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Institutional transition: Social cohesion and demand for land titles in urban Tanzania

Martina Manara

University College London (UCL), Bartlett School of Planning, Central House, 14 Upper Woburn Place, London WC1H 0NN, United Kingdom

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ABSTRACT

In much of urban Africa, demand for statutory property rights remains low even when governments coordinate land titling programmes and reduce the costs of registration. This paper studies the Residential Licence programme of Dar es Salaam (Tanzania), which has had moderate and decreasing uptake since the early 2000 s. It tests hypotheses that social cohesion – measured via neighbourhood homogeneity and individual connectedness (or marginalisation) – affects choices of formalisation and explores two potential channels through social cohesion producing returns from informal systems and social sanctions for exit. Statistical analysis of city-wide administrative data shows that more homogenous neighbourhoods with higher shares of older, male and cooperative landholders have lower individual titling, and marginalised individuals, such as newcomers, female and uncooperative landholders, make more recourse to statutory property rights. However, primary survey data and vignettes suggest that landholders expect substantial returns from formalisation, including gains of tenure security and public goods provision over and above the informal tenure system. Expectations of social sanctions by neighbours are negligible overall, and neighbours do not provide significant disincentives (nor incentives) for land titling decisions in this context. By showing that dimensions of social cohesion make land title acquisition of higher priority for specific groups and individuals, these results add to a growing literature on the links between social cohesion, tenure security and land titling decisions. They underscore a need for further research on how informal tenure systems produce and distribute public goods (including tenure security) generating heterogeneous (dis)incentives for transitioning to alternative land institutions. This knowledge will provide better understandings of demand for land titles in rapidly urbanising developing cities and inform more effective land policies addressing specific shortcomings of informal tenure systems for diverse contexts, communities and individuals.

1. Introduction

While economic theory predicts that demand for land titles should increase with intensifying land competition and land value (Demsetz, 1967; Platteau, 1996), this is rarely observed in fast urbanising sub-Saharan Africa, where a hodgepodge of informal land institutions continue to govern urban land, through systems of rules, norms and customs beyond state recognition. Since the 1990 s, international actors and governments have promoted land titling pursuing diverse and even conflicting interests (Boone, 2019) to facilitate land and credit markets (De Soto, 2000), while also protecting de-facto rights and enabling state revenue. Through land titling programmes, governments coordinate the stages of town planning and land surveying *en masse* to raise the supply of land titles at relatively cheaper prices. However, the last stage of title acquisition by landholders remains a bottleneck, and many revert to

informality over time (Ali et al., 2021). Recent literature has challenged economic models based on land values and wealth, transaction and bureaucratic costs. First, it is increasingly recognised that landholders navigate overlapping institutional systems and the strength of informal property rights affects valuations of land titles (Jimenez, 1984; Friedman et al., 1988; Lanjouw and Levy, 2002; Kim, 2007; Monkkonen, 2012). Relatedly, returns from land titling are heterogeneous across cities, communities and individuals based on wider factors affecting tenure security in the informal system (Lanjouw and Levy, 2002; Kim, 2007; Monkkonen, 2016). Thus, recent research has explored how social incentives and disincentives impact perceptions of tenure security and choices of formalisation by diverse landholders (Balán et al., 2024; Collin, 2020; Honig, 2017; Gochberg, 2021; Zhang, 2022).

Using the Residential Licence programme of Dar es Salaam (Tanzania) as its case-study, this paper deepens current understandings

E-mail address: m.manara@ucl.ac.uk.

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of the social factors mediating demand for land titles. Specifically, it asks, does social cohesion among neighbours contribute to explain individual choices of formalisation? If so, what are the channels underlying a relationship between social cohesion and demand for land titles? Social cohesion is defined through community-level homogeneity and individual-level marginalisation within neighbourhoods. Homogeneous communities may disincentivise land titling if they are more effective in providing joint returns from informal systems and social sanctions for exit, while marginalised individuals may have incentives to formalise if they are disadvantaged by the informal system and less sensitive to the social costs of exit. However, whether these factors influence land titling decisions remains underexplored. This is partly due to limitations in the availability of spatially disaggregated large-scale datasets on land title acquisition and difficulties in defining and measuring social cohesion. Drawing on government data covering the entire city, primary survey data with residents of selected areas, and interviews with local leaders, I study these questions in the context of a programme that has offered interim property rights (Residential Licence) to over 180,000 plots across the city, since the early 2000s (Kironde, 2006; Manara, 2022; Manara & Pani, 2023a). Approximately half of the eligible landholders acquired a Residential Licence at the beginning of the programme, but less than twenty percent currently have one. Through implementing cheap technologies to keep prices largely affordable, this programme provides an ideal context to study social factors affecting demand for land titles beyond standard economic concerns on prices and affordability.

Broadly consistent with the paper's hypotheses, statistical results suggest a relationship between dimensions of social cohesion and land titling. Homogenous communities with higher shares of older, male and cooperative landholders have lower individual land titling, and marginalised individuals – exemplified by landholders who recently acquired the land, are women or unwilling to cooperate to collective action – make more recourse to statutory property rights. However, exploring the potential channels of this relationship between social cohesion and land titling, the paper shows that expectations of higher returns from informal tenure and social sanctions for exit by neighbours are scarce overall. Instead, landholders expect substantial individual and joint gains from formal tenure, motivating shared expectations of social approval for land titling and potential social sanctions for staying informal (should formalisation gather pace). In sum, neighbours do not provide social disincentives (nor incentives) for land titling decisions in this context. Other motivations may explain the relatively moderate and decreasing rate of Residential Licence acquisition, as companion papers further investigate, such as the progressive disengagement of state actors with this programme (Manara, 2022), the introduction of an alternative and competing formal title (Manara & Pani, 2023a), and the fact that benefits from land titles are projected in the distant future (Manara & Regan, 2024). This paper adds to this knowledge by demonstrating that dimensions of social cohesion make land title acquisition of higher priority for specific groups and individuals, calling for further studies into the uneven returns of informal tenure systems in diverse contexts.

These results contribute to understand the co-constitution of land tenure and social relations (Peters, 2009; Boone, 2018; Valkonen, 2021) by further suggesting links between individual experiences of social cohesion and heterogeneous perceptions of tenure security under informal systems (Ghebru and Lambrecht, 2017; Lahoti, 2022; Zhang, 2022). Furthermore, the paper relates to recent work that framed formalisation as a choice between the community and the state, arguing that social connections disincentivise recourse to statutory property rights for landowners with strong social ties of ethnicity (Collin, 2020), kinship (Honig, 2017) and cooperation (Gochberg, 2021). This work aligns with the view that that formal property rights may be seen as substitutive and even threatening of communal networks, collective action and social institutions, as suggested by older debates (Bromley, 2008; Durand-Lasserve, 2006; Payne, 1997; Von Benda-Beckmann,

2003) and recent evidence on the potentially socially disruptive effects of land titling in rural (Harris and Honig, 2023) and urban contexts (Balán et al., 2024)¹. In conducting a novel examination of the relationships between social cohesion and urban land titling, this paper proposes two advancements. First, it focuses on diverse channels of social cohesion, entrenched in gender relations, length of tenure, and cooperation to infrastructural public goods, which are critical to experiences of tenure security in developing cities (e.g. Ferreira and Ávila, 2018; Lahoti, 2022; Van Gelder and Luciano, 2015; Zhang, 2022). Second, this paper also probes into the mechanisms of the relationship between social cohesion and land titling through the empirical analysis of primary survey data on expectations of (i) returns from informal and formal tenure systems and (ii) social sanctions for choices of formalisation and staying informal, and (iii) by examining whether these vary with several measures of social connectedness.

The paper adds to further strands of literature. First, it complements a scholarship studying how individuals negotiate between institutional frameworks, for example, when deciding to resolve land disputes formally or informally (Edeh et al., 2022; Winters and Conroy-Krutz, 2021). Second, literature on neighbourhood effects in development has provided evidence that social networks influence decisions to adopt risk mitigation measures (Di Falco and Bulte, 2013), credit products (Wydick et al., 2011) and new infrastructure, such as sanitation (Thulin et al., 2022), decisions that may be related to land titling – which often comes with promises of state protection, access to credit and infrastructural upgrade. This paper is not concerned with peer-effects (i.e. the influence of other people's behaviour) in land title acquisition per se (see Manara, 2020, chapter 2, where I examine this question). However, in the same spirit, it advances the study of social incentives influencing demand for land titling. Finally, there is a burgeoning mixed-methods research on the demand for land titles in urban Tanzania, including the Residential Licence (Collin, 2020; Kusiluka and Chiwambo, 2019; Parsa et al., 2011) and longer-term leaseholds (Ali et al., 2016; Kusiluka & Chiwambo, 2018; Manara & Regan, 2022, 2024; Panman & Lozano Gracia, 2022; Wankogere & Alananga, 2020). Adding to this work, this study and its companion papers (Manara, 2020, chapter 2; Manara, 2022) provide unique insight on how social relations, social expectations and peer-behaviour affect choices of formalisation with interim property rights.

The paper proceeds as follows: first, it discusses how social cohesion may determine returns in the informal system and social sanctions of exit, therefore producing social incentives and disincentives for formalisation. Second, the context of this research and the land tenure formalisation programme under study are presented. Next, the mixed-methods approach is described, before discussing the empirical findings and conclusions of this paper.

2. Social cohesion and demand for land titles

Drawing on notions of legal pluralism (de Sousa Santos, 1977) and the continuum of property rights (Payne, 2001), the literature increasingly acknowledges multiple sources of de jure, de facto and perceived tenure security (Van Gelder, 2010) and wide factors affecting how individuals understand and navigate overlapping normative frameworks in developing contexts, including social relations within households and communities, non-state and state authority (Valkonen, 2021). It is demonstrated that tenure security is lower for individuals with weak social ties, such as newcomers and women (Ghebru and Lambrecht, 2017; Zhang, 2022). Newcomers are discriminated in a range of African

¹ Balán et al. (2024) argue that formal and informal institutions are imperfect substitutes, since citizens that participate more in social institutions, such as churches and mutual aid society, are more likely to demand land titles. However, the adoption of land titles crowds out participation in informal institutions.

cities including Bakavu (Van Overbeek and Tamás, 2020), Cape Town (Barry et al., 2007), Durban (Patel, 2013), Juba (McMichael, 2016) and Nairobi (Mwau et al., 2020). Global indicators suggest that, beyond external threats of eviction, women are more susceptible than men to internal threats of tenure security from household and community members (Feyertag et al., 2021) and social norms against female ownership (Rakodi, 2016) are reported in Dar es Salaam (Manara & Regan, 2024), Nairobi (Lockwood, 2020) and Isuikwuato in Nigeria (Chigbu, 2019). More generally, Lahoti (2022) observes that the presence of safety networks and ‘habitat contributions’ within a settlement correlates with higher tenure security in urban India. This and further evidence led scholars to posit a relationship between social cohesion (otherwise referred to as ‘social capital’ or ‘social connections’) and perceptions of tenure security (Lahoti, 2022; Zhang, 2022), interrogating how these factors affect preferences and incentives for alternative property rights (Collin, 2020; Honig, 2017; Gochberg, 2021).

There are potentially many defining features of social relations within communities, and this paper will focus on one: social cohesion between neighbouring landholders. Specifically, social cohesion is understood in two ways.² First, it is the level of homogeneity within a neighbourhood. By enabling norms of cooperation and broader informal arrangements, homogeneity can enhance the effectiveness of community mechanisms of tenure security and other public goods, therefore producing joint returns from informal tenure systems. For example, Collin (2020) shows that ethnic homogeneity in the neighbourhood produces joint returns of tenure security from government eviction in Dar es Salaam. As he suggests, this could explain why a 10 % increase in the percentage of co-ethnic neighbours correlates with a 6 % decrease in the probability of acquiring formal documents (i.e. Residential Licences). Furthermore, homogeneity by length of tenure may also mitigate internal land conflict: while Harris and Honig (2023) report beliefs that migrants would not respect the local authority, Edeh et al. (2022) demonstrate that newcomers have lower confidence in the informal arbitration of land disputes. More generally, homogeneity allows individuals to align interests and actions towards shared goals (Putnam, 1995). Often homogeneous communities have developed more functional and legitimate local rules, which are better aligned with the needs of the majority, and therefore trigger spontaneous compliance in collective action situations. When defections occur, homogeneity also facilitates the enforcement of social sanctions that preserve the informal order (Habyarimana et al., 2009; Miguel and Gugerty, 2005).

Furthermore, it is considered that community members have subjective experiences of social cohesion, depending on individual positions within the community (i.e. the neighbourhood). Whilst homogeneity can produce joint returns from informal tenure systems, social connectedness and marginalisation distribute those unequally, determining uneven individual returns of tenure security and access to public goods. For instance, Honig (2017) demonstrates that farmers in rural Senegal and Zambia are less likely to acquire land titles when they have kinship links to customary authorities, suggesting that this is due to higher individual returns of tenure security via advantages in the arbitration of land disputes. By contrast, Balán et al. (2024) find that citizens close to urban chiefs have higher demand for land titles in the D.R. Congo, arguing that these connections increase the costs of informal protection and expectations of advantages in the titling process. Either way, this evidence is consistent with further qualitative work suggesting that, in case of pluralistic normative frameworks, social identity and positionality determine “balances or imbalances of power” (Nyenyezi Bisoka et al., 2020: 11). Migration status, gender, wealth, education and many other traits shape heterogeneous experiences of tenure security and individual preferences for certain authorities and rules, which are eventually seen as more legitimate or effective than others (ibidem; also

Meinzen-Dick and Mwangi, 2009; Van Overbeek and Tamás, 2020). Thus, though group-level homogeneity and individual positionality, social relations may affect direct returns from informal systems and potentially influence demand for land titles.

In addition to producing and distributing returns from informal tenure systems, social cohesion may also affect land titling decisions more indirectly, by imposing social sanctions for those who leave (or threaten to leave) the informal system. The social costs theory of land titling posits that landholders acquiring land titles may produce social costs to the informal system (for example, by weakening local tribunals or collective action) and be socially sanctioned through the denial of moral and material support in subsequent social interactions. Consequently, the fear of these social sanctions would discourage choices of formalisation at the community level. For example, Gochberg (2021) explicitly frames land titling as a social dilemma within communities, suggesting that the acquisition of a land title represents an incomplete exit from the wider social system, and individuals opting for formalisation can be sanctioned through alienation in other domains of social life. This is supported by empirical evidence that landholders who rely on the help of family and neighbours are more reluctant to acquire land titles in rural Uganda, because they value returns and fear alienation from these social relations. In the same spirit, Harris and Honig (2023) demonstrate that community members with individual land titles are deemed uncooperative in reciprocal and collective action situations, such as repaying debts and contributing to school and hospital facilities. Indeed, Balán et al. (2024) find that the adoption of land titles crowded out participation in social institutions, such as churches and mutual aid groups, lending further credibility to an older argument that land titling can disrupt solidarity networks within communities (e.g. Bromley, 2008; Durand-Lasserve, 2006).

As discussed above and further summarised in Appendix Table A.1, land titling behaviour should respond to social cohesion within communities, decreasing in homogeneous neighbourhoods but increasing for marginalised landholders. First, homogeneity may reduce needs for land titles directly (by providing public goods, especially tenure security) and indirectly (by enabling effective social sanctions for leavers). For example, well-established social relations amongst old settlers, male landholders and members of collective action networks may strengthen mutual trust in customary or local arrangements to avoid or resolve land disputes, dig wells or repairing roads, etc. On the contrary, the presence of newcomers, female owners, or non-contributors may raise uncertainty around the effectiveness of these informal arrangements. As mentioned, newcomers may be considered less trustworthy and respectful of the local authority or simply less knowledgeable of local rules. Female ownership may challenge patriarchal norms and potentially unleash conflict, while uncooperative neighbours may threaten local collective action and public goods. Additionally, as explained above, communities where time, patriarchy and cooperation generate higher homogeneity should be more effective in sanctioning exit. Therefore, neighbourhoods with higher shares of old settlers, male owners and cooperative individuals should experience higher joint returns from informality and social sanctions decreasing the acquisition of land titles.

Furthermore, within these communities, marginalised individuals should be more likely to acquire land titles compared to others, because of direct disadvantages in the distribution of tenure security and other public goods and indirect advantages of exit. That is, if marginalised individuals are less dependent on social networks and norms of trust, reciprocity, and cooperation, they should be less vulnerable to social sanctions because they have ‘less to lose’ in terms of moral and material support from other landholders. All these factors may contribute to explain empirical data that newcomers have higher valuations of land titles and tendency to formalise (see Friedman et al., 1988, Harris and Honig, 2023; Jimenez, 1984; Lanjouw and Levy, 2002). Similarly, female landholders and non-contributors may have lower expectations of returns from the informal system and lower sensitivity to the social

² This resonates with a two-dimensional concept of social capital in sociology, as organisation- and individual-level social capital (Coleman, 1990).

sanctions of exit. Thus, focusing on length of tenure, gender and cooperative attitude as three important – but necessarily limited – channels of community homogeneity and individual marginalisation, the remainder of this paper will explore if social cohesion affects choices of title acquisition, particularly through expectations of returns from the informal system and social sanctions of exit, as per the hypotheses discussed in this section and in [Table A.1](#).

3. Land tenure and formalisation in urban Tanzania

With 7.5 million inhabitants and expected to reach 10 million by 2030 ([World Bank, 2020: 5](#)), Dar es Salaam is the largest city of Tanzania and one of the world fastest growing cities. Founded in the 17th century as a commercial centre, under German and British rules, the city developed as a node of trade ([Brennan et al., 2007](#)). Largely fuelled by rural–urban migration, massive urbanisation occurred through the densification and expansion of unplanned settlements, compensating for the deficit of formal housing and state infrastructure through basic forms of accommodation and services at relatively low costs ([Lupala, 2002; Kombe and Kreibich, 2000](#)). Today, unplanned settlements present a variety of material and socio-economic characteristics across the city ([Panman, 2020](#)) attracting both poorer migrants ([Andreasen et al., 2016](#)) and the middle-classes ([Mercer, 2021](#)). In many cases, the risk of imminent government eviction is low and the informal governance system protects ownership and transaction rights through sub-ward (*mtaa*)³ chairpersons, branch leaders and their assistants: political representatives variously integrated within the state apparatus ([Manara & Pani, 2023b; Panman, 2021](#)). These actors of local governance, broadly defined as local leaders, witness informal ownership rights and issue unregistered sale agreements that still enjoy relatively high levels of legitimacy ([Manara & Pani, 2023a; Wolff et al., 2018](#)).

Nonetheless, growing pressures of urbanisation, densification and churning of residents challenge the capacity of informal systems to provide tenure security and other public goods ([Kombe and Kreibich, 2000](#)). This is demonstrated by rising cases of neighbours' encroachment and inheritance disputes ([Manara & Regan, 2024; Mercer, 2021; Nuhu, 2021](#)) and limited coordination of collective action for infrastructural improvements ([Panman, 2021](#)). As in many other African cities, these risks are not evenly distributed across communities and individuals. For instance, newcomers face distinctive risks due to fraudulent transactions and double-sale in the informal land markets ([Alananga and Mwasumbi, 2019; Wolff et al., 2018](#)). Therefore, according to chairpersons interviewed by this author, newcomers have higher propensity to acquire the Residential Licence, due a “lack of social relations that make them feel insecure” (Said, elected once).⁴ Female owners are more susceptible to scamming and higher prices than men ([Alananga and Mwasumbi, 2019](#)), experience unequal inheritance rights ([Manara & Regan, 2024; Macha, 2013](#)) and tend to tolerate boundary disputes ([Manara & Regan, 2024](#)), as urban areas are also permeated by patriarchal and customary norms favouring male ownership ([Evans, 2015; Genicot & Hernandez-de-Benito, 2022; Kudo, 2015; Wineman & Liverpool-Tasie 2017](#)). Thus, the rapidly urbanising context of Dar es Salaam provides a good case-study to examine if dimensions of social cohesion, uneven returns from informal tenure and social pressures amongst neighbours affect land titling decisions.

However, the context of urban Tanzania also presents uncommon features in the region, particularly as land governance and community life are less reliant on customary authorities and ethnicity rules. First,

the post-independence and socialist history of the country, especially the land collectivisation movement of the 1970 s (*Ujamaa*), created a legacy of ‘statist land institutions’, with offices of local governments almost completely replacing local chieftaincies, even in rural areas ([Boone and Nyeme, 2015](#)). In this respect, Tanzania provides an exceptional context compared to cities like Kampala (Uganda), where customary authorities and norms still govern land through formal recognition and de-facto legitimacy, or Nairobi (Kenya) where informal land is controlled by landlords pursuing interests of economic profit and political power. Relatedly, post-independence governments have sought to forge a national identity by imposing one universal language (Swahili) and by tabooing tribal affiliation. Thus, there is a much higher percentage of individuals who only associate with their national identity (versus ethnic identity) in Tanzania compared to Ghana, Kenya, Nigeria and other countries ([Collin, 2020: 904](#), using Afrobarometer data). Despite this, [Collin \(2020\)](#) finds links between ethnic enclaves, higher tenure security and lower uptake of Residential Licence in Dar es Salaam, suggesting that ethnic homogeneity still plays a role in choices of formalisation. Instead, other channels of social cohesion that may be equally or even more relevant – such as length of tenure, norms of gender and attitudes of cooperation – have remained underexplored.

In the 1990 s, Tanzania led a new wave of land reforms in sub-Saharan Africa, heavily influenced by external interests to facilitate international land and credit markets ([Manji, 2006; McAuslan, 2013](#)). The 1999 Land Acts prescribed two ownership documents for urban land: the Certificate of Right of Occupancy (CRO) and Residential Licence (RL). Both documents provide private statutory property rights: just like a CRO, the RL is registered within a government database and is enforceable within the state courts of law. It can be transferred and collateralised legally, therefore promising – at least on paper – advantages over and above other unregistered proofs of ownership, such as higher tenure security and compensation (in case of eviction), translating in higher transaction values and bank loans. However, unlike the CRO, which has a duration of sixty-six years (for residential use), the licence is only valid for five years (renewable). The latter was designed as an incremental and pro-poor land registration system where plots are identified through low-cost technology and community participation ([Kironde, 2006; Manara & Pani, 2023a](#)). Thus, prices of first acquisition and five-year renewal have been low (i.e. 20,000TSh and 10,000TSh, or \$8–4) and land rents negligible (24TSh/sqm). While further transaction costs may accrue in specific cases, typically the RL can be even ten times more affordable than a CRO.⁵ Therefore, this programme provides an ideal context to study broader non-economic factors affecting demand for land titles.

In the early 2000 s, the Ministry of Lands estimated that unplanned settlements covered over 80 % of land and approximately 500,000 housing units in Dar es Salaam. The first phase of the Residential Licence programme was launched in 2004, targeting about 220,000 plots. As illustrated in [Figure 1](#), the programme included 160 sub-wards from the city centre to the urban periphery, presenting a wide variety of characteristics. These *mitaa* (and the subsample of 52 where primary data was collected) are situated in distinct administrative units (municipalities) and at various distances from the CBD (from two to nineteen kilometres). This is reflected in heterogeneous land values and uses, road and market access, plot density and size, housing and infrastructure quality, history of occupation and socio-economic profile of landholders. For example, in Ilala, at the border with the formal city, Malapa has

³ The *mtaa* is the smallest administrative unit in the city. In our field sites, they have 1,700 plots and 13,000 residents on average (chairpersons' estimates).

⁴ Information from in-depth interviews of 52 *mtaa* chairpersons. Further details on their roles and the methodology of this data collection are found in [Manara and Pani \(2023a,b\)](#).

⁵ Additional transaction costs may include the time costs of travelling to the municipality, arrears on missed payments, or further expenses for site visits if information in the 2006 database needs additions or amendments, valuation reports (up to 200,000TSh) and advocates' documents (up to 5% of the selling price) for the registration of a transfer. Some prices vary with plot size (e.g. land rents), but officially there is no further discrimination on gender, income, or other factors. For information on CRO prices see [Manara and Regan \(2022\)](#).

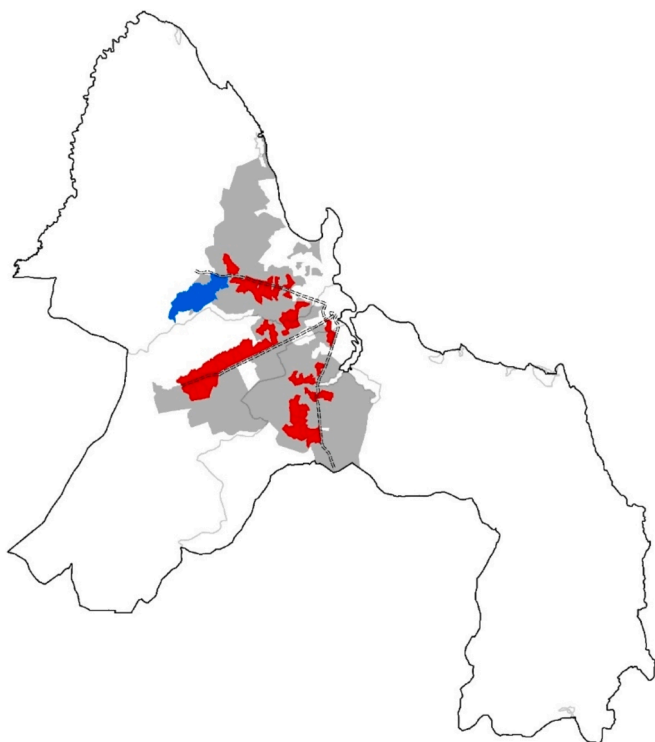


Figure 1. Dar es Salaam divided into three municipalities as in the early 2000 s (until 2015/2016): Kinondoni (west), Ilala (central), and Temeke (east), crossed by main roads: from top to bottom, Morogoro, Nyerere and Kilwa road (dashed lines). The Residential Licence programme (phase I) included about 160 mitaa or sub-wards (grey). The Land Tenure Survey discussed in this paper involved 52 mitaa (red). In 2016, the government conducted a pilot programme of regularisation with Certificates of Right of Occupancy in the Kimara ward (blue). [No colour in printed copy]. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

higher rates of two-storey buildings and a lively rental market. A little further from the CBD, Kombo and Miembeni received some infrastructure and service upgrades, while in proximity to the Msimbazi river, settlements have dirt roads and poor-quality houses, subject to frequent and devastating flooding. This diversity is likely to result in heterogeneous levels of social cohesion, perceptions of tenure security and informal land governance quality more broadly. Furthermore, heterogeneity in length of tenure, female ownership and attitudes of cooperation provide an ideal context for this study.

While this programme experienced moderate uptake in its early years, with about fifty percent of eligible landholders acquiring a licence by 2007, less than twenty percent currently have an active document and the programme was not replicated elsewhere until 2019 (Manara & Pani, 2023a). Meanwhile, a burgeoning literature on the demand for formal titles in urban Tanzania has only touched upon the hypotheses studied in this paper. For example, Collin (2020) finds that newcomers are relatively less likely to acquire the Residential Licence in two low-income communities close to the city centre. Wankogere and Alnanga (2020) argue that women report higher constraints to land titling with Certificate of Right of Occupancy compared to men (e.g. monetary costs and lengthy processes). Indeed, women are under-represented as legal owners in the government cadastre, even though experimental evidence suggests that resistance to co-titling is low (Ali et al., 2014). Finally, Kusiluka and Chiwambo (2018) reflect that the presence of a ‘strong’ community discourages the acquisition of Certificate of Right of Occupancy by validating ownership and resolving land conflicts locally, while for Parsa et al. (2011) high incidence of property disputes is a factor leading to higher uptake of Residential Licence. Building on these observations and Collin’s (2020) research on the effect of ethnic

enclaves, this paper will provide novel scrutiny on the links between social cohesion and demand for Residential Licence in Dar es Salaam.

4. Methodology

4.1. Administrative data and sampling

To set up the Residential Licence programme, the Ministry of Lands conducted a massive enumeration exercise of over 220,000 plots in Dar es Salaam, recording de-facto landholders and plot boundaries in collaboration with the contiguous neighbours and community leaders. Eventually, over 188,000 plots were identified and administered a socio-economic questionnaire, which this paper uses to study the relationship between social cohesion and demand for land titles. This analysis is restricted to a subsample of plots that were interviewed in the field from 2004 to 2006 (90 %), were deemed suitable for formalisation (not classified as ‘hazardous’),⁶ and are owned by individuals for residential use, instead of institutional or solely commercial plots (summary statistics in Table 1, panel A). I also remove plots with potential land conflict, which could not possibly acquire a land title. These include plots where the landholder did not sign a boundary agreement form (9 %) or with pending inheritance cases, where a note was made on the death of the landholder or the presence of an administrator (5 %).⁷ Additionally, I remove plots belonging to the same compounds to minimise bias due to sorting dynamics (5 %), as will be explained later in this section. Regressions on female ownership further drop plots with multiple landholders (4 %). This low share suggests that the programme encouraged the registration of one landowner only, instead of co-titling.

Summary statistics for the remaining sample are reported in Table 1, panel B, where variation in the number of observations depends on missing values. To study how marginalisation in the informal system affects land titling decisions, I focus on three variables: length of tenure, female ownership, and willingness to contribute to local public goods. On average, respondents have held their plots for 13 years, while 15 % of landholders arrived within the last two years, demonstrating the rapid densification of informal settlements. These are coded as ‘newcomers’. Finally, one in five plots is owned solely by women (21 %), suggesting that de-facto female ownership is not rare in this context, even if it remains a minority. Finally, during the field interview (i.e. prior to the issuance of titles), respondents were asked if their household would be willing to contribute to neighbourhood improvement programmes, such as road repairs, digging ditches or water wells, through various modes of contribution: cash, labour, or labour and cash. A total of 40 % responded negatively and are therefore considered ‘non-contributors’ for the purposes of this analysis. Additionally, the paper draws on the Residential Licence Registry of each municipality to retrieve detailed records of title uptake. Roughly 47 % of sampled plots acquired a Residential Licence by 2007, while the rate increased to 55 % by 2017. However, less than 20 % currently have an active document, either renewed over time or recently acquired.⁸

Despite of theoretical and contextual justifications (elaborated in the prior section), these variables can only provide narrow proxies for community homogeneity and individual marginalisation. For example,

⁶ Hazardous plots are typically along river valleys or major roads demarcated for expansion and infrastructural upgrade.

⁷ Plots with boundary conflict are not substantially different in the key characteristics of length of tenure, female ownership, and cooperative attitude of the landholder, while plots with inheritance conflicts have earlier years of arrival (1988 versus 1993), fewer newcomers (8% versus 16%), more female attribution (31% versus 22%) and uncooperative attitude (70% versus 44%).

⁸ The administrative dataset used for this analysis records if a Residential Licence was renewed, not the landholder who paid the renewal fees. Therefore, this may be either the landholder who initially acquired the document or a buyer (after a registered transaction of the licence).

Table 1
Administrative data: Summary statistics.

Variable	Obs	Mean	Std. Dev.
Panel A			
Interviewed by 2006 (in field)	188,315	0.9	0.3
Owned by institution/company	187,861	0.007	0.084
Has residential use	171,867	0.981	0.135
In disaster prone area	220,560	0.08	0.271
In plots' compound	220,561	0.046	0.211
Signed boundary agreement	176,683	0.908	0.289
Has inheritance case	187,852	0.046	0.209
Has multiple owners	187,842	0.041	0.198
Panel B			
Acquired RL by 2007	115,424	0.465	0.499
Acquired RL ever (by 2017)	115,424	0.549	0.498
Length of tenure (year arrival)	103,527	1992.443	11.276
Newcomer (2 years)	103,527	0.151	0.358
Female ownership	115,424	0.212	0.409
Unwilling to contribute	115,424	0.4	0.49
Plot area	115,424	395.924	750.987
Number of households	108,621	2.131	1.948
Number of people	106,307	7.747	4.908
Has tenants	109,800	0.364	0.481
Owner resident	109,800	0.909	0.287
Building completed	112,842	0.796	0.403
Self-assessed building value	97,679	11,681,119	12,824,094
Water seller	111,395	0.688	0.463
Water from neighbour's tap	111,395	0.128	0.334
Waste collection	103,945	0.342	0.474
Has electricity	105,073	0.407	0.491
Direct road access	115,424	0.445	0.497
Distance to closest road (min. 5 m wide)	115,424	88.512	100.836
Distance to main road	110,589	55.026	89.213
Mean distance to plots in disaster prone area	115,424	296.48	243.774
Distance to closest river	115,424	739.98	535.074
Distance to city centre	115,424	8794.374	3166.284
Count contiguous neighbors	115,424	4.45	1.544
Count neighbors in 50 m	115,424	18.763	9.277
Mean RL Acquisition Contiguous (2007)	114,273	0.451	0.312
Mean RL Acquisition Contiguous (ever)	114,273	0.534	0.315
Mean RL Acquisition 50 m (2007)	113,192	0.443	0.204
Mean RL Acquisition 50 m (ever)	113,192	0.526	0.209
Mean Year Arrival Contiguous	111,332	1992.324	8.534
Mean Year Arrival 50 m	112,274	1992.579	6.603
Mean Non-newcomers (2 years) Contiguous	111,332	0.851	0.252
Mean Non-newcomers (2 years) 50 m	112,274	0.844	0.186
Mean Male owners Contiguous	114,190	0.785	0.244
Mean Male owners 50 m	113,177	0.781	0.143
Mean Willing to contribute Contiguous	114,250	0.58	0.325
Mean Willing to contribute 50 m	113,189	0.58	0.234

some local leaders observed that communities with longer length of tenure may be indigenous tribes, such as the Zaramo and Ndengereko, the Matumbi and Makonde, which have “different ways of managing and selling their properties informally” (Denis), embedded in Muslim norms, “lower awareness and education” on statutory property rights (Ali). In other cases, it was suggested that newcomers may be more affluent than the indigenous population in the same neighbourhoods.⁹ Thus, correlations between length of tenure and land title acquisition may only scratch the surface of a more complex social relation of tenure sedimented in tribal affiliation, religion, and wealth. Similarly, data on education, income, and marital status would be needed to shed further light on female ownership, for example exploring which women were able to register their names as de-facto sole owners, and whether they had equal propensity to also register de-jure (via land titling). However, some of the potential co-variates mentioned above were either

⁹ Information from in-depth interviews of 52 mttaa chairpersons. Further details on their roles and the methodology of this data collection are found in Manara and Pani (2023a,b).

unrecorded or unreliable in the socio-economic questionnaire utilised for this paper (see ‘Controls’ below). Finally, an obvious limitation of adopting a measure of stated willingness to contribute to collective action is that this may not reflect actual contributions.

4.2. Empirical model and framework

Following earlier discussions, individual demand for the Residential Licence is modelled as a function of key characteristics of the landholder and their neighbours, proxying for degrees of social cohesion, and potentially affecting returns from the informal system and social sanctions for exit. This equation can be written as a linear probability model:

$$Y_i = \alpha + \beta X_i + \gamma X_i \times X_{j(i)} + \delta X_{j(i)} + \epsilon_i \zeta + \eta \bar{Y}_{j(i)} + \lambda_{s(i)} + \lambda_{t(i)} + u_i + \epsilon_{s(i)} \quad (1)$$

Where Y_i is an indicator variable equal to 1 if landholder i has acquired a licence by 2007. This measure is preferred to minimise the risk of plot and ownership characteristics changing over time (with respect to data recorded until 2006) and because most uptake occurred by 2007. X_i is a measure of landholder i 's key characteristics. Depending on specification, it is i 's length of tenure in number of years or a dummy equal to 1 if i is a female (sole) landholder or someone unwilling to contribute to local public goods. For each of these variables, $X_{j(i)}$ describes the mean of j , neighbours to i , who are old settlers, male and cooperative landholders, respectively. Finally, $X_i \times X_{j(i)}$ is an interaction term, which captures how neighbours' characteristics impact across individuals based on i 's own characteristics (for example, identifying the effect of having male neighbours for women versus men). Alternative forms of the dependent and independent variables are also adopted in additional specifications and robustness checks (not shown).

While this study is exploratory in nature, still it moves from intuitions on the expected sign of parameters β , γ , and δ . As elaborated in ‘Social cohesion and demand for land titles’ and synthesised in Appendix Table A.1., estimates of δ should be lower in homogenous communities of old settlers, male and cooperative landholders, where the joint returns from informality should be higher because of norms and customs supporting the community-provision of public goods, including – but not limited to – tenure security. Estimates of β should be positive for individuals experiencing marginalisation in the informal system, such as newcomers, women and uncooperative landholders, because of lower individual returns from the informal system (direct channel), such as disadvantages of tenure security and public good access, and lower sensitivity to social sanctions of exit (indirect channel). Finally, since social cohesion is the result of one's own position vis-à-vis others, I expect positive estimates of γ when marginalised individuals belong to otherwise homogenous communities with a predominance of the opposite traits causing even greater experiences of marginalisation.

These predictions depend on assumptions that could be invalidated changing the sign of parameters. For instance, communities may sanction newcomers and women more intensively, precisely to offset their direct and indirect incentives to formalise. In this case, we would not observe positive β or γ . Other social sanctions may be imposed by relatives, household, or village members, which would also affect coefficients. Furthermore, if uncooperative individuals are merely free riding on collective action and see land titling as another opportunity to free ride on others' contributions, we should not expect a positive β for non-contributors, who may be even less prone to formalise compared to others. Finally, it is assumed that state contributions via land titling and taxes are seen as substitutive to collective action. If instead they are deemed complementary, we should not expect a negative δ for homogenous communities of cooperative individuals, who may be even keener to formalise compared to others.

4.3. Construction of neighbourhoods

Drawing on spatial data and GIS software, I identify two sets of

neighbours for each plot. First, I match each plot with their contiguous parcels (sharing a boundary), which are intuitively the most relevant to i . Often contiguous neighbours are involved in the validation of one another's informal tenure in processes to transact and mortgage land formally and informally, resolve boundary quarrels and other land disputes, for example around the management of solid and liquid waste. Contiguous neighbours also determine one another's probability of incurring land disputes. For example, if a landholder is particularly non-cooperative, their adjacent neighbours may feel higher risk of nuisance or encroachment. However, contiguous neighbours present specific issues of sorting (as further discussed below), especially in a context where land may be sold and inherited through informal subdivision of plots.

To mitigate issues of sorting, specifications also consider an alternative set of non-contiguous neighbours. Indeed, members of the broader community, such as nearby residents, elders, and authoritative individuals can also be involved as witnesses in ownership and boundaries disputes. Furthermore, cooperation among larger groups is required to provide larger scale public goods, such as road repair. Therefore, a larger neighbourhood may also be relevant. For the purposes of this analysis, this is arbitrarily defined as all plots whose centroids fall within 50 m (and are not contiguous), which is consistent with explicit network data from Dar es Salaam, showing that social connections among neighbours decay sharply with distance, and drop after 50 m (Collin, 2020). Robustness checks (not shown) use an alternative definition of neighbourhood (i.e. a fixed number of closest neighbours).

4.4. Controls

Term $\bar{Y}_{j(i)}$ controls for the average rate of Residential Licence acquisition in the neighbourhood (i.e. the endogenous effects of Manski's neighbourhood-effects model, 1993). This paper is not concerned with how neighbours influence each other's choices of formalisation (which I study through different empirical approaches in companion papers (Manara, 2020, chapter 2; Manara, 2022)). However, controlling for the local rate of uptake is important to avoid conflating the effect of social relations with peer-effects and further correlated effects driving common choices among neighbours. All specifications control for spatial fixed effects $\lambda_{s(i)}$ absorbing correlated effects and local shocks at two geographic scales:¹⁰ the mtaa (smallest administrative unit) and a randomly assigned block of 100 m by 100 m. Fixed effects for the year of interview $\lambda_{t(i)}$ control for unobservable factors potentially linked to the roll-out of the programme.

The vector of controls c_i further includes the number of plots in the relevant neighbourhood (among standard controls). As described in Table 1, panel B, additional controls include: plot size, number of households and residents, dummies if any of the building is rented out, if the landholder lives in the plot, and if there is a completed construction, dummies for water system, waste collection and electricity and self-assessed building value. Instead, I prefer to drop variables that are either particularly unreliable or underpopulated, such as, for example, income and assets.¹¹ Finally, I create a set of geographic controls including direct road access, distance to road passable by car (5 m wide), distance to primary road network, distance to river and hazardous plots, and distance to city-centre. Specifications using length of tenure in years include both linear and quadratic terms.

¹⁰ For example, local land values or the influence of local leaders, who could be either well-versed or hostile to the government's project of formalisation.

¹¹ These are typically subject to objective measurement error and respondent bias (even more so in the context of a massive enumeration exercise conducted for a government land titling project).

4.5. Sorting and further limitations

As common in neighbourhood-effects models, a major challenge to identification is spatial sorting: the residential location of individuals is not randomly assigned, and often reflects preferences for environments and neighbours alike. In model (1) this is represented by parameter u_i , a vector of unobserved landholder, household, or land characteristics, which can correlate with both X_i and Y_i , as well as $X_{j(i)}$ and Y_i , leading to spurious estimates of β , γ , and δ . For example, if female landholders tend to locate in safer areas compared to men and safety commands higher land titling, this quality of plot location (which is not observed in the data) could bias the estimate of β upwards. If women are particularly concerned about tenure security, they may prefer locating nearby other female landholders and will also have higher demand for Residential Licence, which would bias estimates of δ upwards. Contrarily, if they are highly concerned about preserving matrilinear customary norms, they will prefer to locate next to other female owners (presumably with same tribal affiliation) and they will be more resistant to statutory property rights, which would bias estimates of δ downwards.

Furthermore, sorting is especially problematic in the context of African cities. Despite limited systematic analysis of land markets and inheritance processes, it is generally understood that land gets sold and inherited through subdivision, essentially producing 'compounds' of connected (and selected) individuals. As said above, the dataset marks these 'compound' situations, enabling me to remove those from the analysis (5 %). However, further cases may be unrecorded, for example if land was exchanged between friends, or if it was subdivided a long time ago. In sum, any interpretation of β , γ , and δ should be cognisant of the fact that we are measuring correlations between social cohesion and demand for Residential Licence, as opposed to causal estimates. These may capture further factors explaining why a landholder located in specific areas and nearby specific neighbours, *prima facie*, and social relations of tenure entrenched in friendship, family, and other preferential relations. In the view of this author, realising these implications is important, but results remain valuable to enrich empirical knowledge on the social dimensions of land titling decisions.

4.6. Primary survey data

Most importantly, the empirical strategy described thus far does not enable us to examine the potential channels of a relationship between social cohesion and land titling, particularly by studying how landholders understand returns from formalisation (versus the informal system) and whether they expect social sanctions for land titling by neighbours, such as tacit or open disapproval, strong admonishment or change of attitude. To address these questions, the paper draws on primary survey data collected in two rounds in 2018 and 2019. The methodology of this Land Tenure Survey is detailed in companion papers (Manara, 2022; Manara & Pani, 2023a). One important feature of the survey design is that respondents were sampled from several locations, through a process of stratification by distance to the city centre. This produced representative data reflecting the wide heterogeneity of neighbourhoods under the Residential Licence programme, which was previously described and illustrated in Figure 1.

In the first round, we surveyed 1,363 self-identified landholders in 138 survey clusters of fifty-two mitaa. Each survey cluster includes ten respondents selected from nine contiguous plots and their branch leader (street leader or *mjumbe*). This enabled us to elicit explicit measures of social connectedness and social expectations on formalisation at two scales of community: the survey cluster and the mtaa. As summarised in Table 2, panel A, just under half of respondents ever acquired a licence, while 18 % currently have one (renewed or recently acquired). On average, respondents know well five of the nine neighbours in the same survey cluster, 52 percent trust their neighbours to witness informal ownership, and typically attended one or two community meetings in

Table 2
Land tenure survey: Summary statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Panel A: Respondent characteristics					
Acquired RL	1363	0.486	0.5	0	1
Has active RL	1363	0.175	0.38	0	1
N neighbours known well	1363	5.084	2.598	0	9
Trust neighbours as witnesses	1363	0.517	0.5	0	1
N community meetings attended (last year)	.	.	.	.	.
none	1363	0.188	0.391	0	1
1 or 2	1363	0.332	0.471	0	1
3 or 4	1363	0.273	0.446	0	1
5 +	1363	0.207	0.405	0	1
Female self-identified landholder	1363	0.478	0.5	0	1
Length of tenure	.	.	.	.	.
1970 s or earlier	1288	0.15	0.357	0	1
1980 s	1288	0.166	0.372	0	1
1990 s	1288	0.274	0.446	0	1
2000 s or later	1288	0.41	0.492	0	1
Tribal influence on land ownership	1363	0.225	0.418	0	1
Local leader	1363	0.092	0.29	0	1
Pending land dispute	1363	0.097	0.296	0	1
Panel B: Expected returns from formal titles					
Higher compensation for eviction	1363	0.88	0.325	0	1
Lower risk of boundary dispute	1363	0.885	0.319	0	1
Panel C: Social expectations (vignette 1)					
Land titling negative	1359	0.027	0.163	0	1
Land titling positive	1359	0.912	0.283	0	1
N neigh. would be indifferent	238	23.067	24.473	0	100
N neigh. would approve	238	67.63	29.157	0	100
N neigh. would approve openly	238	42.563	29.427	0	100
N neigh. would disapprove	238	9.45	14.55	0	89
N neigh. would disapprove openly	238	4.454	9.42	0	89
Panel D: Social expectations (vignette 2)					
Staying informal negative	1363	0.892	0.31	0	1
Most neigh. would be indifferent	1363	0.108	0.31	0	1
Most neigh. would critique (mild)	1363	0.58	0.494	0	1
Most neigh. would critique (strong)	1363	0.249	0.433	0	1
Most neigh. would critique (change attitude)	1363	0.063	0.243	0	1

Note. Panel A and B summarise key respondents' characteristics and expectations of returns from land titling, respectively. Panel C summarises responses to vignette 1, where a fictional character acquires a Residential Licence. What would most neighbours in the same survey cluster think of this? Options included: indifference, think it is negative or positive. A subsample of 238 respondents responded one additional question: out of one hundred neighbours in the same mtaa, how many would be indifferent, approve and disapprove (tacitly or openly) of title acquisition? Panel D summarises responses to vignette 2, where the fictional character learns that many of their neighbours have an active Residential Licence. How would most of these react if this fictional character decides to hold to informal tenure? Options included: indifference, mild criticism, strong criticism (e.g. verbal admonishment), and change of attitude (e.g. becoming less kind and cooperative).

the prior year.¹² Compared to administrative data from the early 2000 s, there is a much higher percentage of female owners (48 percent) because the survey did not distinguish between women registered in the Residential Licence database and self-identified landholders.

Following the methodology in Bicchieri (2016), vignettes leveraged social expectations around two hypothetical scenarios involving a fictional character (a man living in the respondent's mtaa) and their neighbours. The fictional character can afford the costs of acquisition and renewal and has no boundary disputes: therefore, they could acquire a Residential Licence – if they wanted. The attribution of one specific gender (male) was made to ensure greater comparability of responses and to leverage expectations of social sanctions for the typical landholder. In fact, vignettes enable us to examine social expectations on

¹² These are generally summoned by the local government (i.e. mtaa office) or sometimes branch leaders.

aggregate, but did not randomise individual characteristics of the fictional landholder nor the predominant trait of neighbours (a research design that would require a much larger sample). Further questions explored if respondents think that social expectations of neighbours' disapproval (or approval) could affect land titling decisions, and whether social (dis)incentives for formalisation exist in broader networks, such as by households or local leaders (see Appendix C).

5. Results

5.1. Statistical analysis of administrative data

Table 3 examines the relationship between social cohesion and demand for land titles using administrative data. Column 1 shows the bivariate relationship between individual-level characteristics proxying for positions of social connectedness (or marginalisation) in the community and individual land title acquisition by 2007. As detailed in 'Methodology', these characteristics are length of tenure (panel A), female (sole) ownership (panel B) and unwillingness to contribute to settlement improvement works (panel C), from administrative records collected during the plot identification stage of the Residential Licence programme. The first variable is measured continuously (in years), while the others are dummies. Columns 2–7 interact these landholders' characteristics with measures of community homogeneity: the means of neighbours who are non-newcomers (length of tenure larger than two years), men and contributors. Two definitions of neighbourhood are adopted: the 50 m neighbourhood (cols. 2–4) and the contiguous plots (cols. 5–7). All models 2–7 include standard controls and fixed effects for mtaa, 100-meter block and interview year. Columns 3–4 and 6–7 apply further sampling restrictions,¹³ while columns 4 and 7 add further controls. Other specifications using alternative definitions of the outcome variable (uptake by 2017), alternative measurements of homogeneity variables as dummies (instead of continuous means), neighbours' length of tenure in years (instead of the 'non-newcomer' dummy) and 200-meter block fixed effects are not presented in this discussion.

Results show that the primary effect of neighbourhood homogeneity is to decrease individual land titling. Holding constant all standard controls (including the number of neighbours and the rate of formalisation in the neighbourhood) and further controls, we observe less uptake with increasing shares of older settlers (panel A, cls. 3–4) and contributors (panel C, cols. 2–4) in the 50-meter neighbourhood, and more male landholders in the contiguous plots (panel B, cols. 5–7). By how much does individual uptake shrink when the means of these variables increase from their bottom to their top decile?¹⁴ Controlling for all other individual characteristics, uptake decreases by 2.6 percentage points in more homogeneous communities of old stayers (col. 4), 2.9 percentage points in communities with higher concentration of male landholders (col. 7) and 2.5 percentage points in more homogeneous communities of cooperative landholders (col. 4). These changes are relatively large, corresponding to 5–6 percent drops in the mean outcome. As per the paper's hypotheses, homogeneity in these community characteristics may be associated with better-established informal rules, norms and customs that enable the effective production of joint returns of tenure security and other public goods (direct channels), and better enforcement of social sanctions for those leaving the informal system by acquiring land titles (indirect channel). However, results are not consistent across the two reference networks (i.e. of 50-meter or contiguous neighbours) suggesting that identifying the relevant community is key to further dig into the social factors affecting

¹³ Sampling plots where the characteristics of interest are observed (non-missing) for at least half of the 50-meter neighbours (cols. 3–4) or all contiguous neighbours (cols. 6–7).

¹⁴ Precisely, the mean of old stayers increases from 0.67 to 1; the mean of male landholders from 0.5 to 1; the mean of contributors from 0.27 to 0.88.

titling decisions.

Furthermore, measures of individual marginalisation are also significant predictors of individual land title acquisition. Controlling for standard and further controls, including the number of neighbours, the rates of homogeneity and formalisation in the neighbourhood, we see that landholders in a position of marginalisation have higher propensity to acquire land titles. We observe this for landholders who arrived more recently (panel A, cols. 1–5), are women (panel B, cols. 1–5) or unwilling to contribute to collective action (panel C, cols. 1–7). When the neighbours' means are held constant in col. 4, uptake is 6.2 percentage points higher for a landholder who has only recently arrived (length of tenure zero instead of ten years), 9.2 percentage points higher for female landholders (instead of men), and 8.6 percentage points higher for individuals who are unwilling to contribute (compared to those who are willing). These changes are important, corresponding to increases of 13, 20 and 19 percent in the mean outcome, respectively. In panels A and B, cols. 6–7, coefficients are not precisely estimated, which might be due to much smaller samples. Despite this, most results align with the paper's hypotheses that positionality in the community matters to individual land titling decisions, and marginalised landholders may make more recourse to statutory property rights because of lower individual returns of tenure security, lower access to other public goods, and lower sensitivity to the social sanctions of exiting informal systems and networks.

However, findings challenge the paper's intuition that marginalised landholders would be even more disadvantaged in homogenous communities with a predominance of the opposite trait and that this would further encourage formalisation. In panel B, cols. 5–7, while the gender of adjacent landholders is the main predictor of title uptake, this effect holds for both women and men alike, as is not impacted by the interaction terms. Furthermore, in panels A and C, the interaction terms show that newcomers and non-contributors' higher propensity to formalise drops significantly in homogenous communities of old settlers and contributors. In panel A, col. 4, a landholder with one year length of tenure becomes 1.5 percentage points less likely to formalise when the mean of non-newcomers switches from the median to the ninetieth percentile (from 0.8 to 1). Similarly, in panel C, col. 4, non-contributors become 2.2 percentage points less likely to formalise as the mean of contributors raises from the median to the ninetieth percentile (from 0.59 to 0.88). Thus, marginalised landholders are less inclined to acquire land titles in homogenous communities with overall higher length of tenure and cooperative attitude. This might be positive (if they benefit from joint returns of increased tenure security and collective action in public goods provision) but also negative (if, instead, they would prefer the individual returns from formalisation, yet refrain from acquiring a title in order to avoid social sanctions).

As discussed in 'Methodology', these results are necessarily subject to limitations, such as arbitrary neighbourhood definitions and missing values causing noise. Nonetheless, they are certainly suggestive of a relationship between social cohesion and land titling decisions. First, they show that dimensions of community homogeneity and individual positionality make land title acquisition of higher priority for specific groups and individuals. This is consistent with the hypothesis of heterogeneous joint and individual returns from informal tenure systems, such as lower tenure security in younger communities, for newcomers and female sole owners. Second, panel C suggests substitutionary effects between collective action and state contributions (via land titling). If the erosion of collective action and other social costs are anticipated, neighbours may discourage formalisation through social sanctions. So, what are the expected returns from formal and informal tenure systems in this context? Do these generate social sanctions discouraging formalisation, for example through social disapproval or withdrawal of support? The next section addresses these questions using primary survey data and vignettes. Specifically, it explores respondents' expectations of: (i) returns from formalisation (*vis-à-vis* informality) and (ii) social sanctions for exiting the informal system. Finally, this section tests whether these expectations vary with the positionality of individual

landholders, based on gender and length of tenure as well as explicit measures of social connectedness from the survey.

5.2. Analysis of channels from survey data

5.2.1. Social expectations of returns from tenure systems

As further elaborated in companion papers (Manara, 2022; Manara & Pani, 2023a), survey respondents expected several individual (private) returns from the Residential Licence. For example, those who have this document and consider it as their preferred proof of ownership (44 % of the survey sample) provided the following motivations: it helps ensure proper compensation in case of government eviction (86 %), minimise the risk of boundary disputes with neighbours (83 %) and inheritance disputes (66 %), increase the value of the plot (68 %) and provides access to bank loans (56 %). Thus, many respondents valued land titles as tools to protect the household's private interests, and stated that their household would express feelings of relief, happiness, and a sense of gratitude if they acquired a Residential Licence (Appendix C). Additionally, many also expected substantial joint returns from land titling via state mechanisms ensuring compensation in case of eviction and local redistribution of land revenue through infrastructural investment.¹⁵ So, they described the acquisition of Residential Licence as an act of citizenry and contribution to the state, which may even generate social pressure to formalise if land titling gathers pace. These qualitative insights emerged from open ended questions in the second round of the survey.¹⁶

For example, Peter is an elder living on low income. He affirms that acquiring a Residential Licence would increase the government's revenue, which can then be invested into development projects. With a primary level education, he mentioned that this revenue could be diverted into "educational services... library, laboratory, classrooms and improve road infrastructures" (TMK/KKM/B1). Thus, he believes that each and every one of his neighbours would definitely approve of land titling as it encourages civic-mindedness, and he expressed regret that he could not afford to renew his Residential Licence. A father of five in his forties, with very low household income, no formal education, and no Residential Licence, Salum added that – if land titling gathered pace – a typical landholder (i.e. the fictional character of vignettes) would feel pressured to acquire one since he "would be afraid that neighbours will laugh at him, and he would feel ashamed in front of them" (TMK/NZSA/E6). Similarly, Jumanne thinks that failure to acquire the land title would cause others to "see a person as a betrayer, an isolated man who stays far from the community" and could not follow others "because of money" (TMK/KMZ/A5).

After all, as Rajab typifies, a land title cements one's legality as an active contributor to the state (TMK/KKM/A3). Thus, just like Peter and the other respondents quoted above, many concurred that a landowner would "feel ashamed" (TMK/ZBK/A5), "inferior" (UBG/KIB/D4), or "guilty" (ILA/SBS/A10) "for not paying while other people are paying and contributing to government revenue" (*ibidem*). On the one hand, these social pressures may reflect individuals' fears that they could be seen as free riders by other community members. On the other, there may be genuine interests in contributing to the state and beliefs that formal mechanisms will re-distribute land revenue locally. As mentioned before, Tanzania's post-independence history is

¹⁵ While infrastructural investment is clearly a collective return, state compensation for eviction may be understood as either collective or individual (if it entails some plot-by-plot negotiation).

¹⁶ As explained in 'Methodology', primary survey data were collected in two rounds in 2018 and 2019. Initially, 1,363 respondents answered a shorter questionnaire. The second survey consisted of a longer questionnaire with open ended questions. It was administered to a random subsample of 243 respondents, selecting two plot holders per survey cluster after a balancing procedure (Manara, 2022).

characterised by statist land institutions and a socialist experience of land collectivisation, which may still influence perceptions of the state's role in land administration. More recently, the government has made efforts to emphasise the need to register land and collect revenue (land rents and property tax) for urban infrastructure and development, which may also contribute to explain faith in state returns from land titling (Appendix C).

5.2.2. Social sanctions for formalisation (and staying informal)

These beliefs motivated substantial expectations of social approval for land titling. In the first hypothetical scenario (vignette 1), respondents learn that another landholder living nearby has an active licence (currently valid). Would they think it is good, bad or do not mind? And what would be the predominant response (i.e. social expectation) in their survey cluster, composed of ten plots identified by landholders' names and nicknames on a list? Just under 3 percent think that the predominant response would be negative versus positive (91 percent) or indifferent (Table 2, panel C). In the second survey round, a subset of respondents was also asked to predict the exact number of neighbours who would react through indifference, tacit and open approval or disapproval (out of one hundred neighbours in the same mtaa, instead of the survey cluster). On average, respondents expect that nearly half of their neighbours would express open approval (43 out of 100), congratulating the fictional character who has acquired a licence, and enquiring about the process to get one. There are limited expectations of open disapproval (4 out of 100) mostly imagined as verbal reprimand for wasting money on something that has little benefits. Instead, nobody hinted at potential verbal or physical conflict generated by land titling decisions.

Further reinforcing evidence of social approval for formalisation, the second vignette provides evidence of social sanctions for staying informal, should land titling gather pace. This hypothetical scenario presents a fictional character who does not have a valid licence, despite the capacity to acquire one.¹⁷ Speaking with neighbours, they realise that many now have active licences, more than they originally believed. If this fictional character decides to hold to informal tenure, what would most neighbours think? In this case, almost 90 percent of respondents expect a predominance of negative opinions as opposed to indifference (Table 2, panel D). Moreover, 58 percent of respondents predicted mild criticism, while 25 percent of respondents stated that most neighbours would react with open criticism, including strong admonishments. Only 6 percent of respondents predicted that most neighbours would change their attitudes, becoming less kind and cooperative to the landholder who chooses to remain informal.

While respondents may not anticipate or discount further social costs accruing in the future (for example, if revenue contribution substitutes for collective action, in line with results in Table 3, panel C), these findings challenge the hypothesis that social sanctions disincentivise the acquisition of land titles. At the same time, however, expectations of neighbours' support for formalisation do not provide effective social incentives to acquire a Residential Licence. First, social support for land titling is unlikely to be expressed and affect neighbours' relations: respondents indicated that about half of their neighbours would be either indifferent (23 %) or only tacitly approving of formalisation (25 %), and the predominant reactions to staying informal would be either indifference (11 %) or mild criticism (58 %), without strong admonishments or changes of attitude. In fact, land titling choices are rarely discussed among neighbours: 37 % of respondents have never heard of someone acquiring or renewing the Residential Licence in fifteen years (Manara, 2022: 1380). Furthermore, a minority (5 %) think that land titling

decisions may be motivated by desires of seeking neighbours' approval, both in the present and if land titling gathers pace.¹⁸ Despite acknowledging collective returns, land titling may be seen primarily as a private decision of the household. This is consistent with further evidence discussed above that private returns from land titles are highly valued and household members would provide the highest approval for formalisation (Appendix C).

5.2.3. Variation of social expectations by individual connectedness

This final section explores whether expectations of (i) returns from formalisation and (ii) social sanctions for land titling decisions vary across individual (self-identified) landholders by explicit survey measures of social connectedness or marginalisation (Table 2, panel A). First, the number of neighbours known well in the survey cluster of ten proximate plots proxies for the quantity and quality of neighbours' relations ('known well' was defined by 'having frequent meetings and conversations on important issues for more than ten minutes'). Second, reliance on neighbours to witness and validate informal land ownership measures trust and mutual returns of tenure security. Third, the number of community meetings attended in the last year captures broader community participation and civic engagement. Further controls include indirect measures of marginalisation utilised above (i.e. gender and length of tenure), following tribal norms of land ownership and being a local leader. Survey cluster fixed effects control for homogeneity in the neighbourhood traits and other spatially correlated unobserved variables.

The overarching result is that expectations of returns from land titling and social sanctions by neighbours are not systematically higher for marginalised landholders (as defined in this analysis). However, Table B.1 in Appendix B suggests that connections to statutory and customary institutions affect expectations of state returns from land titling. Within survey clusters of one branch leader and nine proximate plots, the first is more likely to expect higher compensation for eviction compared to other landholders, while those who follow tribal norms of land ownership are less likely to do so (effects between 8 and 10 percent of the mean outcome, panel A, col. 8). Collaborating with the local government, branch leaders may be more informed about the government's proclaimed benefits of land titles or trust these promises more. Further evidence challenges a link between social marginalisation and disadvantages of tenure security in the informal system. In panel B, arriving one period later (i.e. one decade or more) is associated with lower expectations that formal titles will reduce risks of boundary disputes (effect around 3 percent). In panel C, the presence of pending land disputes is not higher for less connected landholders, women and those arrived later. Despite this, it is worth reminding that these results are contingent on several empirical caveats, and therefore deserve further investigation.¹⁹

In Table B.2, some measures of social connectedness correlate with increased expectations of social sanctions from neighbours. For example, the likelihood of expecting sanctions for staying informal (should land titling gather pace) is 11 % higher for well-connected individuals who know eight of their neighbours well compared to none and 9 % higher for those who attended five or more community meetings in the prior year compared to none (panel B, col. 8). This is in line

¹⁸ Results obtained asking a straightforward question about the fictional character of vignettes and also generic landholders in the neighbourhood.

¹⁹ For example, key caveats include the potential bias of our connectedness measures, the sampling of self-identified landholders (which may in some cases differ from the actual ones), a relatively older populations (only 3% of respondents were newcomers arrived in the last five years), a simplistic assumption that the presence of land disputes (broadly defined) proxies for perceptions of tenure security. Instead, those who are most disadvantaged in the informal system may purposefully avoid land disputes and accept various forms of injustice.

¹⁷ They do not have pending land disputes with neighbours and can afford the costs of acquisition and renewal of a Residential Licence.

Table 3
Social cohesion and demand for land titles.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	50-meter neighbourhood			contiguous neighbourhood			
Panel A							
Length of tenure (years)	−0.0014*** (0.00)	−0.0043*** (0.00)	−0.0050*** (0.00)	−0.0062*** (0.00)	−0.0028*** (0.00)	−0.0002 (0.00)	0.0005 (0.00)
Mean neigh. non-newcomers (2 years)		−0.0246 (0.02)	−0.0509** (0.02)	−0.0783*** (0.03)	−0.0013 (0.01)	−0.0076 (0.04)	−0.0034 (0.04)
Length of tenure # Mean neigh.		0.0028* (0.00)	0.0038** (0.00)	0.0043** (0.00)	0.0012 (0.00)	−0.0001 (0.00)	−0.0019 (0.00)
Observations	103,527	99,416	87,997	59,925	98,101	26,329	17,880
R-squared	0.073	0.184	0.178	0.229	0.181	0.259	0.311
Panel B							
Female owner	0.0272*** (0.00)	0.0613*** (0.02)	0.0692*** (0.02)	0.0921*** (0.03)	0.0303*** (0.01)	0.0234 (0.02)	−0.0089 (0.03)
Mean neigh. male owners		−0.0049 (0.01)	−0.0042 (0.01)	−0.0045 (0.02)	−0.0163** (0.01)	−0.0374*** (0.01)	−0.0584*** (0.02)
Female owner # Mean neigh.		−0.0450* (0.03)	−0.0561* (0.03)	−0.0731* (0.04)	−0.0035 (0.01)	0.0068 (0.03)	0.0597 (0.04)
Observations	111,364	107,580	104,452	63,016	107,625	46,083	27,879
R-squared	0.072	0.181	0.179	0.234	0.177	0.224	0.285
Panel C							
Unwilling to contribute	0.0844*** (0.00)	0.0976*** (0.01)	0.0998*** (0.01)	0.0861*** (0.01)	0.0879*** (0.01)	0.0997*** (0.01)	0.0917*** (0.01)
Mean neigh. willing to contribute		−0.0354** (0.01)	−0.0411*** (0.01)	−0.0411* (0.02)	−0.0205*** (0.01)	−0.0116 (0.01)	0.0012 (0.02)
Unwilling to contribute # Mean neigh.		−0.0327** (0.02)	−0.0357** (0.02)	−0.0379* (0.02)	−0.0149 (0.01)	−0.0405** (0.02)	−0.0468** (0.02)
Observations	115,424	111,505	108,381	65,344	111,605	49,232	29,819
R-squared	0.079	0.183	0.181	0.231	0.180	0.223	0.278
Mean Outcome	0.465	0.465	0.465	0.465	0.465	0.465	0.465
Mtaa – Block100m – Interview Year FE	yes	yes	yes	yes	yes	yes	yes
Standard Controls		yes	yes	yes	yes	yes	yes
Sample Restrictions			yes	yes	yes	yes	yes
Additional Controls				yes			yes

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses clustered at the mtaa level.

Note. Results from linear regression described by equation (1). The sample includes all plots identified and interviewed by 2006, with individual owners (as opposed to institution or company), residential land use (instead of solely commercial), and eligible for land title uptake (not in disaster prone areas). Moreover, the sample excludes plots belonging to compounds or with potential disputes (if the owner did not sign the boundary agreement form or the plot has an active inheritance case). To simplify the analysis in Panel B, regressions on female ownership further drop plots with multiple landholders.

with the paper's hypothesis that connected individuals may be more subject and sensitive to social sanctions (even if in the opposite direction: i.e. to enter the formal system following others). However, those who rely on their neighbours as witnesses of informal ownership and those influenced by tribal norms of land ownership are about 23 percent less likely to expect intense criticism (instead of indifference or mild criticism) for staying informal (panel C, col. 8). Whilst it cannot be concluded that social expectations vary systematically with individual positions of marginalisation in small neighbourhoods, these findings contribute to a research area that requires further and rigorous empirical scrutiny.

6. Conclusion

This paper has examined how social cohesion mediates the acquisition of the Residential Licence in Dar es Salaam, Tanzania: a statutory property right with moderate and decreasing uptake since the early 2000 s. It was hypothesised that neighbourhood homogeneity and individual connectedness influence demand for land titles by affecting (i) expected returns of tenure security and public good provision (direct channel) and (ii) social sanctions for leaving the informal system (indirect channel). Accordingly, quantitative analysis of administrative data showed that homogenous communities with higher shares of old stayers, male and cooperative landholders have lower land titling, while marginalised individuals – newcomers, women and non-contributors – make more recourse to statutory property rights. Digging deeper into the potential channels of a relation between social cohesion and demand for

land titles, primary survey data found that most landholders expect several private and joint returns from formalisation, including through state mechanisms, and this generates shared expectations of social approval for land titling. In conclusion, the paper has shown that dimensions of social cohesion make land titling of higher priority for certain groups and individuals, but neighbours do not provide social disincentives (nor social incentives) for land titling in this context. This may be linked to the fact that land titling is seen primarily as an act of state contribution and a private decision: thus, state actors and household members constitute primary reference networks compared to neighbours (Appendix C). Furthermore, other factors may explain drops in Residential Licence uptake over the years, including the government's progressive emphasis on longer-term leaseholds, as further studied in companion papers (Manara, 2022; Manara & Pani, 2023a).

These findings are subject to limitations discussed throughout the paper. Notably, a reductionist approach was taken to measure social cohesion focusing on proxies available in administrative data and selected measurements of social connectedness in survey data. Instead, broader factors are co-constitutive of social relations of tenure (see Van Overbeek and Tamás, 2020) and should be considered to provide more accurate approximations of homogeneity and marginalisation in the informal system. Further research could take this paper's results forward, for example, by building on alternative conceptualisations and measurements of social cohesion, or by designing experimental vignettes to further dig into the channels of a relationship between social cohesion and land titling decisions. Given the context specificity of land tenure systems, it would be interesting to conduct comparative research

across diverse urban contexts. Some of the paper's results may be specific to urban Tanzania, where formal and informal governance systems are less reliant on customary authorities and ethnicity rules compared to other contexts in the region. As mentioned, a long history of statist land institutions and the socialist background of the country may be affecting expectations of state-returns from land titles, social approval for state-contributions via land title acquisition, and the secondary importance of neighbours compared to other reference networks (i.e. local and national government actors). On the other hand, results showing that length of tenure, female ownership, and cooperative attitude to collective action correlate with land tenure decisions are relevant and potentially transferable to other African cities, where rural-urban migration and the peri-urban expansion of cities reshape the social fabric of neighbourhoods. Ultimately, recognising the diversity of social relations of tenure and how they mediate demands for institutional change in various contexts, for specific groups and individuals, is necessary to design effective land policies targeting local needs of tenure security in rapidly urbanising cities.

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CRediT authorship contribution statement

Martina Manara: Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A–C. Supplementary data

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