

QUALITY OF GOVERNANCE AND
PERCEPTION OF TENURE
SECURITY ACROSS COUNTRIES

by

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Abstract

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Quality of governance is directly related to economic well-being in all of the countries around the world. One of the mechanisms of this relationship works through quality of property rights protection. But there is no consensus about the measurement to which extent these rights are protected. One of approaches is subjective well-being analysis that consider the tenant`s point of view.

In this study, we analyze subjective statement of how property is protected, social and economic factors behind and key institutional determinants of the statements. Moreover, the second dimension of property rights, i.e. formalized ones, was also discovered. As results suggests, educational and inclusiveness of environment are the key sources of higher perception of tenure security.

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Chapter 1

INTRODUCTION

IMF in 2019 worsened the forecast for economic growth of the global economy later global lockdown imposed in response to COVID-19 revealed weak institutional capability of many countries to deal with these issues. Most of the countries did not announce for generous aid for citizens, most people have to deal with high risks tête à tête. In this term, households' own recourses are decisive in many dimensions. Primary, own land, real estate, machinery may be the key tool for people to survive during unpleasant periods of time. On macro level, property owned by residents is one of most important field of governance, because it may be taxable and play role of airbag during the crisis. Moreover, some researchers mention, property rights might be considered as a key source for economic development and respectively more intensive economic growth on a global scale (North, 1990).

While property as sort of production factor plays a key role both on micro and macro level, without specific bundles of rights, property will have no impact. Property rights make it possible for property to be sold, bought, leased, rented etc. But there is no consensus regarding proper measurement of property rights. Several approaches regarding property rights measurement, sources and ways for assurance may be employed. One of them is described by Van Gelder (2009) and analyzed as a three - dimension tenure (property or rental rights), consists of de-jure (formal documentation), de-facto (experienced level of tenure security) and perceived tenure (subjective level of security).

To some extensions it is not discussible, that tenure security is protected by a government, local, state or federal? Political institutions in this extension are supposed to have positive effect on perception of tenure security and as a result on economic development (Kaufmann, Kraay and Mastruzzi 2010). At the same time this effect is heterogeneous across countries and even regions and well-studied, e.g. by Acemoglu and Robinson (Aghion 2005), they demonstrated a strong positive correlation between GDP per capita and an average protection against expropriation risk, i.e. measurement of institutional quality across countries based on historical data. Thus, it is important rather to study quality of governance and its impact on subjective tenure security. Additionally, the study will focus on another measurement of tenure security, formalization of property rights, that rather than de-facto tenure security influences involving property into production goods and services.

The research purpose of this study is to predict variations of de-jure tenure security across groups of countries based on personal and country-level characteristics related to economic, social and institutional framework; investigate association among indicators of institutional quality and perceived tenure security; and find out to which extent individual-level characteristics are associated with possession formalized documents on property.

Chapter 2

LITERATURE REVIEW

2.1. Institutions

Institutions, according to D. North (1991), are presented by the constraints that structure social, political and economic interactions. Generally, they exist in two dimensions, formal rules (common law, civil law, socialist law) and informal rules (traditions and taboos). Economic sense of institutions is expressed by their ability to decrease uncertainty, lower transaction costs and shape assignment of property rights that implies more intensive economic development (North, Institutions 1991). Particularly, the impact of property rights institution on economic development is well-known, it is positive and may be transmitted through forming the perception by economic agents.

Some of the studies examine the effect of economic and political institutions on economic growth; nevertheless, this link can be reviewed as a reverse causality, i.e. how economic growth or GDP in constant terms affect quality of institutions. Kaufmann and Kraay (2002) found a strong positive connection with improvement in quality of an institution on income (GDP), but at the same time they found that improvement in economic institutions would not necessarily lead to economic growth; moreover, it may create obstacles for economic performance. At the same time, Chong and Calderon (2000) revealed a positive effect of level of economic development on quality of institutions, namely through testing effect of quality of bureaucracy, level of access to education, degree of property rights assurance on income shares across 118 countries.

Institutions are aimed to achieve the goals of equality, security and growth thus, they have to be designed and operated in a certain environment. According to the 1997 World Development Report, institutions are characterized by political stability, law enforcement bodies' credibility, personal safety and property protection, absence of corruption and policies predictability. Any deviations from these principles (i.e. total institutional credibility) may lead to the lack of trust, thus institutions may lose their power in decreasing uncertainty, lowering transaction costs and effectively assigning property rights. (World Development Report 1997). Institutional credibility forms trust in governmental institutions' performance, that converts to the positive perception of economic agents' rights security, including tenure security. (World Development Report 2002).

2.2. Property Rights

Property rights are one of the key institutions, they are determining type of property, type of actions with property, exchange rules and restrictions. As it was mentioned above, considering that the term 'property rights' as a notion is an institution, it plays a key role in forming perception of to what level the property rights are secured.

In general, all economic activities in their nature are exchanging bundles of property rights among economic agents. (Furubotn and Pejovich 1972) These rights are presented as the right to use, transfer and exchange all disposable assets and resources. (Libecap 2010) Property rights can be characterized as provision, assignment and level of security of rights. In the case of being not well-defined, assigned or poorly secured property rights do not operate well, and credibility of such institute becomes lower. As a consequence, they will not play a role of inducement for economic agents to intensify their economic activity in a full scale.

A property rights institution can function in its two forms, de-jure (formal) and de-facto (in practice) property rights. According to the study done by D. North, property rights are two continuums with informal traditions, taboos and procedures that are not formally fixed that refers us to de-facto rights and formal procedures that are constituted in formal laws and fully accepted by the society through law and enforcement system, namely de-jure (North, Introduction to Understanding the Process of Economic Change 2005).

The dichotomy of property rights, i.e. division into DF and DJ in its nature has a complementary character. On the one hand, DF tenure security reflects actual status of a property while DJ formalizes it. Moreover, there is a positive relationship between DF and DJ tenure security, i.e. formalization or legalization of tenure and its actual security.

However, as literature survey demonstrates, existing de-jure property rights, i.e. formalized documents that confirm ownership or tenancy regarding some property, sometimes are not necessary in terms of using and exchanging property, e.g. investment in housing improvement. Particularly, formal justification sometimes is not necessary to use as a collateral, to sell or buy a property. Unformal proofs are sufficient in such cases. This effect was revealed in 1997 on Sub-Saharan sample of countries and is known as “Africa effect”, in the rest of the world this effect was not observed (Lastarria-Cornhiel 1997).

In terms of titling and formalization, property rights may be considered as condition of stimulation investment via its features mentioned above, i.e. lowering transaction costs and decreasing uncertainty (Van Gelder 2009). The same effect was found by de Soto, as it was shown, insecurity of property rights is associated with capital formation reduction and obstacles in using property as collateral (De Soto 2010).

Thus, if property rights are not ensured in formal way and are not commonly accepted, such situation leads to lower investment stocks and weaker economic activity. (De Soto 2010)

2.3. Quality of Governance and Tenure Security

A government is responsible for policy formation in a wide range of society areas, particularly, for law making and enforcement property rights. The quality of governance plays a critical role in investment decision, especially if such investments are irreversible, e.g. capital investments. (Calderón and Chong 2000) At the same time, the decisions are formed through assessment of tenure security based on quality of such protection, which is made and executed by and through the governmental mechanisms, i.e. special institutions. Thus, well-performing governmental institutions can be associated with, for example, high rate of possession legal documents on property.

Theoretically, there are several approaches for the assessment. According to Kaufman et al (2010), the quality of governance is presented by the design of process how government is selected, controlled and replaced, institutional ability of government to conduct announced policy, attitude of agents and government to exercised institutions or norms and rules.

Another point of view employs a concept of ‘good-for-economic-development’ approach that is reflect a functional side of the government which performance affect economic processes in a country (Mirau and Hammadache 2017). Following this approach, law-making, including assignment of property rights, control and enforcement has to be designed to maximize utility of the most economically active party. As a result, less active agents may become less protected, e.g. will not possess documents on their property.

Additionally, the theory of impartial institutions refers to the idea that quality of governance can be assessed as a perception of citizens and foreigners' current rules and thresholds and procedures how authorities control for compliance their rules (Rothstein, 2008). In this point it is important to mention corruption, that is in nature is a substitution public interests with private ones in public governance process. Because 'corruption involves a holder of public office violating the impartiality principle in order to achieve private gain' (Kurer 2005) that in fact can be considered as obstacle for holding documents.

Inefficient governance may imply costly and complicated formal procedures of legitimization, inequal assignment of the rights among groups of people that are divided based on economic, social, origin or legal status. It may imply lower economic activity primary due to higher opportunity costs for the agents to fit all of the formal requirements (De Soto 2010).

As it is mentioned before, since property rights institution is one of the institutions that is enforced primary by a government, assessment of the quality of governance can be discussed in the framework of tenure security.

From this point of such assessment it is possible to employ principal – agent approach. In principle any kind of regime may be represented in a simple principal-agent model, namely when one of the players do not comply and another one may suffer from this situation (Rothstein and Tannenberg 2015) Similar approach was employed in studying corruption as one of the forms of abusing power by the authority. (Rose-Ackerman and Søreide 2011) The same framework can be applied to the problems related to property rights assignment. If principal (society) mandated agent (government) to establish, monitor and enforce the violators of established rules. If representor of agent is tending to focus and follow own interests and then the principal agent problem is occurred.

For example, suppose an optimal assignment and documentary provision of property rights is an obligatory objective and as a desirable outcome for the government is boosting economic activity. Then in case of ineffective assignment of property or obstacles with getting titles on property the government falls completing the task and property rights are not assigned and proved optimally. Holding *ceteris paribus* criteria, for any economic agent holding an asset becomes not optimal even if it was like this before. As it is underlined in Grossman and Hart (1986), if the marginal return of A's (B's) investment is greater than that of B's (A's) or his investment is more asset-specific than B's (A's) under the assignment of property rights A (B) should own the asset .

Another possible negative consequence of lacking commitment by government, when authorities may do not face strong incentive to protect law and do law enforcement. At such case agents may start considering a formal titling as inefficient way to protect their rights. At the same time, formal titling implies costs on fees and transportation along with time costs. All of these factors became a basement of the concept of “Africa Effect” (Lawry and Samii 2017). It is appeared when a connection among formal titling, experienced eviction and expectations of, i.e. eviction of property, is almost insignificant. Namely, people will rather protect their property on their own then collect documents for court disputes, such cases testifies a deep institutional erosion.

Thereby, in some cases quality of property rights assignment, level of tenure security and community trust plays a crucial role in establishing effective tenancy or ownership and boosting economic activity.

2.4. Perceived Tenure Security

The key role in tenure security investigation plays its measurement. Finding the most precise proxy for that implies an accurate analysis and there is no consensus what a proxy for tenure security is. Moreover, there is lack of the literature that examines simultaneously all of three dimensions of tenure security: perceived, de-facto and de-jure, or forward-looking (perceived), backward-looking (de-facto) and focused on current point in time (de-jure).

Benefit streams (Bromley 1991) obtained from property usage is objective measurement but time-inconsistent and is limited in capacity, it does not fit for non – commercial property.

A number of court cases or at least number of subpoenas that are proceeded by court or by body of legal enforcement. This is direct measurement, but its accuracy is non discussible as well as country – specific issues that make cross-country analysis impossible. Perceived tenure security i.e. answers got from assets` holders may be considered as not country-varying, precise but subjective measurement for testing tenure security.

The literature surveyed previously covers specific type of property, e.g. Van Gelder (2009), Rao (2017) etc., or property in specific country or region, as it was mention above. Moreover, formalization of tenure security in context of its role in perception of tenure security that cover more than one country and more than one type of property is even less.

Chapter 3

METHODOLOGY

The concept of perceived tenure security will be considered as interaction of two parties, government that supply rules, control for justice and ensure security of property rights and household, that demand these and may assess quality of such kind of services. The interactions can be considered either from supply side or from demand side, but as literature suggest, assessment from the governmental side is much more frequent topic than from households' point of view.

3.1. Conceptual framework of perceived tenure security

A government uses its legal capacity through public institutions, e.g. protecting and grabbing property, allowing or suspending dissent, setting rules and principles and resolving disputes. (La Porta, Silanes and Shleifer 1998) To which extent a government will reach its goals depends on its legal capacity that in its turn directly affect readiness to use assigned property rights and consequently, perception tenure security. (Besley and Persson, 'The origins of state capacity: property rights, taxation and politics 2009).

At the same time, owners and tenants are heterogeneous and various personal, i.e. in terms of social status, characteristics may have larger explanatory power in terms of understanding behavior. Following discussion above, it was assumed that "Africa effect" is appear primary due weak governance, at the same time Van Gelder found that respondent's social characteristics are also significant in terms of tenure security analysis. (Van Gelder 2009)

Consequently, the questions for empirical analysis are following:

Is quality of governance positively associated with perception of tenure security?
Is quality of governance associated with perception of tenure security through possession legal documents or on its own?

How personal characteristics are associated with probability of possession of legal documents, e.g. risk of eviction in the future.

As it is expected, that the higher level of bureaucratic (governmental) quality enables the perception of property rights as secured ones through de-jure (formal) tenure security.

Because institutional quality is ensured by legal capacity of a government, analysis in this part will be focused on quality of governance, as on product of institutional performance. The indicators come from the World Governance Indicators (WGI) (World Bank Group 2020) provided by the World Bank Group. However, WGI describes rather quality of execution but not legislation, since that indicator of legislative norms will be included (Equal Treatment and Absence of Discrimination) (WJP 2019)

WGI consists of aggregated, weighted and representative for cross country and over time analysis indicators from more than 30 sources. (Kaufmann, Kraay and Mastruzzi 2010) WGI includes following indicators. Voice and Accountability indicator that reflects of which extent people in a country can attend, vote and affect political configuration in the country; additionally, it includes freedom of speech, associations, expressions and media. Political Stability and Absence of Violence indicator shows a probability of political instability, violence including politically motivated and terrorism. Government Effectiveness measurement includes quality of public and civil service, how it is independent on political institutions, quality of policy rules and ways of implementation, credibility of a

government's implementation of policies. Rule of Law indicator reflects the level of confidence of a society in contracts, property rights, enforcement institutions and probability of crimes. Control of Corruption indicator refers to corruption perception as exercising public power in a private gain, level of state capture by politicians or private individuals.

Equal Treatment and Absence of Discrimination, an indicator developed by World Justice Project. The indicator based on survey conducted in 128 countries (in 63 countries a survey is representative) with 170 000 participants (including experts and households). The indicator Equal Treatment and Absence of Discrimination 'Measures whether individuals are free from discrimination—based on socio-economic status, gender, ethnicity, religion, national origin, sexual orientation, or gender identity—with respect to public services, employment, court proceedings, and the justice system' – namely, it measures formal (legally approved) discrimination. (WJP 2019)

Economic agents represent the other party, it includes representatives that are rent, own or occupied any type of property and use it in their own needs. They are supposed to face certain level of tenure security or insecurity and make decisions regarding their tenure.

As it is underlined above, there is no consensus regarding measurement of tenure security, one more reason of that was lack of global, comparable and representative dataset. In 2019 the first wave of Property rights index (Prindex) was released. Prindex includes individual level data covers 59 countries in 2020, 33 of them was released in 2019. (Prindex , 2019) Prindex covers all of types of property, including land, residential, commercial ones; adult population that is randomly selected and representative in national level that allows to perform representative cross-country analysis. Prindex covers (1) individual specific

measurement, i.e. age, gender, marital status, area of living etc; (2) tenure related measurement, i.e. fact of possession legal documents (titles), experienced eviction of tenure, subjective likelihood of eviction tenure in the future etc.

Data from Prindex will be employed as proxy for perception of tenure security, de-facto tenure security, and de-jure tenure security.

De-facto or in what extent owners or tenants experienced their ownership or tenancy in previous periods can be measured as presence of previous experience of eviction, conflicts regarding the rights on a property or duration of using a property (Van Gelder 2009).

There are several ways how to proxy de-facto tenure security using Prindex data, one of them is experienced eviction of property in the past, namely the questions “Did you personally ever lose the right to live in a property against your will”; “Did you personally ever have to give up the right to use another property (other than the one you lived in) against your will?”; “Do you have any of the following documents (including informal only, e.g. utility bill) that demonstrate your right to live in this property?” (Prindex , 2019)

De-jure tenure security, or how owners and tenants can justify their rights to use a property. Legalization implies a wider range of instruments in legal disputes, important in right transfers and crucial for attracting investments (Lawry and Samii 2017). At the same time, economic agents not always associate their de-facto tenure security with formal titling due to several reasons because provision with formal documents requires a well-performing and designed law system with effective enforcement.

Prindex data includes answers on unambiguous question regarding possession titles on used or owned property. The question “Do you have any of the

following documents (including official documents only, e.g. Certificate of ownership) that demonstrate your right to live in this property?”

Perceived tenure security is an important notion to test because of its crucial role in many economic mechanisms, as it was discussed above. An agent forms perception from all of the information available regarding property, individual characteristics and institutional environment around. Considering the information, an agent makes a decision on what extent and how an agent can assure a protection of the property, in formal or informal way or both. Also, it explains decision regarding investments in the property, participation in market and resource allocation (World Development Report 1997).

Prindex questionnaire includes data, that can be used as proxy for perception of tenure security. The question that respondents answered covered likelihood of losing property against their will in the next five years. Respondents were supposed to specify the level of likelihood, i.e. answer “very unlikely”, “unlikely”, “somewhat likely”, “very likely”, or refuse answer the question.

Thus, individual and country level data will be employed. Individual level data explains variation in person`s characteristics and three dimensions of tenure security mentioned above. Country-level data will explain another source of variation from the institutional or environmental side.

3.1. Perceived and de-jure tenure security estimation

The models should help to answer the research question, is quality of governance positively associated with perception of tenure security? It is also important to investigate the channel through which institutions influence perception of property rights, i.e. is quality of governance positively associated with perception of tenure

security? The model should be controlled by personal specific characteristic based on study by Van Gelder (2009)

The model below will be specified to estimate perception of tenure security and to estimate difference between two effects. First, whether the effect of quality of governance on perception of tenure security is associated with de-jure channel, i.e. whether a respondent and his/her family members link perception of tenure security with holding legal documents that prove their tenancy or ownership. (Besley and Ghatak, Property Rights and Economic Development 2010) Second, whether quality of governance is associated with perception of tenure security of respondent and his/her family members, the model was constructed based on Van Gelder (2009).

$$y_i = a_0 + a_1 df_i + a_2 dj_i + a_3 gender_i + a_4 marital_i + a_5 age_i + a_k educ_k + a_b income_b + a_8 area_i + \alpha_j DJ_i * X + a_9 x_1 + a_{10} x_2 + a_{11} x_3 + a_{12} renter_i + a_{13} owner_i + u \quad (1)$$

where y_i is perception of tenure security if the forms of dummy, df_i is a level of de-facto tenure security, namely whether the respondent experienced in the last 5 years eviction of his/her property against the will or not, $gender$ refers to gender of the respondent, $marital$ is a current marital status of the respondent, age is an age of the respondent, $educ_k$ refers to educational level of respondents where is $k=1, \dots, 5$ according to levels of education reported, $income_b$ refers to respective quantile of income distribution (country scale), $b=1, \dots, 4$; $area$ refers to urban or rural area where the respondent live, $dj_i * x$ is 3 interactions of country-specific institutional indicators from WGI and WJP with de-jure measurement, namely,

respondents` answer the question, whether he/she possesses legal documents that can justify his/her right to use property. Sequence of $x=1,\dots,3$ refer institutional indicators from WGI and WDP discussed above. Namely, x_1 is Voice and Accountability, x_2 is Political Stability and Absence of Violence, x_3 is Government Effectiveness, other indicators are omitted due to high correlation as it discussed in Chapter 3.

The model is controlled for possible endogeneity, i.e. significant association of perception of tenure security with personal-level characteristics, e.g. marital status, area, income, age, education, gender based on previous research that found evidence of such significant relationship. (Lawry and Samii 2017)

Because of existence relationship between perceived tenure security and personal-level characteristics, it is also beneficial to research to which extent de-jure, proved or formal tenure rights may be explained from the social, demographic and economic characteristics of particular person. Namely, to what extent probability of possession legal documents is determined by personal-level characteristics. Following the relationship stated by Van Gelder (2009), de-jure or formalized tenure security may be predicted with set of variables that cover personal – level features as it is stated in equation (2) below.

$$dj_i = b_0 + b_1 age_i + b_2 age_i^2 + b_3 income_i + b_4 area_i + b_5 gender_i + b_6 marital_i + b_7 education_i + b_8 renter_i + b_9 owner_i + \varepsilon, \quad (2)$$

where dj_i is probability of possession legal documents that prove the rights of respondent or his/her family to use or occupy stated property, age_i is actual age

of the respondent, age_i^2 is age of respondent to the power of two, $income_i$ is an income quantile in a country scale, $area_i$ refers to urban or rural are reported by respondent, $gender_i$ is gender dummy refers to male or female respondent, $marital_i$ refers to one of three groups of marital status (Single/Never Married; Married/Living Together; Widowed/Divorced), $education_i$ refers to one of five levels of education, based on International Standard Classification of Education developed by UNESCO (2012), namely, elementary or less, secondary, technical, bachelor, masters or PhD; $renter$ refers to whether respondent rent property or not, $owner$ does to whether respondent own property or not.

Both of the models will be estimated as linear probability models, namely, from the equation (1) the dependent variable (perception of tenure security) will be constructed as dummy variable by grouping answers, this section will be discussed in chapter four.

Chapter 4

DATA DESCRIPTION

4.1. Description of Prindex, WJP and WGI data

Prindex data is individual-level questionnaire data gathered from more than 53,000 respondents among 33 countries in 2018 by Gallup and CrossTab and more than 26,000 respondents among 26 countries in the second wave in 2019. The data represents individual level responses regarding tenure, all of country income groups and can be used in cross-country analysis.

World governance indicators consists of country-level data and covers 59 countries in the sample, WJP consists of country-level data and covers 52 countries in 2019.

4.2. Data Cleaning and Constructing

Before perception of tenure security and probability of possession titles estimation, additional steps for data clearing and constructing variables are required.

1. Individual-level variables with omitted data will be removed from the sample.
2. Variables of quality of governance, that highly correlate will be removed from the sample.

As it is shown in the Table 1, highly correlate variables, namely, control of corruption, rule of law, regulatory quality and government effectiveness will not be considered in the analysis to reduce inconsistent results.

Table 1. Correlation coefficients among quality of governance variables

Variables	<i>VA</i>	<i>PS</i>	<i>GE</i>	<i>RQ</i>	<i>RL</i>	<i>CC</i>	<i>ET</i>
<i>VA</i>	1.000						
<i>PS</i>	0.628	1.000					
<i>GE</i>	0.753	0.736	1.000				
<i>RQ</i>	0.799	0.691	0.944	1.000			
<i>RL</i>	0.762	0.742	0.943	0.914	1.000		
<i>CC</i>	0.805	0.736	0.917	0.892	0.952	1.000	
<i>ET</i>	0.458	0.504	0.509	0.509	0.676	0.693	1.000

Note: VA-Voice and Accountability, PS - Political Stability and Absence of Violence, GE - Government Effectiveness, RQ – Regulatory Quality, RL- Rule of Law, CC - Control of Corruption, ET- Equal Treatment and Absence of Discrimination.

Thus, and due to significant gap in Equal Treatment and Absence of Discrimination in covering sample, high correlation among other variables of quality of governance, to estimate (1) only three variables of quality of governance will be employed, i.e. Voice and Accountability; Political Stability and Absence of Violence; Government Effectiveness.

3. Personal level characteristics from Prindex data 2019-2020 are reshaped, missed values are dropped. Variable from the equation (2) Marital status, Education, Perception of tenure security were grouped to make analysis comparatively easier.

Table 2. Variables used in perception of tenure security estimation

Variable from the model	Prindex dataset question	Comments
<i>DJ</i>	Do you have any of the following documents that demonstrate your right to live in this property? Again, I am asking about documents that have either your name or a family member's name on it.	Proxy for de-jure tenure security; Under “any” interviewer means any of 70 documents listed in questionnaire.
<i>DF</i>	Did you personally ever have to give up the right to use another property (other than the one you lived in) against your will? Did you personally ever lose the right to live in a property against your will?	Proxy for de-facto tenure security.
<i>Perception</i>	And in the next 5 years, how likely or unlikely is it that you could lose the right to use this property, or part of this property, against your will?	Proxy for perceived tenure security.
<i>Age</i>	Age of the respondent	Age above 99 years are considered as 99 years old.
<i>Urban</i>	Type of area according to governmental classification	Urban is 1 and rural is 0
<i>Gender</i>	Gender of respondent	Male if 1
<i>Single, Widowed/divorced, Married</i>	Let's start with a few questions about yourself. What is your current marital status?	Self-stated
<i>Edu_[Type]</i>	What is the highest level of education you completed?	Self-stated, [Type] is one of 5 categories, e.g. <i>edu_primary</i>

TABLE 2 - Continued

Variable from the model	Prindex dataset question	Comments
<i>Inc_0, Inc_1, Inc_2, Inc_3, Inc_4, Inc_5</i>	I wonder if you could just tell me which one of the following broad ranges your past 12-month total household income falls into? Your best estimate is fine.	Household income in corresponding quantile.
<i>Renter; Owner</i>	Tenure classification	Indicated, whether respondent is owner or

4. Education variable in the original dataset consists of 31 unique values as respondents reported. To make it easier to analyze and compare, variables were grouped according to UNESCO educational levels` classification as it is stated in table below (2012).

Table 3. Educational levels accordance

Variable from the model	Prindex dataset question
<i>edu_primary</i>	No formal education, Complete primary education, Completed elementary education or less, Did not attend/complete primary school, Incomplete primary education, Infant/Junior School/Basic Adult Literacy, Informal schooling only (koranic school), Lower Secondary School Primary School
<i>Edu_secondary</i>	Complete secondary education, Intermediate/Some secondary or high school, Junior High School, Secondary - year Tertiary Secondary, Senior School, Upper Secondary, School GCSE/SCE

TABLE 3 - Continued

Variable from the model	Prindex Answer
<i>edu-technical</i>	Complete technical education, Incomplete technical education, Nursery School, Post secondary education
<i>edu_BA</i>	Complete university education, Completed four years of education beyond the school, Diploma, Higher Education Access Courses, HND/HNC/Nursing Degree PG Diplomas, Incomplete university education, Secondary/Full baccalaureate, Secondary/Incomplete baccalaureate, Undergraduate Degree, University
<i>edu_MA</i> or <i>edu_MA_PHD</i>	Doctorate, Master's Degree, Post graduate education

5. Marital status according to questionnaire is self- stated and distributed among 8 distinct responses. These answers were gathered in 4 groups, namely, *Never Married /Single; Married; Widowed/Divers. Married* was chosen as based category for models' estimation.
6. As it was mentioned above, Prindex data is valid for cross-country analysis. Due to homogeneity in age-gender structure, different number of observations etc., there are individual level weight to reshape data in representative country-level form. For cross -country analysis data was weighted to eliminate issues stated above.
7. *Perception* indicator initially consists of is gathered in 6 dimensions, namely: "Very unlikely", "Unlikely", "Somewhat likely", "Very likely", "(Don't know)", "(Refused)". Dummy variable *Perception* was formed for the assessment to eliminate subjective biases due to difference in life circumstances, subjective perception of own current status,

language differences, heterogeneity in cultural responses (OECD 2013)

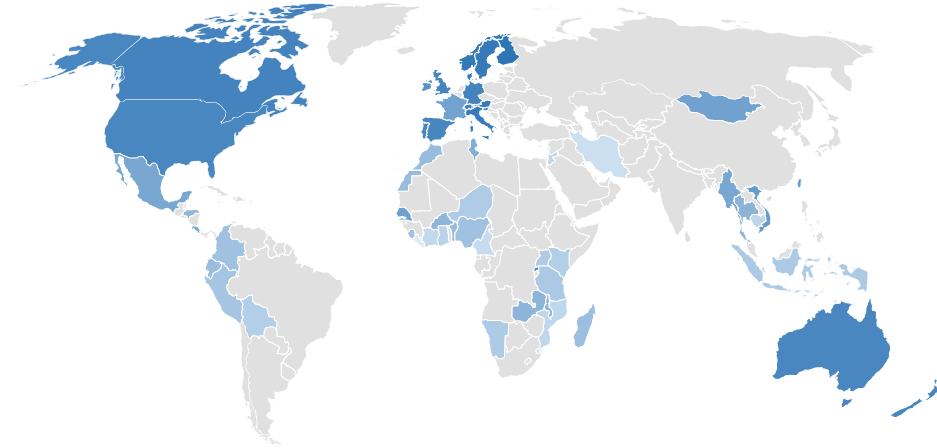
Variables that represent quality of governance are centered and increase whenever indicator improves (the larger is better). Estimation will include two steps: first, model (1) and model (2) will be estimated for whole sample (52 countries); second, both of the models will be estimated separately for 6 global regions according to World Bank Country and Lending Groups (2020), namely, East Asia and Pacific, Europe and Central Asia, Latin America & the Caribbean, Middle East and North Africa, North America, South Asia, Sub-Saharan Africa.

For all estimations linear probability model will be employed. For this type of model heteroskedastic variances is issue, thus, robust standard errors will be reported. Variables that describe personal characteristics and quality of governance are tested for jointly significance in model (1). As it was stated above, to avoid collinearity in the model (1) some of variables of quality of governance have been removed.

Chapter 5

RESULTS

Figure 1. Level of perceived tenure security across countries



Note: Dark color corresponds with high level of perceived tenure security, grey light corresponds to countries that are not in the sample.

As the model of perception of tenure security suggests, the highest observed perception of tenure security is observed in Finland (97.1%), the lowest level is in Liberia (52.4%). Among all of females, 73%, among males 75.5% perceived tenure security as secured.

Table 4. Distribution of perceived tenure security among income groups

	High income	Low income	Lower middle income	Upper middle income	Total
Insecure	9.99%	33.47%	31.33%	30.52%	25.81%
Secured	90.01%	66.53%	68.67%	69.48%	74.19%

As it is stated in Table 4, there is obvious distinction in perception of level security among countries divided by income, based on World Bank methodology (2020). Thus, there is no such difference between low income, lower middle income and upper middle-income countries but is large in comparison to high income countries.

As it is presented in the table below, Latin America and Caribbean, Middle East & North Africa, Sub-Saharan Africa countries are above the average value of perceived tenure insecurity, while Europe and Central Asia and North America are below, and East Asia and Pacific is almost reach average level. Thus, people these countries where level of insecurity is high may face obstacles regarding any operations with their property.

Table 5. Geographical distribution of perceived tenure security

	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Total
Insecure	25.22%	9.43%	29.32%	28.90%	9.92%	33.78%	25.81%
Secured	74.78%	90.57%	70.68%	71.10%	90.08%	66.22%	74.19%

As it is shown in table below, possession of titles is not distributed smoothly, in general, around 2 percent of sample have not responded on this question; 43.86% does not possess documents on property at all, the largest share is represented by Sub Saharan region (58.31%) and Latin America and Caribbean region. (48.9%) Those, who possesses legal documents (54.25% of sample) represents the largest share in North America (88.94%), Europe and Central Asia (76.56%) and East

Asia & Pacific (64.15%). More than 41% of respondents from Sub-Saharan Africa Group do not possess legal documents on their property.

Table 6. De-jure tenure security among World Bank Country Groups

Group \ DJ	(DK)	(Refused)	No	Yes
East Asia & Pacific	1.21%	0.07%	34.57%	64.15%
Europe & Central Asia	6.16%	0.16%	17.12%	76.56%
Latin America & Caribbean	0.00%	0.00%	48.90%	51.10%
Middle East & North Africa	4.75%	0.07%	45.82%	49.36%
North America	1.32%	0.46%	9.27%	88.94%
Sub-Saharan Africa	0.59%	0.00%	58.31%	41.09%
Total Among DJ	1.84%	0.05%	43.86%	54.25%

The estimation evolves 2 steps: first, de-jure tenure security model was estimated in two stages: for full sample and for each World Bank region apart. Second, perceived tenure security model was estimated for whole sample (countries listed in Table 7) then, for each World Bank region apart.

Thus, as estimation predicts, there is evidence of association of de-facto tenure security with perceived tenure security for full sample, experienced eviction decreased perceived tenure security on 2.5% on average, holding everything else constant. Moreover, there are evidence of such association in Latin America and Caribbean sample, and Sub-Saharan Africa sample. Namely, on average, experienced eviction decrease probability of perceived tenure security on 17.9% in Latin America and on 13.5% in Sub-Saharan Africa. These results are consistent with ones stated in literature.

It was expected, that de-jure tenure security is associated with perception of tenure security, according to the estimation, it is. Specifically, there is an impact of de-jure tenure security, namely, the fact of possession legal documents will increase the probability of perceived tenure security on 7.7% *ceteris paribus*. The highest magnitude of coefficient in Europe & Central Asia sample (.25), Middle East & North Africa (.14), in Sub-Saharan sample (.086) and East Asia and Pacific sample (.07). Namely, in these regions, holding documents will increase probability of perceived tenure security on 25%, 14%, 9.6% and 7% respectively. Moreover, as it was mentioned, de-jure tenure security in Sub-Saharan Africa sample is also positively associated with perception of tenure security, thus it may be evidence of weakening Africa effect, described above. The effect for Latin America and North America samples is not statistically significant and obviously require further analysis with broader list of countries in respective regions.

Considering control variables, e.g. income distribution, there is evidence, of statistically significant association of respondents' income on probability of perceived tenure security. As estimation suggests, dispose income in the level of 1st quantile in country scale is 7.1% decrease probability of tenure security for full sample, level of 2nd quantile decrease on 2.6% and level of 3rd quantile decrease on 2.9% against having income on 5th quantile. That is quite reasonable, lower-middle income people and even on people the middle of distribution is insecure but much less than the poorest ones. Being renter of property is negatively associated with perception of tenure security in all of sample, excluding the North America subsample. In full one, being renter is associated with 18.7% lower probability of perceived tenure as secured, while being owner is vice versa, on 6.6% increases probability of tenure security (see Appendix C for the details).

To answer the research question, the models predicts associations of institutional factors on cross-country level on perceived tenure security. As it was stated

above, the model analyzed impact of quality of governance associated with holding titles and with the fact of possession titles on tenure. Technically, to answer the question, coefficients of interaction terms among institutional variables and probability of holding documents are analyzed.

In the case of holding titles, Voice and Accountability indicator is positively associated with probability of perceived tenure security in East Asia and Pacific sample (.055), negatively associated in Sab – Saharan Africa (-.088) and positively associated in full sample (.031). Thus, ability to participate in “selecting government, freedom of expression, freedom of association, and a free media” in the case of holding titles increases probability of perceived tenure security on 5.5% in East Asia and Pacific countries, on 3.2% in all of countries on average and decreases in Sub-Saharan Africa on 8.8%. This phenomenon requires deeper analysis of local context, perception of local and state (federal) governance by citizens and assessment of elections in selected countries. For the rest of samples this effect is not statistically significant. Thus, quality of these institutions is partially associated with perception of tenure security.

At the same time, there is no evidence of statistically significant association of Political Stability and Absence of Violence indicator with probability of perceived tenure security either across all of the sub-samples or in full sample.

Government effectiveness, “quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” in the case of holding titles, is statistically significant in improvement probability of perceived of tenure security in Sub-Saharan Africa (.086). Thus, *ceteris paribus*, improving public services in

particular may increase probability of holding titles on 8.6% in countries included into the sample.

Despite of fact, that there are evidence of transmission effect of quality of governance on perception of tenure security, there is no evidence of only one channel, namely, it is impossible to reject hypothesis, that there are no other, particularly, direct impact of quality of institution of perceived tenure security.

Voice and Accountability indicator is positively associated with probability of perceived tenure security, increasing the indicator by 1 will imply improvement in probability that tenure security will consider as secured by 4.8% in Sun-Saharan Africa sample; in Middle East and North Africa sample improving indicator is associated with 12.5% increase in probability of perception of tenure as secured. At the same time, it is negatively associated with perception of tenure security in Latin America and Caribbean sample (-.474) and East Asia and Pacific sample (-.109).

Political Stability and Absence of Violence coefficients are not statistically significant in any sample of the model.

Government effectiveness is positively associated with perception of tenure security in Latin America region (.757) and negatively associated in Middle East and North Africa (-.247). This study is not aimed to investigate special reasons for regional difference, but one may be found in further analysis, e.g. analysis of personal level attitude and trust to local governance, including additional institutional variables and responsiveness to external shocks in the past.

The model (2) is aimed to investigate demographic characteristics, gender gap, differences in education in terms of prediction probability of possession titles on tenure (see Appendix D for the details).

De-facto tenure security is associated with probability of possession titles in whole sample; thus, experienced eviction of property increases probability of holding titles on 20.3%. The largest magnitude is observed in North America sample (53.6% in probability of holding titles) East Asia (15.3%) and Europe and Central Asia (14.4%), coefficient in Latin America sample is not statistically significant. This may be evidence of how people assign a power of titles on tenure on prevention past experience.

Age and age squared predicts that age factor plays less role whenever people get older, this effect is valid for full samples, Sub-Saharan Africa and South Asia, on the rest of samples coefficient is not statistically significant.

Income quantile shown a weak explanatory power, predicts negative association with de-jure tenure security in some samples, namely the respondents who is classified as poor or extremely poor are less likely to hold titles even if any other factors will be fixed in Middle East and Sub-Saharan Africa. This may conclude, that there is may be wealth discrimination even in access to public services.

Being an urban dweller is associated with 6.1 % larger chance to have title in comparison to people in rural areas (full sample), in Sub-Saharan Africa is associated with 11.6% larger chances.

Men are more likely to have titles then women, particularly, due to their role in the family that may create additional factors of insecurity for women, particularly, this difference is significant in East Asia and Sub-Saharan Africa sample of

countries, men are more likely to hold documents in comparison to women on 4.3% and 4.6% respectively.

Marital status also plays role in probability of possession titles, on average, being Single or never married decreases probability on 1.6% versus being married.

Educational level predicts, that, for full sample on average those who obtained MA or PhD degree are on 32.8% likely to poses titles in compare with those who do not have education at all or have a primary one, BA degree makes it likely on 12.4%, technical or nursery school does on 12.1% and just secondary education increases on 7.5% on average. This effect varies across samples, for North America education does not play any role in prediction of probability of holding titles, the largest magnitude for MA or PhD degree is observed in Sub-Saharan sample, BA is in Latin America and Sub-Saharan samples, thus this effect may be associated to higher income and better access to public services. Secondary education is positively associated with probability holding titles in Sub-Saharan Africa (7.7%), East Asia and Pacific (6.5%) and in full sample (7.5%).

Being renter is significantly increasing probability of holding titles versus other alternatives, namely, on 42.4% in East Asia, on 40.6 in Latin America, in 28% in Europe and Central Asia, while being an owner is associated with ever largest magnitude, e.g. on 71% in East Asia. For full sample this difference is significant, 43.1% among owners and 24.3% among renters against those, who uses property with or without permission, or those who refused to answer.

Standard errors of both models are robust. According to F-test for jointly significance in the model (1), the null hypothesis is rejected at 1% level of confidence for variable of education, marital status, quality of governance and tenure security (both of DJ and DF). Model (2) performs the F tests as following,

the null is rejected at 1% level of confidence for variables of education, marital status and income. Tests were performed for models of full sample.

Variables were also inspected on multicollinearity, and models were on specification.

As variable inflation factor was used to find evidence. As post-estimation test predicts, for some of variables, as *age* and *age2*, VIF value is greater than 10, while rest of the variables shows much lower (below than 10) value of VIF. Additionally, for some of quality of governance variables VIF values was also greater than 10, but in their nature these variables may be correlated with each other.

Specification test (link test) is based on the assumption that is model is specified correctly, there is no chance for any additional variable that may be significant at 1%. Thus, as model (1) test suggest, hypothesis that the model is specified correctly is failed to reject (p-value of *_hatsq* = 0.891). As the model (2) test suggests, the same hypothesis is rejected for model (2), thus the model has to be improved in terms of explanatory variables, that may be a subject for further research.

Chapter 6

CONCLUSIONS

This study contributes to the literature in following ways: conceptually, conducted analysis may be the base for further analysis in some vectors: income discrimination in titles provision, gender gap in perception of tenure security, role of education in different in different countries. Secondly, this study deepening knowledge about nature of phenomena of formalized property and rental rights across groups of countries. Fourth, based on empirical results it may be concluded, that in considered countries from Sub-Saharan sample there is no more Africa effect that was discussed in literature review section.

This paper answers three research questions, that quality of governance is associated with tenure security, in some cases or regions the effect is not the same as expected that requires deeper investigation and institutional quality assessment. In some cases, quality of governance is directly associated with probability of tenure security, in other cases it transmits the impact through holding titles on property.

From literature it is known that titling is important, and this paper stated, what is important for titling. The study found out two main components that are heterogeneous across countries, formalization and education.

Public services infrastructure: formalization. As far as there is a huge gap between those who rent or own property and probability of possession titles is higher, another party of respondents who uses property with or without permission primary is less likely to have titles on that. Since this party is the most vulnerable and should be a target for policymakers.

Education covering improvement is essential, over 20% of full sample have primary or less education, while it may increase tenure titling especially in regions with low or lower-middle income. But education may also be associated with income thus for particular analysis it will be important to find whether this effect remains if a base category is changed.

When policy is carried out, there are several issues that may be conceptually important. First, perceived tenure security depends on institutional framework, level of accountability, government effectiveness and political stability, this effect is heterogeneous as institutional framework across countries and regions is. Second, personal level characteristics are powerful in explanation whether a person hold titles or not, thus focusing on affordable public services will definitely widening a party of titles holders.

Finally, there is a wide window for further research on assessment perceived quality of governance, impact of particular institution on perception de-jure tenure security; income, education and gender-related effects across countries; time - variant factors and past economic and institutional shocks.

WORKS CITED

- Aghion, Philippe. 2005. *Handbook of Economic Growth*. Vol. 1A. New York: Elsevier B.V.
- Besley, Timothy, and Maitreesh Ghatak. 2010. *Property Rights and Economic Development*. Vol. 5, in *Handbook of Development Economics*, by Dani Rodrik and Mark Rosenzweig. North-Holland: Elsevier BV.
- Besley, Timothy, and Torsten Persson. 2009. "The origins of state capacity: property rights, taxation and politics." *American Economic Review* (American Economic Association) 99 (4): 1218-1244.
- Broegaard, Rikke. 2005. "Land Tenure Insecurity and Inequality in Nicaragua." *Development and Change* 35 (5): 845-864.
- Bromley, Daniel. 1991. *Environment and Economy: Property Rights and Public Policy*. Oxford: Basil Blackwell.
- Calderón, Cesar, and Alberto Chong. 2000. "Institutional Quality and Income Distribution." *Economic Development and Cultural Change* (University of Chicago Press) 48 (4): 761-86.
- De Soto, Hernando. 2010. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. Vol. 1. 1 vols. Springer.
- Fangping Rao, Max Spoor, Xianlei Ma, Xiaoping Shi. 2017. *Perceived land tenure security in rural Xinjiang, China: The role of official land documents and trust*. China Economic Review.
- Fort, Ricardo. 2007. *Property rights after market liberalization reforms Property rights after market liberalization reforms Ricardo Fort Land titling and investments in rural Peru*. Vol. 1. 1 vols. Wageningen: Wageningen Academic Publishers.

- Furubotn, Eirik G., and Svetozar Pejovich. 1972. "Property Rights and Economic Theory: A Survey of Recent Literature." *Journal of Economic Literature* (American Economic Association) 10 (4): 1137-1162.
- Grossman, Sanford J, and Oliver D. Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy* 94 (4): 691-719.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2010. *The Worldwide Governance Indicators: Methodology and Analytical Issues*. World Bank , Washington, DC: World Bank Policy Research Working Paper, 1-31.
- Kraay, Aart, and Daniel Kaufmann. 2002. *Growth Without Governance*. DC: World Bank Policy Research Working Paper No. 2928, 1-60.
- Kurer, Oskar. 2005. "Corruption: An Alternative Approach to Its Definition and Measurement." *Political Studies* (SAGE) 53: 222-239.
- La Porta, Rafael, Florencio de Silanes, and Andrei Shleifer. 1998. *Corporate Ownership Around the World*. Department of Economics, Harvard , Harvard Institute of Economic Research Paper No.1840.
- Lastarria-Cornhiel, Susana. 1997. "Impact of privatization on gender and property rights in Africa." *World Development* (Elsevier) 25(8): 1317-1333.
- Lawry, Steven, and Cyrus Samii. 2017. "The impact of land property rights interventions on investment and agricultural productivity in developing countries: a systematic review." *Journal of Development Effectiveness* 9 (1): 61-81.
- Libecap, Gary. 2010. *Contracting For Property Rights*. Cambridge: Cambridge University Press.

- Mirau, Rachid, and Ahmed Hammadache. 2017. "Good Governance and Economic Growth: A Contribution to the Institutional Debate about State Failure in Middle East and North Africa." *Asian Journal of Middle Eastern and Islamic Studies* (Shanghai International Studies University) 11:3: 107-120.
- North, Douglass. 1991. "Institutions." *The Journal of Economic Perspectives* (American Economic Association) 5 (1): 97-112.
- North, Douglass. 2005. *Introduction to Understanding the Process of Economic Change*. Vol. 1. 1 vols. Princeton: Princeton University Press.
- OECD. 2013. *Guidelines on Measuring Subjective Well-being*. OECD, OECD Publishing, 206-227.
- Prindex. , 2019. *Prindex*. Accessed 2020. <https://www.prindex.net>.
- Rose-Ackerman, Susan, and Tina Søreide. 2011. *International Handbook on the Economics of Corruption*. Vol. 2. Edward Elgar Publishing.
- Rothstein, Bo, and Marcus Tannenbergs. 2015. *Making Development Work - The Quality of Government Approach*. Stockholm: Expertgruppen för biståndsanalys .
- The World Bank Group. 2020. *World Bank Country and Lending Groups*. Accessed 05 2020. <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>.
- UNESCO. 2012. *ISCED*. Institute for Statistics, UNESCO, Montreal: UNESCO Institute for Statistics.
- Van Gelder, Jean-Louis. 2009. "Legal Tenure Security Perceived Tenure Security and Housing Improvement in Buenos Aires: An Attempt towards Integration." *The International Journal of Urban and Regional Research* (The

Netherlands Institute for the Study of Crime and Law Enforcement) 33
(1): 126–146.

WJP. 2019. *The World Justice Project Rule of Law Index 2019*. The World Justice Project, Washington, DC: The World Justice Project, 120.

World Bank Group. 2020. *Worldwide Governance Indicators*. Accessed 2020.
<https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators>.

World Development Report. 1997. *The State in a Changing World*. World Bank, Oxfordm UK: Oxford University Press, 7-26.

World Development Report. 2002. *Building Institutions for Markets*. Oxford: Oxford University Press, 3-26.

World Justice Project,. 2019. *WJP Rule of Law Index 2019*. Annual, The World Justice Project, Washington, DC: The World Justice Project, 13-180.

APPENDIX A

Table 7. Perceived tenure security across countries

Country	Secured	Country	Secured
Australia	89.2%	Mexico	77.5%
Austria	94.3%	Mongolia	79.3%
Benin	70.3%	Morocco	69.8%
Bolivia	63.0%	Mozambique	59.9%
Burkina Faso	71.9%	Myanmar	77.7%
Cambodia	60.2%	Namibia	64.2%
Cameroon	58.3%	New Zealand	89.7%
Canada	90.7%	Niger	64.1%
Colombia	67.6%	Nigeria	67.8%
Costa Rica	77.4%	Norway	94.8%
Cote d'Ivoire	59.4%	Peru	66.4%
Denmark	93.6%	Portugal	90.1%
Ecuador	69.0%	Rwanda	90.5%
Finland	96.1%	Senegal	80.2%
France	79.2%	Sierra Leone	66.9%
Germany	90.7%	Slovenia	92.9%
Ghana	61.3%	Spain	89.7%
Honduras	71.5%	Sweden	94.5%
Indonesia	64.4%	Switzerland	93.0%
Iran	56.7%	Taiwan	81.9%
Ireland	85.4%	Tanzania	65.1%
Italy	93.7%	Thailand	72.9%
Jordan	60.4%	Tunisia	74.9%
Kenya	62.9%	Uganda	64.1%
Liberia	52.3%	United Kingdom	90.1%
Luxembourg	80.3%	United States	89.4%
Madagascar	68.7%	Vietnam	82.1%
Malawi	71.4%	West Bank and Gaza	74.8%
Malta	90.6%	Zambia	72.5%
Mauritius	70.6%		
		Total	74.2%

APPENDIX B

Table 8. Descriptive statistics of variables

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
<i>age</i>	59,041	26.10	16.83	1	84
<i>global_income</i>	59,041	2.531	1.078	1	4
<i>Gender</i>	59,041	0.483	0.500	0	1
<i>Urban</i>	59,041	0.590	0.492	0	1
<i>DF</i>	59,041	0.326	0.469	0	1
<i>owner</i>	59,041	0.476	0.499	0	1
<i>renter</i>	59,041	0.139	0.345	0	1
<i>inc_1</i>	59,041	0.319	0.466	0	1
<i>inc_2</i>	59,041	0.184	0.388	0	1
<i>inc_3</i>	59,041	0.164	0.370	0	1
<i>inc_4</i>	59,041	0.154	0.361	0	1
<i>inc_5</i>	59,041	0.179	0.383	0	1
<i>Single_Never_married</i>	59,041	0.271	0.445	0	1
<i>Married</i>	59,041	0.575	0.494	0	1
<i>Widowed_Divorced</i>	59,041	0.154	0.361	0	1
<i>DJ</i>	59,041	0.582	0.493	0	1
<i>edu_primary</i>	59,041	0.206	0.405	0	1
<i>edu_secondary</i>	59,041	0.417	0.493	0	1
<i>edu_technical</i>	59,041	0.0532	0.224	0	1
<i>edu_BA</i>	59,041	0.196	0.397	0	1
<i>edu_MA_PHD</i>	59,041	0.00874	0.093	0	1
<i>Perception</i>	59,041	0.756	0.430	0	1
<i>c_VA</i>	59,041	-1.22e-08	0.854	-1.562	1.616
<i>c_PS</i>	59,041	-4.14e-09	0.858	-1.983	1.751
<i>c_GE</i>	59,041	-5.82e-09	0.900	-1.424	1.956

APPENDIX C

Table 9. Perception of tenure security among regions

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>
<i>DF</i>	0.020 (0.016)	0.031* (0.019)	-0.179*** (0.028)	-0.064 (0.040)	0.141 (0.108)	-0.135*** (0.016)	-0.024*** (0.009)
<i>age</i>	0.003** (0.001)	-0.001 (0.002)	-0.003** (0.001)	-0.006* (0.003)	-0.002 (0.004)	0.002 (0.001)	0.000 (0.001)
<i>age2</i>	-0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
<i>inc_1</i>	-0.063*** (0.017)	-0.072*** (0.018)	-0.043*** (0.016)	-0.122*** (0.044)	-0.197*** (0.059)	-0.046*** (0.015)	-0.071*** (0.010)
<i>inc_2</i>	-0.040** (0.018)	-0.005 (0.013)	-0.022 (0.020)	-0.098** (0.048)	-0.062* (0.032)	-0.014 (0.016)	-0.026*** (0.009)
<i>inc_3</i>	-0.047*** (0.017)	-0.010 (0.013)	-0.013 (0.021)	-0.151*** (0.049)	-0.011 (0.026)	-0.016 (0.018)	-0.029*** (0.009)

TABLE 9– Continued

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>
<i>inc_4</i>	-0.005 (0.017)	0.009 (0.012)	0.014 (0.023)	-0.073 (0.046)	-0.044 (0.031)	-0.013 (0.017)	-0.009 (0.009)
<i>tenant</i>	-0.343*** (0.025)	-0.071** (0.036)	-0.171*** (0.019)	-0.227*** (0.033)		-0.101*** (0.013)	-0.187*** (0.010)
<i>owner</i>	0.091*** (0.019)	0.050*** (0.014)	0.053*** (0.020)	0.087** (0.036)	0.034 (0.046)	0.050*** (0.012)	0.066*** (0.009)
<i>Urban</i>	0.003 (0.012)	-0.015 (0.013)	0.008 (0.016)	-0.060* (0.031)	0.007 (0.039)	-0.010 (0.010)	-0.003 (0.007)
<i>Gender</i>	-0.008 (0.011)	-0.006 (0.010)	0.034*** (0.012)	-0.085*** (0.029)	-0.027 (0.028)	0.041*** (0.010)	-0.002 (0.007)
<i>Single_Never_married</i>	0.037** (0.018)	-0.034* (0.018)	0.025* (0.014)	0.014 (0.041)	-0.110** (0.047)	-0.012 (0.012)	0.002 (0.011)
<i>Widowed_Divorced</i>	-0.024 (0.017)	-0.040*** (0.013)	-0.002 (0.017)	-0.072 (0.049)	-0.048 (0.040)	-0.024 (0.016)	-0.022** (0.011)
<i>edu_MA_PHD</i>	-0.148 (0.246)	0.076** (0.033)	0.206*** (0.031)	0.022 (0.078)		-0.084* (0.049)	0.093*** (0.021)

TABLE 9– Continued

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>
<i>edu_BA</i>	0.031 (0.021)	0.032 (0.021)	0.089*** (0.019)	0.019 (0.042)	-0.073 (0.142)	0.026 (0.017)	0.055*** (0.010)
<i>edu_technical</i>	-0.063** (0.032)	0.062* (0.034)	0.119*** (0.019)	0.085** (0.042)		-0.008 (0.023)	0.079*** (0.012)
<i>edu_secondary</i>	0.031** (0.014)	0.014 (0.018)	0.059*** (0.018)	0.011 (0.035)	-0.106 (0.143)	-0.010 (0.011)	0.020** (0.008)
<i>DJ</i>	0.070*** (0.020)	0.246* (0.141)	0.003 (0.057)	0.142*** (0.042)	0.222 (0.237)	0.086*** (0.019)	0.077*** (0.009)
<i>.DJ#c.c_VA</i>	0.055*** (0.017)	-0.180 (0.188)	0.235* (0.125)	0.013 (0.043)	-0.138 (0.218)	-0.088*** (0.020)	0.031*** (0.010)
<i>DJ#c.c_PS</i>	0.007 (0.022)	0.000 (0.045)	-0.039 (0.050)	0.130* (0.071)		0.028* (0.015)	0.026** (0.011)

TABLE 9– Continued

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>	<i>Perception</i>
$DJ\#c_{c_GE}$	0.027 (0.028)	0.024 (0.093)	-0.309* (0.180)	-0.319** (0.127)		0.086*** (0.025)	-0.003 (0.016)
c_VA	-0.109*** (0.015)	0.320* (0.188)	-0.474*** (0.100)	0.125*** (0.038)	0.181 (0.216)	0.048*** (0.015)	0.001 (0.008)
c_PS	-0.001 (0.019)	0.032 (0.045)	0.052 (0.039)	0.118** (0.057)		-0.019* (0.010)	0.017** (0.008)
c_GE	0.060** (0.023)	-0.105 (0.092)	0.757*** (0.146)	-0.247*** (0.092)		0.015 (0.020)	0.010 (0.013)
Constant	0.594*** (0.032)	0.590*** (0.146)	0.882*** (0.052)	0.982*** (0.078)	0.701** (0.343)	0.696*** (0.025)	0.713*** (0.018)
Observations	11,853	10,059	8,859	4,95	1,458	21,861	59,04
R-squared	0.113	0.061	0.089	0.081	0.151	0.035	0.098

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX D

Table 10. De-jure tenure security estimation

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>
<i>DF</i>	0.153*** (0.014)	0.144*** (0.020)	-0.000 (0.021)	0.193*** (0.027)	0.536*** (0.084)	0.040** (0.016)	0.203*** (0.009)
<i>age</i>	0.003*** (0.001)	0.001 (0.002)	0.001 (0.001)	0.000 (0.003)	-0.005 (0.003)	0.011*** (0.001)	0.006*** (0.001)
<i>age2</i>	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
<i>inc_1</i>	-0.004 (0.013)	0.008 (0.020)	0.004 (0.013)	-0.160*** (0.042)	0.002 (0.047)	-0.061*** (0.015)	-0.011 (0.010)
<i>inc_2</i>	0.015 (0.015)	0.002 (0.019)	-0.000 (0.017)	-0.110** (0.048)	0.032 (0.034)	-0.046*** (0.017)	0.007 (0.011)
<i>inc_3</i>	0.009	-0.001	0.020	-0.093*	-0.025	-0.017	0.011

TABLE 10 – Countinued

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>
<i>inc_4</i>	0.004 (0.013)	0.007 (0.018)	0.050** (0.019)	-0.087* (0.046)	0.022 (0.032)	0.012 (0.018)	0.017 (0.011)
<i>rentar</i>	0.424*** (0.021)	0.280*** (0.029)	0.406*** (0.016)	0.194*** (0.033)		0.157*** (0.012)	0.243*** (0.010)
<i>owner</i>	0.715*** (0.009)	0.229*** (0.019)	0.765*** (0.011)	0.254*** (0.034)	0.178*** (0.052)	0.211*** (0.011)	0.431*** (0.009)
<i>Urban</i>	0.017* (0.009)	-0.019 (0.017)	0.023* (0.012)	0.032 (0.031)	-0.011 (0.036)	0.116*** (0.010)	0.061*** (0.007)
<i>Gender</i>	0.043*** (0.009)	0.013 (0.012)	0.023** (0.010)	0.006 (0.030)	-0.037 (0.026)	0.046*** (0.009)	0.016** (0.007)
<i>Single_Never_married</i>	0.015 (0.013)	-0.003 (0.020)	0.013 (0.012)	0.069* (0.038)	0.016 (0.048)	-0.013 (0.012)	0.044*** (0.010)
<i>Widowed_Divorced</i>	0.021 (0.013)	-0.036** (0.017)	0.024* (0.015)	0.007 (0.043)	-0.000 (0.036)	0.006 (0.015)	0.012 (0.010)

TABLE 10 – Countinued

VARIABLES	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	Sub- Saharan Africa	Main Sample
	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>	<i>DJ</i>
<i>edu_MA_PHD</i>	0.083 (0.063)	0.185*** (0.032)	0.154*** (0.057)	0.071 (0.075)		0.225*** (0.048)	0.328*** (0.021)
<i>edu_BA</i>	0.122*** (0.015)	-0.004 (0.024)	0.197*** (0.015)	0.176*** (0.041)	0.226 (0.156)	0.192*** (0.018)	0.124*** (0.009)
<i>edu_technical</i>	0.116*** (0.020)	0.106*** (0.036)	0.062*** (0.016)	0.064 (0.046)		0.114*** (0.022)	0.121*** (0.012)
<i>edu_secondary</i>	0.065*** (0.011)	0.020 (0.021)	-0.014 (0.013)	0.103*** (0.034)	0.215 (0.154)	0.077*** (0.010)	0.075*** (0.008)
Constant	-0.050** (0.022)	0.557*** (0.048)	0.026 (0.025)	0.268*** (0.068)	0.095 (0.166)	0.068*** (0.021)	0.057*** (0.017)
Observations	11,853	10,059	8,859	4,95	1,458	21,861	59,04
R-squared	0.507	0.123	0.487	0.178	0.282	0.113	0.329

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

