ENDORSED TRANSGRESSIONS: EXCEPTIONS AND THE PRACTICES OF INFORMALITY IN MANAGUA, NICARAGUA

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Urban and Regional Planning – Master in Urban and Regional Planning

2023

ABSTRACT

Within a conceptual framework in which informality has less to do with socioeconomic level and more with a social practice engaged in by different social groups to meet their goals, this project highlights the policy context of housing developments in Managua, capital city of Nicaragua. By analyzing 342 housing projects that exist in the formal real estate market of the city, I focus on identifying the spatial and regulatory urban features of "legal" housing developments in Managua over the last 20 years. Despite these housing projects appearing to be correct, proper, or orderly, these developments embody the concept of informality – as a state sanctioned practice – and are enabled by the granting of "exceptions" to individual projects, but which has become the norm. Either through evasion or exception, this pattern is enabled by a regulatory logic of urban development that rationalizes the granting of exceptions through the dissonance between planning and actual practices of development, with the latter not being able to respond to the actual existing conditions of development in the city.

ACKNOWLEDGMENTS

I would like to thank my parents, my brothers, friends and mentors in Nicaragua, whose love and support extends well beyond this work.

My committee members Dr. Deyanira Nevarez Martinez and Dr. Edward Murphy, and especially to my committee chair and advisor Dr. Noah Durst for sharing in my excitement for this work and for challenging me to do better. Mostly, for the tremendous amount of thoughtfulness and kindness that they have showed me.

To the Fulbright organization, it was truly and honor to be selected for this award and to have this support throughout the program.

To my classmates of the MURP program, it has been an extraordinary experience to share from different cultures, and to find friends in this process.

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1. Introduction

The concept of informality has developed through the discourse of economic ideas, those of housing, the land tenure discourse or that of urban as a misnomer of illegality and poverty. However, recent scholarship builds its understanding of the phenomenon from an understanding of broader political economy structures and power struggles. This new framework shows that informality is not exclusive of households in conditions of poverty, that it exists in relation to the state and as such it implies a series of practices that can take place at any given moment during the housing development process. This research sets out to contribute to the literature of informality among the wealthy in Latin America.

By asking (i) what are the spatial and regulatory urban features of housing developments in Managua over the last 20 years?, (ii) what is the relationship between the current pattern of urbanization, the regulation and enforcement of housing developments, and regulatory exceptions? and (iii) how does the granting of permits or exceptions by public officials configure a de facto dis-enforcement of policy for urban development in Managua? I analyze 342 housing projects that exist in the housing market of Managua, capital city of Nicaragua. I evaluate project development characteristics against land use regulations, whether housing projects are allowed and in what intensity, which allows me to establish the relationship between development practices and legal instruments within an analytical framework of urban informality.

In this paper, I highlight how beyond showcasing a segmented offer, projects in the city tend to display a series of strategies by location that both entrench that segmentation and that bypass urban development codes. In this study I examine the relationship between the current pattern of urbanization and the regulation and enforcement of housing development. I find that the granting of permits or exceptions by public officials entails a de facto (dis)enforcement of policy for urban development in Managua and leads to widespread urban informality.

This research is structured in four main sections, starting with the literature review. Here I review the concept of informality from its traditional conceptualization, take account of the changes it is seeing in Latin American literature, and work through the postulates of informality we see in the literature today, mainly from the global South. However, I bring in literature from the U.S. on the practices of informality to inform my research design. The section on data and methods details the data sources and types, and the data cleaning process. More important, this section shows the research design and levels of analysis established in accordance with the theoretical and analytical

framework. The results section is divided into three subsections matching the levels of analysis. Finally, a conclusion and discussion chapter considers possible future research.

2. Literature Review

A Review of the Concept of Informality

Since appearing in the discourse of the economy of developing country in the early 1970's (Hart 1973) the term "informal" has come to be associatied with poverty and underdevelopment. Herrle & Fokdal trace the first transformation to Santos (1979) who shifted the view of informality from activities to systems, "by describing the mutual dependence of formal and informal circuits". However, the traditional view persevered and informal/informality continued to describe the distinction between formal and informal sectors based on type of employment, and to be ascribed to "the urban poor, or the people living in slums or squatter settlements" (Moser as cited in Herrle & Fokdal). Throughout the 1970 – 1990 and either within the schools of thought of dualist, structuralist or legalist research, informality would denote underdevelopment, uneven capitalist development or a competitive advantage, the latter a view of the legalist school. When in the 1990's the term was adopted by architects, designers, and planners the term became a synonym for "unplanned", "irregular" or "illegal" settlements inhabited by low-income groups" (Herrle & Fokdal, n.d.).

The concept has developed through different, but not mutually exclusive, discourses. Whether within the discourse of economic ideas, those of housing, the land tenure discourse or that of urban planning (Cities Alliance, 2021), informality remained a misnomer of illegality and poverty. Activities or actions "unregulated by the institutions of society in a legal and social environment in which similar activities are regulated" (Portes et al., 1989, p.12) or "a series of activities that, by occurring outside the arena of the normal, regulated economy, escape official record keeping" (Portes & Sassen-Koob, 1987, p.30).

Simultaneously, its connection to self-help housing turned informality into a response to over-regulation and became the foundation of the idea of informality as a survival strategy by the poor, the "arduous" entrepreneurs, as De Soto calls them. While seemingly different, both perspectives – that of the lawbreaker, and that of "heroic entrepreneur" (de Soto, 2000)– presented informality as a matter of individual agency (or at most of small communities) in a fight with the structural context that they were avoiding or otherwise resisting.

The early conceptualizations of informality as a separate labor sector as drawn by Hart in 1973 are today a lot less clear. Recent scholarship builds on an understanding of informality from a perspective of political economy and power struggles (Alfaro d'Alençon et al., 2018; Banks et al., 2020). The land tenure and the urban planning discourse have stressed the social dimension of

informality, the active role of the state and a new perspective on the relation between formal and informal (Cities Alliance, 2021).

Throughout empirical research is the gap between studies of informality in the global North and those in the global South.[1] The first layer of difference comes from the long history of studying informality and informal settlements in the south, while the global North, specifically the U.S., scholar debate started only in the 1980's (AlSayyad, 2004). A concise way to understand the current analytical difference around the concept of informality is the tendency – at least for Latin American studies – to center on the economic dimension of informality, and issues like land tenure. While, on the other hand, the positionality of the global North sees informality through the lens of code enforcement and planning law, and increasingly more to the nuance of regulatory tools and outcomes like informality. Others differentiate the phenomenon itself to a difference in its origin. Shrestha et al., (2021) claim that "the nature of production of informal land and housing is different in the global north and south" (p.159) with the difference rooted in 'de-facto' access to marginal/alienated land" and with "access (or lack of access) to rental housing", for the global south and north, respectively. Alterman & Calor (2020) warn that we are to be mindful of the further differences between "legitimacy and effectiveness of the rule of the law" (p.51) within the two contexts.

Informality in Latin America

In Latin American studies, housing and informality are still strongly associated with low-income housing conditions; processes of self-help housing construction and neighborhood consolidation; land use, management and policy that derive into topics of regularization, housing segregation, disparity and equity; and housing policies which usually look into housing deficits and policy approaches (*La Investigación Urbana En América Latina: Tendencias Actuales y Recomendaciones - UNESCO Digital Library*, n.d.; Mctarnaghan et al., 2016; Schteingart, 2020). Despite the expansion of themes in the last two decades and a growing critical perspective on structural processes and inequalities, housing and urban development scholars in the region have usually researched issues of housing with relation to poverty and informal settlements as the traditionally defined areas characterized by poverty, underemployment, etc.

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[1] Because the encompassing term of "global South" refers to a wide array of regions, countries, and specific political, economic, and cultural context, when necessary, I will refer to the Latin American region specifically.

Works like Teresa Caldeira's (2001) City of Walls began the recount of the growing presence of enclosed high-end developments in Brazil, while authors like Roitman (2003, 2011, 2015) describe similar experiences in other Latin American cities. These can be framed in the account of structural processes like the ones described by Abramo (2012, 2020) and his analytical framework of the relation between formal and informal housing markets, and the consequent development of the city 'comp-fused', a term referring to the processes of compactness and diffusion of urban structures that result from the relation between informal and formal markets, and within the submarkets of informality the author works through. Nevertheless, research examining informality among the wealthy still limited.

Vieda Martínez & Chiodelli (2021) explore the practices of affluent urbanites and characterize these housing projects in terms of their geographical, physical, and morphological features. They contend that this kind of informality is "the result of a complex assemblage of economic and cultural factors […] that interact with precise institutional features, such as the structural inability of public bodies to implement land use and buildings rules fully and homogeneously, both for operational and political reasons" (p.2). By detailing the strategies of Bogotá's upper class in developing informal housing, Vieda Martínez and Chiodelli (2021) offer a perspective of "informality beyond poverty" that allows us to take a closer look at urban development in Latin American cities from a different perspective, and altogether at other areas of the city than those that have historically received attention from urban scholars. This manifestation of informality has less to do with socioeconomic level and more with a "crosswise social practice which can be (and is currently) engaged in by people of any social condition to meet their goals – including wealthy people" (p.2). In the context of Santiago de Chile, Vicuña & Zárate (2021) show empirical research in the Latin American region that connects the existing processes of housing development and assesses their relation to development codes. Their case explores "norms of exception" to urban planning and their role in the production of the city and identify exceptionality as a distinctive feature of new urban governance in the region.

Thus, in important ways, Latin American literature is transitioning from a traditional perspective of informality as poverty, to the study of enclosed and segregated housing and the first glimpses of recognizing the latter as practice(s) of informality.

Informality in the 21st Century

Despite their initial differences in origin and in framing of the issues of informality and housing, today both the literature from Latin America and the U.S. as an example of the global North, are shifting. From the traditional conceptualization of informality, recent scholarship builds its

knowledge of the phenomenon from an understanding of broader political economy structures and power struggles (Alfaro d'Alençon et al., 2018; Banks et al., 2020). They have entered the interregional debate called for by AlSayyad & Roy (2004) and take from the developments on the global South perspectives. Devlin (2010) refers to this perspective as the "informal urbanism approach" in that the approach taken by researchers from the global South highlights the spatial manifestations of the issues of power, of governance and the relation between law and space – a disjuncture – that thinks in the political terms of a "rearticulation of spatial control" (Devlin, 2010, p.19).

These standpoints follow Ananya Roy's work as a useful framework for understanding the changing realities of urban informality across the global south (Banks et al., 2020; McFarlane, 2012). Under Roy's revision the term informality acquires different dimensions than we might be used to: "a differentiated process embodying varying degrees of power and exclusion" (Roy, 2005, p.148) with a connection to global capitalist markets, and in which the role the state takes in how these processes plays out comes forth. For her, informality should be understood as "produced by the state itself" (p.149). And with informality beyond its dichotomic definition as opposed to formality, she proposes "the term urban informality to indicate an organizing logic, a system of norms that governs the process of urban transformation itself" (p.148), or "informality as a mode of urbanization". An important shift is that this revision of the term also removes the equivalence of informality to absence of law or norms. The continuum of informal practices take place in contexts of planning regimes that are themselves deregulated, ambiguous and that work through exceptionalities (Roy, 2009) depicting "informality as a state of deregulation maintained by the negotiability of value" (McFarlane, 2012, p.93). In other words, a set of new rules that are continuously negotiated by the set of actors involved, and that result in several different practices implying different processes of engagement between the state and other actors, and of the directionality of the negotiation.

Within this new debate, informality is no longer a fixed sector, and it is in turn understood as produced by relationships of power and by the state (Devlin, 2018; Roy, 2005, 2016). Banks et al. (2020) see it as a "site of critical analysis" and McFarlane, 2012 present it as a practice of urban critique. This alternate perspective views informality as "more than the absence of rules or regulation" (Banks et al., 2020, p.220). Thus, informal practices entrench processes of stratification and disadvantage within cities (Banks et al., 2020b) revealing winners and losers in the process. Inquiring into its social and institutional aspects shows that informality is a set of extralegal practices (Banks et al., McFarlane) that extend beyond the realities of the urban poor and are deployed as a

strategy for elites and subaltern groups in conferring or accumulating advantages. Furthermore, informality is not viewed as a fixed result or product, but as much as it constitutes practices it is also a "negotiable value" (McFarlane, 2012, p.93).

As Banks et al. (2020b) warn, informal practices entrench processes of stratification that reveal winners and losers. When engaged in by elites, informal practices can confer advantages and we see how "those urban actors who are in position to benefit from informal urban practices and processes, due to their circumvention of the rules or a lack of enforcement by the state, are often bolstered by their financial, social or political power and connections" (Alfaro D'Alercon, p.61). This is not only suggestive of the other linkages between informality and inequality (other than the 'traditional' ones), but as Roy suggests this elite informality brings with it a legitimization by the state, and implies not only the regulation of space, but also of social difference. In her description: "upscale informal subdivisions formed through legal ownership and market transaction but in violation of land use regulations." Banks et al. (2020) highlight that seeing informality as a state of exception, as we do following Roy's framework, "is useful because it emphasizes the scale of negotiation, but this does not mean there are no rules. Indeed, representations of exceptionalism are key to the exercise of (il)legitimacy, and such 'exception' is very much part of the everyday politics practiced by cities across the global South" (Roy, 2005, p.232). These claims take form in cases like the one presented by Vieda Martínez and Chiodelli (2021) for the case of Bogota's upper class informal housing. They will take relevance in the analysis that follows as I break down the case of Managua and center land use regulations.

Within this new approach to informality, the understanding of practices becomes of importance. Shrestha et al. (2021) use the same terminology and by referring to 'informal housing practices' aim to "recognize the inherent imprecision in the range of practices and/or activities associated with producing or occupying residential space which falls beyond 'formal' systems of law or regulation' (p.159) while empathizing "the variety of non-standard ways in which people produce, supply, and negotiate residential accommodation" (p.160), which would be true in any given context.

The Practice(s) of Informality

As research on informality has increased, scholars have identified examples of informal housing outside the Global South highlighting the relationships between informality and the State (Banks et al., 2020; Devlin, 2010, 2018; Harris, 2018; McFarlane, 2012, 2019) and studies of informality in the U.S. that have aimed at undercovering the relation between informality and planning law come to a description of practical enforcement (Herbert et al., 2022; Li, 2019; Mukhija & Monkkonen, 2007;

Ward, 1999, 2004). In turn, these can help us develop a more nuanced understanding of these practices and their relationship with the law. The framework of exploring the relationship between legal structure, enforcement practices and degrees of compliance that has been developed in the U.S. context is a starting point for the analytical reading that follows. Durst & Wegmann's (2017) typology of informal housing in the U.S. is a good example. Non-compliant, non-enforced or deregulated forms of informality imply different ways in which housing relates to planning law. While non-compliant implies a disregard towards the law, non-enforced or deregulated would imply one or other degree of indifference or discretionality from the enforcement bodies. That is, there is a directionality about informality.

This relationship can be understood through the concept of enforcement as defined by Alterman & Calor (2020) as "an executive (or administrative) government function" dependent on available financial resources, on policy priorities and on politics. Enforcement practices necessarily entail discretion about what, how much, and when to enforce, and in turn creates the de facto exercise of discretion and the eventual selective enforcement of regulation. Thus, as the authors claim, "the legal realm provides tools of legitimacy for planning policies and tools for implementation" (Alterman & Calor, 2020, p.154). As much as it is political, enforcement is also the practical aspect of law and codes in the city. From Latin America, Rodríguez & Abramo (n.d.) call this "deregulation resource" through which there is a promotion of private capital investments.

Furthermore, the authors claim these can occur across interrelated regulatory regimes: property rights protection, law governing property transfer, land-use and zoning laws, subdivision regulations and building codes (Durst & Wegmann, 2017, p.285). Their typology helps understand informality as a nuanced phenomenon, not always conforming to the traditional physical characteristics that we tend to ascribe to it (i.e., informality as poor and deficient housing, located in outskirts of city boundaries) and not solely concentrated in areas of poverty and underdevelopment.

In a context of a welfare state, Chiodelli et al., present an analysis of the empirical forms of housing informality in Italy. The authors identify a "plurality of urban informal practices" (2021, p.1) and therefore open the discussion around housing informality from an institutional and regulatory perspective, and in relation to public institutions and political strategies. While some can arise from illegal production, others do so from illegal use, and relate to public institutions in one of three ways: (i) Identified but not formally reported, (ii) Identified, reported, but not (yet) sanctioned; or (iii) Identified, reported, condemned but appeal. Within this regulatory perspective the authors propose

that "incompleteness and self-contradiction in legislative frameworks produce 'spaces of possibility' within which illegal practices can arise and spread" (p.35).

Keeping in mind that these studies show there is a directionality and discretionality being played out in enforcement of planning law, and resulting in a variety of informal housing practices and that as Devlin (2018) highlights that practices of informality are not limited to actions by the poor, but are also "often carried out for profit or for 'desire'", the following section looks at exceptions as a practice of informality deployed by cities elites in order to gain advantages in the use of space.

Exceptionality or Sanctioned Informality?

Although part of a wider review and critique of contemporary urban development, namely the "new emergent patterns of spatial sorting" that come from the bounded spaces of "insular cells", "fortified enclaves" or "privatopias". Murray (2017) uses the term "urbanism of exception" to refer to spaces "where urban landscapes consist of interlocking, overlapping, and intersecting spatial topographies of 'exceptional spaces'. All which operate in accordance with their own rules of the game and do not depend upon a singular, a priori conception of the rule of law" (p.307). These exceptional spaces can be read through Roy's informality as a mode of urbanization. Furthermore, their emergence through an urbanism of exception shows us exceptionality a practice of informality inasmuch as these spaces of exception are "based on the relaxation, suspension, or outright abolition of the preexisting normal judicial order" (p.308). Exceptions as a practice of informality show the discretionality of enforcement of planning law.

In Murray's perspective, the abstract "elite" is turned interest-driven and organized groups or entities, such as real-estate developers and public-private partnerships that are now transforming the urban environments. These "powerful groups supporting relaxed regulatory frameworks justify their actions by reference to temporal and budgetary pressures" (p.313) and base this informality as planning practice upon "ad hoc, case-by-case processes of decision-making embedded within the formal planning process" (p.314).

Krijnen & Fawaz (n.d.) present the case of Beirut, Lebanon and address informality as a "deliberate planning strategy" within a neoliberal turn that has materialized in planning through the facilitation of private production of space. This calls on the market logic of the neoliberal framework that have widened informal decision-making. They contend "ad hoc decision-making is not a failure in planning or the inability of a Third World government to organize the production of its built environment. On the contrary, informality appears to be a deliberate planning strategy that best fits the interests of those decision-makers who find in the flexibility it provides the leeway needed to

regulate and organize the development of the city according to their own interests" (p.255). Their perspective implies that the relationship between the state and the producer of informality is directly negotiated. Furthermore, in this scenario those producers are not the poor looking for alternatives to their housing needs, but other actors who see in informality – or more specifically in the informalization of processes – "the flexibility provides decision-makers in allowing particular exemptions or circumventions but not others" (p.255).

While Murray's "exceptional spaces" refer to both the process and the products of informal decision-making – or discretionary enforcement – Krijnen and Fawaz highlight exceptions as a practice within the process of urban planning and development. The perspectives are not mutually exclusive, and in fact go to show that informality not only has a directionality, but that planning and development decisions move through the informality continuum at different stages of the process.

Research Framework

For this research I build my analytical framework by integrating the claims described above, i.e., that informality that it is not exclusive of households in condition of poverty, that it exists in relation to the state and in so it implies a series of practices that can take place at any given moment during the housing development process. This theoretical framework allows me to look into housing informality at different phases of the process of housing development: land use regulation and production, market transaction and ownership. These would relate to different dimensions of informality – as the regulatory regimes of Durst and Wegmann suggest – in property rights protection, law governing transfer, land-use and zoning, subdivision regulations and building codes. I focus on the initial phase of land-use regulation and production, and thus in the regime of land-use and zoning laws and see informality as a mode of urbanization that can take different ways of practice. In turn, I center on the practice of the negotiated value of informality through exceptions. I present the case of Managua, the capital city of Nicaragua as a case study that showcases the nuances of informality today.

Policy Context and Housing Development in Managua

In recent history one of the structuring events of the city has been the 1972 earthquake that brought down what was then the entire city (an area known today as the historic and traditional center). By 1972 CEPAL had estimated the population of Managua at 423 thousand, one-fifth of the country's population (Cruz, 2021) in a city that did not expand beyond the Loma de Tiscapa to the south (what is today the center of the city). Then, on the morning of December 23, 1972, a series of earthquakes brought down the city. Just as much as the earthquake had a devastating effect on the

city, the subsequent decisions made regarding the reconstruction of the city can still be felt today. Ignoring recommendations to relocate the city (Cruz, 2021), then President Somoza decided that the reconstruction of the city would take place in the area that surrounded the collapsed area. However, it was well known that Somoza, his family, and friends, held many properties within Managua, and their value would plummet if the capital was transferred somewhere else. This economic interest was also at the base of the reconstruction that followed. With the center of the city enclosed by decree, reconstruction of the city was forced in the vacant land on the outskirts of the city that Somoza himself owned.

Urban Inequality in Managua

Managua's spatial growth model has been characterized by its low density and its sprawl towards suburban areas under a dispersed pattern, especially since the 1972 earthquake, which advances on the radial road axes that connect the city with the surrounding municipalities, especially towards the southwest. This growth has occurred "without planning processes, for which the expansion occurred in an uncontrolled manner, in low densities, with high consumption of rural and suburban land, and without the necessary provisions in infrastructure and basic services" (InterAmerican Development Bank, 2013. p.51). In recent years, these roads have become important axes for private investment for the construction of highly relevant commercial and office buildings in the city and the areas close to them, for luxury housing projects. This model also has other implications and results in social phenomena such as the tendency to isolation and the formation of "islands" disassociated from the existing social and urban fabric (Rodgers, 2006) showing an increase in social segregation and urban fragmentation at different levels/scales (Gutiérrez Lanza, 2020; López-Irías, 2016; Sánchez Uriarte et al., n.d.; Suárez Bonilla & López-Irías, 2015)

Neoliberal Production of the City

Both in the teaching and in the practice of architecture and urban planning in Nicaragua, the terms urban plan and urban legislation are handled interchangeably. However, it should be clarified that in the normative system there are important distinctions between the terms. In the legal-regulatory system, and in the case of Managua specifically, planning instruments are all those that delineate action strategies with respect to a specific area, in this case urban, and may be general or sectoral planning. The latter referring to delimited spatial sectors or specific dimensions of action (housing, for example). On the other hand, an instrument of legislation is one that has been submitted for approval by the Municipal Council and approved as a decree or regulation, and that therefore has legal support to be implemented, executed, or enforced. Throughout the history of urban planning

in Managua, there have been many planning instruments that have not become instruments of urban legislation.

Although urban planning instruments have been updated in recent years, there have been no instruments of legislation at the municipal level and few at the national level (Alcaldía de Managua, 2021). Thus, these urban planning strategies have no enforcement power since the municipal territory is still under the 1982 code as the only enforceable document.

However, the absence of these legislative or policy instruments does not imply that the city saw its urban development halted. Between 1998 and 2018 at least 340 projects of residential typology can be counted in the city, as shown in the resource Map of Urban Housing Development, published by the Municipality of Managua. Capital injection in specific areas of the city and a directed marketing strategy are two of the main contributors to the creation and segmentation of housing supply in the city today. Private housing development projects constitute an important injection of capital into the city.

As I will show, today the supply of the housing market in Managua is controlled by private developers, and they cover a varied range of socioeconomic segments through a stratified supply that aims to satisfy differentiated demands. The response has resulted in an accentuation of the disorderly, discontinuous, and uneven urbanization process in Managua. The same that has generated urban inequalities "characterized by the separation or differentiation of ways of life of certain social sectors" (López-Irías, 2016, p.28) with respect to others. Rodgers (2006) points out:

> […] A more weighted process of intervention in favor of urban elites, which has not simply sought to impose a new urban form on those of the past, but actively restructures the global profile of the city through the explicit separation of certain urban spaces (p.11).

For this author, the uneven transformation of the city becomes more evident through a series of large-scale urban interventions or projects that took place in the city during the 1990s and early 2000s, through which he proposes to understand "a pattern that suggests a fairly selective construction or reconstruction" (Rodgers, 2006, p.17). Thus, in Managua “an archipelago of fortified enclaves” began to be constituted, made up of the residential areas of the urban elite, service, or leisure points, which, due to their dispersion in the spatial scope of the city, made a network necessary at the service of the connection of these spaces, to grant the same 'security' of the fortified rooms to the routes of displacement. This previous research shows the need to further development on the topic of construction of the city and its relation to urban codes.

For Rodgers, enclaves - both in Managua and in the rest of Latin America - "change the character of public space and public life and impose rules of inclusion and exclusion" (2006, p.16), a postulate that also applies to residential spaces in their relationship with the rest of the city in the case of Managua (Gutiérrez Lanza, 2020). Without a doubt, capital investment is accompanied by a discursive resource, which presents the projects as an attractive offer (Brites, 2017). The countless slogans on billboards, ballots and advertisements that flood cities today is the visual discourse that combines the characteristics that a certain project could have in an idea, or a complete panorama of how it is presented as a product in the market (Gutiérrez Lanza, 2020).

While there are no explicit urban policies, the selective investment and enabling the market as a promoter of "urban development", additionally enabled through the resource of "deregulation" (Rodríguez & Abramo, n.d.) are a concretion of neoliberal planning strategies as described by authors like Brites (2017).

3. Data & Methods

This research sets out to answer (i) what are the spatial and regulatory urban features of housing developments in Managua over the last 20 years?, (ii) what is the relationship between the current pattern of urbanization, and the regulation and enforcement of housing developments, and regulatory exceptions?, and (iii) how does the granting of permits or exceptions by public officials configure a de facto dis-enforcement of policy for urban development in Managua? To do so, I analyze 342 housing projects that exist in the housing market of Managua, capital city of Nicaragua. The data include projects from the last 25 years of urban development. The period analyzed starts in 1993 with the creation of CADUR and closes in 2018 due to the sociopolitical crisis that began in Nicaragua, which along with many other consequences, has greatly impacted the housing market.

Data Sources

This study relies on two main sources of information: official documents, including maps, codes, and norms from governmental agencies; and data collected from secondary sources. Field interviews regarding housing development practice with urban scholars and private developers were conducted to complement the data collected.[2]

The Map of Urban Housing Developments[3] published by the Managua municipality, and available online, is the starting point of data collection. The map serves as a proxy for urban permits for projects, given that the municipality does not count "informal settlements," nor can it count a project for which it does not hold official records of urbanization or building permit requests. Through examination of satellite imagery, I also identified several housing projects that exist either outside the municipal boundary or that were not accounted for in the map – both are a possible indication of disregard of codes from housing developers – but that are presented in officially sponsored housing fairs.

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[2] Four interviews were conducted between May and June 2022: urban scholars with a long trajectory of studying urban development in the city, one of whom is also a former public official; a second public official; and a private real estate developer were interviewed for this work. These conversations allow me to add insight into my data interpretation. Names of the interviewees are kept for anonymity.

[3] https://www.urbanismomanagua.gob.ni/wp-content/uploads/2020/06/Desarrollos-Habitacionales-40-20-a%C3%B1os.pdf

Data Types

Three types of data were collected for each housing development: project variables, code variables, and spatial relation variables.

Project Variables

Project Variables are those that describe the built characteristics of each project, including the project name, year of development, total number of houses in a project, built area of homes within the project, lot area, total occupation factor or floor-to-area ratio,[4] and their georeferenced location. I considered projects that are aimed at home sales (the rental market is excluded), that include sites and services (plotting, roads, service infrastructure), complete construction of homes – a model referred to as "key-in-hand" – and that are mainly accessed through the banking credit system via mortgages. This market can also be characterized by being driven by private developer members of the chamber of developers (CADUR, for its acronym in Spanish) and established through a highly segmented offer, with projects ranging from social interest housing for low-income groups to high-end luxury gated communities. Furthermore, they can be considered as recognized and recorded by local planning authorities through their appearance both in official maps and housing fairs that are endorsed by the housing authority.

Projects were first identified through a systematic review of official maps available online: the Map of Urban Housing Developments by the Municipality, and the Map of Wells by the water authority ENACAL. Second, I also used open-source satellite imagery to identify the location of projects that are outside of the municipal boundary or that were developed after the publication of either map. Whenever the maps were available in document format, these were brought into a GIS, georeferenced, and digitalized. These first maps drew polygon outline for each project; however, for a cleaner presentation these were converted to centroid points.

Once projects' locations were identified, variables describing the projects themselves were collected through field work during CADUR's Urban Housing Fairs (for more recent projects) as a source for physical brochures that are handed out to the public containing the main characteristics of the projects in general and the model homes; CADUR's Housing Catalog, which is mainly a compilation of the brochures of housing projects, was also accessed online; official developers' websites; and

[4] When projects have several models for homes, these variables have been averaged out in the database.

editions of the Pricing Guide Magazine that were available online or had been digitized and shared publicly. In the case of their built characteristics, when the sources where hard copies, these have been digitalized, and the data available in them matched in the database.

Code Variables

The second section of the database consists of Code Variables, which will be used to evaluate projects' compliance with existing regulation. These data come from the currently active 1982 Zoning Code. The Zoning Code is comprised of a zoning map and its corresponding text. For this research, the main elements were the map and the synthesis tables that describe the development restrictions for each type of zone. The database includes net density, allowance of group homes, parcels per hectare, parcel (or lot) area, and total occupation factor or floor-to-area ratio. When code variables showed range data, these were divided into the variables MINIMUM permitted and the MAXIMUM allowed. Relating these, additional variables are set on conditional statements that evaluate whether a project is compliant or not with the minimum and maximum for each of following density restrictions: lot area minimum, lot area maximum, and total occupation factor. For example, in the case of minimum lot area, a project was deemed non-compliant if the lot area of a project was lower than the minimum restriction or over the maximum restriction.

In addition to these binary variables indicating compliance/non-compliance, I also calculated that the difference (i.e., deltas) between the project characteristics and the code restrictions in both absolute and relative terms; this provides insight into the degree of non-compliance.

Spatial Relation Variables

The final section is Spatial Relation Variables. This third set of variables was created to validate the available data's validity to generalize towards all developments in the city. These have resulted from running spatial join functions through QGIS, relating the location of each project centroid with a set of spatial data like poverty areas (which come from official data from the National Institute of Information for Development [INIDE for its acronym in Spanish] (*Instituto Nacional de Información de Desarrollo - INIDE*, n.d.) and maps available online, digitized in GIS), a municipality boundary variable – as drawn by the 1982 Urban Development Code – set as a binary value (inside municipal boundary / outside boundary), and a main road buffer, setting 0.5 miles from the main roads that circumvent or radially connect the city with other municipalities. The 0.5 miles parameter was set considering walkability standards, and it is also set as a binary, within the 0.5 miles or in the difference.

Research Design and Analytical Methods

Data Validation

The data can be thought of as a census of the projects and includes relevant information from the whole universe of projects during the study period. An initial count of the data for each variable of interest shows that for 342 projects, 235 or 68.7%, have values for the total number of homes per project; built area in square meters is available for 217 (63.5%) projects; while lot area in square meters and total occupation factor are only present for 144 (42.1%) of them. The year of development is present for 224 of the projects (65.5%); however, this is an imperfect measure of the date of development, as projects are often developed in phases over many years or are marketed and sold before constructions begin. Subsequent analysis suggests that these data are not missing at random,[5] so care is taken not to generalize the findings beyond the sample of properties with complete data; see the appendix for me details.

Measuring Informality at Three Separate Scales

The primary analytical approach is quantitative in nature and seeks to examine the compliance of development projects with development regulations. This is conducted primarily by examining whether the development complied with the restrictions in force in each location in each scale of analysis, as will be described below, either inside or outside of the city, in areas zoned (or not) for housing, and in zones that allow for developments with specific characteristics.

Following the literature review and the analytical framework described, projects are evaluated against land use regulations – specifically, I evaluate whether housing projects are allowed in their existing location and at their existing intensity. This allows me to establish the relationship between development practices – embodied in the projects' density – and the legal structure of development requirements set by the development codes. Building off Durst & Wegmann's (2017) typology of informal housing in the U.S. and Murray's concept of exception, this analysis of development practices and their relation to development requirements also allows for afn examination of issues of enforcement and compliance. For example, while some informal development may be

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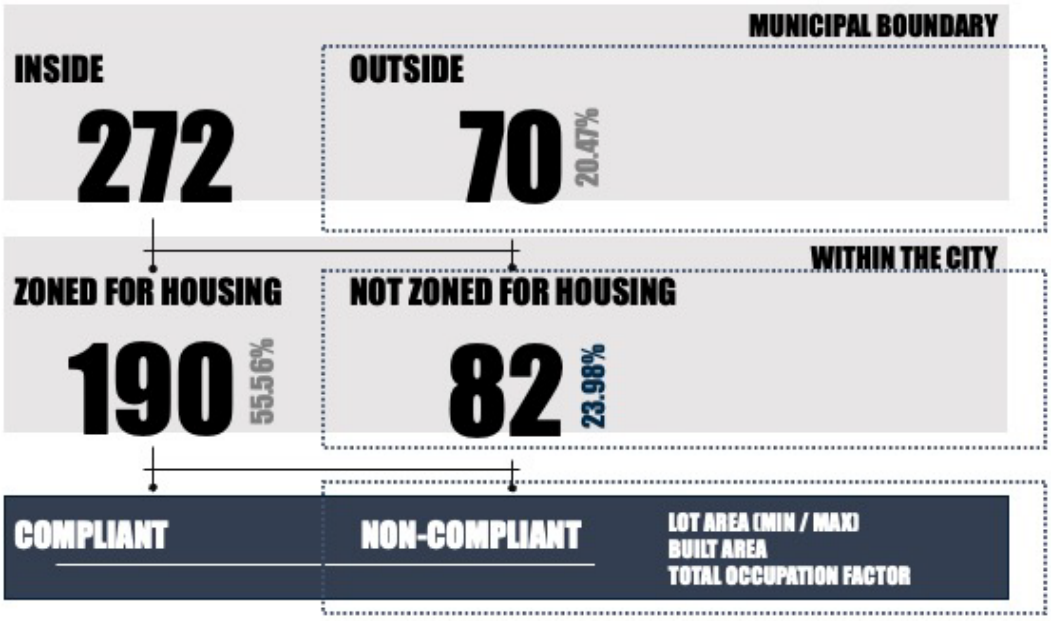
[5] A total of six Chi-2 and T-test were conducted to assess whether the project data were missing at random. I examined missingness in relation to the spatial variables: boundary location, road buffer, and poverty areas. The results indicate that in relation to boundary location and road buffer, data are not missing at random. As a result, caution should be taken to not generalize the findings beyond the sample for which complete data are available.

conceptualized as non-compliant because it circumvents the law, informal development that arises due to non-enforcement or deregulation by government actors embodies a different form of informality (Durst and Wegmann, 2017). Similarly, exceptionality granted is in turn a negotiated valued of formality/informality given in an *ad hoc* basis, as explained by Murray (2017).

I focus on three different scales of analysis, each of which highlights one pathway by which informal development occurs: some projects fall outside the municipal boundary, while others are located inside; of those located inside the city, some are located in areas not zoned for housing, while others are located in residential zones; lastly, among those located in residential zones, some fail to comply with specific development requirements (see Figure 2).

Figure 1 Levels of analysis. Source: Created by author.



The first scale of analysis distinguishes whether a project is inside or outside the municipal boundary. A few projects in the database are outside the municipal boundary, yet they were registered during data collection mainly because, when sold to the public, they are advertised as being within the city. A reasonable explanation for the ease of blurring of the municipal boundary can be found in the variability of where the official city limits are, and how little they are known by the public. The city varies much because of geographical features and sprawl. The projects' depiction in the market as within the city is both a marketing strategy and a sign of the dynamic between Managua and the other municipalities (most of which form part of the non-officialized metropolitan

region), especially through the roadways as connecting axes. These matters are beyond the scope of this work. However, they are included in the analysis because, although they are outside the boundary, their strategies to associate their location with the city is of relevance within this research. The case can be made that their location in areas that are unregulated or un-zoned makes these projects informal by circumventing current regulations within the city and falling out of compliance with the regulations of the municipalities in which they find themselves.

Next, the projects that exist inside the municipal boundary will be evaluated at a second scale. The existing zoning map accounts for 27 large categories that detail uses of housing, commercial, industrial, institutional and others. These land uses have been classified as either zoned for housing or not zoned for housing, and projects categorized into one or the other, with those in areas not zoned for housing again considered as informal. The third scale of analysis focuses on the subset of projects that are in areas zoned for housing. Compliance in this context is evaluated by examining the projects' characteristics against specific code regulations and restrictions, namely those referred to home density, i.e., lot area minimum, built area minimum, and homes per project.

Key Informant Interviews

As a complement, qualitative data collected through interviews helps to round out the analysis and understand the planning practice and normative context in which the projects are developed. One important caveat is the low response rate: of eight interviews planned, only four were successfully conducted. However, the interviews were not planned to be exhaustive of the case being studied, and their inclusion adds additional insight into key findings. For analysis, the interviews were transcribed and coded into topics of interest, including zoning and codes, enforcement, development practices. Insights from these interviews are used to make sense of broader findings from the quantitative analysis.

Two interviewees are urban scholars with long trajectories of studying the city's urban development; one former public official; and one private urban developer, associated member of the developer's chamber CADUR. For the subjects interviewed in their capacity as former city officials, the questions focused on the processes through which housing development is occurring in the city. Because this information relates to city management in their official capacity, it is subject to Nicaraguan national law No 621 Public Information Access Law, approved in 2007. For the subjects interviewed for their role as private developer, the questions explore the decision-making processes in housing and real estate development. All interviews were conducted with IRB approval from MSU.

Relying on official documents and open-sourced secondary data, the following section shows the results of evaluating projects variables against urban development code. The interpretation of the results includes the insights gained from key informant interviews and is structured following the level of analysis described above.

4. Results

Introduction

The enduring belief about Managua's urban planning is that it is essentially nonexistent. The overall chaotic nature of the expansion and densification of the city seem to be the evident symptoms of a lack of planning or urban norms. This research aims to show that the processes of urban development in the city – specifically those related to housing – are of more nuance than that.

An overview of housing projects in the city shows an increasing predominance of certain preferred locations, and of enclosed and access-controlled housing projects (Gutiérrez Lanza, 2020). However, these walls are a transgression in plain sight of articles 28 and 29 of the Urban Development Regulation, which proceeds from the 1982 Urban Development Plan. These articles describe the project "urbanization" – what we could understand as the U.S. equivalent of a subdivision – as residential areas created by upgrading land through infrastructure, services and plotting, and makes two basic conditions explicit:

1. The projects must not have perimeter walls or access controls, a rule to which condominium housing projects are the exception, whose logic of exclusivity is inherent to them and is protected by the legal recourse of the cadastral registration of the property shared privately between the condominium owners. In urbanization projects, "perimeter enclosure is not allowed."
2. The streets and services of the project must be donated to the municipality "and allow free vehicular and pedestrian access to the general population."

In the same way, this rule is cited by the recently published Cartilla de Urbanismo [Urbanism ABC-Book for Managua] (Alcaldía de Managua, 2021). Both conditions are made explicit in the regulation to ensure the integration of new housing developments into the existing urban fabric. However, it is well known that in Managua projects of this type donate streets and services to the municipality - with which they transfer responsibility for their management and maintenance, by turning it into a public good - while requesting an exception to the provision that prohibits perimeter walls, as a highlight "safety" feature of their developments, which is in all cases granted, turning the exception into a rule. Thus, almost all housing projects, regardless of their legal status (whether they are condominiums or not), and their commercial name (Residential, Urbanization, Condominium, etc.) have a perimeter wall, access control and in some cases devices of surveillance, all against the dispositions of the urban development code.

My claim here is that despite them being thought of as correct, proper or orderly, these housing developments fall into the category of informality – thinking of this concept as a continuum, as proposed by Roy – and that this pattern is enabled by the extension of "exceptions" to individual projects, which has become the norm. It is possible that appearance of these projects where and/or how they should not appear is related to the review and permit process decisions made in the municipality. The projects, and by extension the process of urban development in the city, is carried out through an urbanism of de-regulation, non-enforced regulations and exceptions. What follows is an analysis that details the more conspicuous of these transgressions and first insights into the rationality of these exceptions.

Circumventing the Rules by Circumventing the City: Informality-as-Deregulation

I begin by discussing how development projects circumvent the development regulations in the City of Managua by circumventing the city itself, especially those that can be characterized as social interest housing. As I illustrate, a substantial fraction of the development projects in the sample are located outside the city. Many of these developments appear to be social interest housing, a fact supported by analysis of project characteristics and key informant interviews. These projects are characterized by smaller building sizes and higher residential densities. By developing these projects outside the municipality, developers appear to be capitalizing on less expensive land and avoiding city development restrictions. This resembles what Durst and Wegmann (2017) call informality-as-deregulation.

As the city sprawls along its axis and extends its footprint towards the neighboring municipalities (Gutiérrez Lanza, 2021), several housing projects have leaped over urban areas beyond the municipal boundary. This is illustrated in Figure 4, which shows the distribution of projects outside the city, inside the city but outside residential zones, and within residential zones. Projects outside the municipal boundary account for 20.47% of the total project in the database. As is clear in Figure 4, projects outside the city are primarily clustered near the major highway. This presumably allows residents to commute to the city with ease, and likely explains developers' ability to market these developments as within the city of Managua despite their location on its outskirts.

The characteristics of the projects themselves – including the built area, lot area, and number of homes per project – all suggest that developers outside the city are primarily pursuing social interest

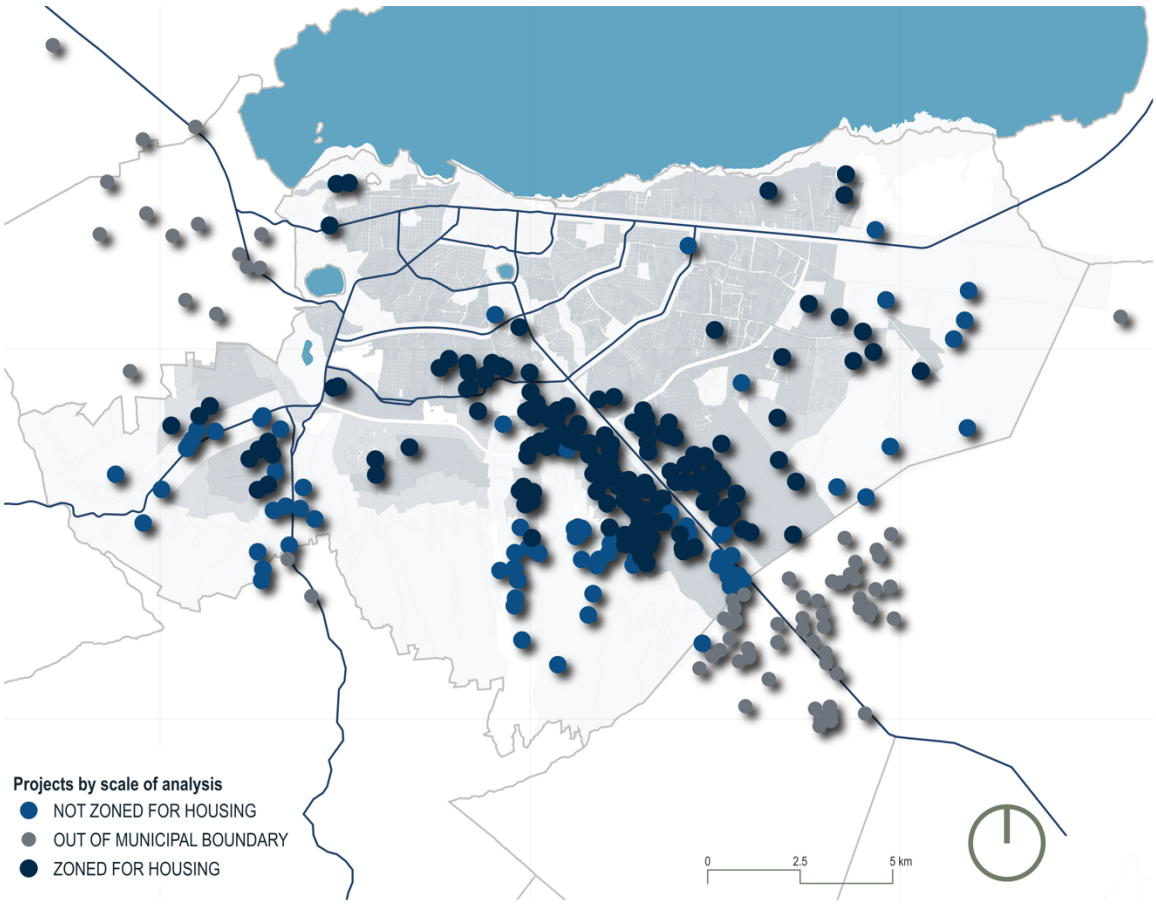
housing[6] developments that target low-income buyers. To illustrate, Table 1 presents descriptive statistics for projects in each location. As is clear, projects in areas zoned for housing within Managua have an average of approximately 90 homes per project, compared with 150 homes in areas within the city that are not zoned for housing and as many as 300 homes on average in areas outside the city. Similarly, projects outside the city boundary have smaller lot areas (337 square meters) than do those in areas within the city (525 to 540 square meters), and they have smaller built areas (127 square meters) than those in in residential (185 square meters) and non-residential zones (254 square meters) within the city. All of these statistics point toward a disproportionate share of social interest housing developments outside the city. Because the projects outside the municipal boundary find cheaper land to develop, they have become the preferred location for social interest housing projects, which make their profit through the smaller size and greater volume of houses built.

The concentration of social interest housing outside the city, and the conclusion that cost is a central determinant of this pattern of extra-municipal development – which follows David Ricardo's postulates on land rent (Ricardo, 1821) – was supported by key informant interviews. For example, as one private developer explained to me:

> "Access to water and cheaper land. Social interest housing can't… the land for social interest housing can't be more than 1 US dollars a square foot. Because otherwise you can't sell the house at social interest price […] that is why you don't see social interest housing in Carretera Sur, because there is less water… so we invest less" (interview, private developer).

[6] Social Interest Housing [Vivienda de Interés Social VIS] in Managua refers to homes that have a built area, and a cost no greater than USD 40,000 for single family homes, and USD 50,000 for multi-family housing, according to Social Interest Housing Law No.677 [Ley Especial Especial para el Fomento de la Construcción de Vivienda y de Acceso a la Vivienda de Interés Social], updated 2017.

Figure 2 Map showing the location of projects registered. Created by author.



While land price might be a primary driver, outside the municipal boundary developers also find highly deregulated land – this leads to a form of informality-as-deregulation. In some cases, regulations are non-existent, while for others they are at such a broad scale that applicable planning documents only refers to "urban areas" and do not detail specific land uses or additional development restrictions. This is the case for all the adjacent municipalities, Nindirí to the south and Mateare to the west[7]. For this reason, all that is outside the boundary can be considered informal without further evaluation of any specific built environment characteristics. While outside of the municipal boundary, their proximity to the city and connection to city services can be interpreted as the strategy by which projects take advantage of the claim to being in the city and its services while

[7] Plan Regulador Municipal, Municipio de Nindirí (2012), Plan Municipal de Ordenamiento y Desarrollo Territorial 2012 – 2022 Municipio Nindirí

also utilizing the advantages of a location outside the municipal boundary. While they could be thought of as de-regulated, locating in other municipalities with little to no regulation, their strategy can also be interpreted as informality through evasion, when thought of in relation to the planning codes of Managua.

Table 1 Summary of Development Characteristics by Location

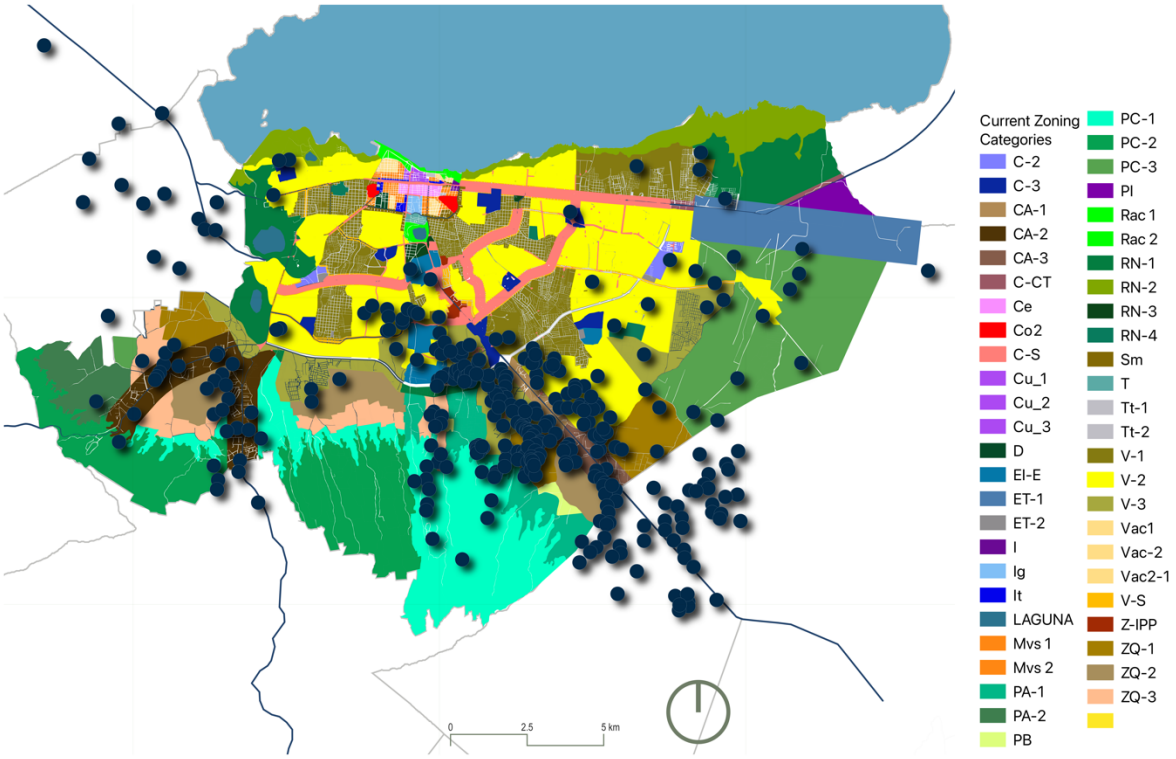
Area Classification	Count	Percentage of Total	Average Home built area (m^2)	Average Home Lot Area (m^2)	Average Total Homes Per Project
Outside the Municipal Boundary	70	20.47%	127.26	337.34	302.71
Projects Inside the Municipal Boundary					
NOT ZONED FOR HOUSING	82	23.98%	254.51	525.74	148.81
ZONED FOR HOUSING	190	55.56%	185.98	541.30	88.13
Grand Total	342		189.01	487.17	151.78

Residential Development in Non-Residential Zones: Discretionary Exemptions from and Nonenforcement of Codes

This second scale discusses projects that are located in areas not zoned for housing and enabled by non-enforcement of codes. An important number of projects are located in these areas. They are characterized by having the largest built area and second largest lot area. These built characteristics are indicative of luxury homes, with large constructions and large total occupation factor of the plot. For these projects, locational values are the primary driver of their location, and the notion of the code's outdatedness is at the base of the leniency to allow for their development. In this location and by their development process these projects display informality as non-enforcement, as called by Durst and Wegmann (2017).

Projects within the municipal boundary but in areas not zoned for housing are a total of 82 projects, or 23.98% of the total. The data show these projects have the highest average home built area, and the second largest average home lot area, at 254.51 sqm and 525.74 sqm, respectively, which brings their occupation factor to 0.5 (see Table 1) and are on average 36% larger than those in areas zoned for housing. These projects with bigger homes are characteristic of high-end luxury projects. Their location in relation to amenities and other urban externalities locate them in certain high-value areas of the city, especially those which are viewed as offering green natural spaces and a retreat from the city while maintaining proximity to services and amenities (Gutiérrez Lanza, 2020). As illustrated in Figure 4, they are located to the disregard of zoning and the protected character of most of these areas (those identified in green), inside the municipal boundary but on the border of the consolidated area, especially towards the south.

Figure 3 Project location overlayed on current zoning map. Created by author.



Areas not zoned for housing are located on the outskirts of the city, following the city's topographical and natural characteristics, where land and water conservation are designated as part 1982 urban development plan. However, their designation as not zoned for housing appears to be interpreted as a void in the city's zoning. This quote from a private developer shows this well-established perception on the state of urban development codes in the city.:

> "[The urban development code from 1982] definitely it's a norm that is outdated, because if you've had the chance to see it, it only covers until lake Tiscapa; after Tiscapa is where we have developed and where we move today, and it's not even considered, so it's really not a document to consult today" (interview, private developer).

We see a corresponding justification from city officials. Responding to the 'actually existing' conditions of development in the city, the enforcement of compliance with the code has been described by a former public official as less than successful: "it doesn't fit, reality doesn't allow you to properly apply these established urban codes." In turn, enforcement "[applies] bits and pieces from one code and the other in order to patch-up what is in the plans" (Interview, former public

official) showing great discretion its enforcement. Rodger's 2012 research in Managua cites a similar rationality from the now former city's planning director.

More often than not, the process goes as described by a former public official:

> Let's say, [some] use is allowed, but not a specific type. But the trajectory of the last years has allowed for those uses, so well, we keep allowing it. You obviously can't apply any [urban development restrictions] that are already established for the zone – well then, we do a kind of patch-up to kind of carry on with the line [of development].

Under this logic, the undefined ranges of development of areas not zoned for housing allow for a more lenient evaluation of exceptions. Projects in areas not zoned for housing would be requesting an exemption to their restricted/prohibited condition in certain areas, which could leave the matter of the intensity of their development to discretionary consideration. This would usually look into the density of other projects in the area and creates a snowball effect of requesting exemptions and of higher densities (interview, housing scholar).

Projects located in areas not zoned for housing are also de facto informal, as the code doesn't allow for their presence in these areas of the city that are classified as projected for reservation of natural resources or meant for agricultural production. Developer and city officials share in a rationality that the current land use code does not serve economic development and the city's reality. Thus, these projects are informal through non-enforcement.

Within the Municipal Boundary, Zoned for Housing: Informality through Exceptionality

In this final section, I discuss the smallest scale of analysis. Following Roy's claims that informality manifests in "upscale informal subdivisions formed through legal ownership and market transaction but in violation of land use regulations" (2005, p.149), I evaluate project development characteristics against land use regulations, particularly those regarding location and density. The majority of projects are located in areas zoned for housing, and many display built characteristics that appear to fit a model of "progressive" homes for the middle-class in which the total occupation factor is reduced by building less. As reported by key informants, these projects would undergo an *ad hoc* revision process, and by developing against density restrictions these projects resemble what, following Murray (2017), we can call informality through exceptionality.

Projects in areas zoned for housing account for 190 of the total, or 55.56%, possibly a result of residential uses accounting for the bigger sum of land within the city. They have the lowest number of homes per project but show averages of larger lots and smaller homes that fit the ideals of a middle-income family that is looking for a "seed" home in a lot that allows them to grow. That is, a

model of "progressive development" that allows families to expand the built area in a timeframe that best suits their needs and financial capacity.

Compliance

For their evaluation, areas zoned for housing have been divided into "residential zones' and 'country house zones', as the major division considered in the code. These zones are each divided into high, medium, and low-density development, but for the analysis that follows, the difference between the zones is more significant than that between the density categories. It is worth noting that "residential zones" are closer to the city center or highways, while country house zones (what in the U.S. we would call agricultural homes) tend towards the outskirts of the city, as shown in Figure 5.

Figure 4 Project location by residential zone classifications. Created by author.

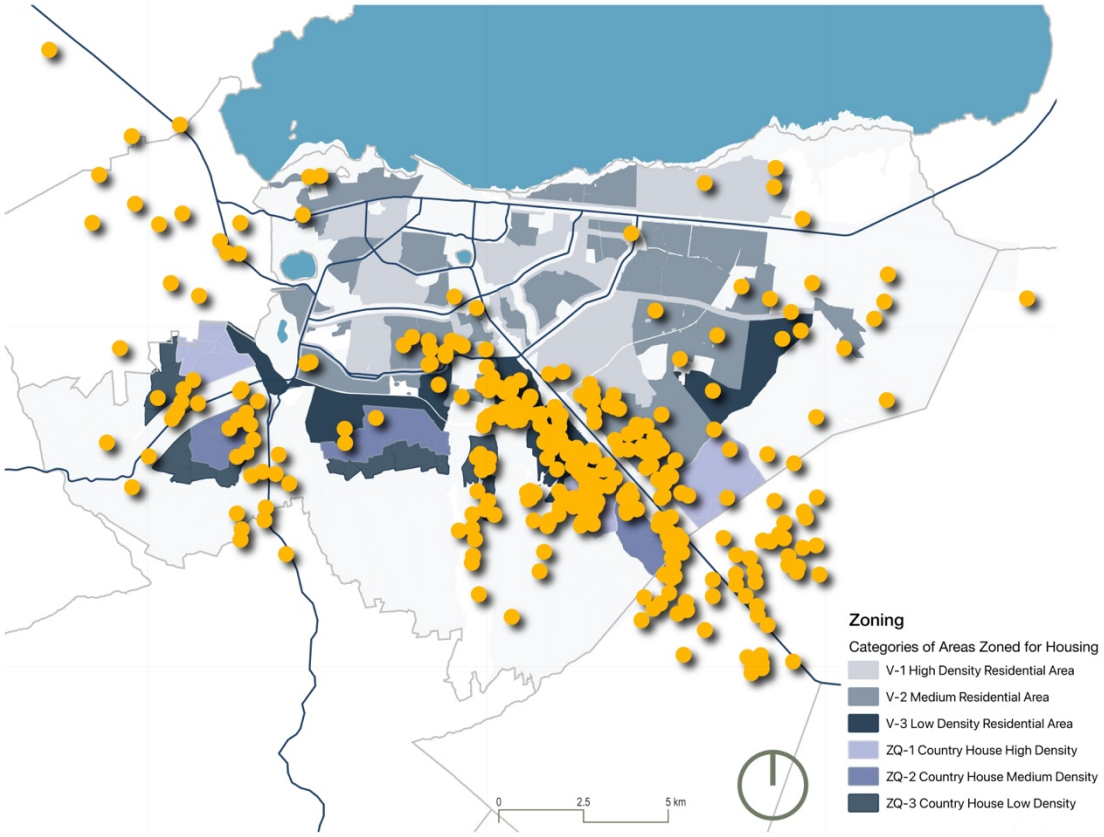
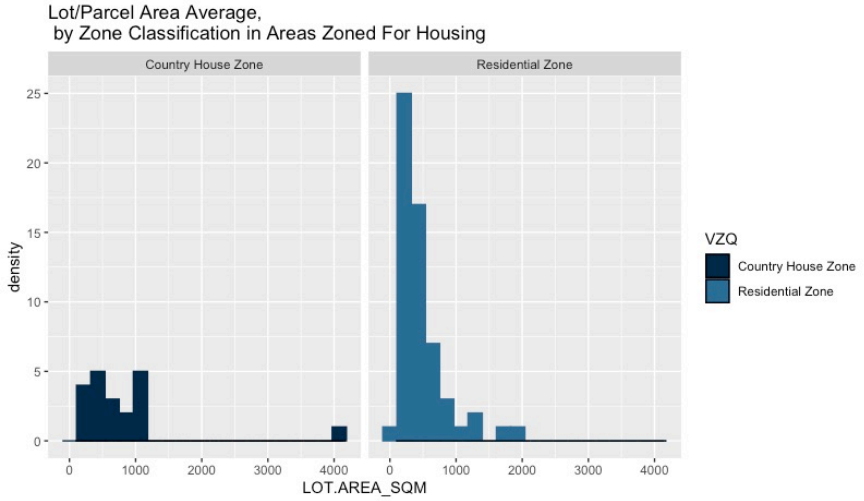


Figure 5 shows a histogram for average lot area in square meters by the classifications within areas zoned for housing described above. We can see that for "residential zones" (right pane) the distribution is skewed to the right, displaying a higher number of projects with smaller lot areas, while "country house zones" have a lower number of projects; overall, its distribution is less varied and most project have relatively small lot areas. Considering the spatial location of these classifications, they seem to display a similar trend to that identified in the larger scales of analysis. Within the city boundary, projects tend to grow as they move further from the city center towards higher-valued areas.

Figure 5 Histograms for the development characteristics: lot area in square meters, by classification within areas zoned for housing. Created by author.



Finally, I analyze the difference between code restrictions and the developments themselves to show the absolute and relative differences (or deltas) to give a sense of the degree of non-compliance. As an illustrative variable, I evaluate the compliance of projects with the development restriction on minimum lot area for the projects located in areas zoned for housing.

The top panel of Table 2 shows that within areas zoned for housing, country house zones restrict to an average lot area 2,137.5 square meters, approximately 4 times larger than both the minimum and the maximum lot area averaged by residential zones. The latter restrict lot area to a minimum of 359.23 square meters and a maximum of 575 square meters. On the other hand, country house zones allow for a smaller occupation factor (or floor to area ratio) at 0.64 while residential zones allow for 1.65, indicating higher density development in the latter. All characteristics are consistent with the overall structure of urban space that seeks a dense city center and less dense development the further from the city's core, as was established in the 1982 development code that set these restrictions.

Against this development restriction, we see in the bottom panel of Table 2 the summary of the observed development characteristics calculated from the project database. This evaluation shows that 32 projects are not compliant with the minimum lot area, and 38 projects are non-compliant with the maximum lot area for a total of 70 projects non-compliant with the restriction. Only 9 projects fall into complete compliance.

Table 2 Development Restrictions by Code and Observed Development Characteristics

Development Restrictions Summary					
	Country House Zone			Residential Zone	
Minimum Lot Area	2137.5			359.23	
Maximum Lot Area				575.00	
Total Occupation Factor TOF	0.64			1.65	
Development Characteristics Summary					
	Compliant	Non-Compliant with Minimum Lot Area		Non-Compliant with Maximum Lot Area	
	Residential Zone	Country House Zone	Residential Zone	Country House Zone	Residential Zone
Number	9	32		38	
Average Lot Area	550.95	619.93	272.34	4171.55	496.57
Average Absolute Delta	-182.38	-1340.60	-252.33	671.55	247.92
Average Relative Delta	-0.22	-0.67	-0.44	0.19	1.17

Note: * Country House Zones are restricted to a single lot area for each density and does not provide range for minimums and maximums.

The evaluation of non-compliance has been divided into those not compliant with the minimum and those not compliant with the maximum. For projects that are non-compliant with minimum lot areas, the relative difference between restrictions and observed development characteristics are greater for country house zones, at 67% below the minimum, while projects in residential zones are on average 44% below the minimum. Projects non-compliant with maximum lot area show greater differences between country house and residential zones, with 20% and 117% larger, respectively. That is to say, there is an important number of projects that are informal through non-compliance. However, the interviews conducted point to a more nuanced process.

It is important to note that the administrative procedure for revision on norm application in projects is established in the Construction Permit Code (bylaw) that is part of the 1982 urban legislation. A permit must be issued by the municipality prior to any construction activity. To be approved for a permit, a developer should comply with zoning and land use regulation and building laws that are applicable for housing projects, the latter depending on the typology of the project (the bylaw

accounts for four different types). The procedure then begins with the Land Use Constancy (or record), moves to the blueprint project revision, the subsequent final and executive project revision, which if all are successful end with the municipality issuing a Construction Permit. However, in practice the process for consulting land use occurs in a different manner, one more towards negotiation, according to the developer interviewed:

> "What we have is a general understanding as developers, we have a general understanding of the city norm and… at the time that I have a plot I want to develop, I approach the municipality to get to know specifically in the zone what are the norms that are applicable to be able to… adjust to that norm. But there doesn't exist an urban planning [code] that… that you can consult previously" (interview, private developer).

On the other hand, a former public official describes how they understand this process:

> The municipality is aware of the shortage, of the [lack of] currency of its instruments, and so are the developers. Then there is a common factor that exists, it's like 'let's help the development, let's help the development by sticking to our reality' […] So, okay, look if we agree to x or y variance of the code, then we can benefit one or another way […] It's a process that was previously called dispensation, now it's called exception something, there is exception in the name (interview, former public official).

In this process developers will request an exception to certain development restrictions, like setbacks or lot minimums, based on how "illogical" it is to have a lot that can be developed and benefit certain sections of the city, and alleging how "in previous years similar projects have been built, that also didn't respect these codes, however, these have been developed, they have done so in an effective way within the sector" (interview, former public official). In the face of development that "can't be stopped" the response is "a municipality that is in one way or another, flexible" (ídem). Thus, projects that are within areas zoned for housing but non-compliant with one or other density restriction can be understood better as informal through a mechanism of exceptionality as they imply the relaxation or suspension of one or more restriction. This mechanism of informality appears to follow Murray's (2017) claim of a development of ad hoc considerations and a disregard of a previous conception of the rules of law.

Conclusion

While the projects on all levels of analysis appear correct, proper or orderly, their production – specifically in terms of land use regulations – was questioned in this research by examining their production against enforceable regulations. Through the scales of analysis, I find that informality in

Managua is displayed at different spatial scales through different practices. De-regulation, non-enforcement, and exceptionality showcase the continuously negotiated value of informality/formality through exceptions offered by or requested from the municipality, and, thus, how development practices relate to enforceable land use codes and regulations. Informality in Managua is multidirectional and moves through the informality continuum throughout the stages of housing development processes, in this case, production. Market transaction and use merit further research.

Furthermore, the scales seem to relate to housing market segments by socioeconomic status. The locational value attached to each market segment (social interest housing, middle-class progressive homes, and luxury projects) and their built characteristics irrespective of zoning and development restrictions supports the hypothesis that these follow a specific development pattern more related to developer preferences or market demands than to regulatory restrictions as strong determinants of project characteristics. It is then not surprising that these informality practices are justified and rationalized by an ideology of development centered on economic growth and progress, thus related to the bedrocks of economic neoliberalism. This evaluates the city's codes as "non-fitting" to the realities of the city and the need for economic development brought on by private investment. Informality beyond poverty in Managua expresses real estate interest as the inequality in rule-breaking and allows certain interest groups to lead the city's urban development through the support of deregulation as an action framework to their advantage, justifying exceptionality in decision-making.

5. Discussion and Conclusion

This research set out to contribute to the literature of informality among the wealthy in Latin America. Through the case study of the city of Managua, I research the spatial and regulatory urban features of housing developments; the relationship between the current pattern of urbanization and the regulation and enforcement of housing developments; and how the granting of permits or exceptions by public officials configure a de facto (dis)enforcement of policy for urban development for the city. In doing so, I find that informality is displayed at different spatial scales through different practices. De-regulation, non-enforcement, and exceptionality showcase the continuously negotiated value of informality/formality through exceptions offered by or requested of the municipality. The granting of permits or exceptions by public officials entails a de facto (dis)enforcement of policy for urban development in Managua and leads to widespread urban informality. These processes are leading the city's development through a specific pattern, largely related to developer preferences or market demands and usually to the disregard of regulatory restrictions.

In showing how the structuring of urban space is led by market forces, the case study reinforces current literature on informality and the positionality of informality as a phenomenon relating to political and economic structures and power struggles, and not exclusive to low-income families, but rather a practice engaged in by different groups in order to achieve certain goals. I show that the disjuncture between formal codes or laws and practice – in this case argued by outdatedness – does not imply an absence of power or control over city development, but rather places it in the hands of interest groups, who negotiate the value of formal/informal, ultimately exacerbating processes of urban inequality. As it is occurring in Managua, informality is certainly a mode of urbanization.

This research contributes to the literature by highlighting the nuances of informality beyond poverty. By showing informality in the production of housing – not in the use, as is the usual stance – and its changes through spatial scale, my analysis highlights the different strategies used by developers and the relation of these strategies to the enforcement of land use codes. Furthermore, we see how the concept of informality is caught within notions of economic development as a justification. Recognizing the existence of these particular interests, their relation to notions of economic development as an ultimate goal, and their effect in the city space is an important first step for planners.

This work is limited by data accessibility – both quantitative in terms of the registers of projects and accessibility to public officials – a context that might be similar in other Latin American cities. Gathering primary data was a time extensive effort and the gaps identified were filled using open-sourced data when available. Future research, for Managua and other cases, should further explore informality beyond poverty by examining different stages of the housing development process. While the outdatedness of the development code could be a particularity of the case, it also shows the importance of establishing a timeline of development practices and codes to better understand their relationship in the actual practice of housing development. Finally, while we expand the understanding of the phenomenon of informality as an urban and spatial reality, the rationalities that justify or give leniency to informality and that establish a market-led development pattern should not go unnoticed and must be related to broader social and political processes.

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APPENDIX

Table 3. Chi2 Test Results for Data Validation

Independent Variable	*Dependent Variables*	*P-value*
Boundary Location	Total Number of Homes in Project	0.054
	Lot Area	0.126
	Built Area	0.717
Road Buffer	Lot Area	0.251
Poverty Areas	Lot Area	0.027
	Built Area	0.009

Table 4. Chi2 Results for Total number of homes in project - to boundary location

	NOT MISSING	***MISSING***	***GRAND TOTAL***		
Managua	178	92	270		
OUTSIDE	56	16	72		
Total	234	108	342		
	NOT MISSING	**MISSING**	**GRAND TOTAL**	**Chi-square statistic**	3.70
Managua	76%	85%	270	**DF**	1
OUTSIDE	24%	15%	72	**P-value**	0.05456

Table 4 (cont'd)

Total	100	100	342	Cramer's V	0.07350

Table 5. Chi2 Results for lot area (sqm) to boundary location

	NOT MISSING	***MISSING***	***GRAND TOTAL***		
Managua	108	162	270		
OUTSIDE	36	36	72		
Grand Total	144	198	342		
	NOT MISSING	**MISSING**	**GRAND TOTAL**		
Managua	75%	82%	270	Chi-square statistic	2.33
OUTSIDE	25%	18%	72	DF	1
Grand Total	100	100	342	P-value	0.12675

Table 6. Chi2 Results for lot area (sqm) to road buffer

	Not Missing	*Missing*	*Grand Total*		
Difference	96	120	216		
MainRoad_buffer0.5	48	78	126		
Grand Total	144	198	342		
	Not Missing	**Missing**	**Grand Total**		
Managua	67%	61%	216	Chi-square statistic	1.32
OUTSIDE	33%	39%	126	DF	1
Grand Total	100	100	342	P-value	0.25130

Table 7. Chi2 Results for built area (sqm) to boundary

	Not Missing	**Missing**	**Grand Total**		
Managua	170	100	270		
OUTSIDE	47	25	72		
Grand Total	217	125	342		
	Not Missing	**Missing**	**Grand Total**		
Managua	78%	80%	270	**Chi-square statistic**	0.13
OUTSIDE	22%	20%	72	**DF**	1

Table 7 (cont'd)

Grand Total	100	100	342	**P-value**	0.717050

Table 8. Chi2 Results for lot area (m2) to poverty areas

	Not Missing	**Missing**	**Grand Total**		
Pobreza Alta	27	49	76		
Pobreza Baja	55	64	119		
Pobreza Media	39	74	113		
Pobreza Severa	23	11	34		
Grand Total	144	198	342		
	Not Missing	**Missing**	**Grand Total**		
Pobreza Alta	19%	25%	76		
Pobreza Baja	38%	32%	119	Chi-square statistic	4.85
Pobreza Media	27%	37%	113	DF	1
Pobreza Severa	16%	6%	34	P-value	0.02769
Grand Total	100	100	342		

Table 9. Chi2 Results for built area (m2) to poverty areas

	Not Missing	Missing	Grand Total		
Pobreza Alta	41	35	76		
Pobreza Baja	83	36	119		
Pobreza Media	65	48	113		
Pobreza Severa	28	6	34		
Grand Total	217	125	342		

	Not Missing	Missing	Grand Total		
Pobreza Alta	19%	28%	76		
Pobreza Baja	38%	29%	119	**Chi-square statistic**	6.71
Pobreza Media	30%	38%	113	**DF**	1
Pobreza Severa	13%	5%	34	**P-value**	0.00960
Grand Total	100	100	342		0.17226