

# **How effective are informal property rights in cities? Reexamining the relationship between informality and housing quality in Dar es Salaam, Tanzania**

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Improving access to adequate housing is a global development priority. Formalisation of property rights occupies a central role in this agenda, based on long-held ideas about the weaknesses of informal arrangements in cities. In practice, however, we know remarkably little about how informal property markets in urban areas work. Drawing on both quantitative and qualitative data, this paper demonstrates that informal institutional arrangements in Dar es Salaam are surprisingly effective in securing ownership and addressing transaction costs – in other words, in the key dimensions of property rights targeted by formalisation projects. It also reveals, however, that the system is ineffective at upholding the third yet often-overlooked component of property rights: land *use* rights. This results in a social dilemma that traps housing in a low-quality equilibrium. The findings have direct implications for urban development policy in Dar es Salaam and across the world and open new avenues for comparative research on access to adequate housing.

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## Introduction

The global south is urbanising rapidly. There is widespread consensus that ‘clear and enforceable property rights’ are needed to enhance the social and economic prosperity of these growing cities (Collier, 2017; Lall, Henderson, & Venables, 2017; Payne & Durand-Lasserve, 2012; World Bank, 2013). This consensus has influenced decades of international development policy advice and is captured in targets 1.4 and 11.1 of the Sustainable Development Goals (SDGs).

Yet what *form* should these property rights take? Most of the literature focuses on formal, legal rights despite acknowledging that property rights can be enshrined in norms and social practices. This likely reflects the belief that informal arrangements are less secure than formal rights, particularly in urban areas. Given that cities are large, anonymous places, it is difficult to monitor and punish those who fail to uphold norms. As land becomes scarcer and more valuable, the payoffs to breaking agreements may also increase (Baland & Platteau, 2000; Ellickson, 1991). People will therefore increasingly seek legal protection for transactions in cities; as economic historians note occurred in Europe during industrialisation (Cai, Selod, & Steinbuks, 2015).

Despite this, many cities in the global south are expanding outside of the framework defined by property laws. In Sub-Saharan African cities, *most* land is acquired through informal market transactions (Rakodi, 2006; World Bank, 2015). We know comparatively little about how these markets work, and what these arrangements mean for housing outcomes in practice (Kihato & Royston, 2013; Rakodi, 2006). To paraphrase Marcel Fafchamps, there is no better measure of this than the propensity to call unfamiliar institutional arrangements ‘informal’ (Fafchamps, 2003, p. 4).

This paper therefore examines the institutions that underpin the informal land market in the case study city of Dar es Salaam (Tanzania). The analysis reveals

arrangements that are surprisingly effective in securing ownership rights and reducing transaction costs for informal property. It also shows, however, that land use rights – a vital yet largely overlooked component of the property rights ‘bundle’ – are weak, resulting in a social dilemma that traps housing at low-quality standards. These findings contribute new insight on the functioning of informal property rights in urban areas, further debate about the role of informal institutions in development, and open avenues for new comparative research on adequate low-income housing. They also have direct policy implications for Dar es Salaam and other cities in the global south.

The paper is structured in three parts. It opens with a description of the data and methods used in the analysis. The second section provides an overview of the property rights system in Dar es Salaam and explores the arrangements that underpin informal rights in detail. Section III analyses the implications of these arrangements for housing quality in the city. The final section concludes.

## **Section 1: Methods**

This paper takes a multidisciplinary approach to explore the role of institutions in shaping payoffs to behaviour. It is grounded in a wide literature that includes both historical and contemporary analysis of informal arrangements to reduce transaction costs and support market activity (e.g. Ellickson, 1991; Fafchamps, 2010; Greif, 1993; Grossman, 2020; Milgrom, North, & Weingast, 1990; Pamuk, 2000); as well as coordinating institutions that support community management of common pool resources (Foster, 2011; Ostrom, 1990; Ostrom, Gardner, & Walker, 1994).

The research draws on both quantitative and qualitative data. Market insights and housing patterns are analysed using data from the World Bank’s Measuring Living Standards in Cities Survey (MLSC), which was piloted in Dar es Salaam between November 2014 and February 2015. This survey was designed to shed new light on

living standards in urban areas, including the relationship between informality of tenure and housing quality. The data are representative for the city as a whole as well as between settlement areas that are more regular and those that are classified as ‘irregular’ through a semi-automated algorithm (World Bank, 2016).

The qualitative data are composed of 43 semi-structured interviews and three focus groups, conducted over two months of field research in 2017. This includes interviews with 10 officials at the two lowest levels of government, the Ward and Subward; 11 real estate experts and informal brokers; and 22 interviews and three focus groups (15 participants) with residents of centrally located, low-income areas of the city as. All respondent names have been changed for anonymity.

The analysis of the qualitative data draws on the Institutional Analysis Development (IAD) framework developed by Elinor Ostrom and others. This framework conceptually delineates the ‘action arena’ of interest – in this case, where actors transact and dispute property rights – in order to systematically analyse the institutions that shape payoffs to behaviour. In doing so, however, the paper is limited in the extent to which it can analyse decisions around property ownership and inheritance that occur within the family, such as land use decisions in shared plots and gender dynamics than shape women’s access to land. There is room for further research that analyses the family as an action arena of its own.

Section III of the paper brings together insights from the quantitative and qualitative data to explore the implications of property rights arrangements on housing quality. It draws on the analytical tool of a two-player game, in order to formalise the narrative and clearly state expectations about how institutional rules shape human actions and interactions.

## **Section II: Property Rights in Dar es Salaam, Tanzania**

Dar es Salaam is the largest and most economically important city in Tanzania. It has a population of more than five million people, and is among the fastest growing cities in Sub-Saharan Africa (Collier & Jones, 2017; Moldrop Wolff, Kuch, & Chipman, 2018). Most residents live in low-quality, one-storey accommodation (World Bank, 2016).

Most of the housing in Dar es Salaam is ‘informal’. The MLSC data shows that sixty percent of owner-occupiers do not have any form of legal documentation for their property, and only a minority can be considered to have full legal title.<sup>2</sup> Why is this? There is an extensive literature on urban informality but little consensus on why it emerges and persists. Formal rules are often expensive and inappropriate, but researchers highlight that the nature of the informal systems, as well as the dynamic relationship between the two sets of rules are also relevant (Roy, 2005; van Gelder, 2013). Indeed, within the region, some argue that informal systems may be better adapted to the needs of the urban poor (e.g. Antwi & Adams, 2003; Chitengi, 2016; Mooya & Cloete, 2007; Rakodi, 2006). Others caution that they protect the interests of elites (e.g. Joireman, 2011).

In Dar es Salaam, land policy highlights the importance of enabling markets and formalising ownership yet gaining official recognition of property rights in urban areas is time consuming and expensive. Land must have been surveyed and allocated for residential uses in a town planning drawing, the Municipal Surveyor must approve a deed plan, a sales agreement must be notarised, fees paid, and a ‘Certificate of Right of Occupancy’ issued by the Ministry of Lands (Kironde, 2006; Moldrop Wolff et al., 2018).

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<sup>2</sup> 16 percent have a title deed or Certificate of Right of Occupancy. One quarter have partial documentation, and less than 1 percent claim to have traditional/customary rights.

As such, most households acquire property through informal transactions (Kironde, 2000, 2006; Kombe, 2005). Some of these properties are located in parts of the city that have been developed outside of the legal system; for example, in areas designated for purposes such as agricultural or reserved uses, or land which has not yet been surveyed and planned. Other properties are brought to the market through subdivision of existing residential land, which violate official property laws.

How do property rights work for those who buy land informally? Legal tenure is a short hand for *a set of rights* we call ‘property rights’ – namely, the rights to own, transfer, and use property (Lombard & Rakodi, 2016; Payne & Durand-Lasserve, 2012). While the former two rights entitle owners to certain privileges, the latter is a *restriction* that defines what property owners can and cannot do with their property (Eggertsson, 1990, p. 34).<sup>3</sup> The following subsections analyse the institutions that support these three dimensions of property rights in the informal market.

### ***Ownership and transfer rights***

Interview respondents indicate that there are clear norms of ownership in Dar es Salaam, as well as established processes to manage disputes that may arise from informal transactions. These norms bear little resemblance to legal processes yet align with accounts detailed in Morogoro, Dodoma, and Dar es Salaam more than twenty years ago (Kombe, 1994, 2005; Kombe & Kreibich, 2001).

Ownership is conveyed through inheritance or purchase. The transfer of land can take place through a private sale process between the individuals interested in buying and selling the property. Thus, owner occupiers in the centre of the city described having bought their plot many years ago from a landowner who subdivided their

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<sup>3</sup> These restrictions can serve to *enable* more effective use of land, as will be discussed below.

property when the area was still agricultural. Those that had bought their property more recently described a similar process for plots located in the periphery.

Most respondents indicated that they did not know the owner of the plot before the transaction; they were introduced by a friend or an informal property broker (*dalali*, in Swahili). This echoes recent research that also finds most informal land transactions take place through *dalali* (Moldrop Wolff et al., 2018). These brokers are not formally regulated and are widely considered to be untrustworthy (Mercer, 2017; Moldrop Wolff et al., 2018).

As such, it is not surprising that respondents indicated that fraudulent practices abound – indeed, it is not uncommon to see a sign attached to an empty plot to warn naïve buyers that the land is not for sale. What *is* surprising, however, is that informal owners nonetheless express high levels of security of tenure. This is noted in existing qualitative research (Briggs, 2011; Kironde, 2000; Kombe, 2005; Moyo, 2006), and confirmed in the MLSC survey, as most (75 percent) of informal owner-occupiers say they are not at all concerned that someone may take their property away from them without their permission.

The case of one respondent, Joyce, a 30-year-old woman who rents two rooms with her sister in a central unplanned settlement, is illustrative. In the last ten years, she has bought plots of land in three different periphery areas of Dar es Salaam. In the first case, it emerged that land had been cleared, subdivided, and sold without the owner's permission. One day, she recalled, 'the owner bring a truck and break down everything...' As will be discussed further below, she is still trying to resolve this issue by drawing on dispute resolution processes available to her.

In the second instance, the owner himself was involved in the fraud. One afternoon, Joyce recounted, she went to visit her plot and discovered a man there cutting

trees. It transpired that he had made a down-payment on the same land some years prior. Furious, they confronted the person responsible for the double sale, who happened to be in the neighbourhood to sell another piece of land. After heated discussion, it was agreed that Joyce would keep the land as she had paid full price for it, while the other man could either accept a different plot in the area or get his money back.

Joyce has now almost completed building a house on this second plot, and recently bought a third in another area of the city as an investment. She does not worry about the risks; she believes that ‘at the end of the day, all will be fine. He [the prior owner] is the one who just has to tell the truth’. In other words, Joyce has confidence that her rights to ownership are widely accepted, and that the norm of telling the truth will prevail. How can we explain this confidence given her own experiences of conflict? The answer lies in institutions that underpin both ownership and dispute resolution.

In each sale, Joyce followed the same transaction process that other respondents indicated was the norm. Once the sale was agreed, a written statement was created and signed by each party and a witness on both sides, who are usually a family member or friend. The agreement is kept by the buyer. Officials from the lowest level of government – the Subward or *Mtaa* (street, in Swahili) – and/or the local political party system (Ten-Cell leaders) are also often asked to witness the transaction. Neither of these officials has any formal role in land management, yet all respondents that had bought a plot of land recently described paying a fee of between 5 and 10 percent of the value of the transaction to these figures for this purpose.

In the event of a dispute, respondents emphasised that the first step is for the affected parties to attempt to resolve the issue directly – just as Joyce did. Should this fail, the injured party reaches out to local authority figures such as the Subward

Chairperson, who will consult with neighbours and suggest a resolution. In the majority of cases, respondents asserted, this is sufficient to resolve the issue.

What gives weight to the judgement of these local figures on issues of land? There are well-known cases of local authority figures upholding informal rights, but these tend to occur in small, homogenous communities, where people know each other well so the costs of monitoring and sanctioning behaviour are relatively low (Fafchamps, 1992; Ostrom, 2005). We do not associate these solutions with rapidly urbanizing cities where relationships are anonymous and heterogeneous (Baland & Platteau, 2000; Ellickson, 1991). Despite this, there are features of the institutional context in Dar es Salaam that may nonetheless reinforce these judgements. These are: (I) the community context of weak formal support networks; (II) the existence of hierarchical monitoring and enforcement capacity; and (III) self-regulating checks on official's behaviour.

Life is precarious in cities like Dar es Salaam. The city is known locally as '*Bongo*', which derives from the Kiswahili word for brains and reflects the belief that you have to rely on your wits to get by. Indeed, one respondent, after recounting the many difficulties she faced when she first migrated to the city – including her first employer's refusal to pay her for months of work – sighed by way of explanation, 'that's life in Dar es Salaam'. There are few official social safety nets, 60 percent of employed household heads work without a contract, and formal insurance systems are virtually non-existent (MLSC survey).

People must instead draw on networks of support to navigate life and access basic services. Forty percent of households rely on their neighbours' connection to access water (MLSC survey). Interview respondents described calling on neighbours for periodic help – from trivial issues like borrowing salt to life-saving support. For

example, one explained that she had been away from home when floods hit in 2011; it is fortunate, she reflected, ‘that I have a good relationship with my neighbours, because they went to my house and took my children and grandchildren to higher ground’.

In situations like this where formal markets are deficient and there are complex networks of social rights and obligations, incentives for cooperative behaviour are likely to emerge (Baland & Platteau, 2000; Platteau, 2000). This is particularly the case if transgression of social norms in one sphere can be punished in other (Baland & Platteau, 2000; Platteau, 2000). This takes us to the second key contextual feature of Dar es Salaam: mechanisms for monitoring action and punishing transgressions across different spheres of action may be more effective than they appear at first glance.

The main challenge of monitoring and enforcement is costs: in urban areas social networks may be large, making it hard to keep tabs on behaviour. Yet where ability to help others is linked to prestige and power, mutual obligations based on trust may take on a ‘star shaped’ network with a patron at the centre (Fafchamps, 1992). As such, the growing tendency to involve the Subward in informal property transactions should be contextualised in the Chairperson’s influence on many different facets of urban life: their signature is needed for a range of documents, from opening a bank account to joining the military; and they often sit at the head of local volunteer security services (*policijame*) that deal with daily security and policing issues in the area. As such, the Chairperson may have the capacity to punish non-compliance with property rights norms in other vital areas of daily life.

Subward officials are also able to draw on a remarkably extensive network to monitor behaviour. This network takes the form of ‘Ten-Cell’ leaders. Technically, the Ten-Cell leader is a feature of the political party structure. Prior to the introduction of multiparty democracy in 1992, however, they performed important local government

functions, and many continue to do so today. Indeed, residents interviewed were unsure whether the Ten-Cell leader was a representative of a political party or local government, and all the chairpersons interviewed stated that a letter of introduction from a Ten-Cell leader was needed before their office could provide services to a new resident in the area.

The third key factor that reinforces this system is that the broader institutional structure of local government may provide a check on the behaviour of the chairperson. Although land issues fall outside of their official remit, other government officials accept the chairperson's engagement in land issues. As one official at the next level of government, the Ward Office, explained: '[i]t is not the law, but it is recommended' that the chairperson be involved in sales transactions. In fact, as one former municipal planner explained, they are the 'interface with the formal system'.

Indeed, if the Subward chairperson cannot resolve the dispute, it can be escalated to the Ward Tribunal. This Tribunal is the first forum of the legal system.<sup>4</sup> From here, files can be transferred to the district and primary courts, and ultimately to the High Court and even the Court of Appeals (Pedersen, 2010). This is the process that Joyce, the interview respondent mentioned above, is currently going through with her first plot, and is depicted in Figure 1. As she explained, 'we have the case at the court... We have a lawyer... The first time the government said it was ours, and then not... At the moment we just wait... It's a bit hard'.

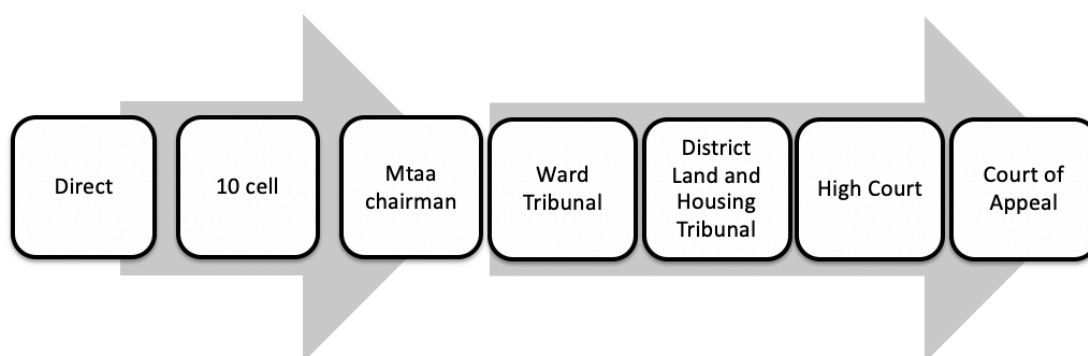
Respondents indicated that it was rare for disputes to escalate into the court system, which is seen as slow, expensive, and unreliable. Indeed, officials stated that

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<sup>4</sup> Ward Tribunals were established between 2004 and 2005 to ease the burden on the court system (Pedersen, 2010).

even residents with formal property documentation would turn to the Subward chairperson for dispute resolution first – a finding that echoes practices recorded in Dodoma and Morogoro (Kombe & Kreibich, 2001). Yet the *possibility* of taking the case to court may act as a check on the behaviour of Subward chairperson. Their authority on land issues is largely persuasive, and thus, like other customary leaders, may feel it is undermined if community members question it by seeking legal recourse (Aldashev, Chaara, Platteau, & Wahhaj, 2012). This may provide an incentive for local leaders to make judgements that do not differ substantively from court systems, and it is notable that respondents suggested that they felt the chairperson generally adjudicated fairly.<sup>5</sup>

Figure 1: Informal and Formal Land Dispute Resolution Process



Informal ownership and transfer rights are thus underpinned by widely accepted norms and backed by credible monitoring and enforcement capacity. Are these mechanisms more costly than formal enforcement mechanisms? Eggertson breaks down transaction costs associated with market exchange of property into six categories: costs related to search, bargaining, contracting, monitoring, enforcement, and protection

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<sup>5</sup> Subward chairpersons are also rated more favourably than other officials in Dar es Salaam in the Afrobarometer survey.

against third party encroachment (Eggertsson, 1990). In Dar es Salaam, informal costs are likely on a par and arguably lower than formal costs in most of these dimensions, since (I) there is no official property market data, so all buyers must rely on informal channels such as *dalali* or personal recommendations to search and bargain for property; (II) costs of notarising a formal sales agreement are likely higher than the charge local officials levy; and (III) the two systems fuse in terms of monitoring, enforcement, and protection. These findings have profound implications for our understanding of housing quality constraints in the city, as will be discussed further in section III.

### ***Use Rights***

Land use restrictions are vital to well-functioning land markets. This is because, as standard urban economics textbooks stress, land is a fixed asset so the value of land and the payoffs to different land uses will be at least in part determined by uses of neighbouring land. Legal restrictions thus *restrict* property uses, but they also *provide* something important: peace of mind that your investment will not be devalued by your neighbour deciding to open a noisy bar or polluting factory on your doorstep. They help owners establish reasonable expectations about their neighbours' behaviour.

Land use rights are often-overlooked in the broader literature on housing quality in the global south. This may be because formal land use restrictions are often so overly-restrictive that researchers looking at formal systems are primarily concerned about the needed to *loosen* regulations (e.g. Glaeser & Henderson, 2017; Henderson, 2009; Monkkonen & Ronconi, 2016). But this tells us little about land use rights in informal markets. How is uncertainty managed in this context?

Areas settled outside of formal legal frameworks are often described as 'self-planned', or 'self-regulated', and the land use patterns are thought to reflect social

relationships (Fekade, 2000; R. Harris, 2014; Kombe, 2005; Kreibich, 2000). These can take the form of explicit agreements and community-wide commitments to land use plans. Yet in centrally located irregular areas of Dar es Salaam, the norm is that plots are subdivided and developed without reference to any broader neighbourhood development vision. New houses emerge at the back of old houses, without direct access to the road. The front door of one house opens onto the latrine of another.

Interview respondents were quick to complain that these conditions are unsanitary and unsafe. These disadvantages are also reflected in market data: two forthcoming papers using hedonic price regressions of MLSC data shows that houses located in visibly irregular areas are valued 30 percent lower than those in regular areas, and that the rental value for a room is also 18 percent lower, all other things being equal.<sup>6</sup> Despite this, officials contested the idea that land use restrictions did not exist in these areas. Instead, they claimed they struggled to *enforce* rules. As one Ward official explained, ‘People do not listen. If they want to build, they build.’

If officials and residents alike both profess to support land use restrictions, and informal institutions appear to be effective at upholding other dimensions of property rights, why are these arrangements so unsuccessful? The data suggest that there are two key differences between informal land use coordination and land ownership/transfer arrangements. The actors remain the same, but there are differences in the context and action situation that change the payoffs to action in important ways.

The first key difference is that norms on land uses are not clearly defined and shared in the way that land ownership and transaction norms are. Although most respondents thought some form of restriction applied, they were uncertain of what they

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<sup>6</sup> These are co-authored papers currently under review for the World Bank working paper series.

were and how processes operated. This may be because the *need* for these norms is not apparent until it is too late. Urban specialists interviewed expressed the belief that migrants follow building practices that served them well in rural areas but are inappropriate in cities. Only once the area densifies do the downsides become clear: people can no longer dig a new pit latrine when theirs becomes full, and without access to the road, they cannot be serviced by liquid waste removal trucks or solid waste services.

Once construction has taken place, however, disputes are difficult to resolve. As such, respondents said they had little choice but to appeal to local leadership to intervene. Yet in contrast to disputes over ownership and transactions, residents complained that local leaders were very unresponsive to issues arising from land use coordination problems. Why is this? Information problems may be a factor, and town planners often stress the need to train local officials in principles of town planning. Officials interviewed, however, described their position differently: emphasising the importance of land use controls but expressing the belief that they were simply unable to act on this matter.

Officials' behaviour suggests that they face different payoffs to action on land use coordination challenges compared with ownership/transfer rights. Ultimately, whether or not leadership emerges to establish institutional constraints on behaviour will depend on whether the individual benefits of change are greater than the costs of leadership (Platteau, 2008). And in dense, central neighbourhoods the layout of land may shape payoffs *against* leadership.

Specifically, there are cases of Subward and Ten-Cell leaders taking on the role of galvanising action to improve land uses within a settlement area (Burra, 2004; Kombe & Kreibich, 2001; Magigi & Majani, 2006). Yet all of these examples come

from peripheral communities threatened with eviction. Although many households incurred personal costs to accommodate changes – for example, donating a portion of their land to roads – they were able to meet improvement demands without relocating residents outside of the settlement. In dense, central areas, the situation is different. Efforts to regularise the layout of settlements may lead to diffuse benefits to many but sharp costs to an angry few. The act of widening a road, for example, may require resettlement of some residents and can be a cause of political protest (Collier, 2017, p. 426).

In fact, in centrally located areas, leaders may face greater reward for *opposing* redevelopment than spearheading reform. Subward leaders can benefit from positioning themselves as defending the community against efforts to expropriate them; gaining greater authority by representing the community in negotiation with outside agents (Aldashev et al., 2012). This was reflected in the frustrations of Ward level officials in Dar es Salaam. As one explained: ‘when you try to get them to follow the rules, the chairperson reacts by saying “you are disturbing my people”’.

In addition to this, an important driving factor in densification of central areas is demand for rental accommodation: the MLSC data shows that more than half of households in Dar es Salaam are renters, and 80 percent of these households live in one or two rooms. These are generally single-storey houses built around a central courtyard, to which additional rooms are often added to rent out.<sup>7</sup> When a renter moves into new accommodation, they are expected to register with the local Ten-Cell leader and the Subward office. This may create incentives for local leaders to turn a blind eye to housing expansion; as one local leader interviewed put it: ‘when you come and build in

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<sup>7</sup> This is discussed further in an accompanying paper currently under journal review.

my Subward you are immediately a part of my Subward. Because I want your vote, I will have some politeness towards you’.

In short, the absence of commonly accepted land use coordination norms to guide action in centrally located settlements in Dar es Salaam is a source of concern to local residents, but community leaders are reticent to engage in these issues. This likely reflects both challenges intrinsic to land use coordination – in particular, the need to anticipate changing demands over time as areas densify – and the issue that once areas become irregular, there may be greater payoffs to leadership in opposing efforts to regularise and coordinate land uses than in promoting them. In the following section, I explore how these arrangements affect housing quality in the city.

### **Section III: Implications for Housing Quality**

Policy makers in Dar es Salaam often attribute the proliferation of low-quality housing to informality (Briggs, 2011; Campbell, 2013; Collier & Jones, 2017). Economic theory provides a sound basis for this claim: we anticipate that informal markets will be marked by low levels of tenure security and high transaction costs, since risks cannot be mitigated through legal channels (Field, 2005). The outcome is underinvestment in housing, both because higher risk will be captured in lower real estate values and because ‘people cannot be expected to invest if they do not feel reasonably secure’ (Brueckner & Lall, 2015; Payne & Durand-Lasserve, 2012, p. 46). Many thus conclude, for example, that ‘[w]ithout a doubt, one of the most serious problems’ facing ‘Africa’s informal urban settlements is insecure tenure’ (UN-HABITAT, 2011, p. 12).

Recent evidence, however, casts doubt on this hypothesis as an explanation for low-quality housing in Dar es Salaam. As discussed further in an accompanying paper, insight from the MLSC survey indicates that there is remarkably little difference in

quality across formal and informal properties in the city.<sup>8</sup> In this accompanying paper, we also fail to find any price premium associated with legal tenure, and show that neither housing nor neighbourhood amenities are significant predictors of having a formal title. The findings in section II of this paper help to explain why this is: informal institutional arrangements have arisen which mean that informal rights are widely accepted, and cost of enforcing property rights are similar across formal and informal owners.

The results also, however, reveal that an often-overlooked component of property rights is poorly enforced across the board: official land use rights are widely ignored, while those shaped by social agreements and norms are fragile. What are the implications of this for housing quality in the city? Irregular development patterns are widely linked to reduced access to basic services such as improved water and sanitation. This occurs both through direct effects, such as reduced road access and space to provide these services, and through spatial externalities – if some members of a neighbourhood cannot be serviced by sanitary waste disposal and thus continue to deal with faecal sludge in ways that compromise public health, demand for sanitary waste disposal will rationally be lower in the area as a whole (Satterthwaite, Mitlin, & Bartlett, 2015).

Indeed, the MLSC survey shows that both the value of people's property and the returns on investing in housing quality is undermined by the construction decisions of others. As discussed above, hedonic price analysis shows that there is a 30 percent price discount associated with property located in irregular neighbourhoods in Dar es Salaam, all other things being equal. Moreover, mains connection is associated with a rental

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<sup>8</sup> This is a co-authored paper currently under review for the World Bank working paper series.

price premium of 73 percent in regular areas but only 3 percent in irregular areas, all other things being equal.<sup>9</sup>

Under these circumstances, a social dilemma – a situation when choices made by rational individuals result in socially irrational outcomes (Bates, 1995, p. 29) – may emerge. Below, I demonstrate these dynamics with a two-player game. Suppose two neighbours are each considering making improvements to their 6-room house in a central, regular area of Dar es Salaam. Both neighbour (A) and neighbour (B) currently rents out two rooms in their house to tenants at the median market rate in the MLSC survey of Tsh 30,000 a month. They each have a choice: extend their house and build two additional rooms, gaining Tsh 30,000 a month from each new tenant (Tsh 60,000 in total), or connect the house to mains sewage and water, improving existing rents.

In making their decision, the property owners must consider the action of their neighbour. Given the public-good nature of sewage, the amount of rental increase associated with connecting to the mains will depend on their neighbour's investment decision as well as their own. If both choose to invest in sewage, they can expect a 73 percent improvement in rent (Tsh 43,200 a month for both tenants combined). If their neighbour instead chooses to extend their property, the payoffs will be smaller (as a guide, I use the payoffs for sewage connection in irregular areas, i.e. 3 percent, or Tsh 1800).

If both neighbours choose to extend their houses, the quality of the neighbourhood as a whole suffers. To simplify, say the neighbourhood becomes visibly irregular. In this event, the rent of all of their own rental rooms as well as their

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<sup>9</sup> These results are presented and discussed further in a co-authored paper currently under review for the World Bank working paper series.

neighbours' rooms will be depressed by Tsh 5000 per room (the median rent in irregular areas is Tsh 25,000). As such, the payoff will be Tsh 50,000 per month for the two new rooms, minus lost income of 10,000 on their existing rooms.

The payoffs are set out in Figure 2. Putting aside the issue of the different costs of these reforms for the moment, the payoffs are such that neither player has a dominant strategy; what they choose depends on the action of the other player. The outcome where both players choose to invest in mains (M,M) is the outcome that makes both best off. Yet the outcome where both extend (E,E) will occur unless some institution exists that can allow the two to credibly coordinate their action. This is because, neighbour (B) has every incentive to extend their house if they see that neighbour (A) has invested in sanitation, just as neighbour (A) has the same incentive if (B) connects to the mains.

Outcome (E,E) is pareto efficient but it is not optimal by other standards. Indeed, in judging allocative efficiency we must consider the large spatial externalities to sanitation that are not fully internalized in the private rent tenants are prepared to pay for mains in a fully serviced area. Indeed, sanitation is often thought to be vital for economic density, agglomeration economies, and the very economic benefits of urbanisation (Ashraf, Glaeser, & Ponzetto, 2016).

Figure 2: Simplified Payoffs to Urban Land uses in a Two-player Game

		A	
		Extend house	Mains
B	Extend house	40000 40000	1800 60000
	Mains	60000 1800	43000 43000

This analytical exercise shows that strong land use rights institutions are likely a necessary condition for regular housing development patterns. Yet they may not be a *sufficient* condition. Below, I modify the game to reflect a world where there are credible constraints on development, and thus neither neighbour can extend their property. The two players now choose between connecting to the mains or keeping their money with their savings group, which offers 5 percent interest per month.<sup>10</sup> As with the previous game, the benefits of sewage are contingent on *all* members of the area adopting sewage.

This exercise helps to show that costs of basic services are a key consideration. In Figure 3, a connection fee of Tsh 200,000 is assumed based a recent project in Arusha that subsidized connections (ODI, 2016). At this cost, the outcome will be (M,M). In practice, however, the real costs of connection to the sewage in Dar es Salaam is much higher: the World Bank's Doing Business 2018 report indicates that it currently takes 30 days and Tsh 3 million to get a water and sewage connection from

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<sup>10</sup> A savings group is a mutual-aid group akin to an informal credit union that are widespread across the region (le Polain, Sterck, & Nyssens, 2018).

the utility company, Dawasco. At 5% interest from a savings group (Tsh 150000), this payoff would far exceed the private benefits of connection.

Figure 3: Game with Land Use Restrictions and Subsidised Connection Costs

		A	
		Savings group	Mains
B	Savings group	<div> <div>10000</div> <div>10000</div> </div>	<div> <div>1800</div> <div>10000</div> </div>
	Mains	<div> <div>10000</div> <div>1800</div> </div>	<div> <div>43000</div> <div>43000</div> </div>

These findings highlight that lack of credible commitment on land use coordination can result in a social dilemma, where outcomes are individually rational but socially sub-optimal. In the case of Dar es Salaam, it suggests that the absence of land use coordination may fatally undermine chances of this residential housing improving out of ‘slum’ standards. The discussion also serves to further reinforce the connection between well-functioning land markets and basic service provision. Even where land use coordination exists, costs of accessing sanitation can remain a critical barrier to household connection.

### Conclusions and policy implications

The global south is urbanising rapidly, and in many places, outside of the legally prescribed framework for property ownership. While there is broad-based consensus that clear and enforceable property rights are vital to the sustainable development of cities, we know much less about the different forms these institutions can take. This

paper contributes new insight by evaluating the institutions that underpin the majority of transactions in a case study city. The results challenge conventional wisdom about informal property rights in urban areas, as they show these rights are more effective than is often anticipated in securing ownership and transfer rights, but investment is nonetheless stifled by land use right failures. In this section, I conclude with a brief discussion of the implications of these findings for ongoing debates in institutional economics as well as urban development policy.

Seminal works of social science research have long shown that informal institutions can be as effective as formal property rights in shaping behaviour around common resource management and private land disputes in rural areas (Ellickson, 1991; Ostrom, 2005; Platteau, 2000). The conditions of urbanisation, however, can put such arrangements under stress; the payoffs to breaking arrangements may grow along with land values, costs of informal monitoring and sanctioning rise as communities become larger, and demand for formal property rights will increase.

The case of Dar es Salaam provides a powerful qualification to this assertion, by challenging the expectation that this reinforcement will necessarily take the form of *legally* prescribed rights. As the discussion above has shown, in Dar es Salaam, *informal* institutional arrangements have arisen that provide informal owner occupiers with perceived security of tenure and potentially even lower transaction risks than formal property owners.

At the same time, however, the findings also suggest that we cannot assume that institutions will *necessarily* arise to solve new property rights challenges in urban areas. There is no consensus about how and why institutions emerge (Platteau, 2000, 2008). Debate around informal property rights institutions in Sub-Saharan Africa has oscillated between optimism about their role in responding to challenges that the formal system

fails to address (Antwi & Adams, 2003; Mooya & Cloete, 2007); and concern, on the other hand, that they serve to protect entrenched groups or elite interests (Joireman, 2011).

The findings presented in this paper advance this debate by raising the possibility that informal solutions may be less well suited to some forms of challenges than others. Specifically, the land use component of property rights requires forward-thinking behaviour and is particularly difficult to address retroactively. ‘Spontaneous’ institutional solutions may thus be more likely to be ineffective. This could be tested through further comparative research.

The findings also open an avenue for future research on the role of local government officials in informal property rights arrangements. Researchers have noted that local officials witness property transactions and adjudicate disputes in cities in contexts as diverse as Brazil, Ethiopia, India, and South Africa (A. G. Adam, 2014; Chattaraj, 2016; Marx, 2009; Perlman, 2016). It is often assumed that these processes are either performative or extractive, since the officials do not have the legal authority to act in this way. The case of Dar es Salaam, however, suggests that under certain circumstances these arrangements support effective ownership and transfer rights.

The findings presented also have direct policy implications. Formalisation of urban property rights has occupied a central position in international development policy advice for cities for decades. The empirical track record of these initiatives in promoting housing investment has been mixed, with failures attributed to factors ranging from project implementation failures, spiraling costs, and failures in connected markets (Buckley & Kalarickal, 2005; Mooya & Cloete, 2007; Payne & Durand-Lasserve, 2012; Payne, Durand-Lasserve, & Rakodi, 2009).

Dar es Salaam is an example of a city where titling efforts have disappointed. The findings of this paper suggest that policy makers may have been too quick to conflate the absence of certain institutional forms (namely, formal titles) with the absence of institutional functions (ownership and transfer rights). This may render projects ineffective: if households do not perceive formal title to be more secure or less costly to transact, they will be unlikely to change their investment decisions in response to formalisation. At worst, projects could be counter-productive: since titles can be used to gain access to microfinance to expand property, with future rental income earmarked as the repayment mechanism for the loan, they may exacerbate land use irregularity. While these results are specific to Dar es Salaam, the evidence suggests that a more complete land market analysis – covering both formal and informal institutions – should be a precursor to property rights reform in *any context*.

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