – Chapter 3 of this thesis – finds that most plot owners relied on the advice of their local leaders when deciding whether to uptake the RL. They are regarded as key informants, representative of the central government and parental figures protecting the interests of communities. Indeed, Manara and Regan (2020) – Chapter 5 of this thesis – demonstrate that leaders hold accurate knowledge on plot owners in their areas and their demand for formalisation.

In the remainder we will argue that, fifteen years into the RL programme, leaders remain centrally involved in recognising property relations, particularly, through practices legitimising and operationalising the formal instruments of property: the cadastral database and the ‘survey’ map. Notably, the central apparatus of government cannot construct and manage formal property without the support of local leaders and the socially embedded rule of law that they administer. Indeed, these embody the public authority and legitimacy that Lund and Boone (2013) argue are central to state’s capacity formation.

#### **4.4 Methodology**

The empirical material discussed below was collected as part of a larger project examining the RL programme of Dar es Salaam through mixed-methods research. In total, we spent over six months in the field during three rounds of fieldwork from August 2017 to August 2019. The data presented here come from semi-structured interviews with mtaa leaders (forty-five), municipal officers (six), employees of banks (eighteen) and lawyers (four). Where permission was granted, those were recorded and transcribed afterwards. Having such a wide array of respondents allowed for extensive triangulation of data. Furthermore, our research required close collaboration with local leaders for the realisation of two large-scale surveys of the informal settlements (with 1,363 and 243 respondents respectively). This experience enabled us to observe leaders’ interaction with plot owners, which was essential to see their public authority in action. Having attended many mtaa offices (**Figure 5**) for a variety of reasons (e.g. collecting research permits, getting contacts, etc.) and often for many hours at a time, we had further opportunities to be passive observers of leaders engaging in their tasks. Relevant episodes were recorded through extensive notes in our fieldwork diaries. Most interviews and conversations with local leaders occurred in their language (Swahili) with the assistance of graduates from Ardhi University acting as our translators. In the empirical sections that follow,

we draw upon data triangulated between sources using verbatim quotations, thereby ensuring the credibility, dependability and confirmability of data (Baxter and Eyles, 1997).

## **4.5 Informal practices of formal property**

### **4.5.1 Informalisation of the cadastre**

From a technical perspective, land tenure formalisation is an attempt to codify and register information on plots and plot owners, such as measurements, location, land use, and the plot owners' identity, among other things. This information is kept in cadastral databases open to public consultation. The relevant public authority relies on the cadastre to provide and validate essential information to third parties interested in buying or mortgaging legally registered land.

Concerning the RL programme, a cadastral database was created by the MLHHSD in the early stage of the project. Nowadays, each Municipality maintains their cadastre comprised of a database and a digital map. Packed into small rooms, behind a couple PCs, there are big piles of grey folders including the relevant paperwork of each RL issued (**Figure 6**). Here, private individuals, lawyers, and bank officers can come to conduct official searches and verify whether a RL document is "genuine", authentic, within expiry and updated in terms of land rent payments. Further, Municipal cadastres record ownership transfers and whether the property has been pledged as collateral with a credit organisation. Thus, official cadastres should substitute unofficial repositories of information on registered plots. Similarly, Municipalities should replace local leaders as the public authority that recognises property relations.

Yet, as we will demonstrate, the cadastral database alone and its formal apparatus cannot fulfil these tasks and adequately respond to the concerns of interested parties. In the presence of ambiguities relative to the plot location (the RL programme did not assign addresses), the ownership (*de facto* individual versus shared property), and the traceability of the registered plot owners, local leaders remain essential in confirming and complementing cadastral information on where the property is, who owns what, and who lives where. Formally mandated to write identification letters for their residents and informally involved in the exchange of unregistered land, local leaders are vital to operationalise and legitimise the cadastre, thereby enabling its functioning.

In fact, the cadastre is operationalised – constructed and maintained – through practices of property recognition by local leaders, demonstrating that this instrument of formal property does not disentangle land from its local network of social relations. Notably, at the beginning of the programme, local leaders assisted the Ministry in the process of collecting information on plots and plot owners. Since then, they have remained central to the formal operations of transferring,

issuing and renewing the RL. For example, for a transfer to be registered in the database, four documents must be submitted to the Municipal office: sale agreement and transfer deed (both prepared by lawyers), official valuation report, and one form from the mtaa office:

*“As a first step, we receive a form from the mwenyekiti called Form of Change of Ownership’, which shows the past owner and the new one. This is the starting point because the mwenyekiti knows the people at his mtaa, so he informs us that a change has happened there. Because the mwenyekiti is the one who initialises anything in the mtaa, everything has to start from him” (RL Officer, Temeke Municipality).*

Having assumed that the sale agreement signed by a lawyer would satisfy the Municipality on the identity of the buyer and the seller of a plot, we asked what extra verification this form could offer:

*“With properties that are not planned, the ownership and boundaries of plots are recognised by the mwenyekiti and the executive officer. They help us to know who the real owner of the plot is, therefore there is no way that we can exclude them... people can cheat in front of the lawyers. Local leaders are the ones who know the plots because they live with the people” (RL Officer, Kinondoni Municipality).*

In other words, for the Municipality, local leaders remain the relevant public authority recognising property relations on all land, regardless of their RL and their registration within the cadastre. Further, this form mandates the mwenyekiti to manually update the *register* of plots, that is, a printed copy of the cadastral database received at the beginning of the RL project. Similarly, for the issuance of a RL, the mwenyekiti and executive officer must sign Form 73 and recognise the rightful owner of the plot. One of our interviews with a lawyer was interrupted by a client returning from his mtaa office with this document. Relieved that the Municipality would finally process his case, the lawyer read to us the endorsement in support of her client’s application for the RL, signed by the mwenyekiti and the executive officer on the back of Form 73:

*“The businessman is also a godly man who cares about the world around him. We welcome him to the mtaa as he will increase and act as a catalyst for sustainable land development”.*

Thus, the social relations constitutive of informal property get re-arranged during formalisation through formal processes and documents, but they are never completely severed, as according to an idealised model of formal property. In fact, here they are central to the issuance of the RL. Furthermore, the same social relations might be involved in the operations to renew the RL. For example, in response to many complaints over boundary and ownership disputes on formally registered land, Ilala Municipality in the city centre now requires that plot owners submit,

together with their expired RL, an introduction letter from the mtaa leader and a renewal form, including a declaration that the land is not under dispute. This must be signed by the mwenyekiti and the executive officer, as well as by at least one neighbour. Hence, the operations of the cadastre continuously re-entangle land in networks of local public authority and social relations.

Not only are local leaders central to operationalise the cadastre. During processes of sale and collateralisation of formally registered land, interested parties also refer to the mtaa office to further verify and supplement the information obtained with official searches from the cadastral database at the Municipality. In this sense, the public authority of local leaders is called upon to bestow further legitimacy onto an instrument of formal property. This demonstrates the complementarity of formal and informal practices in the recognition of property relations. Thus, whilst formalisation is meant to transfer authority over property relations from the informal social network to the formal apparatus composed of new actors and tools (e.g. central government and lawyers, cadastre and formal law), in this case formalised property remains essentially entangled in its local web of social relations. As an important example, often lawyers execute a sale agreement without consulting the cadastral database,<sup>78</sup> but they always advise the buyers to conduct local searches in the field:

*“It’s the buyer’s due diligence to check with the neighbours and the mwenyekiti that the seller is the real owner of that plot and the plot has no dispute. The mwenyekiti knows the area well, while I’ll be sitting here in my office. You can try to bypass the mtaa temporarily, but you will need to go back eventually... how can you claim that you are the owner if the mwenyekiti does not stand for you?” (T.M.).*

When we asked lawyers whether they did not have any duty to verify basic information on plots, such as the ownership, size or boundaries, one referred to the principles of jurisprudence responding that, *“this is immaterial to a lawyer”*.

*“What is material”, he continued, “is that these people appeared before me and they agreed on the terms of the sale. The lawyer is just a witness of their contract. I execute the document... as to the correctness of the terms of the agreement, I cannot be involved. Some issues are material facts and others are legal facts... I am concerned with the latter” (S. P.).*

Borrowing his words, most material facts on plots and plot owners are typically verified through local searches, even for the sale of formally registered land and despite of cadastral searches.

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<sup>78</sup> One lawyer estimated that only ten percent of his clients did cadastral searches before purchasing land.

Similar positions were expressed by the loan officers of nine mainstream credit organisations.<sup>79</sup> In fact, banks deem official searches extremely useful to reduce the risk associated with the collateralisation of unregistered land, such as forged documents, encumbrances (other unpaid loans) and pending disputes. In order to minimise these risks, all banks have made cadastral searches compulsory. However, they will always complement these with local searches involving the mwenyekiti and the neighbours of plot owners applying for loans. For example, banks worry that the owners registered in the cadastre may have informally sold their plots, initiated a dispute, collateralised their land with a loan shark, or applied for a stronger title deed (CRO). This information would not display in the cadastral database and must be collected in the field, given its importance for the repossession of properties in case of default:

*“Official searches can satisfy us that the document is genuine, that is, authentic and not expired, and land rents were paid for...but other things, at the Municipality they do not know really”* (Loan Officer, Commercial Bank).

By involving the local authority and social relations to verify and supplement official searches, credit institutions call into question the public authority of the higher-level government (Municipality) and its formal instrument (cadastre). In fact, these cannot guarantee the RL as a secure collateral unless informal practices provide extra recognition of property relations, therefore bestowing further legitimacy onto the RL and the cadastral information attached to it. In sum, the cadastre needs complementary local searches to provide the desired security.

#### **4.5.2 Informalisation of the ‘survey’ map**

Processes of tenure formalisation start with the fixing of boundaries between private properties as well as between private and public land. In conjunction with cadastral information, the survey map normally removes most ambiguity on informal property relations, therefore decreasing the risk of boundary disputes. Further, the survey map makes property legible to individuals, chartered land surveyors, solicitors and courts to ease the arbitration of disputes.

A relatively cheap and imprecise method was adopted to construct the RL map; thus, this is not a survey map proper. Following the collective identification of plot boundaries by local leaders and neighbours, these were initially drawn by hand on aerial pictures in the field. Subsequently, they were digitised and linked up to systems of measurements, coordinates and projections in

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<sup>79</sup> Drawing on qualitative research with nine of the largest financial organisations in Dar es Salaam, Manara and Pani (2020a) engage in a detailed analysis of rules and conditions of access to loans, loan types and sizes associated with each category of collateral (i.e. unplanned and unregistered land, interim or full property rights). In so doing, this paper demonstrates that financial organisations react to a complex and evolving land policy by producing and adjusting credit institutions to be complementary with a wide array of property institutions. For example, banks involve local leaders to reduce risks associated with the unregistered collateral (sale agreement) and short-term lease (RL).

GIS. The RL map is kept in digital format at the relevant Municipal office that administers the cadastral database. Together with the *register*, each mtaa office received, on one occasion at the beginning of the project in 2005, a large-scale printed copy of the RL map covering its entire area, which was never updated thereafter (**Figure 7**). Further, plot owners acquiring the RL obtain a deed with a map displaying the layout of their property and some neighbouring plots (**Figure 2**). This document reports the square meters, but there are no linear measurements, coordinates, or building footprints. Government land officers and technical tools should therefore be involved to correctly decode the map in the deed.

In fact, formalisation attempts to establish the authority of the central government on property and to define a formal process of land dispute resolution including land officers, technical instruments and the Court. In this way, for registered land, statutory law and formal processes should substitute the informal arbitration of boundary disputes by local leaders. Yet, as we will demonstrate, local leaders remain a primary public authority of conflict resolution legitimising and operationalising the RL map to arbitrate disputes on both formally registered and unregistered land.

Local leaders influence the circumstances and the modalities in which the RL map is operationalised, that is, when it should be used to administer land disputes, by which public authority (Municipality or mtaa), and how it should be interpreted at the mtaa level without the support of technical tools. This underscores the public authority of local leaders as they mediate the intervention of other actors and processes in the recognition of property relations.

For example, a minority of mtaa leaders prefer to involve the higher-level government when dealing with the RL map. In fact, some believe that this is the legitimate public authority to operationalise formal instruments of property, while others stress that expert knowledge and technical tools are necessary to correctly interpret the map.

*“Since the mtaa does not have the authority to use the RL, we don’t look at its map. We only use peaceful [informal] means... if we fail, we take the dispute to the ward committee. They are the ones who can use the RL and deal with these things”* (Mwenyekiti wa mtaa 17, hereafter ML).

*“In fact,”* recounted another leader, *“we don’t know how to read these things. We are not experts on land. At the Municipality, they are able to handle the map in a more intellectual way, they understand what they are looking at”* (ML16).

Deciding to withdraw from using the RL map to arbitrate disputes, these mtaa leaders recognise the mandate of higher-level state actors, the Ward and the Municipality, to administer property

relations via formal processes. In this sense, formalisation and formal instruments effectively transfer public authority from the lowest to the higher-level government.

In other cases, instead, leaders preclude this transfer by avoiding any recourse to the RL map, which they do not recognise as a legitimate instrument:

*“It doesn't show dimensions and it is short lived, only valid for five years. Something might have happened to the plot area, like a sub-division, and the map on the RL wouldn't update that” (ML16).*

*“The RL won't help because plots here are un-surveyed, even the map at the back of the deed doesn't show the precise boundaries as seen on the land... Maybe I should repeat this: these are informal settlements and there is no formal measurement,”* emphasised another leader explaining how he normally approaches boundary disputes in his mtaa. *“I personally use my own experience of the area and involve neighbours who know the history of the land. We listen to the plot owners: they are the ones who know the objects of their boundaries. So, if it's a tree or tyre we ask them to show and the neighbours to confirm... Using the map we could go off track because it does not have clear measurements and we would not be fair” (ML32).*

Conversely, most leaders routinely operationalise the register and the map in order to resolve land disputes informally, before they escalate to the higher authority. Deciding to implement the map without recourse to the relevant state actor and through informal practices, these leaders consolidate their public authority on property relations. In so doing, often they bestow *de facto* legitimacy onto the RL map even when it is not valid *de jure*, because a plot owner has not acquired or renewed the formal document.

For example, in one mtaa towards the city centre, which faced around fifty disputes per year, approximately half of the plot owners had never acquired a RL – the average across the city. Regardless, the mwenyekiti would use the register and the map to arbitrate disputes also on formally unregistered plots:

*“These instruments are still very important because they detail plots for everyone in this mtaa and have so much legal validity” (ML1).*

In fact, most leaders effectively managed to resolve disputes at the mtaa level, by operationalising the RL map without recourse to the higher authority, land experts and technical tools. To translate the legal prescriptions illustrated in the RL map from the abstract to the real-world space, they combined the formal instrument of the map with other means of informal dispute arbitration. This illuminates well the re-entanglement of formal property within pre-existing networks of local authority and social relations. Further, it demonstrates that formal

instruments of property might be operationalised through informal practices of translation mediated by the discretionary agency of local actors.

Indeed, most leaders noted the importance of the RL map detailing the boundary and square meterage of the plot. Yet, without linear measurements shown in feet, like on the informal sale agreement (*“which can be paced on the plot”* – ML5), or without reference to informal markers such as trees, tyres and poles, how could this “government backed” instrument be understood by dwellers of the unplanned settlements, many of whom lacked a formal education? So, many leaders preferred to “keep the peace” by combining the RL map with more familiar and well-understood informal instruments that bore the legitimacy of pre-existing informal practices and local “wisdom” (e.g. ML26). In this way, the RL eased – but certainly did not replace – the informal process of dispute arbitration.

For instance, some leaders recounted that they operationalised the RL map by visiting the plot and involving the local social relations, like wajumbe and neighbours:

*“I think the oral history of the plot works well enough because some people insist that there is no use of the square meters and they know their plots well. Anyways... if there is a legal document the case doesn’t take that long and it generally goes much smoother. If you have a RL, it is easier to have people understand... nine out of ten disputes are settled this way and one will go to the ward”* (ML29).

In the absence of linear dimensions on the RL map, one respondent described how they operationalised the map by mimicking a practice that they had seen utilised by land officers:

*“When we go to the site we take bricks, because between one plot and another you should leave four bricks, two from each plot... Since the people trust the masons, we ask them to measure the plot as the area shows on the RL map”* (ML34).

*“There was one case”,* explained another mwenyekiti, *“where the plot owner was complaining that the neighbour had extended up to his plot, which he knew because his boundary ended at a tree. So, we used the RL map to explain to the people that one should leave space for a footpath. And the tree was still there, so it was easy to reference where the footpath should be”* (ML40).

These examples demonstrate that local leaders operationalise the RL map in combination with informal means: oral history, physical markers and new practices adapted from the formal system. Inevitably, these produce contingent and individualised translations of the map, legitimised by recourse to informal actors and instruments. Practices of translation are perhaps better exemplified in the case of ML40 above. Here, the RL map provided an illustration of the legal prescription in abstract space, which supported the claim of the contestant and indicated a



resolution: the footpath must be left open. In conjunction, the natural marker provided a familiar and well-understood informal instrument, which facilitated the implementation of the legal prescription in the real-world space. In fact, the tree enabled the mwenyekiti to translate the RL map into a legitimate and operational resolution. Of course, we will never know if the footpath was opened precisely where illustrated on the map.

### **4.5.3 Structural constraints to informal practices**

Through practices that legitimise and operationalise the cadastre and the map, we have discussed the agency of local leaders in the construction and management of formal property. Yet, before concluding, we must reflect upon the presence of structural constraints of the formal system affecting the agency of local leaders. For example, many of our respondents complained about the lack of updated registers and maps. In fact, several generations of leaders had manually updated their registers since they were first issued in 2005, and our respondents felt these were no longer reliable or easy to consult. The large-scale maps were now faded or falling apart (**Figure 7**), despite the diligence of leaders whom we observed carefully opening and folding the paper map on more than one occasion. Even worse, a few mitaa didn't have these instruments at all, for example, because the ward had appropriated them following the division of an older mtaa into smaller units. Thus, in order to get the details for the Form of Change of Ownership and Form 73, or in case of boundary disputes, these leaders needed to travel to the ward office to consult the register and the map. This disincentivised their use and reduced the agency of local leaders. Indeed, Municipal officers confirmed that the mtaa leaders had often requested new registers and maps, but the Ministry did not have the resources to produce and distribute them. In sum, whilst local leaders and informal dynamics of property recognition are essential to the formal property apparatus, higher government actors maintain an important function, conditioning the agency of local leaders. Without access to the instruments of formal property, the mutual legitimation of formal and informal institutions that Kombe and Kreibich (2000, 2001) deem essential for a strengthened land management is inevitably compromised.

## **4.6 Conclusion**

This paper has examined the situated practices that make land into formal property arguing that an idealised model of formal property cannot simply be imposed upon society. In fact, processes of formalisation inevitably produce context specific enactments of formal property, as illustrated by our case-study of the RL programme in Dar es Salaam. Central to our argument, we demonstrated that informal practices of property recognition by the local leaders are vital to legitimise and operationalise the instruments of formal property: the cadastral database and the 'survey' map, which are therefore informalised. For example, our evidence has shown that local leaders are essential to the construction and maintenance of the cadastral database, as the

Municipality necessarily involves them in the identification and recognition of plot owners for the purposes of issuing, renewing and transferring the RL. Furthermore, in response to the legitimacy gap produced by the process of formalisation, lawyers, prospective buyers and loan officers routinely refer to the mtaa office to further verify and supplement the information obtained from official searches of the cadastral database at the Municipality. Similarly, local leaders influence the modalities in which the RL map is operationalised, deciding whether it is a legitimate instrument of dispute arbitration and which authority should legitimately implement it. Often, they choose to use the map at the mtaa level, therefore bypassing the relevant statutory authority and formal processes. In this case, they interpret and operationalise the map through informal practices of translation, combining this formal instrument with other means of informal dispute resolution, like oral history and natural markers. Crucially, our research has demonstrated that by legitimising and operationalising the instruments of formal property, local leaders effectively mediate the recognition of property relations by other state actors (e.g. Municipality, Court). In this way, formal property remains essentially entangled in the same local authority, social relations and practices, which were constitutive of informal property. Thus, the RL apparatus is far from an idealised model of formal property.

This paper also set out to deploy informality as a lens to deconstruct state and law into their contingent and individualised practices, with a focus on processes of land tenure formalisation in the Global South. In so doing, we have provided three main contributions. First, we have added to prior studies on the informality-state nexus and the informalisation of the state illustrating that formal property is itself constituted of informal practices. Second, we have contributed to debates on processes of state and public authority formation, exploring the role of ‘twilight institutions’ (Lund, 2006) – local leaders – as they legitimise and enable the formal property apparatus. Third, we have illustrated that formal law is not objective and depersonalised. Rather, it is socially practiced through local agents and socially embedded dynamics of property recognition.

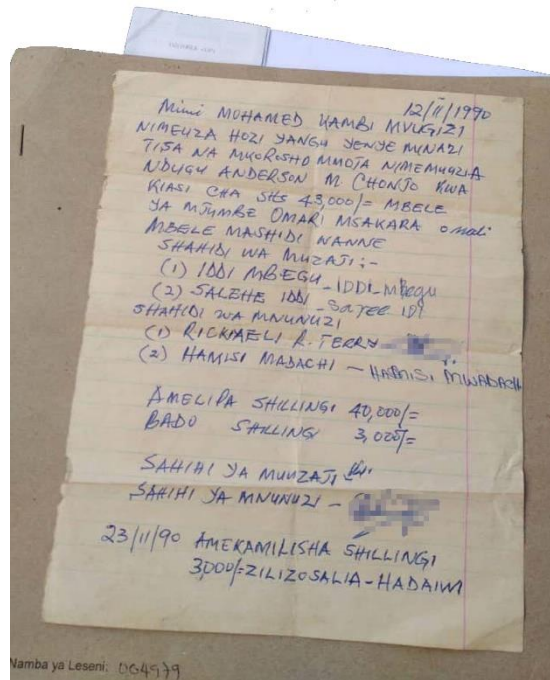
Taking these contributions together, our study critiques an idealised model of tenure formalisation, which suggests that formalisation imposes a transfer of public authority from the lowest to higher levels of government, from the informal social contract to formal law. Conversely, our empirical material underscores that a model of formal property is actively negotiated by multiple actors and practices that translate the law (Kusiak, 2019) and rearrange the social relations constitutive of informal property (Blomley, 2014). On the one hand, we have argued that the central government cannot construct formal property *without* the mediation of local actors and informal practices. On the other, we have suggested that local leaders require the support of the higher-level authority if they are to legitimise one another in the process of formalisation. As such, our findings suggest a need for further research studying the

sociotechnical processes of formalisation and how they incorporate informal dynamics of recognition of public authority and property.

## 4.7 Figures

**Figure 1.** Examples of Sale Agreement from the mtaa office.


(a)



Notes: Sale Agreement from the 1990s. Old documents usually provide information on the land (e.g. development of built construction, type and number of trees), the price (paid and outstanding), and names of the buyer, seller and witnesses, which often include neighbours and local leaders.

(b)

**HALMASHAURI YA MANISPAA YA TEMEKE**

PICHA YA MUZAJI  PICHA YA MNUNUZI

TAREHE .....

**HATI YA USHAHIDI WA UZAJI WA ENO / SHAMBA / KIWANJA**  
 Mimi ..... Nimeamua / tumeamua kumuuzia  
 eno/ shamba/ kiwanja changu / chetu  
 Ndugu ..... ambaye ni mnunuzi wa shamba /  
 eno / kiwanja kina ukubwa wa hatua Kaskazini futa ..... Kusini futa ..... Mashariki  
 futa ..... Magharibi futa ..... Tumeuza / nimeuza kwa thamani ya  
 Tshs ..... Mnunuzi amelipa zote Tshs .....  
 Ametoa malipo ya awali Tshs ..... bado Tshs .....  
 Ambayo ni 1 ..... 2 ..... 3

**MIPAKA YA SHAMBA / ENO/ KIWANJA**  
 Kaskazini nimepakana na ..... Kusini nimepakana na .....  
 Magharibi nimepakana na ..... Mashariki nimepakana na .....  
 Mimi / sisi / tunathibitisha kuwa eno ni letu / langu halina mgogoro na mtu.

SAHIHI YA MUZAJI ..... SIMU NA .....  
 SAHIHI YA MNUNUZI ..... SIMU NA .....

**MASHAHIDI UPANDE WA MUZAJI**  
 1. .... SAHIHI ..... SIMU NA .....  
 2. .... SAHIHI ..... SIMU NA .....

**MASHAHIDI UPANDE WA MNUNUZI**  
 1. .... SAHIHI ..... SIMU NA .....  
 2. .... SAHIHI ..... SIMU NA .....

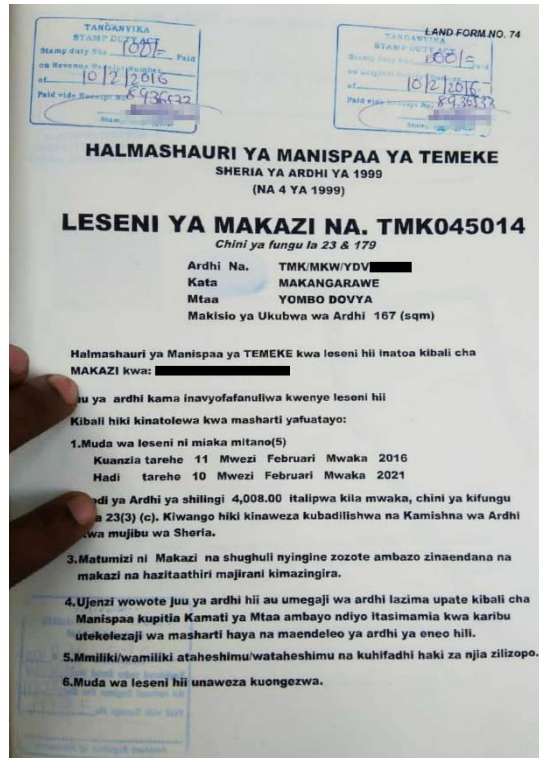
MALIZO YAMEFANYIKA MBELE YA MWENYEKITI WA SERIKALI YA MTAJ KIBULUGWA  
 NDUGU .....

SAHIHI ..... MUHURI .....

Notes: Sale Agreement from the 2010s. Recent documents usually describe the plot and its boundaries (e.g. size in feet, names of adjacent neighbours). They identify the buyer, seller and witnesses, which often include neighbours and local leaders. Most mitaa prepare their own form, borrowing the Municipal headings from other official documents.

Figure 2. Example of a Residential Licence document.

(a)



Notes: Front page. It includes information on the plot area (sqm), plot owner's name and surname, RL start and end dates, and terms of validity. For example, it specifies the land rent amount and some building standards for new construction.

(b)



Notes: Back page. This map shows the plot registered with RL (grey) and its surrounding plots. Importantly, it identifies plots by numbers but does not display linear measurements or coordinates.

**Figure 3.** Residential Licence programme phase I (2004-2006).



Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence programme phase I.

**Figure 4.** Residential Licence programme phase II (started 2019).



Notes: *Mitaa* (sub-wards) in grey included in the Residential Licence programme phase II (started 2019). *Mitaa* boundaries have changed over time.

**Figure 5.** Picture of one mtaa office.

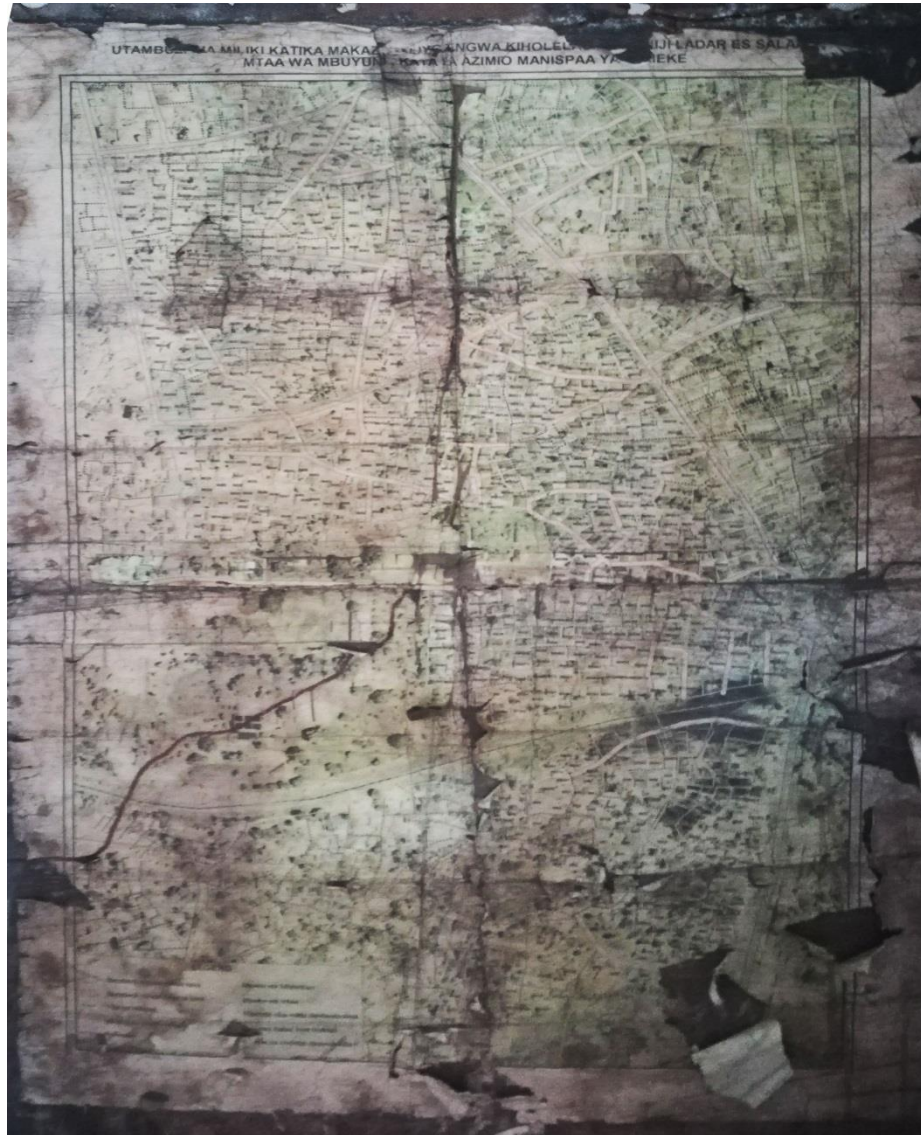


**Figure 6.** Picture of one Municipal Residential Licence office.





**Figure 7.** Example of one mtaa map.



Notes: These maps were provided to mtaa offices in the early stages of the Residential Licence programme, circa 2005-2006. They were never substituted thereafter.

## 4.8 References

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## Chapter 5

# Eliciting demand for title deeds: Lab-in-the-field evidence from urban Tanzania

The project was approved by the Tanzanian Commission for Science and Technology (COSTECH) [REC ref. 2019-135-NA-2019-37]. It has passed review by the LSE Research Ethics Committee in October 2018 under the project name “Leveraging Informal Institutions to Raise Land Formalisation” [REC ref. 000770]. More details on the ethical aspects of this project are found in Appendix C.

### 5.1 Introduction

Much of urban land in Africa is allocated low values of built capital, remains unplanned, and is settled under informal property rights (UN Habitat, 2016; Lall et al., 2017). A strand of literature argues that formalising property rights can boost urban development in developing cities (Henderson et al., 2020). Formalisation can create transparency in prices enabling functional urban land markets and improved property records facilitating taxation (Collier et al., 2017). More generally, property rights can reduce expropriation risk, lower the cost of property protection, and remove barriers to credit (Besley and Ghatak, 2010).<sup>80</sup> Yet, establishing property rights is costly for cash-strapped governments in sub-Saharan Africa.<sup>81</sup> To recover programme costs once neighbourhoods are surveyed and entered into a town plan, plot-specific fees are charged for title deeds. This stage of formalisation (the uptake of title deeds) remains a bottleneck in many African cities (Bezu and Holden, 2014).

This bottleneck is observed in Dar es Salaam, Tanzania, where formal titles account for only 20-25% of residential surveyed plots. Despite low uptake, literature suggests that there is a demand for land titles in this city. In fact, qualitative research suggests that formalisation policies rally considerable social support (Manara and Pani, 2020a).<sup>82</sup> However, it is argued that the price of

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<sup>80</sup> There is empirical evidence that property rights have a positive impact on investment in rural Africa (Besley, 1995; Goldstein and Udry, 2008). For urban land, evidence is concentrated in South America finding impacts on household investment, education and labour supply (Field, 2007; Galiani and Scharrodsky, 2010).

<sup>81</sup> Formalisation requires surveying and town planning to meet the standards of formal law. There are scale economies to surveying, and so governments and development agencies alike make efforts to coordinate land demarcation (surveying) en masse.

<sup>82</sup> This paper studies the demand for short-term leases – Residential Licences – in Dar es Salaam, based on administrative data from the RL programme and 2018 survey data. The paper notes that demand for RL has decreased over time, resulting in a modest rate of formalisation. Nonetheless, survey data demonstrate that plot holders have positive beliefs on land registration. In particular, they believe that the long-term CRO is a better ownership document, providing the highest benefits. They therefore wish they

registration constitutes an important barrier (Kusiluka and Chiwambo, 2018; Magina et al., 2020; Omar 2017; Sheuya and Burra, 2016)<sup>83</sup> and that project costs exceed demand (Ali et al., 2016). Precisely, this paper estimates demand for full statutory property rights (Certificate of Right of Occupancy, CRO) in two neighbourhoods of Dar es Salaam, where a pilot project has covered the costs of surveying and planning but the uptake of titles is low (13% in two years). Furthermore, we propose a better pricing strategy that elicits demand for titles from local leaders, thereby increasing the programme affordability and social inclusivity.

Integrating local leaders in the formalisation process has the potential to raise the uptake of title deeds. Institutions in Africa have long relied on local leaders (Michalopoulos and Papaioannou, 2013). While formalisation can be seen as eclipsing their role in the land tenure system, these leaders are complementary to state capacity when they are formally integrated (Henn, 2020). For instance, property tax collection by local leaders raises more revenue than collection by state agents because of their knowledge of local individuals' payment propensities (Balan et al., 2020). If leaders know and will reveal information on the willingness-to-pay for title deeds, it can be used by the state to better target fees, i.e. by charging less to plot owners with lower willingness-to-pay. This can raise uptake while still covering project costs. However, extracting this information accurately can be difficult if leaders have private reasons to favour some property owners in their neighbourhood. Two obvious questions arise which are the focus of our paper: are leaders informed about the willingness-to-pay for title deeds? And if so, will they share this information accurately when they are able to influence the prices faced by their neighbours?

This paper is related to a literature that studies the use of agents to target subsidies for the poor, to identify individuals with high returns to loans, and to report corruption (Basurto et al., 2018; Niehaus et al., 2013; Olken, 2009). Agents may have different preferences from the social planner and so strategically give misleading information. In a closely related paper to ours, Rigol et al. (2020) test whether cash incentives can encourage entrepreneurs to report which of their peers have the highest marginal returns to a loan. Our paper is, to the best of our knowledge, the first to study whether agents can be used to extract information on willingness-to-pay.

There is also a long literature on eliciting willingness-to-pay for non-market goods. In a related paper, Ali et al. (2016) estimate the demand for title deeds in a neighbourhood of Dar es Salaam

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could take part in regularisation schemes and obtain CROs. The paper concludes that the government emphasis on CRO partly explains low demand for RL. Crucially, it also demonstrates that there is social support for land registration in Dar es Salaam, despite of low uptake of land titles.

<sup>83</sup> Beyond the literature, key policy makers at all levels of government also suggested this to the authors.



using a take-it-or-leave-it randomisation of title fees. Their method estimates mean compliance conditional on fee size, and so cannot be used to determine individual willingness-to-pay. In another related paper, Berry et al. (2020) elicit the willingness-to-pay for water filters using the Becker-deGroot-Marschak (BDM) method. This method does allow the researcher to estimate individual willingness-to-pay, however the policy maker cannot use it to set fees in practice.<sup>84</sup> Our paper provides a method (by eliciting third party information) that both identifies individual willingness-to-pay and can be practically implemented.

In another related study, Balan et al. (2020) show that tax collection by local elites can raise more revenue than collection by state agents. Their evidence suggests that the primary mechanism through which this works is informational advantages of chiefs that enabled them to better target tax visits based on households underlying payment propensities. They test this with a treatment arm where state collectors meet with local chiefs who indicate, address-by-address, ability and willingness-to-pay. Our paper sheds light on this particular mechanism by directly measuring the ability of local leaders to predict willingness-to-pay and by studying the conditions under which this information can be accurately extracted.

Our paper makes three contributions. First, we challenge the view that the low uptake of title deeds in Dar es Salaam is due to plot owners not recognising, or not needing, the benefits from tenure formalisation (Briggs, 2011). In fact, we provide evidence of significant demand for title deeds, albeit at lower prices than the government is currently charging. We estimate the demand for property titles using the Becker-deGroot-Marschak (BDM) method which incentivises respondents to truthfully reveal their willingness-to-pay.<sup>85</sup> Roughly 40% of plot owners in our study are willing to pay fees equal to the monthly income of a typical household. This is much higher demand than is found in previous work in Dar es Salaam (Ali et al., 2016). Yet, demand remains lower than current fees. Therefore, we suggest that the government could set lower prices in order to raise the uptake of titles.

Our second contribution is to show that local leaders have accurate information about both the aggregate demand curve in their neighbourhood, as well as the ability to distinguish variation in willingness-to-pay across owners in their neighbourhood. This is true even when conditioning on the fee size, or property value. Therefore, the local knowledge of community leaders can be used to set prices of land titles to raise uptake and collect sufficient revenue. This would help to make formalisation inclusive for the urban poor and financially viable for the government.

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<sup>84</sup> The BDM cannot be used in practice by the policy maker because it relies on the credible incentive that the customer will be able to buy the good at a random price.

<sup>85</sup> The BDM method was originally developed by Becker et al. (1964) and is still used at the frontier of applied work (Berry et al., 2020).

Our third contribution is to show that, when predicting willingness-to-pay, leaders are influenced by an environment where their predictions are used to allocate subsidies. However, almost all these distortions can be mitigated with a simple cash prize for ex-post accuracy. Notably, we find that leaders only distort their responses on the aggregate demand. In fact, we find no evidence that this environment affects leaders' predictions when it comes to discrimination across different plot owners in their neighbourhood.

As part of a follow-up study, we collected data on each invoice's progress file to examine the stages of the title acquisition process, thereby identifying further bottlenecks on the supply side of the formalisation project. Additionally, we interviewed a sub-sample of leaders to further investigate some of our experimental results. Finally, forty-two of the plot owners participating in our experimental sessions were selected, at random, to also undertake in-depth interviews digging into the determinants of their willingness-to-pay, including the expected benefits and costs of tenure formalisation, alongside other factors.

Results from this qualitative work on plot owners' demand are discussed in a companion paper (Manara and Regan, 2020). In summary, this paper argues that most plot holders expect both private and public returns from the title deed, which explains substantial demand for regularisation in the study area. Expected benefits pertain primarily to security of tenure and, to a lower degree, access to credit. Low uptake is the result of three factors. First, the price of CRO exceeds willingness-to-pay for most respondents (as will be demonstrated in this chapter). Second, the survey process provides considerable benefits by enhancing tenure security, which reduces the need for title deed acquisition. Third, the title deed does not provide other immediate benefits beyond those already gained at the survey stage of regularisation. Thus, there is a tendency to delay and postpone uptake to a later date when one of three things arises: the household budget, the cash available, or an immediate need for the title deed.

The paper proceeds as follows. The experimental setting and design are described in sections 5.2 and 5.3, which cover the study context and data collection methods. The data is described in section 5.4 including a description of the demand elicited by BDM. Results in section 5.5 show leaders' ability to predict demand on the aggregate and for price discrimination. Sections 5.6 and 5.7 discuss the follow-up study and the policy implications of research findings. In section 5.8 we conclude.

## 5.2 Context and setting

### 5.2.1 Conceptual motivation for extracting willingness-to-pay

In this paper we propose that, by collaborating with leaders who have local knowledge, the central government can more effectively target fees to both neighbourhoods and individual plots and owners. In doing so, this price discrimination could raise uptake while still meeting the fee requirements to cover the project cost. By price discriminating, the government can cross-subsidise and thereby raise the revenue required to make a titling programme cost effective. The potential gains are twofold. First, conditional on the project being complete, price discrimination can be used to recover the Harberger triangle deadweight loss. In a simple example this would mean waiving fees for particular individuals who are identified as having a low ability and willingness-to-pay. The second set of potential gains can be much larger. In a context where projects are only built if the expected revenue is above the fixed cost, then price discrimination can make the entire project viable which can lead to significant gains (Kremer and Snyder, 2018). This reasoning is similar in spirit to Romer (1994) who shows the potential for large gains from trade when ‘new’ goods are introduced in the market by raising enough revenue to cover a fixed cost of entry.

An alternative response is simply for the government to cover these project costs and give away the titles for free. There are two reasons why this may not be possible. First, the government may not be able to secure the necessary funds to do so, or the efficiency of raising public funds may be so low as to make it unviable. This may be especially true if channels of raising revenue are limited or wasteful as is the case in many developing countries (Pomeranz and Vila-Belda, 2019). Secondly, a growing body of research underscores that building capacity for revenue collection is important for state development (Besley and Persson, 2014). From this perspective, governments should not universally subsidise formalisation, but rather encourage those with higher private benefits to make more of a contribution to the public fund. Finally, while it might seem radical to advocate that the government price discriminates when allocating property titles, it is important to observe that the current fee structure already employs a price discrimination strategy. Invoice fees are calculated based on location, land use, and individual plot size. Further, in the private market for survey services, a basic version of leader-elicited price discrimination is already employed. The largest surveying and planning company in Tanzania offers a ‘free lunch’ to individual plot owners that cannot afford to pay the survey fees. To do this, they hold discussions with local leaders who help them identify the plot owners with the lowest willingness-to-pay. If these individuals do not own plots above 800 sqm, they are offered the service for free.<sup>86</sup>

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<sup>86</sup> From authors’ discussions with two of Tanzania’s leading survey companies.

## 5.2.2 Experimental setting

Our study was conducted in Dar es Salaam where the Tanzanian Ministry of Lands, Housing and Human Settlements Development (MLHSD) designed and implemented a pilot project of land tenure formalisation, starting in the Kimara Ward of Ubungo Municipality in 2016. Here, uptake has been less than 13% after the first two years. Since the government has fronted the fixed costs of surveying and planning, they have lessened coordination issues, and now plot owners can simply pay their invoice to complete the process of acquiring a title. The title that we study is a legal document of ownership, Certificate of Right of Occupancy (CRO), which is supplied by the MLHSD and provides the highest protection by law in the country. A CRO formally recognizes a 66-year lease of a plot of land from the government. Legally, a CRO provides private benefits in four ways: compensation in the case of government-led expropriation, protection from land disputes, use as collateral with mainstream banks, and legal transferability of land.<sup>87</sup>

A plot of land must be surveyed and approved by the municipal town planning office to be eligible for a CRO. There are scale economies to surveying: the survey of a standalone plot may cost around 6 million TSh while the average cost drops to 17% of this when 10 plots are surveyed at once, 5.8% for 100 plots, and for large scale projects with more than 1,000 plots the average cost is about 0.2 million TSh.<sup>88</sup> For this reason the MLHSD has run a pilot programme in the Ward of Kimara, surveying plots at scale. The fees for CROs cover survey, planning and administrative costs. **Figure 1** shows an example of an invoice from the Kimara programme with charges that include costs for surveying and planning, administrative fees, a land value capture ‘Premium’, and ‘Revolving Fund’. The latter is a mark-up used to subsidise future surveying projects. Some fees are fixed (Application, CRO, and Deed Plan), while all others vary with plot size and land value. Facing these fees, demand for CROs has been low. This motivates concerns over the effectiveness of the government’s pricing strategy for raising revenues and supplying affordable CROs.

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<sup>87</sup> More specifically, owners of a CRO who are expropriated by the government are entitled to higher compensation, and since surveying is a pre-requisite, documentation of exact plot boundaries mitigates potential conflict with neighbours (Wolff et al., 2018). While ownership of a plot without CRO can be enough to access small loans, these typically have a maximum ceiling of 20 million TSh, when the informal sale agreement is used as collateral. Instead, there is no ceiling for loans pledged against the CRO: in this case, the loan amount is only limited by the collateral value and the bank’s single borrower limit (Manara and Pani, 2020b). For land sales, the CRO provides the buyer a guarantee of the seller’s rightful ownership. While land is often sold informally, these types of sale are susceptible to scamming with land being sold to multiple people. Wolff et al. (2018) describe a case in Kigamboni, Dar es Salaam, where a single plot was sold to over 30 individuals.

<sup>88</sup> From authors’ discussions with two of Tanzania’s leading survey companies.

We conduct two lab-in-the-field experiments with 146 owners and 90 local leaders (*wajumbe*)<sup>89</sup> from fifteen neighbourhoods (*washina*)<sup>90</sup> in two sub-wards (*mitaa*),<sup>91</sup> where surveying was complete and invoices issued to plot owners. These owners had yet to pay their invoice by the start of the intervention (April 2019), over three years since the formalisation project commencement. The leaders in our study have different hierarchical positions and party affiliation,<sup>92</sup> but all have been in charge at least for one mandate since the announcement of the formalisation project. Importantly, while working closely with the lower level government (mtaa chairmen and executive officers), these leaders are non-state actors. The election process is regulated by the party,<sup>93</sup> and they hold unpaid positions outside of the government apparatus. Their role is mostly political on paper, but in practice it encompasses political, social and administrative tasks beyond an official mandate. For example, wajumbe organise and encourage residents' attendance of public meetings.<sup>94</sup> Furthermore, they are involved in solving family disputes, issuing identification letters (e.g. to banks, schools and government), monitoring service provision (e.g. waste collection) and facilitating government projects (e.g. distribution of IDs). Finally, the mtaa chairman and executive officer often engage wajumbe as witnesses in cases of land dispute and, more generally, to validate informal ownership when this is required by third parties, e.g. prospective buyers, municipal or bank officers (Manara and Pani, 2020c – Chapter 4 of this thesis). In fact, wajumbe are the ultimate source of knowledge on local land matters, which is why we propose eliciting demand for titles from them.<sup>95</sup>

There are roughly six wajumbe in each neighbourhood or shina under study, which enables us to have multiple leaders provide information on the local demand. These neighbourhoods

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<sup>89</sup> In the singular, 'mjumbe'.

<sup>90</sup> In the singular, 'shina'. Typically, it includes a couple of hundred plots.

<sup>91</sup> In the singular, 'mtaa' is the smallest administrative unit and the lowest level of local government in Tanzania (sub-ward). Typically referred to as 'street', it contains a few thousand plots.

<sup>92</sup> In our study area both the ruling CCM party and the opposition Chadema party were represented by wajumbe and, in each neighbourhood, a given party will have one mjumbe and several assistant wajumbe.

<sup>93</sup> The National Election Committee regulates and supervises the election of the mtaa chairmen. In this case, the party reviews several candidates and selects one contestant to run for the mtaa election, whereby all residents have voting power. Conversely, the election of wajumbe is managed by the political parties. In this case, candidates are reviewed by the party office at the shina level. The party committee allows some candidates to run for elections. Normally, these are active members of the party. Voters must be registered with the party and residents of the shina. After election, each mjumbe appoints four or more assistants who must be approved by the party committee. These will automatically join the committee. The assistants have the same role as wajumbe, acting on their behalf when the latter are absent. Typically, wajumbe collaborate with their assistants on many tasks.

<sup>94</sup> Including, but not limited to, the political party meetings.

<sup>95</sup> In fact, predictions by decentralised leaders are likely more accurate than those by chairmen and executive officers who control over a thousand plots and therefore have less fine-grained knowledge. Additionally, for ethical concerns, we prefer to have multiple leaders predict the plot owners' demand for land titles. Using an average prediction to determine the discounts available through the study mitigates the impact of one leader intentionally favouring or penalising one plot owner for personal reasons beyond their willingness-to-pay.

typically contain around 250 plots. They are all located in Kilungule A and B, two mitaa of the Kimara Ward. For simplicity we refer to our study area as Kilungule, shown in **Figure 2**.

### **5.3 Data collection**

The full timeline of the study is depicted in **Figure 3**. In brief, first we collected data for the sampling process. Then we conducted the leader survey and experiment. Finally, we held information sessions with plot owners, and after a few weeks we invited them for their experimental sessions. These passages are fully described in this section. Furthermore, forty-two plot owners were selected at random to undertake in-depth interviews digging into the determinants of their willingness-to-pay. Last, we conducted two rounds of follow-up data collection in January and October 2020 to gather administrative records on the history of each invoice's file and to interview a sample of leaders who had taken part in our experiment. We present and analyse this data in section 5.6 of this paper.

#### **5.3.1 Sampling**

We collected CRO invoice records of all 1,482 invoiced plots in our study area and matched 1,401 of these to geo-located plot boundaries. Of these, only 13% had purchased their title deed, even though 28% had been invoiced over two years earlier, and only 3% had been invoiced within the last six months. From this population we randomly sampled fifteen invoiced plots from each neighbourhood in our study area, for a total of 225 plots. We stratified our sampling so that low, medium, and high value plots were represented in each neighbourhood. We then conducted a rapid survey of the selected plot owners in order to gather their contact information, occupancy (i.e. owner or tenant), and their social connection to each leader (i.e. whether they knew or ever interacted with their leaders). Following the invoice collection, we conducted a census of the 96 leaders in our study area which allowed us to match them to neighbourhoods, classify their party affiliation (CCM or Chadema) and hierarchical position (main leader or leader assistant), and geo-locate their residence. From this population we randomly assigned leaders to one of three treatment groups. We stratified the randomisation based on political affiliation and physical and social proximity to sampled invoiced plots.

All randomisation (both for the sampling of plot owners and the allocation of leaders to treatment groups) was done mechanically during a series of public meetings where the process could be observed. Despite the potential for mechanical error, this was an important procedure to garner trust with the community. It also provided a practical experience with randomisation so that those who also participated in the BDM at the end of the study were already familiar with the lottery process.

### 5.3.2 Other information sessions

We invited all 225 sampled plot owners to attend an information session to introduce them to our project, two to three weeks before their actual experimental session. The focus of the information session was on familiarising the respondents with the BDM procedure. They were told that during the experimental session they would be asked, “What is the maximum price that you would and could pay in the next 10 days for your invoice towards your title deed?” We then explained the concept of willingness-to-pay both in theory and with examples. They were told that on the research day they would have an opportunity to commit to pay their invoice if it was offered at a price they could afford, and so it was important that they thought carefully over the following weeks about their willingness-to-pay for the title deed. We then explained the specifics of the BDM method and that their best strategy was to determine for themselves their true willingness-to-pay and then reveal exactly that price to the surveyor. We used theory and examples to show why this was the best strategy for them. We finished the session by practicing with volunteers for either a soda or an aerial photo of their plot (see **Figure 4** for an example).<sup>96</sup> Throughout the session we asked for feedback from respondents until it was clear they understood.

Owners were given at least two weeks between the information session and the price elicitation session. During this period, they were encouraged to consult others (family, joint plot owners, friends, etc.) on their willingness-to-pay and plan out a strategy for gathering the funds they may need if they won a discount. This time was also used to sort out individual issues with each invoice. Some of these issues were simple for us and the Ubungo Municipal Office to accommodate, such as the misspelling of names, partial payments already made, and the addition of spouses to invoices. In a few exceptional cases, we allowed ‘decision makers’ to participate on behalf of the true owner on the invoice.<sup>97</sup> For other issues we had to drop invoices from our sample. This was the case where, by the time of starting the study, invoices had already been fully paid or the plots sold (19 cases), where at least one owner had deceased (4 cases), when the owner lived out of country and could not be reached (13 cases) or had conflicts (5 cases) over the rightful ownership. After discarding these issues there were 184 remaining invoiced plots.

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<sup>96</sup> For the practice rounds, we used scripts similar to the actual experimental script in Appendix A.

<sup>97</sup> This was done in two exceptional cases, one where the plot owner had been living in Canada for over thirty years and his brother was the de-facto owner of the plot, and a second where the plot owner was disabled and her son took on responsibility for the plot. In both cases the decision maker was responsible for paying the invoice, and in neither case did we change the name of the plot owner on the invoice.

### 5.3.3 Owner survey and price elicitation

We invited 184 eligible plot owners to participate in a survey and price elicitation lottery, and 146 of these attended. We also invited a leader to each session in order to establish trust with the respondents. The survey collected information on demographics, a CRO knowledge test, perceptions on tenure security, and perceived costs and benefits of a CRO. Following the survey, each respondent participated in the BDM price elicitation. This began with a practice round where the respondents were randomly assigned the opportunity to purchase either a soda or an aerial photo of their plot (see **Figure 4** for an example) through the BDM mechanism. Following the practice, they were offered the opportunity to acquire the title deed for their plot at a discounted invoice price, again through the BDM mechanism. If the respondent won the discount, they were scheduled to make their payment within ten days.<sup>98</sup>

The BDM procedure that we implement closely follows that of Berry et al. (2020) with slight adjustments to our context. Respondents stated their willingness-to-pay (bid) and participated in a lottery extracting a new invoice price (draw). According to standard BDM procedure, if the draw were lower or equal to their bid, they would be offered the title deed at the new discounted price; if the draw were higher, they would not be offered a new price. Scripts can be found in Appendix A. Detailed explanation and practice rounds enabled respondents to understand that their bid should represent the maximum price they could and would like to pay; their bid could not be changed after the lottery; and, upon winning, they must make the according payment within ten days. Once the bid for the invoice was finalised, a price was drawn which determined whether the respondent would pay for the invoice at the drawn price.<sup>99</sup>

There were 39 respondents who drew prices lower than their bid and so won a discounted invoice value. For each, we confirmed that they could pay and that they had a plan to collect the necessary funds. Finally, we had them sign off on their bid value and draw outcome. All participants received a 10,000 TSh cash allowance for their participation, and winners of

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<sup>98</sup> Because the price of the title deed was high for many households, we did not ask for immediate payment. First, asking respondents to bring the full amount of cash to cover their bid value would be a significant wasted effort in the case that they did not win. The second reason was to allow enough time to gather funds from family, friends, or micro-lending groups. In fact, 15% of respondents confided asking the financial support from family and friends to make higher bids (Manara and Regan, 2020).

<sup>99</sup> Practically, the respondents drew 1 of 75 plastic balls from an opaque jug. Each ball corresponded to a price between 0 and their full invoice value, which was recorded on a reference sheet. The exact distribution depended on the size of their plot (thus, indirectly, the invoice value). In order to maintain goodwill, the distribution of prices was shown upon request just before the price was drawn and none of the respondents asked to change their bid after seeing the distribution. An example of this distribution, for plots between 400 and 500 sqm, can be found in Appendix A.



discounts were required to use this as a down payment in order to discourage overstating their willingness-to-pay. Still, five (12.8 percent) of the winners did not complete the purchase.<sup>100</sup>

### **5.3.4 Leader survey and experiment**

We conducted surveys with the leaders one month in advance of the first plot owner price elicitation session. All 96 leaders in our study area were invited to participate and 90 (93.8 percent) attended and completed the survey. The questionnaire consisted of demographics, a CRO knowledge test, social network, and predictions of plot owner characteristics. The network and prediction questions all related to the owners of the 15 selected plots in each leader's respective neighbourhood. For reference, the leaders were given both official names and nicknames of each owner as well as a photo of the particular plot that was selected.

The survey concluded with price elicitation tasks. Leaders were asked to rank each of the 15 plot owners in their neighbourhood in terms of their willingness-to-pay for the title deed. After ranking, leaders had also to predict, for each plot owner, their exact willingness-to-pay. Each leader conducted the task under their randomly assigned treatment. The exact scripts used can be found in Appendix B.

Leaders assigned to the *control group* were told that the research was conducted for academic purposes only. They were encouraged to be as truthful and accurate as possible to enable high quality research. Finally, they were ensured that their answers would not be used to change any procedure over the course of the study.

Leaders in the *stakes group* were informed that their responses to the price elicitation tasks would be used to change procedures in the remaining study; particularly, to help decide which plot owners would have higher chances to win high discounts through the lottery. If leaders suggested a plot owner had a low willingness-to-pay, we would adjust the distribution of discounts available in the lottery to this plot owner to make it more likely that they win a high discount. Importantly, we adjusted the distribution of available discounts based on an average of leaders' predictions for the same plot owner, thereby mitigating concerns over the ethical aspects of this treatment.<sup>101</sup>

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<sup>100</sup> Three of these cited unforeseen health issues with a family member that became a priority for the funds that were allocated to the title deed. One was unable to borrow the money that she had expected. The last one went away on business and was unwilling to arrange a representative to make her payment.

<sup>101</sup> Specifically, using an average prediction mitigated the impact of one leader intentionally favouring or penalising one plot owner for personal reasons beyond their willingness-to-pay.

Finally, leaders in the *incentives group* received the same instructions as the stakes group, but they had the opportunity to earn cash for their accuracy. We adopted an ex-post payment rule that would be implementable in a policy setting.<sup>102</sup> Leaders were given simple payment examples to work through. Each leader was reminded that being as truthful and accurate as possible was the best way to earn the cash. At the end, the leader with the most points was paid 30,000 TSh and the four runners-up were paid 20,000 TSh each.

## 5.4 Data and sample descriptives

### 5.4.1 Summary statistics and balance

In **Table 1** we present mean characteristics for the whole sample of both the plot owners (column 1) and leaders (column 2). Compared to leaders, plot owners tend to be younger and more highly educated but score worse on a short quiz about CROs and have lower household monthly incomes. While the majority of owners are male there is a significant share of female ownership (73% of plots have sole ownership, and 35% of these are owned by women). This is in line with previous findings that the cultural environment in Dar es Salaam is not particularly hostile to co-titling or female ownership (Ali et al., 2016). Leaders are also slightly more likely to be men, but 40% of them are women. Considering potential heirs, 92% of plots are owned by individuals with at least one child. The average CRO invoice value is 527,000 TSh, or roughly two and a half times the median monthly income in our sample. Most plots are occupied by their owners, still 28% are owned by absentee landlords. A full 86% of plots were acquired by purchase as opposed to inheritance or squatting, though only 25% of all plots have a certificate of sale (*hati ya mauzo* or sale agreement). Exactly half of the plots are owned by individuals with at least one other plot in Tanzania.

Leaders themselves tend to own their homes: 94% own the plot they live on while the remainder all live on a plot owned by a member of their household. Leaders typically have a long history of residence in Kilungule. While only 7% have settled in the past six years, a full 38% have been living there for over 19 years. Out of the fifteen owners sampled for each neighbourhood, leaders know on average 12 of these, though only 4.3 have ever come to the leader for official assistance. Leaders have few social connections among the plot owners in the study: on average 0.22 owners are family, 1.4 are friends, 1.8 meet regularly for religious purposes, and 1.3 are considered highly esteemed by the community. Also presented in **Table 1** are differences in leaders' characteristics between the stakes and control groups (column 3), and differences

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<sup>102</sup> Before the price elicitation tasks, leaders were explained that, at the end of the study, we would pick one price level and observe which plot owners stated willingness-to-pay above that price. For each plot owner with stated willingness-to-pay above the threshold price, leaders would score a number of points corresponding to the assigned ranking position of that plot owner. This is implementable in a real-world setting, since the policy maker will observe which of the plot owners do in fact uptake titles. If titles were purchased by owners for whom the leader ranked high, then the leader was accurate.

between the incentives and control groups (column 4). There are only a few marginally significant differences, though standard errors are large. The stakes group has fewer women and more leaders with household income below 100,000 TSh compared to the control group. The incentives group has more leaders with their home plot surveyed than the control group.

#### 5.4.2 Demand for CROs

**Figure 5** describes the demand for CROs elicited through the BDM. For the BDM demand curve in **Figure 5a** we show, for each price, the share of plot owners whose bid was greater than or equal to that price. This is done by running successive logit regressions at each price point and correcting for heteroskedasticity in the calculation of the confidence intervals. While the full sample of plot owners were not willing to purchase a title deed at their invoiced price, there is still a significant amount of demand for CROs. Over 40 percent of plot owners would be willing to pay 200,000 TSh, which is more than the monthly household income of half of our respondents. However, demand is still much below the invoice fees that are currently being charged. The median invoice in our sample is approximately 500,000 TSh. At such a price, less than 10 percent of plot owners would be willing to pay. Even if all plots were charged 170,000 TSh (the minimum invoice value observed in our sample), roughly 50 percent of plot owners would not purchase a title deed. In **Figure 5b** we compare the elasticity of demand calculated from the smoothed version of the demand curve above. There is a wide range (200-600,000 TSh) where demand is relatively elastic, beyond which we have trouble estimating due to the sparsity of observations in the tail of the distribution.

#### 5.4.3 Leader predictions and placebos

Because we are interested in knowing whether leaders have accurate knowledge of the willingness-to-pay for CROs in their neighbourhoods, we first check if they have knowledge on a related set of plot characteristics. In **Table 2** we run regressions based on the model:

$$y_{ij} = \beta \hat{y}_{ij} + x'_j \gamma + \varepsilon_{ij} \quad (1)$$

where  $y_{ij}$  is a characteristic of plot  $i$  related to leader  $j$ ,  $\hat{y}_{ij}$  is leader  $j$ 's prediction of plot  $i$ 's characteristic and  $x'_j$  is a vector of leader controls for randomisation strata, neighbourhood, and surveyor id.

Panel A shows that leaders' predictions of plot and plot owner characteristics are positively associated with their true characteristics. In column 1, leaders are able to distinguish between owners with higher or lower income. Our estimates for income rank are very similar to those found by Rigol et al. (2020) for Indian entrepreneurs' predictions of their peers' income rank. In

column 2 we show that leaders' predictions of the CRO invoice value rank are positively associated with the true rank in our sample, and for column 3 this is also true across all the fifteen plots selected for the study (including the attriters).<sup>103</sup> Therefore, column 3 signals that our plot owner survey sample is not selected towards plots that are easier to predict. In columns 4 and 5 we can see that leaders also have some ability to predict whether plot owners have paid their property tax or if they have an informal sale agreement.

Panel B does placebo tests by comparing the relationship of leader predictions and actual characteristics across treatment groups. It is a placebo because these predictions were given by leaders *before* they were assigned their treatment. The stakes group has a slightly higher differential between predicted and observed for each characteristic, but there are no significant differential coefficients of either the stakes or the incentives treatments. This suggests that all leader groups have similar predictive capacity.

## 5.5 Results

### 5.5.1 Leader predictions of aggregate willingness-to-pay

**Figure 6** compares demand for CROs elicited through the BDM mechanism with that elicited through local leaders. For the BDM demand curve, we show for each price the share of plot owners whose bid was above that price. We follow a similar procedure for the leader predicted demand curve but use the leader's prediction of the plot owner's willingness-to-pay instead of the owner's bid. Since there are multiple leaders for any given owner, and so multiple predictions of their willingness-to-pay, we cluster standard errors at the plot owner level. The same 146 plots are used to construct both the BDM and leader predicted demand curves.

In **Figure 6a**, we only use leaders under the control group and compare the demand curve based on their responses with the BDM results. Whether demand is elicited from the BDM mechanism or predicted by leaders, the curves are strikingly similar. At least on an aggregate level, leaders seem to have knowledge of the distribution of willingness-to-pay in their neighbourhoods.

When leaders are told that their responses will be used to determine the likelihood that a plot owner receives a discount (stakes), they distort their responses. **Figure 6b** uses only leaders under the stakes treatment and compares the demand curve based on their responses with that based on the BDM. For most prices where demand is positive there is a large gap between the demand curve elicited from this group of leaders compared to the BDM. This suggests that, despite their predictive ability, eliciting aggregate demand from leaders may be difficult in a

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<sup>103</sup> The full sample of plots includes those plot owners that did not participate in the research, despite being selected. Therefore, their actual willingness-to-pay, elicited by BDM, is unknown to us.

setting where their responses are used to price CROs in the community. One aspect of this result is counter-intuitive: if leaders wanted to increase the chances of high discounts, they should have stated that plot owners have low willingness-to-pay. Instead predictions by leaders in the stakes group were biased upwards. In Section 5.6.1 we discuss this result in detail based on follow-up interviews with local leaders.

However, offering a monetary incentive to leaders for their predictive accuracy can mitigate the distortions created in the stakes environment. **Figure 6c** uses only leaders under the incentives treatment and compares the demand curve based on their responses with that based on the BDM. Whether demand is elicited from the BDM mechanism or predicted by leaders with incentives, the curves are statistically indistinguishable. This is not only due to wide confidence intervals. The largest gap between the point estimates of leader and BDM elicited demand curves is a 0.08 point difference, and for most prices the gap is less than a 0.03 point difference. The cash incentive has shrunk the gap observed in the stakes group, where leaders were told that their responses would be used to determine discounts but they did not receive incentives for accuracy.

### 5.5.2 Leader ability to distinguish willingness-to-pay across owners

While leaders may be able to predict the aggregate distribution of demand fairly well, it remains to be seen if they can also distinguish between individuals with high and low willingness-to-pay. In this section we describe the ability of leaders to distinguish individuals with high and low willingness-to-pay by running regressions based on the model:

$$w_{ij} = \beta \hat{w}_{ij} + x'_j \gamma + \varepsilon_{ij} \quad (2)$$

where  $w_{ij}$  is willingness-to-pay of plot  $i$  related to leader  $j$ ,  $\hat{w}_{ij}$  is leader  $j$ 's prediction of plot  $i$ 's willingness-to-pay and  $x'_j$  is a vector of leader controls for randomisation strata, neighbourhood, and surveyor id.

In **Table 3** Panel A we show that the coefficient on leader prediction of different measures of owners' willingness-to-pay is always positively associated with the true measures of owners' willingness-to-pay. Column 1 considers the within neighbourhood rank: an individual predicted to be one position higher in the ranking is on average 0.2 positions higher in the rank of plot owners' bids. Column 2 uses the actual level of willingness-to-pay: an individual predicted to bid 10,000 TSh above another will, on average, bid 1,000 TSh more. Column 3 takes the log of willingness-to-pay: a one percent increase in predicted willingness-to-pay translates to a 0.33 percent increase in actual willingness-to-pay, on average. Column 4 takes the percentile rank of all owners in the sample (rather than within neighbourhood). Here, moving from an individual

at the median to one at the 60th percentile of predictions results in a 2.3 percentile increase in the true willingness-to-pay, on average.

Finally, columns 5 and 6 use the probability of being the top or bottom rank in the neighbourhood: an individual is 15 percentage points more likely to be the highest willingness-to-pay in the neighbourhood if predicted to be so, and 24 percentage points more likely to be the lowest willingness-to-pay if predicted so. On this last point, it is interesting to note that one of the largest land surveying companies in Tanzania runs a ‘free lunch’ programme, consulting local leaders before charging fees to determine plot owners in the neighbourhood who are in need of a discount. In one of their larger projects, they surveyed over 5,000 plots and used leader information to waive fees for about 2% of the plot owners.<sup>104</sup>

Leaders may have knowledge of individual willingness-to-pay, and yet, they may distort their responses if it can help certain plot owners win discounts or if they are paid incentives for accuracy. In Panel B we analyse the impact of the stakes and incentives environments. To do so we adjust model 2 to account for the differential coefficient for leaders in different environments:

$$w_{ij} = \beta \hat{w}_{ij} + \beta^S \hat{w}_{ij} 1(j \in \text{stakes}) + \beta^I \hat{w}_{ij} 1(j \in \text{incentives}) + \alpha_S + \alpha_I + x'_j \gamma + \varepsilon_{ij} \quad (3)$$

where  $1(j \in \text{stakes})$  is an indicator if leader  $j$  was assigned to the stakes environment,  $1(j \in \text{incentives})$  is an indicator if leader  $j$  was assigned to the incentives environment, and  $\alpha_S$  and  $\alpha_I$  are dummies for each treatment group. Returning to **Table 3** Panel B, none of the differential coefficients of either environment is significantly different from zero at the five percent level. Therefore, we find no evidence that the stakes or incentives environments create distortions across the individual level predictions.

### 5.5.3 Property characteristics to distinguish willingness-to-pay across owners

The Tanzanian government currently charges for CROs with a formula based on ward level land values, plot area and land use. In this section we examine the ability of this formula to target high and low willingness-to-pay individuals. In addition, we create a measure of property values based on photos of the plot, and local knowledge of the area.<sup>105</sup> We consider this measure of property values as another potential indicator upon which to price discriminate. Below we show how variation in property and invoice values relates to the willingness-to-pay of plot owners.

<sup>104</sup> From authors’ discussions with the company.

<sup>105</sup> This follows the procedure that is used for property valuation by local governments and the Ministry of Lands. The valuations are based on the subjective determination of three students from Ardhi University, a local university, which specialises in surveying, planning, and valuation.

In **Table 4** we run regressions of the general form:

$$w_{ij} = \alpha z_{ij} + \beta \hat{w}_{ij} + x'_j \gamma + \varepsilon_{ij} \quad (4)$$

where  $z_{ij}$  is either invoiced fee or property valuation of plot  $i$  related to leader  $j$ . When willingness-to-pay is transformed, we also transform the observable characteristic accordingly, e.g. in Panel A column 1 where the outcome is the rank of willingness-to-pay, we use the rank of invoice value as the explanatory variable.

In Panel A we use invoice value unconditional of the leader prediction of willingness-to-pay. Across columns 1-5, invoice values are positively associated with individual willingness-to-pay. Column 6 shows that the bottom rank willingness-to-pay is particularly difficult to predict with the invoice value. Otherwise the invoice value correlates strongly with willingness-to-pay, with coefficients that are typically closer to 1 than the leader prediction in **Table 3** Panel A. Finally, we note that, while variation in invoice value closely follows that of willingness-to-pay, the average invoice value is more than 2.7 times that of the average willingness-to-pay (**Table 1** Column 1). In Panel B we include the leader prediction in addition to the invoice value. In columns 1-4 we show that, conditional on the invoice value, the leaders are still able to explain variation in the willingness-to-pay. This suggests that the invoice formula and the leaders' predictions could be applied complementary to one another. Finally, conditional on invoice value, leaders are not able to capture any variation when it comes to the top rank of willingness-to-pay. Instead, when considering the bottom rank, leaders are effective while the invoice value is not.

Moving to Panel C we use property valuation unconditional of the leader prediction of willingness-to-pay. In columns 1-4 the property valuation is positively associated with willingness-to-pay and the correlations are of similar magnitude to the leaders' predictions in **Table 3** Panel A. However, in columns 5 and 6 the subjective valuation of the property has no ability to predict the top or bottom ranked willingness-to-pay. In Panel D columns 1-4 we show that subjective property value and leader prediction are both able to describe variation in willingness-to-pay conditional on one another. In columns 5 and 6 only the leader prediction is able to describe the variation in the top and bottom rank willingness-to-pay.

Overall, we can conclude that leaders' predictions are still able to predict variation in willingness-to-pay, even after controlling for invoice and property values. Thus, their predictions could be used complementary to the formula that the government currently applies for a better price-discrimination strategy, particularly in order to make CROs more affordable to

the plot owners with the lowest willingness-to-pay. As seen, this level of information could not be obtained by considering the property value alone.

#### **5.5.4 Can willingness-to-pay cover project costs?**

In this section we do back-of-the-envelope calculations to determine whether the willingness-to-pay is high enough to cover the costs of the project. Currently, 13% of invoices have been paid and their average fee was 616,000 TSh. Therefore, the government raised about 80,000 TSh on average. We sampled plots from the remainder of invoices, and here the average willingness-to-pay was 194,000 TSh. Taking this figure as representative for the entire 87% of unpaid invoices, the maximum revenue that could be extracted from the remainder is  $0.87 * 194,000 = 168,780$  TSh on average. Together the average potential revenue is about 249,000 TSh per plot.<sup>106</sup> Considering that the average cost of surveying and planning for a plot is about 200,000 TSh for large projects (quote from two private survey companies), and comparing this to the average willingness-to-pay, we realise that the costs of surveying and planning are covered. Furthermore, there is an average gain of 50,000 TSh per plot, which could cover other administrative fees. Further revenue will also accrue through the annual land rent, which is currently relatively low (approximately 15,000 TSh for an average size plot). As discussed with key government officials from the MLHHS, the most onerous invoice items, Premium, Revolving Fund and Operational Cost, can easily be reduced or erased altogether. The first is a land value capture;<sup>107</sup> the second is a mark-up to subsidise further formalisation projects;<sup>108</sup> the latter is a variable levy by the Municipality.<sup>109</sup> These items amount to an average of 435,000 TSh per invoice. Reducing these would considerably lower the median invoice in our sample (527,000 TSh).

The simple calculation above demonstrates that willingness-to-pay outweighs the project costs. Furthermore, we note that the willingness-to-pay for the title deed, which we elicited in our study, does not capture the overall private gains to formalisation. In fact, in a separate study we document that plot owners already perceive large benefits to the process of surveying and allocating beacons, regardless of the title document (Manara and Regan, 2020). In addition, there are likely further gains to surveying and titling that are not internalised by the current plot owners, which will manifest in the long run (Michaels et al., 2020). Together this suggests that the gains to formalisation can far outweigh the costs of surveying and planning.

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<sup>106</sup> Note that this is a conservative estimate since the 13% of property owners who have already paid must have had a willingness-to-pay above their invoice fee. Here we assume that their willingness-to-pay was equal to the fee.

<sup>107</sup> On average, 190,000 TSh.

<sup>108</sup> On average, 115,000 TSh.

<sup>109</sup> On average, 130,000 TSh.



## 5.6 Follow-up study

### 5.6.1 Post-experiment interviews with leaders

In January 2020, we conducted follow-up interviews with a sub-sample (72 percent) of leaders in the stakes group<sup>110</sup> to understand why they overpredicted the aggregate willingness-to-pay in their areas (**Figure 6b**). According to the script (Appendix B), if leaders wanted to increase the chances of high discounts in their neighbourhood, they should predict that plot owners have low willingness-to-pay. Instead, predictions by leaders in the stakes group were biased upwards. Thus, stakes leaders have decreased the overall level of discount offered in their neighbourhood. To investigate this unexpected result, our follow-up questionnaire included a simple test<sup>111</sup> and further questions to assess: first, whether the script was understood incorrectly, and second, what other reasons (besides a genuine inability to predict) may have caused an upward bias.

We do not have evidence of any systematic inability to interpret the task correctly. However, our evidence does suggest that the script was not always immediately comprehensible. Indeed, tested on the comprehension of the script, all leaders demonstrated understanding the logic of the task correctly (except one). Yet, 35% suggested that the script was difficult to interpret.<sup>112</sup> Furthermore, after being informed of the study results, a full 78% indicated difficult comprehension as the most plausible explanation of upward bias, and a few leaders admitted they were initially confused by the task. Thus, although we do not have evidence of any systematic inability to interpret the script correctly, it is nonetheless possible that some leaders misinterpreted the task on the day of their experimental session. This might be the result of both script lack of clarity and the experimental environment. On the one hand, tension and fatigue may have increased the propensity to misunderstand a complex script.<sup>113</sup> On the other, we found evidence of experimenter bias. In fact, 39% of respondents suggested that most leaders would worry about depicting a certain image of their area and themselves. In this case, leaders would overstate the local willingness-to-pay in order to demonstrate to the researchers that their neighbourhood is not too poor, and they do not intend to take advantage of the study.<sup>114</sup>

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<sup>110</sup> We interrupted interviews when saturation was reached.

<sup>111</sup> For the test, leaders were presented the script of their experimental session and asked questions, such as: ‘If a leader wants to increase the chances of high discount for a plot owner which he knows has willingness-to-pay 200,000 TSh, what willingness-to-pay should he predict?’ (Options: 100,000 TSh; 200,000 TSh; 300,000 TSh). ‘If the leader wants to increase the plot owner’s chances of high discount, where should he place her plot in the ranking?’ (Options: At the bottom; In the middle; At the top).

<sup>112</sup> We asked respondents if most of their fellow leaders would understand the script correctly eliciting third party information in the spirit of the Bayesian truth serum (Prelec, 2004) to encourage truthful responses. This method assumes that it is easier to admit that the majority, instead of oneself, found the questionnaire hard to comprehend.

<sup>113</sup> On the same day leaders undertook a survey before their experimental session, which may have increased fatigue.

<sup>114</sup> Whilst all leaders may have wanted their areas to appear less poor, those in the control and incentives groups may have had other motivations to provide accurate responses (respectively, helping the researchers to collect high quality data, or winning cash prizes).

The follow-up interviews with leaders suggested two further points that are worth noting. First, the majority believe that most study participants have tried to increase the chances of high discounts for at least some plot owners, typically the elders, the poor, and those with many financial responsibilities (e.g. pending loans, dependent children). This suggests that leaders care about the tenure of vulnerable plot owners and are ready to actively help them to acquire the title deed at a lower price. Combined with the results discussed above, this underscores that leaders are both capable and motivated to identify the plot owners with the lowest willingness-to-pay.

*“Wajumbe are the foundation of the government, hence they are required to accomplish all tasks assigned by the government. If they were involved to suggest prices affordable to their people, they could help to raise the uptake of title deeds” (Leader 3).*

Second, and related to the quote above, most leaders claimed that they could contribute to raising the rate of formalisation in their neighbourhood. In fact, a full 70 percent recounted participating in some project activities, for example by identifying boundaries, organising meetings, and distributing invoices to plot owners.<sup>115</sup> However, only three interviewees (13 percent) were satisfied about this level of engagement, while the majority (61 percent) deem it insufficient.<sup>116</sup> In their opinion, the government would get twofold advantages from a closer collaboration with leaders. On the one hand, they can provide information on the local demand for titles, as demonstrated in this paper. On the other, *“leaders are essential to emphasise the project and motivate people to pay for the title deed” (Leader 12)*. Indeed, in this context plot owners tend to follow the advice of their leaders (Manara, 2020 – Chapter 3 of this thesis), because they *“trust the wajumbe” (Leader 8)* and *“have little information, despite urging the title deed” (Leader 20)*.

### **5.6.2 Further steps in the title acquisition process**

In January and October 2020, several months following the final price elicitation session (May 2019), we gathered administrative records on the history of each invoice's file. In a new centralised digital system, the land officers at Ubungo Municipality check off steps of the title acquisition process, from the invoicing of plots to the payment of invoices, and ultimately the collection of the title deed. This allowed us to follow the history of each plot's title acquisition process, as summarised in **Table 5**. We collected data for all untitled plot owners who were sampled for our study and won discounted prices (39), did not win discounts (107), or did not attend their experimental session (73). By January 2020, there were 14 ‘discounted price’ (36

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<sup>115</sup> Seven respondents who were not involved are either assistants or belong to the mtaa opposition party.

<sup>116</sup> The rest had no opinions on this matter. Many respondents provided motivations for the low engagement of leaders, for example explaining that the ruling party in the mtaa would exclude the opposition leaders from the formalisation project. More generally, others mentioned that these projects require technical expertise, therefore key actors are surveyors, planners, municipal and ministry officials.

percent), two ‘full price’ (2 percent), and four ‘attriters’ (5.5 percent) with allocated titles. Thus, it is clear that discounts have raised the uptake of titles. However, out of 20 allocated titles, only ten had already been collected. Nine months after, by October 2020, an additional five titles had been allocated, among which three to ‘discounted price’, one to ‘full price’, one to ‘attriters’. Altogether, 24 titles had been collected by that time.

This suggests the presence of bottlenecks on the supply side, extending the time and possibly the costs of title acquisition.<sup>117</sup> For example, amongst the 39 plot owners who received discounted prices and completed their payments under the research project by June 2019, many applications had stalled at the stage of ‘Conversion’ (preceding ‘Allocation’). This means that the Municipality needs to amend mistakes in the cadastral drawings and database, including simple typos or major issues of overlapping plot boundaries. Unfortunately, sixteen months after completing the payment, about half of the 39 plot owners are still at this stage.<sup>118</sup> This evidence highlights that the survey process can produce significant bottlenecks, if poorly organised and rushed, as many of our respondents complained. To conclude, we examined the average length of all stages in the acquisition process in order to identify other potential bottlenecks. On average, after ‘Conversion’, the ‘Allocation’ phase takes 134 days,<sup>119</sup> while collection typically occurs another 92 days later. It appears that the lengthier phases concern the data entry (five weeks), the approval of final documents (four weeks), and the preparation of the invoice (three weeks).<sup>120</sup> Thus, the main bottlenecks concern the phases of ‘Conversion’ and title deed collection.

## **5.7 Policy implications of research findings**

Despite of potential theoretical gains, as set out in the paper’s conceptual motivation, the government may not engage in first degree price discrimination by charging different prices to individuals. First degree price discrimination can be next to impossible for centralised policy makers with little to no information on the plot owners themselves. The centralised policy maker is likely to observe a very noisy signal of willingness-to-pay and cannot identify, for example, plot owners who should be subsidised. This is the key issue that this paper focused on, and we argued that it can be mitigated by gathering information on willingness-to-pay from local leaders. However, this solution raises non-negligible practical issues. The most obvious one is that extracting information on each individual plot owner entails considerable effort and investment of government resources, as each neighbourhood has thousands of plots.

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<sup>117</sup> Further costs can include the monetary and opportunity costs of travel to the Municipality, plus the risk of deteriorated institutional trust.

<sup>118</sup> Precisely, 49% are under ‘Conversion’, while 5% have yet to start this process.

<sup>119</sup> During this phase, documents are validated and signed off by the Registrar of Titles.

<sup>120</sup> Intended as working weeks.

Inaccuracies and favouritism cannot be detected as in our controlled environment. On the one side, it may be difficult for the government to credibly stick to these prices. For instance, a plot owner may hold out for a lower price if they see that they are being charged a higher price than a seemingly identical plot. On the other side, the government may be reluctant to such price discrimination schemes, anticipating public backlash. We are not aware of any legal framework that prohibits first degree price discrimination in the charging of fees for property rights in Tanzania.<sup>121</sup> However, land matters are highly political. First degree price discrimination may trigger perceptions of unfairness, complaints, disputes, and political consequences.

Nonetheless, our evidence is policy relevant in two important respects. First, it suggests that the government should lower titling fees across the board. In fact, the government is concerned that the price of regularisation is too high, and the MLHSD has recently established a ceiling to surveying fees (the first essential step of regularisation). A maximum price was set at 250,000 TSh in July 2018,<sup>122</sup> and further reduced to 150,000 TSh in April 2019.<sup>123</sup> However, we find that current titling fees (to pay on top of surveying fees) are *also* too high for most plot owners. Second, eliciting information on willingness-to-pay from local leaders could improve the allocation of titles and lead to welfare gains. This could be done either by engaging local leaders in targeting subsidies or by simply improving the quality of the information used in the existing third degree price discrimination conducted by the government. With regards to the first option, we note that in the market for surveying services (before title acquisition), private companies already ask local leaders to identify plot owners in need of a free survey. As discussed in section 5.2.1, the Tanzanian government cannot universally subsidise titles. Regularisation projects are costly and the charging of fees for title deeds is enshrined in Tanzanian law. In the absence of government data, local leaders could provide relevant information enabling the government to target subsidies to plot owners who cannot afford land titles despite of large perceived benefits.

We do accept that this programme may raise some of the issues of first degree price discrimination laid out previously. Therefore, we argue that third degree price discrimination may be a more viable option, by charging prices to groups of people instead of individuals. First, third degree price discrimination can provide benefits from improved information on willingness-to-pay. The same intuition applies that this price discrimination can lead to gains by recovering some of the Harberger triangle deadweight loss and by making the project viable in

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<sup>121</sup> The 1999 Land Act provides no definition about the methods by which fees must be determined, and simply states that “The Minister ... shall prescribe the rates of fees for all matters in respect of which, by this Act, prescribed fees are required to be paid by any person and shall keep such fees under continuous review” (United Republic of Tanzania 1999).

<sup>122</sup> <https://habarileo.co.tz/habari/2018-07-275b5b67742cb66.aspx>

<sup>123</sup> <https://www.mwananchi.co.tz/mw/habari/kitaifa/video-kupata-hati-ya-kiwanja-sasa-kwa-sh150-000-tu-2965250>

the case that it does not get built with a flat fee. Second, the political and credibility issues raised above are substantially mitigated for third degree price discrimination. Indeed, there is already precedent in Tanzania that fees for title deeds are charged differentially based on land use, location, and individual plot size. Further, in our sample of plot owners, 86% of respondents believe that it is fair to charge different invoices to different plots. Credibility is less of an issue for third degree price discrimination where prices are set on explicit characteristics, as long as the rates charged are communicated transparently. We note that the government already interviews local leaders to collect information on market land values, and these are used to price one of the most expensive invoice items (the ‘premium’) at the Ward level. In this context, leaders could provide additional information to improve the existing third degree price discrimination conducted by the government. In fact, they can predict plot owners’ willingness-to-pay and perceived benefits from regularisation, based on their knowledge of their income level, household composition and other explicit characteristics.

Of course, more research is needed to transfer our empirical findings into policy recommendations. As many RCTs, our lab-in-the-field experiment is subject to issues of internal and external validity. With regards to internal validity, we note that we worked with a relatively small sample of 90 local leaders from two communities of Dar es Salaam where a pilot program of land tenure regularisation has taken place. We managed to involve most leaders in our study areas,<sup>124</sup> thereby eliminating concerns with sampling, but our sample size is limited. This affects the precision of the estimates (Ravallion, 2020). Additionally, our experimental exercise cannot readily be scaled-up as a policy intervention. There are issues of generalisability and external validity that we need to consider (for recent discussions, see Davis and Mobarak, 2020; Vivalt, 2020; Williams, 2020). First, the same intervention might yield heterogeneous effects, depending on sample variability (Meager, 2019) and other factors. For instance, environmental features and local leaders’ characteristics might have impacted our results, as will be elaborated below. Second, the policymaker should consider further complexities, such as general equilibrium effects. That is, if local leaders begin pricing titles, plot owners may start to withhold information from them, and this can lower the predictive ability of leaders. In sum, our estimated mean treatment effects cannot predict the outcomes of a scaled-up intervention. We hope that future research will test the robustness of our findings in different settings, at larger scale, and with less researcher control.

Importantly, there are practical issues associated with the implementation of our intervention at scale. First, there are coordination issues due to a high number of local leaders in each neighbourhood. It might be preferable to involve a high number of leaders to increase their

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<sup>124</sup> Attrition was limited, and 90 out of 96 local leaders in the two study areas participated in our study.

accuracy and accountability, reducing opportunities for error, discretionary and rent-seeking behavior, but there is a trade-off in terms of coordination effort. Second, literature has found evidence of implementer and monitoring effects (Ravallion, 2020). Normally, academic researchers and NGOs put a lot more effort into the implementation of small-scale experiments, compared to government officers rolling out large-scale programs. For instance, in the field we invested a great deal of effort in making sure that leaders showed up at our sessions, and that they received and understood the terms of their engagement. Limited resources and effort by government officials can substantially alter the result of our intervention. Third, the scaling up of our intervention can provide new incentives for local leaders (e.g. political interests) with the risk of affecting their predictions (Moffitt, 2006). For example, in the attempt to please the government or the electorate, leaders might bias their responses towards higher or lower prices, respectively. Relatedly, competition among leaders of different parties might introduce further distortions. In sum, scaling-up our intervention entails political processes and consequences (see Das, 2020).

Amongst the contextual factors that may have impacted our experimental results – thereby limiting the generalisability of our findings – we note that first, the regularisation project under study may not fully represent the universe of regularisation schemes in urban Tanzania, or even Dar es Salaam.<sup>125</sup> In fact, the Kimara project is a government-led pilot, where the government coordinated and subsidised the phases of planning and surveying. First, there is a selection concern. Our communities may have been selected for the pilot because their local leaders are particularly cooperative or supportive of regularisation. Second, the very fact of being selected for the pilot may have generated closer cooperation or alignment with the government's goals, impacting the leaders' experimental behaviour towards higher accuracy and lack of favouritism. Additionally, Kimara has a relatively recent history of urbanisation, controlled levels of density, and a middle-class profile. In inner-city neighbourhoods, leaders might be less familiar with the plot owners due to higher rental and churning of residents. Thus, research findings could be poorly transferable to other neighbourhoods, if leaders have different attitudes towards the government, the regularisation project, or the plot owners in general.

Moreover, local leaders in urban Tanzania differ from similar agents governing unplanned settlements, either formally or informally, in other Sub-Saharan cities. As explained, our leaders are political representatives working in close collaboration with the local government to

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<sup>125</sup> The Kimara project triggered numerous regularisation schemes in the private sector, starting with the Goba project. Most of these later projects are still incomplete therefore it was not possible to study the uptake of CRO in these neighbourhoods. We note that regularisation schemes by private companies involve similar, though not identical processes, which may also impact demand for CRO. For instance, plot owners pay survey and title fees at two separate stages (to the private company and the government respectively).

administer everyday matters, including but not limited to land management (e.g. informal arbitration of land disputes, informal land transfers). This has three important implications for the generalisability of our findings to other contexts. First, our local leaders are knowledgeable in local land matters. Second, the government typically involves them in the delivery of public projects and services. Third, there is a widespread popular perception that local leaders act overall fairly and in the public interest. Thus, to a large extent, local leaders are the legitimate local authority. In consideration of these important contextual factors, it might be difficult to generalise our research findings to other contexts where local leaders represent the interests of particular elites, where they have scarce legitimacy, or are known to exercise power and rent-seeking behaviour (see for example the role of chiefs in the Kibera slum in Nairobi; Marx et al., 2019). Indeed, our experiment should be repeated at a larger scale and in different contexts, including in urban Tanzania, before recommending any policy intervention.

## 5.8 Conclusion

African governments adopt land tenure reforms to contrast the socio-economic issues connected with unplanned and rapid urbanisation, essentially pushing for a transition from informal land tenure to formal law, from the local authority to the central government. Despite there being low uptake of property titles in much of urban Africa, we find that demand for formal property rights is substantial in two neighbourhoods of Dar es Salaam where a pilot project of formalisation only registered 13% uptake in two years. Indeed, roughly 40% of plot owners are willing to pay fees equal to the monthly income of a typical household (200,000 TSh). This is much higher demand than is found in previous work in Dar es Salaam (Ali et al., 2016).<sup>126</sup>

Drawing on this result, we challenge the view that plot owners do not recognise, or need, the benefits of formalisation, as we further explore in a qualitative companion paper (Manara and Regan, 2020). However, demand remains considerably lower than current fees, with the average invoice value being more than 2.7 times the average willingness-to-pay. We demonstrated that, if the government implemented a strategy of *price discrimination*, it would be possible to both cover the costs of surveying and planning and extract an average gain of 50,000 TSh per plot. Our evidence suggests that the government should *lower the price* of formalisation across the board and implement some *cross-subsidisation* in favour of plot owners with the lowest willingness-to-pay.

This study has proposed that a better pricing strategy elicits local demand for titles from community leaders, who are typically involved in the land matters of unplanned settlements. To

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<sup>126</sup> However, results are not easily comparable, because Ali et al. (2016) study two neighbourhoods closer to the city-centre, where the land value is higher and plots are smaller.

summarise, this argument is supported by three sets of experimental evidence. First, local leaders have accurate information about the aggregate demand curve in their neighbourhoods and they can distinguish variation in willingness-to-pay across plot owners. Second, whilst leaders' predictions of aggregate demand deteriorate under an environment where their responses are used to allocate subsidies, an incentive scheme of cash prizes for ex-post accuracy can correct for almost all misreporting. Third, there is predictive capacity of leaders even after conditioning on the fee and property values.


Altogether, this evidence suggests that the local knowledge of leaders can be used to set prices of land titles in combination with the current price discriminating formula based on land value, use and plot area. As argued, this pricing strategy would help to make formalisation projects financially viable and – crucially – more inclusive of the urban poor. In fact, interviews with leaders suggest that they are keen to support the government's formalisation endeavours and facilitate vulnerable plot owners in achieving higher tenure security. Thus, we recommend that these key actors of informal institutions are not left behind in the transition to formal property. Finally, we underscore the need for more empirical research on the supply side of land titling, whereby bottlenecks can provide significant disincentives to the uptake of titles.



## 5.9 Figures

**Figure 1.** Example of an invoice for a CRO.

**UBUNGO MUNICIPAL COUNCIL**  
Invoice



Date: 07-Nov-2018  
 Invoice No: 1368046  
 TO: [REDACTED]  
 P.O Box [REDACTED]  
 DAR ES SALAAM

LOT ID: [REDACTED] LOT NUMBER: [REDACTED] AREA: 484 SQM  
 BLOCK: 4 KILUNGULE B KIMARA IN UBUNGO, DAR ES SALAAM

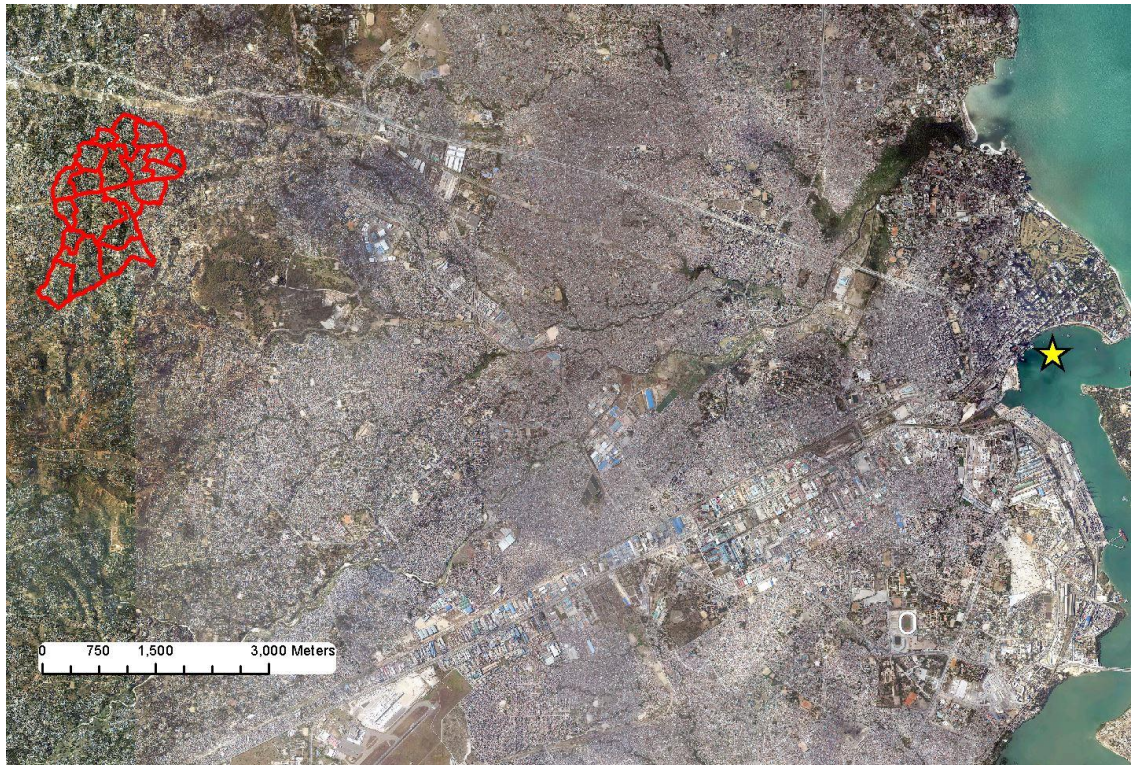
Description	Amount	Amount Due
Application Fee	20,000.00	20,000.00
Land rent From 1st April, 2018 to 30th June, 2018	3,630.00	3,630.00
Registration Fee	2,904.00	2,904.00
Certificate of Occupancy Fee	50,000.00	50,000.00
Deed Plan Fee	20,000.00	20,000.00
Survey Fee	16,940.00	16,940.00
Stamp Duty	816.00	816.00
Premium	181,500.00	181,500.00
Revolving Fund	120,000.00	120,000.00
<b>TOTAL</b>	<b>415,790.00</b>	<b>415,790.00</b>

Please pay in A/C Name: Katibu Mkuu Ardhi, A/C NO: 20101000025, Bank: NMB

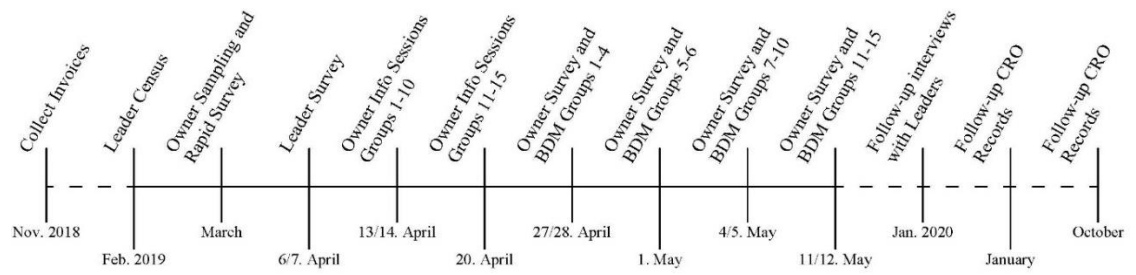
<b>OPERATIONAL COST</b>	<b>140,000.00</b>	<b>140,000.00</b>
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Please pay in A/C Name: Ubungo Municipal Council, A/C NO: 0150235213100, Bank: CRDB

**Figure 2.** Location of the study area in Dar es Salaam.



**Figure 3.** Project timeline.

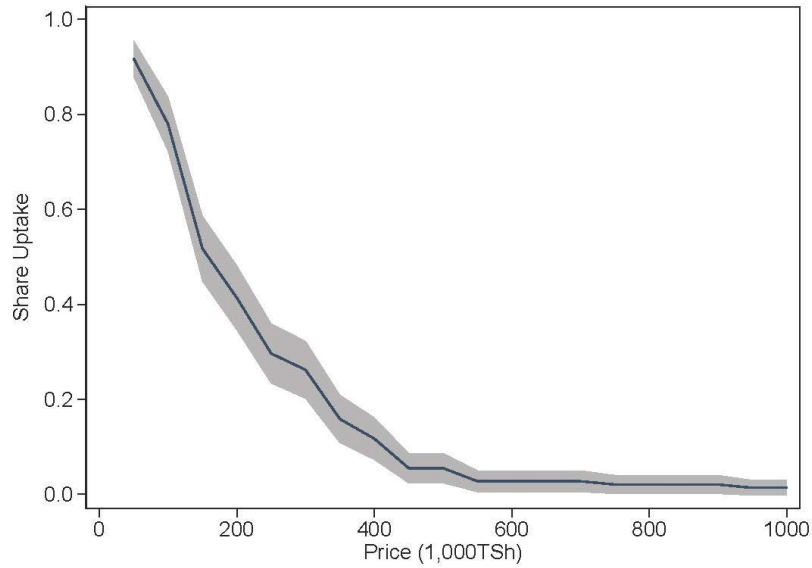


**Figure 4:** Example of a plot aerial picture (for BDM practice round).

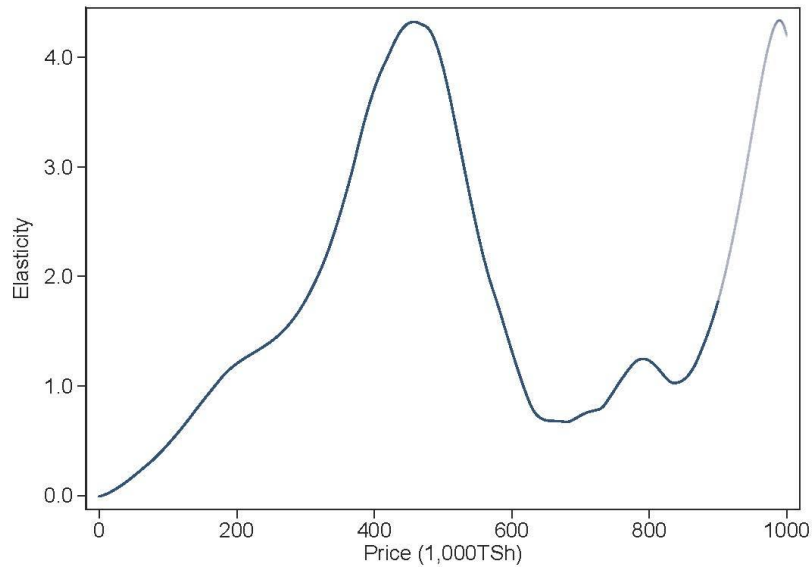


**Figure 5.** BDM elicited CRO demand and elasticity.

(a) Demand curve

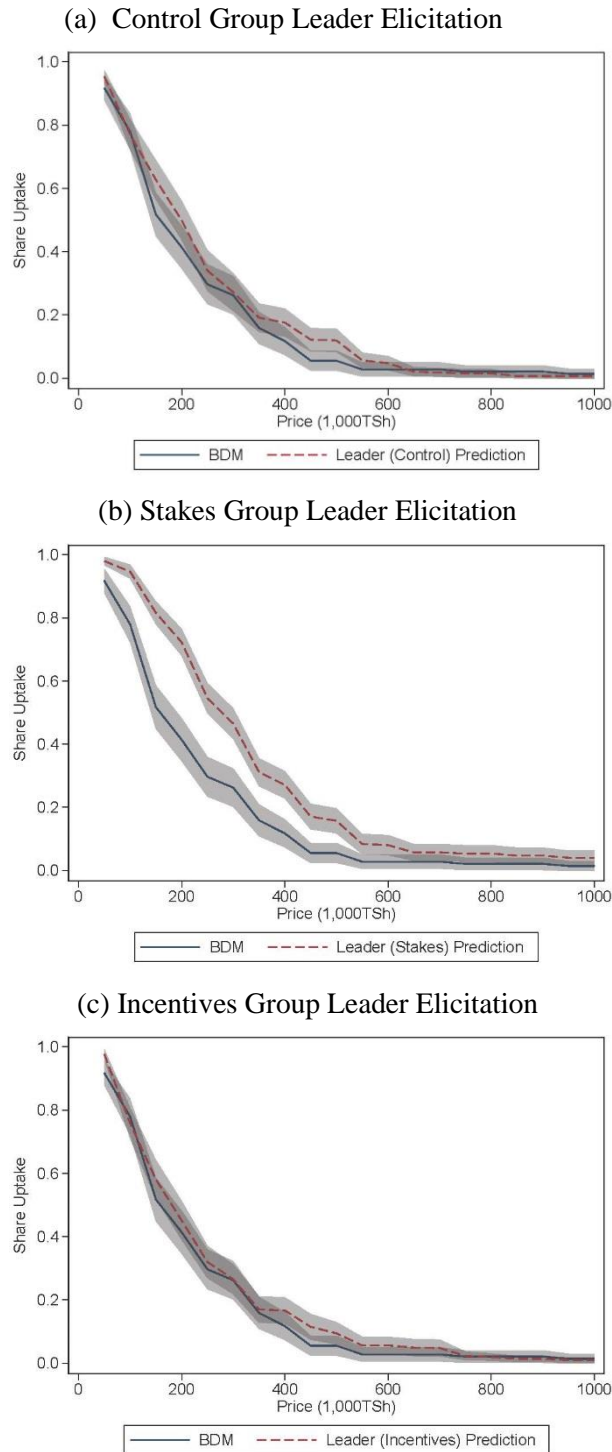


(b) Price elasticity of demand



Notes: **Figure 5a** plots the BDM demand curve with 90% confidence bands. The demand curve indicates the share of respondents with a BDM bid greater than or equal to the indicated price. Confidence intervals are calculated using logit regressions (at prices TSh 50,000; 100,000; ...; 1,000,000) clustering standard errors at the plot level. The sample is 146 plots. **Figure 5b** shows demand elasticities using BDM predicted demand. The BDM elasticity is calculated by a local polynomial regression where, first demand is interpolated using a local polynomial regression with an Epanechnikov kernel, then the point elasticity is calculated and smoothed using a local polynomial regression. In Figure 5b to highlight the sparsity of data in the right tail of our data we lower the transparency over the range of the three largest observations used in the elasticity calculation.

**Figure 6.** Leader elicited CRO demand.



Notes: **Figure 6** plots the BDM and Leader Predicted demand curves, with 90% confidence bands. The demand curves indicate the share of respondents with a BDM bid, or leader predicted WTP, greater than or equal to the indicated price. Confidence intervals are calculated using logit regressions (at prices TSh 50,000; 100,000; ...; 1,000,000) clustering standard errors at the plot level. The same sample of 146 plots is used for both, and predictions are frequency weighted by the number of leaders making predictions on that plot (i.e. each plot is equally weighted when calculating each leader predicted demand curve). **Sub-figure 6a** uses only leaders from the control group and compares the demand curve from their predictions with that of the BDM. **Sub-figures 6b and 6c** use leaders from the stakes and incentives groups respectively.

## 5.10 Tables

**Table 1.** Owners and leaders summary and balance.

	Owners		Leaders		
	(1) Mean		(2) Mean	(3) Diff Stakes-Contr	(4) Diff Incent-Contr
Sole ownership	0.73 (0.037)				
Sole ownership and female	0.26 (0.036)	Female	0.40 (0.052)	-0.24* (0.124)	-0.15 (0.130)
Under 40 years old	0.23 (0.035)	Under 40 years old	0.07 (0.026)	0.06 (0.064)	0.04 (0.058)
Over 60 years old	0.20 (0.033)	Over 60 years old	0.33 (0.050)	0.09 (0.120)	0.11 (0.123)
Educ. primary or less	0.48 (0.041)	Educ. primary or less	0.57 (0.053)	0.05 (0.129)	0.05 (0.131)
Educ. above secondary	0.27 (0.037)	Educ. above secondary	0.12 (0.035)	-0.07 (0.087)	-0.06 (0.090)
Monthly income < 100,000TSh	0.34 (0.039)	Monthly income < 100,000TSh	0.19 (0.041)	0.25** (0.104)	0.00 (0.080)
Monthly income > 300,000TSh	0.35 (0.040)	Monthly income > 300,000TSh	0.42 (0.052)	-0.08 (0.127)	0.05 (0.132)
Avg. CRO quiz score	4.9 (0.114)	Avg. CRO quiz score	7.4 (0.124)	0.15 (0.309)	0.08 (0.318)
No children	0.08 (0.022)	Opposition party	0.14 (0.037)	0.03 (0.092)	0.00 (0.091)
Over 4 children	0.32 (0.039)	Assistant leader	0.39 (0.052)	-0.05 (0.126)	0.01 (0.130)
Absentee Owner	0.28 (0.037)	Owns their home plot	0.94 (0.024)	0.00 (0.064)	0.03 (0.058)
Acquired in last 6 years	0.11 (0.026)	Settled in last 6 years	0.07 (0.026)	-0.03 (0.056)	0.04 (0.074)
Acquired over 19 years	0.34 (0.039)	Settled over 19 years	0.38 (0.051)	-0.01 (0.127)	-0.06 (0.128)
Acquired by purchase	0.86 (0.029)	Home plot surveyed	0.91 (0.030)	0.07 (0.087)	0.17** (0.070)
Has sale certificate	0.25 (0.036)	Count of 15 owners known at all	12 (0.321)	0.54 (0.807)	1.1 (0.773)
Owns another plot	0.50 (0.042)	Count of 15 owners use services at all	4.3 (0.465)	1.7 (1.19)	0.33 (1.01)
Owns another surveyed plot	0.25 (0.036)	Count of 15 owners family members	0.22 (0.052)	0.09 (0.130)	-0.03 (0.114)
Owns another titled plot	0.10 (0.024)	Count of 15 owners close friends	1.4 (0.142)	-0.41 (0.358)	-0.08 (0.363)
Avg. invoice value (1000TSh)	526 (17.9)	Count of 15 owners religious affiliation	1.8 (0.267)	-0.48 (0.646)	0.07 (0.757)
Avg. plot area	464	Count of 15 owners	1.3	0.02	0.08

(sqm)	(32.8)	highly esteemed	(0.124)	(0.297)	(0.330)
Avg. BDM bid	195				
(1000Tsh)	(14.5)				
N	146		90		

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\* $p \leq 0.1$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$  for difference =0 t-test  
Standard errors in parentheses

**Table 2.** Leader predictions and placebos.

	(1)	(2)	(3)	(4)	(5)
	Income Rank	Invoice Rank	Invoice Rank Full	Property Tax Paid	Certificate of Sale
<i>Panel A: Predictions</i>					
Leader Prediction	0.20*** (0.020)	0.30*** (0.035)	0.34*** (0.029)	0.07** (0.029)	0.09* (0.045)
N	871	871	1349	871	871
R <sup>2</sup>	0.25	0.13	0.11	0.14	0.18
<i>Panel B: Placebos</i>					
Leader Prediction	0.19*** (0.035)	0.28*** (0.058)	0.32*** (0.046)	0.02 (0.050)	0.09* (0.047)
Stakes × Leader Prediction	0.05 (0.048)	0.06 (0.086)	0.08 (0.068)	0.06 (0.065)	0.03 (0.057)
Incentives × Leader Prediction	-0.03 (0.046)	0.01 (0.077)	-0.02 (0.071)	0.09 (0.072)	-0.04 (0.042)
N	871	871	1349	871	871
R <sup>2</sup>	0.25	0.13	0.11	0.14	0.18

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01

Notes: Robust standard errors clustered at leader level in parentheses. Each observation is a leader-plot owner pair. Column 1, the dependent variable is the within neighbourhood rank of plot owners' income. The dependent variable in columns 2 and 3 is the within neighbourhood rank of invoice value. Column 2 restricts the sample to plot owners who participated in the study, while column 3 includes all the fifteen selected invoices in the leader's neighbourhood. Column 4, the dependent variable is an indicator if the plot owner paid property tax in 2018. Column 5, the dependent variable is an indicator if the plot owner has a certificate of sale (sale agreement). The regressor is always the leader's prediction of the dependent variable. Fixed effects for leader strata, neighbourhood, and surveyor are included in all models.



**Table 3.** Leaders' ability to distinguish variation in willingness-to-pay.

	(1) WTP Rank	(2) WTP	(3) ln(WTP+1)	(4) WTP Percentile	(5) Top Rank	(6) Bottom Rank
<i>Panel A: Predictions</i>						
Leader Prediction	0.20*** (0.024)	0.10*** (0.029)	0.33*** (0.048)	0.23*** (0.037)	0.15*** (0.052)	0.24*** (0.055)
N	871	871	871	871	871	871
R <sup>2</sup>	0.19	0.09	0.10	0.09	0.03	0.12
<i>Panel B: Distortions from real stakes</i>						
Leader Prediction	0.175*** (0.041)	0.105 (0.081)	0.253*** (0.095)	0.159** (0.069)	0.124 (0.085)	0.249*** (0.093)
Leader Prediction × Stakes	0.049 (0.058)	0.011 (0.091)	0.208 (0.133)	0.150* (0.089)	0.043 (0.125)	-0.120 (0.130)
Leader Prediction × Incentives	0.030 (0.055)	-0.025 (0.088)	0.089 (0.112)	0.098 (0.085)	0.019 (0.125)	0.103 (0.135)
N	871	871	871	871	871	871
R <sup>2</sup>	0.19	0.09	0.10	0.10	0.03	0.12

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01

Notes: Robust standard errors clustered at leader level in parentheses. Each observation is a leader-plot owner pair. Column 1, the dependent variable is the within neighbourhood rank of plot owner's BDM bid. The dependent variable in column 2 is the value of the plot owner's BDM bid in Tanzanian shillings, and in column 3 is the log value. Column 4, the dependent variable is the percentile rank across the entire distribution, rather than neighbourhood only. Column 5, the dependent variable is an indicator if the BDM bid is the highest in the neighbourhood, and column 6 indicates if the bid is the lowest in the neighbourhood. The regressor is always the leader's prediction of the dependent variable. Fixed effects for leader strata, neighbourhood, and surveyor are included in all models.

**Table 4.** Using observable characteristics to distinguish variation in willingness-to-pay.

	(1)	(2)	(3)	(4)	(5)	(6)
	WTP Rank	WTP	ln(WTP+1)	WTP Percentile	Top Rank	Bottom Rank
<i>Panel A: Invoice Formula</i>						
Invoice	0.26*** (0.017)	0.49*** (0.053)	1.33*** (0.088)	0.43*** (0.031)	0.44*** (0.059)	0.04 (0.051)
N	871	871	871	871	871	871
R <sup>2</sup>	0.25	0.37	0.15	0.20	0.19	0.09
<i>Panel B: Invoice Formula and Leader Prediction</i>						
Invoice	0.228*** (0.021)	0.480*** (0.052)	1.247*** (0.092)	0.409*** (0.032)	0.431*** (0.060)	0.026 (0.052)
Leader Prediction	0.151*** (0.023)	0.053*** (0.015)	0.253*** (0.043)	0.179*** (0.035)	0.062 (0.044)	0.239*** (0.055)
N	871	871	871	871	871	871
R <sup>2</sup>	0.30	0.37	0.16	0.22	0.20	0.12
<i>Panel C: Valuation</i>						
Property Value (1,000TSh)	0.12*** (0.007)	0.20*** (0.072)	0.27*** (0.061)	0.22*** (0.022)	0.02 (0.047)	0.03 (0.066)
N	870	871	871	871	871	871
R <sup>2</sup>	0.15	0.07	0.09	0.09	0.01	0.08
<i>Panel D: Valuation and Leader Prediction</i>						
Property Value (1,000TSh)	0.075*** (0.012)	0.171** (0.073)	0.229*** (0.059)	0.195*** (0.023)	-0.015 (0.054)	-0.011 (0.064)
Leader Prediction	0.170*** (0.029)	0.092*** (0.029)	0.301*** (0.046)	0.202*** (0.038)	0.147*** (0.054)	0.242*** (0.056)
N	870	871	871	871	871	871
R <sup>2</sup>	0.21	0.09	0.11	0.12	0.03	0.12

\*p≤0.1, \*\* p≤0.05, \*\*\* p≤0.01

Notes: Robust standard errors clustered at leader level in parentheses. Each observation is a leader-plot owner pair. Column 1, the dependent variable is the within neighbourhood rank of plot owner's BDM bid. The dependent variable in column 2 is the value of the plot owner's BDM bid in Tanzanian shillings, and in column 3 is the log value. Column 4, the dependent variable is the percentile rank across the entire distribution, rather than neighbourhood only. Column 5, the dependent variable is an indicator if the BDM bid is the highest in the neighbourhood, and column 6 indicates if the bid is the lowest in the neighbourhood. The regressors in Panels A and C are the invoice fee and property valuation equivalents of the dependent variable, respectively. While the regressors in Panels B and D are the leader's prediction of the dependent variable as well as the invoice fee and property valuation equivalents of the dependent variable, respectively. Fixed effects for leader strata, neighbourhood, and surveyor are included in all models.

**Table 5.** Title acquisition process.

	<i>January 2020</i>			<i>October 2020</i>		
	Discounted	Full price	Attriters	Discounted	Full price	Attriters
N plots	39	107	73	39	107	73
Titles Allocated	14	2	4	3	1	1
Titles Collected		10			14	

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## 5.12 Appendix A: BDM Scripts (English)

### BDM Introduction SHEET 1

#### READ:

- We would like to share the cost of your invoice, but the price that you will pay is not yet fixed. It will be determined by chance in a lottery that we will play at the end of this survey.
- You will not have to spend any more towards the invoice than you really want to.
- You may even be able to buy it for less.
- If you do not want to pay anything, state this, and you will not have to.

Here is how the Lottery works:

- I will ask you to tell me the maximum price that you would and could pay in the next 10 days towards the invoice for your title deed. Let us call this your *bid*.
- If you state your bid at 'zero' it means that you are not willing to pay anything. By placing a bid larger than 'zero', you declare yourself willing and able to pay that amount in the next 10 days.
- Therefore, you **must** state a bid that you are ABLE to pay in the next 10 days.
- We will write your bid down on a piece of paper and return to the lottery after finishing the survey.
- At the Lottery table there is a cup with many different balls with different numbers on them. They represent discounted prices for your invoice.
- After the survey, we will sit at the Lottery table and pick a ball from the cup.
- If the number you pick (your *draw*) corresponds to a price that is greater than your bid, you will not be offered any discount. You will receive your allowance immediately.
- If the number you pick (your *draw*) corresponds to a price that is less than or equal to your bid:
  - You will pay that price for your invoice in the next 10 days.
  - You will not receive your allowance until that payment has been made.
- If you win a discount and you fail to pay within the 10 days, as agreed, you will:
  - lose the discount
  - lose the allowance
- In any case, if you wish, you will be able to pay for your invoice at the original price at any time.

Final notes:

- You can withdraw from the study at any time with no consequences for yourself.
- You will only have one chance to play the lottery for your invoice.
- You cannot change your bid once the lottery has occurred.

***Answer any questions respondent has.***

To read ONLY upon request:

What happens if you win a discount at the Lottery:

- You will have 7 days to collect the money. From day 8 to 10 you will go to Ubungo Municipality with the researchers.
- You will pay the discounted price that was drawn at the Lottery. The discount will be paid, at the same time, from the research budget.
- Thus, your invoice will be paid fully and you will receive a receipt of the full payment.
- The receipt and the title deed will display only the name(s) of the plot owners. Thus, your title deed will be as valid as if it was purchased outside of the research project.

**2.1 Which item has the respondent been assigned to practice on?**

Soda

Picture

*Proceed with practice round.*

BDM SHEET 3 (Invoice for Title Deed)

**REMEMBER: Get respondent to state HIGHEST price they are WILLING AND ABLE to pay within 10 days.**

**READ:**

- Now you will play to pay for your Invoice.
- Your invoice value is [**state value from questionnaire**], you will not be offered a price above this value or below zero.
- Recall the informational meeting held by us in the last weeks.
- Have you thought about how much you would and could pay for your invoice?
- Will you have the funds available within no more than 10 days?

Let's begin:

- 1) What is the maximum price that you would and could pay for your invoice? We will call that amount your "bid".

**[Respondent states a price X]**

- 2) After finishing the questionnaire, we will proceed with the lottery.
  - If we draw a number that is equal to **X** or less than **X**, you will pay for your invoice at the discounted price drawn.
  - If we draw a number greater than **X**, you will not be offered any discount.
  - You cannot change your stated maximum price after the lottery has occurred.
  - Do you understand?
- 3) Please, tell me – if we extract [**X + 5,000 TSh**] through the lottery, what will happen?

**[Correct Response: they will not be offered any discount to their invoice.]**

**If respondent does not give the correct answer, explain the rules again and then ask question again > go back to 2).**

- 4) And if we will extract [**X - 5,000 TSh**] now through the lottery, what will happen?

**[Correct Response: they will pay for the invoice at [**X - 5,000 TSh**] in the next 10 days.]**

**If respondent does not give the correct answer (both that they will purchase and at the correct price), explain the rules again and then ask question again > go back to 2).**

- 5) If we draw [**X + 5,000 TSh**], will you regret NOT being offered that discounted price?
  - **If YES > proceed to 6.**
  - **If NO > skip to 7.**
- 6) If yes, do you want to change your bid to [**X + 5,000 TSh**]?
  - **If YES > Ok, your new bid is [**X + 5,000 TSh**].**  
**> Go back to 2) with [**X + 5,000 TSh**] as new bid.**
  - **If NO > proceed to 7.**
- 7) So, is **X** truly the most you would want to pay?
  - **If YES > proceed to 8.**
  - **If NO > go back to 1.**
- 8) If you draw **X**, you must be able to pay **X** within 10 days. Are you able to pay **X** within 10 days?
  - **If YES > proceed to 10.**
  - **If NO > What is the maximum price that you would and are ABLE to pay within 10 days from now?**  
**> Go back to 1.**
- 9) Do you confirm that you have a plan to collect the money in 7 days in order to make the payment within 10 days?



- **If YES > proceed to 10.**
- **If NO > Go back to 8.**

10) If the lottery draws a price **X** or below **X** we will keep your allowance on hold until your payment has been made at Ubungo Municipality. Do you accept to have your allowance on hold if you win?

- **If YES > OK**, this is your final bid. We are now going to write it down and seal the envelope.
- **If NO > start again from 1)**

**Record respondent's Final Bid (Section 2, question 2.3)**

2.3 Record Respondent's Final Bid (WTP <sub>0</sub> )	TSh
---	-----

11) Your bid is now sealed and cannot be changed. We will proceed with the lottery after finishing the remainder of the questionnaire.

**[Surveyor, write WTP<sub>0</sub> in the envelope, make the respondent sign and seal the envelope.]**

<b>Surveyor, do you confirm that the envelope has been sealed and the plot owner is aware they cannot change their response in section 2?</b>	YES	NO
---	-----	----

BDM Example of discount distribution.

<u>Discounts for a plot above 400 and below or equal to 500 square metres</u>															
The integers below ranging from 1-75 represent the lottery balls.															
Each ball a corresponding percentage below it.															
The percentage represents the discounted price as a percentage of the full invoice value (e.g. 0% means a price of 0 TSh, 50% is a price of half the total invoice cost, 75% is three quarters the full invoice price, etc.).															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0%	6%	9%	12%	14%	16%	19%	21%	23%	24%	26%	28%	30%	31%	33%	
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
34%	36%	37%	39%	40%	42%	43%	44%	46%	47%	48%	50%	51%	52%	53%	
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
55%	56%	57%	58%	59%	61%	62%	63%	64%	65%	66%	67%	68%	70%	71%	
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
72%	73%	74%	75%	76%	77%	78%	79%	80%	81%	82%	83%	84%	85%	86%	
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
87%	88%	89%	90%	91%	92%	93%	94%	94%	95%	96%	97%	98%	99%	100%	

## 5.13 Appendix B: Leader Experimental Scripts (English)

### Task 1

For this task, you are asked to think about all plot owners of Kilungule A and B and the maximum price that they would pay for a title deed in the next couple of months. For instance, I would not buy a soda if the shopkeeper charged 10,000. If the price was lowered to 1,000 or 800 I still would not buy, but if the shopkeeper lowered the price further to 500 I would buy the soda. So the maximum price that I would pay for a soda is 500.

<b>39.1 Out of 100, how many plot owners of Kilungule A and B would take up the title deed in the next couple of months if the price was zero, that is, if the Government was giving it for free?</b>		
Input a number X from 0 to 100		
<b>39.2 So, does it mean that (100 – X) plot owners would NOT take up the title deed even if the Government was giving it for free?</b>	YES	NO

Note: Proceed only if the respondent responds YES to 39.2. Otherwise call Assistance.

<b>40.1 Out of 100, how many plot owners of Kilungule A and B would pay for the title deed in the next couple of months if their invoice price was:</b>		
		Input a number X from 0 to 100
<b>40.1</b>	100,000	
<b>40.2</b>	200,000	
<b>40.3</b>	300,000	
<b>40.4</b>	400,000	
<b>40.5</b>	500,000	
<b>40.6</b>	600,000	
<b>40.7</b>	700,000	
<b>40.8</b>	800,000	
<b>40.9</b>	900,000	
<b>40.10</b>	1 mio	
<b>40.11</b>	1 mio & 100,000	
<b>40.12</b>	1 mio & 200,000	
<b>40.13</b>	1 mio & 300,000	
<b>40.14</b>	1 mio & 400,000	
<b>40.15</b>	1 mio & 500,000	
<b>40.16</b>	1 mio & 600,000	
<b>40.17</b>	1 mio & 700,000	
<b>40.18</b>	1 mio & 800,000	
<b>40.19</b>	1 mio & 900,000	
<b>40.20</b>	2 mio	
<b>40.21</b>	2 mio & 100,000	
<b>40.22</b>	2 mio & 200,000	
<b>40.23</b>	2 mio & 300,000	
<b>40.24</b>	2 mio & 400,000	
<b>40.25</b>	2 mio & 500,000	
<b>40.26</b>	2 mio & 600,000	

<b>40.27</b>	2 mio & 700,000	
<b>40.28</b>	2 mio & 800,000	
<b>40.29</b>	2 mio & 900,000	
<b>40.30</b>	3 mio	

Notes: Normally, as the price increases, the number of people who would purchase at that price decreases or stays the same. So the ODK will NOT let you proceed if the number X inserted for a response (e.g. 41.20) is bigger than the previous response (e.g. 41.19). If your respondent consistently gives higher numbers for increasing prices, call Assistance.

**!!! Stop the question when the respondent gives response: 0 “zero”!!!**

**!!! The ODK will allow you to go above 3 mio, if necessary!!!**

### Task 2

For this task, you are asked to think about the selected plot owners from your shina and the **maximum price** that each plot owner would pay for a title deed in the next couple of months.

**41.1 Please rank the selected plot owners from your shina from the highest to the lowest willingness to pay. At the top place, rank the plot owner who would pay the highest price. At the bottom place, rank the plot owner who would pay the lowest price.**

**41.2 Please, indicate the maximum price that each plot owner would pay for a title deed in the next couple of months.**

	<b>41.1 Plot ID</b>	<b>41.2 Max price that plot owner would pay for a title deed in the next couple of months</b>
<b>HIGHEST PRICE</b>		
SECOND PLACE		
THIRD PLACE		
FOURTH PLACE		
FIFTH PLACE		
SIXTH PLACE		
SEVENTH PLACE		
EIGHTH PLACE		
NINTH PLACE		
TENTH PLACE		
ELEVENTH PLACE		
TWELFTH PLACE		
THIRTEENTH PLACE		
FOURTEENTH PLACE		
<b>LOWEST PRICE</b>		

Note: You can write any number in intervals of 50,000 OR ‘zero’ for plot owners who would only take up if the title deed was for free OR ‘less than 0’ for plot owners who would NOT take up even if it was for free.

**!!! Respondents can indicate the same maximum price for two or more plot owners!!!**

## INSTRUCTIONS

### **SCRIPT 1: Control Group**

Congratulations, you made it to the final section of the questionnaire! Now we are going to assign you two final tasks. As before, your responses will be used for research purposes only.

With this research, we want to understand how much leaders know about the plot owners of Kilungule A and B, especially those living in their washina, and how accurate is their knowledge. We encourage you to be as truthful and accurate as possible. In this way, you will allow us to produce high quality research and you will demonstrate your knowledge as a leader! Your answers will NOT be used to change anything we do in the course of the study.

### **SCRIPT 2: Treatment 1 (Stakes)**

Congratulations, you made it to the final section of the questionnaire! Now we are going to assign you two final tasks. Differently from previous questions, your responses to this section will NOT be used for research purposes only. Before presenting each task, we will explain very clearly how we will use your responses. Please listen carefully and do not hesitate to ask any questions.

#### Before Task 1

As you know, all plot owners participating in the research will have the chance to win a discount on the price of the title deed through a lottery process. Our objective is to get as many plot owners titled as possible within our budget.

With Task 1, we ask to leaders on **the capacity of plot owners of Kilungule A and B to pay for a title deed**. This information will allow us to decide how much discount we should make available through the lottery.

So, do you understand that with your responses to Task 1 you can influence the discounts that plot owners can get? For example, if we find out from you and other leaders that the capacity to pay is very low, we will make more discount available to be won through the lottery. *Proceed with task 1*

#### Before Task 2

As you know, all plot owners participating in the research will have the chance to win a discount on the price of the title deed through a lottery process. Our objective is to get as many plot owners titled as possible within our budget.

With Task 2, we ask to leaders what **is the capacity of each of the selected plot owners from their shina to pay for a title deed**. We will take this information into account when deciding to whom we should make available higher discounts through the lottery.

So, do you understand that with your responses to Task 2 you can influence the discounts that plot owners in your shina can get? For example, if leaders of a shina suggest that a plot owner has a very low capacity to pay we will make it more likely that this plot owner wins a higher discount through the lottery. *Proceed with task 2*

### SCRIPT 3: Treatment 2 (Incentives)

Note that you will earn points for performing well on the two tasks. At the end of the study, we will reward the 5 leaders with the best scores with some monetary prizes: 30,000 to the 1<sup>st</sup> place, 20,000 to each of the next four! So, this is your opportunity to show your knowledge and win a prize!

#### Incentive for Task 1

As part of the research, we will interview plot owners on their capacity to pay for the title deed. At the end of the study, we will pick one price level and count the number of plot owners of Kilungule A and B who would pay at least that price. Task 1 allows us to measure how good you are at predicting that number. You will earn points depending on the correctness of your responses to Task 1. Be as truthful and accurate as you can if you want to win the prize!

For simplicity, I am going to explain the rule that we will use to assign points through an example.

- Suppose that I ask you: *how many letters come before C in the alphabet?*
- The correct response is 2, that is, letters A and B.
- You will earn:
  - 2 points for responding 2 (correct response)
  - 1 point for responding 1 or 3 (wrong response)
  - 0 points for responding 0 or 4 (wrong response)

This simple example shows that the more accurate responses will earn more points.

#### Incentive for Task 2

As part of the research, we will interview plot owners on their capacity to pay for the title deed. At the end of the study, we will pick one price level and observe which plot owners from your shina would pay at least that price. Task 2 allows us to verify if those who have higher capacity to pay are the same that you rank higher in Task 2. Ranking at the highest places those plot owners that have the highest capacity to pay will earn you points! Be as truthful and accurate as you can if you want to win the prize!

For simplicity, I am going to explain the rule that we will use to assign points through an example.

- Suppose that I ask you to *rank four letters of the alphabet from the first to the fourth*.
- There are several possible rankings of which only one is correct.

Option 1: CORRECT		Option 2: NOT correct	
1	A	1	D
2	B	2	B
3	C	3	C
4	D	4	A

- To allocate points, we will pick one letter, say for example B.
- We will cross out letter B and all letters coming before B, as in the table below.

Option 1: CORRECT		Option 2: NOT correct	
<del>1</del>	<del>A</del>	1	D
<del>2</del>	<del>B</del>	2	B
3	C	3	C
4	D	4	A

- We will then sum up the remaining numbers.

Option 1: CORRECT		Option 2: NOT correct	
3 + 4 = 7		1 + 3 = 4	
<b>TOT 7</b>		<b>TOT 4</b>	

- As you can see, respondents who give the correct ranking (Option 1) will score 7 points, while respondents who give an incorrect ranking (for example, Option 2) will score 4 points only.

This simple example shows that the more accurate rankings will earn more points.

## 5.14 Appendix C: Research Ethics

The project has passed review by the LSE Research Ethics Committee in October 2018 under the project name “Leveraging Informal Institutions to Raise Land Formalisation” [REC ref. 000770]. The project was approved by the Tanzanian Commission for Science and Technology (COSTECH) [REC ref. 2019-135-NA-2019-37]. What follows is a note on research ethics, that Tanner Regan and I have circulated to the Department of Geography and Environment on the 14<sup>th</sup> March 2019. Next, there is the Ethical Approval by the LSE Research Ethics Committee.

### NOTE ON RESEARCH ETHICS

The communities of Kilungule are an ideal context for our study because the formalisation programme is at an advanced stage and many plot owners have already received invoices for the payment of their title deed. Therefore, individual plot owners are already confronting the choice of whether to take up or not take up the title deed.

Importantly, the research *does not* interfere with the process of invoicing the plot owners. It is the Municipality that decides on the invoicing process (e.g. which residential blocks to invoice first). For our study, we only sample from a pool of plot owners who were already invoiced by our study’s start date.

Furthermore, the research *does not* interfere with the plot owners’ chances to get their CROs. Whether they are selected for the study or not, all invoiced plot owners can pay for the title deed at their invoice price and following the normal procedure at any time - before, during and after the study.

Instead, crucially, the research *does* increase the affordability of the CRO for a subsample of invoiced plot owners who will be offered a discount on their invoice price (which they may decide *not* to redeem).

Plot owners and discount levels will be selected randomly through a lottery occurring in the presence of local authorities and other community representatives, which guarantees transparency in the process.

Importantly, plot owners in the study sample will be able to:

- Refuse to take part into the study;
- Drop from the study during the experimental sessions. (As usual, participants will be able to leave the room and the study at any time and with no consequences to them. In



fact, on several occasions, they will be explicitly asked if they wish to continue or withdraw from the study);

- Decide not to redeem the discount.

In other words, the research *does not* force plot owners to purchase titles. Those who are selected for the study have a *chance* to participate and win a discount on their invoice price. This does not mean that they will have to redeem the discount and purchase the title at the discounted price if they do not wish to do so.

Furthermore, the research *does not* manipulate or influence plot owners' evaluations of the title deed. Survey and in-depth interview questions are designed specifically to capture both positive and negative views, perceptions and beliefs on tenure formalisation. Indeed, we aim to understand the complexity of formalisation choices, not to impose our views on the participants.

### **Further Ethical Concerns**

#### *Deception:*

The project makes *no* use of deception: plot owners participating to the experiment will have *full* information on and understanding of the processes involved (e.g. the BDM method, the lottery). At a public meeting, they will be informed that by participating in the study they will have a *chance* to win a discount on their invoice price. They will be explicitly informed that: a) a lottery will allocate discounts: thus, it is not guaranteed that they will get a discount; b) even if they win one, they will *not* have to redeem it and purchase the title deed, if they do not wish to do so.

Because some of the survey techniques involved are complicated (e.g. the BDM method), participants will receive appropriate training before their actual sessions. Instructions will be delivered in Swahili through group and one-to-one sessions with the enumerators. With the group training, we ensure that all participants receive exactly the same instructions. Through one-to-one training, the enumerator will understand and address the specific doubts of each respondent. The enumerator will repeat the training until the respondent feels confident to proceed with the actual session.

#### *Vulnerability:*

All project participants are adults with full capacity of making individual choices concerning whether they wish to: a) take part in the study or withdraw; b) respond to specific questions; c) bear the emotional stress of the lottery process; and d) redeem (or not) the discount in case of a win.

Importantly, each participant will receive all the relevant information to make properly informed choices. In order to achieve this, there will be a first introductory event several weeks before the experimental sessions. Subsequently, participants will be given the phone number of one enumerator that they may contact for further questions at any time before and after their experimental session (each enumerator will take care of 30 participants).

Reminders of salient information will be provided through phone calls and text messages three weeks before and three weeks after the experimental session.

Participants will be read an informed consent sheet before their experimental session and their in-depth interview (the latter will be conducted with a subsample only). They will be informed that it is their right to drop from the study at any time and, on several occasions, they will be explicitly asked if they intend to continue: after reading the informed consent, after explaining the BDM game, before starting an in-depth interview, and before the actual lottery of price discounts. It is our foremost priority to create a research environment where the participants are capable of informed individual choices.

Participants are likely to be household heads (women and men); therefore, we do not foresee them having to confront unbearable pressure within their own household concerning their participation in the study. Additionally, because participants are selected with a publicly transparent lottery mechanism, it is unlikely that the selection process will create severe conflict within the community.

In fact, since early November we have been working with representatives at the Municipality, the ward and the neighbourhood levels to ensure that the entire research process will occur in a fair and transparent way. To address concerns over the sampling of the study participants, it was agreed to operate a mechanical randomisation process during a public event in the presence of about 70 local leaders, including ward, neighbourhood and other community representatives.

We formed a Committee of nine members to oversee the entire project, particularly the lotteries. Two members are part of the research team. Their role is to overview the scientific aspects of the project. The remaining are ward representatives and neighbourhood leaders. Their role is to ensure that the research does not compromise the community wellbeing.

Each major event will be video taped in its key moments. Detailed minutes will be written and signed by the Committee members. This precaution will allow us to easily mitigate – and hopefully solve – any possible complaint and discontent in the community.

The Committee proposed that we explain the value of the research and its potential policy implications to the entire community, including plot owners who are not selected for the study. Unfortunately, organising one large public event is logistically challenging, whilst it is beyond our budget to conduct multiple small events. Hence, we will distribute informative leaflets to the non-selected plot owners.

Finally, our research design minimises all sources of vulnerability and distress due to the participants' relationships with their local leaders. In fact, the research design precludes local leaders from making decisions that could influence or limit the choices of plot owners, including their chances to be selected as study participants or win discounts.

*Financial Incentives:*

Overall the study's participants will receive two types of monetary incentives: a small allowance to compensate the time commitment to the research (for all participants) and monetary discounts on the price of the CRO (only for the winners of the lottery who wish to purchase a title deed at the discounted price).

Concerning the first, the LSE's regulation on ethical research recognises that participants may incur substantial time – and monetary – losses as they take part in research activities. In the settlements where we conduct our research, plot owners may engage in occasional, formal or informal, remunerating activities during the weekend: thus, they will bear time and monetary costs for taking part in the study (each participant is expected to spend between two and three hours in a research session, including transport time). Accordingly, all our participants will receive an appropriate allowance, independently of the lottery outcome. Importantly, also participants who drop out during the experimental session will receive an equal allowance.

Crucially, this allowance does not interfere with or compromise the research findings. On the contrary, by providing an allowance we incentivise also plot owners who are *not* interested in tenure formalisation – and have *no* interest in winning the discount – to take part in the research, despite of the potential time and monetary costs.

Concerning the second, we are conscious that the lottery process may expose participants to some level of emotional distress, manifesting through anxiety, frustration and anger, of which we are fully respectful. However, the respondent will be able to control whether they wish to continue up to the lottery stage. In fact, just before the lottery takes place, participants will be reminded that the lottery exposes them to the chance of not gaining a monetary discount on the price of the CRO and they will be asked if they wish to drop out. This will occur in a private

and confidential conversation between the enumerator and the respondent. In this way, we hope to minimise the risk that those who intend to drop out feel any sense of shame or guilt towards the Committee and the researchers. They will *not* be asked to provide any justifications for their choice.

To conclude, according to the LSE Ethics Committee standards, research that causes respondents some degree of psychological distress is justified when: a) researchers are conscious of the source of distress and put in place adequate mechanisms to minimise it; b) respondents have the capacity to foresee and manage the expected distress; c) respondents control the research environment and are capable of an informed individual choice concerning whether they wish to expose themselves to any potential distress caused by the research; and d) the potential benefits from the research (to the participants and the community) exceed the potential distress that the research may cause.

Specifically, we are fully aware that the proposed research project exposes respondents to some degree of vulnerability and distress, linked to their participation in a lottery process that randomly allocates monetary discounts. However, to the best of our capacity, we are working to minimise these issues, through careful research design and implementation.

In faith,

Martina Manara and Tanner Regan





THE LONDON SCHOOL  
OF ECONOMICS AND  
POLITICAL SCIENCE ■

Houghton Street  
London WC2A 2AE  
United Kingdom

tel: +44 (0)20 7106 1202  
email: [rescon@lse.ac.uk](mailto:rescon@lse.ac.uk)  
[www.lse.ac.uk](http://www.lse.ac.uk)

Research Division

Tanner Regan and Martina Manara  
Department of Geography and Environment  
[t.regan1@lse.ac.uk](mailto:t.regan1@lse.ac.uk)  
[m.manara@lse.ac.uk](mailto:m.manara@lse.ac.uk)

31<sup>st</sup> October 2018

Dear Tanner and Martina

**Re: 'Leveraging informal institutions to raise land formalisation'** [REC ref. 000770]

I refer to the above research proposal which you recently submitted for review by the Research Ethics Committee. Having considered your ethics review application and supporting documents, I am satisfied that you have properly addressed the ethical issues raised by your proposed research. I am thus able in my capacity as Chair of the Committee to approve the application. Please note, however, that ethics approval is contingent upon approval of your travel outline/risk assessment by the Health and Safety team.

Please note that any significant changes to the research design must be reported to the Research Ethics Committee. Amendments to the research design that may affect participants and/or that may have ethical implications must be reviewed and approved by the Research Ethics Committee before commencement (or recommencement) of the project. The Research Ethics Committee may periodically conduct a selective audit of current research projects.

I would like to take this opportunity to wish you well with your research project.  
If you have any further queries, please feel free to contact Lyn Grove, Research Division.

Yours sincerely,

Dr Edgar Whitley  
Chair of the Research Ethics Committee  
cc. Dr Lyn Grove, Research Division

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