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The Rapid Urban Growth Triad: A New Conceptual Framework for Examining the Urban Transition in Developing Countries

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Abstract: Although the urban transition is a universal event that unfolds in all countries, the determinants, patterns, and outcomes do not necessarily follow a uniform process. With the urban transition being basically completed in developed countries around the turn of the 21st century, the growth of cities today is almost entirely confined to developing countries. Still, much of our conceptual understanding of this process is derived from earlier accounts, with definitions rooted in a historical context. This has resulted in common misconceptions such as a tendency to view the growth of cities primarily as an outcome of rural to urban migration, neglecting the growing contributions of urban natural population increase and reclassification of rural areas. A tendency to treat the components of urban growth in isolation has created a rift within the urban studies discourse, preventing any real theorization of their combined impacts and the interplay among them. Applying a systems thinking approach, this paper introduces a multidisciplinary framework for conceptualizing rapid urban growth in developing countries. The framework offers explanatory power to previously neglected components of urban growth and serves as a diagnostic for examining the urban transition—ultimately revealing new policy levers for managing it in a sustainable way.

Keywords: rapid urban growth; developing countries; components of urban growth; internal migration; urban natural population increase; reclassification

1. Introduction

“Around the globe today city growth is disproportionate to urbanization. The discrepancy is paradoxical in the industrial nations and worse than paradoxical in the nonindustrial ... It is in this respect that the nonindustrial nations, which still make up the great majority of nations, are far from repeating past history. In the 19th and early 20th centuries the growth of cities arose from and contributed to economic advancement. Cities took surplus manpower from the countryside and put it to work producing goods and services that in turn helped to modernize agriculture. But today in under-developed countries, as in present-day advanced nations, city growth has become increasingly unhinged from economic development and hence from rural-urban migration. It derives in greater degree from overall population growth, and this growth in nonindustrial lands has become unprecedented because of modern health techniques combined with high birth rates” [1] (p. 14).

Kingsley Davis [1] in his seminal work titled ‘The Urbanization of the Human Population’ noted that the processes underpinning the growth of cities in developed and developing countries were motivated by different drivers. The experiences of today’s developed countries during the industrial revolution were primarily the outcome of rural to urban migration, whereas developing countries in recent times have been driven by urban natural population increase. Although the urban transition is

a universal process that unfolds in nearly all countries, the abovementioned quote reminds us that the determinants, patterns and outcomes can vary considerably.

It is important to differentiate between the processes of urban growth and urbanization. The former of which refers to the increase in the absolute number of people living in urban areas, whereas the latter refers to the increase in the proportion (or share) of the population that is urban rather than rural [1–3]. Both of these processes are underpinned by what the United Nations refers to as the components of urban growth: rural to urban migration, urban natural population increase and reclassification of rural areas as urban [4–9]. It is worth noting that although urbanization and urban growth often occur simultaneously, it is possible for urban growth to occur without urbanization [4,10]. Such concepts are often taken for granted and frequently misused within academic and policy arenas resulting in severe policy implications; it is thus important to treat such terms meticulously.

Unfortunately, the components of urban growth have received rather limited attention to date, with those studies that do cover them often doing so in isolation from one another. Economic explanations of urban growth tend to favour rural to urban migration as the main driver underpinning the urbanization process [11,12], whereas demographic explanations are interested in urban growth as a product of natural population increase [13–15]; and, unfortunately, due to unclear definitions when it comes to ‘urban’ and ‘rural’ and a difficulty with measurement, the discussion on reclassification has largely been absent among the literature. Similar divisions can be noticed geographically as well, with migration underpinning the urban transition in developed countries, and natural population increase as the dominant component in developing countries [1,9,15,16]. The few discussions on reclassification have more often been attributed to socialist and post-socialist contexts [17]. Discussions comparing the growth of cities in developed and developing countries have also been missing; primarily due to a lack of historical data [3]. This continuous division has established a rift within the urban studies discourse, preventing any real theorization of the combined contributions of the components of urban growth and the dynamic interplay among them. As such, the literature has fallen short of an integrated theory capable of explaining rapid urban growth in developing countries.

In light of this absence, much of our conceptual understanding of the urban transition today has been derived from the experiences of the industrial world, with definitions and ideas rooted in a historical context [16,18]. Examples of this outmoded thinking can be found in landmark reports, such as the World Bank’s *Reshaping Economic Geography*, which asserts, “today’s developing countries are sailing in waters charted by developed nations, which experienced a similar rush to towns and cities” [19] (p. 49). Other examples of this can be found in influential theories of development, such as modernization theory, which emphasize structural transformation involving rural to urban migration as the dominant contributor [20]. Subsequently, it appears that the contemporary conditions of developing countries have not been adequately reflected in mainstream policy or theory, producing a knowledge deficit that hinders one’s ability to understand the complexities of many of today’s most pertinent urban issues [21]. To address this shortfall, the aim of this paper is to review existing theories, identify lacunas in our contemporary conceptualization of the urban transition, and to propose a new integrated framework for acknowledging the complexity of rapid urban growth in developing countries.

The paper has been structured as follows: Section 2 problematizes the urban transition in developing countries, Section 3 briefly discusses the methodology, Section 4 provides a theoretical overview of relevant concepts, Section 5 proposes a new conceptual framework, and Section 6 discusses the policy implications before concluding.

2. Problematizing the Urban Transition in Developing Countries

There seems to be a great deal of confusion when it comes to defining the ‘unprecedented’ nature of the urban transition unfolding in developing countries. This has given rise to a number of misconceptions. Popular reference, for example, is often heeded to the process of ‘rapid urbanization’ in developing countries; this can be seen in a number of landmark policy reports written by international

organizations [22,23]. Preston [14], among others [2,9,24] has suggested that the pace of urbanization in developing countries during its peak in the later part of the 20th century was in fact similar to historical accounts experienced in developed countries during their heyday, instead noting that it is their large base populations that is unprecedented. Based on the distinction in terminology noted above, this would imply that it is really the contributions of ‘rapid urban growth’ that is of greater concern.

Evidence of this can be seen in Figure 1, which illustrates the urban transition by average urban growth rates and urbanization level for developed (1875–1950) and developing countries (1950–2025) at the peak of their urban ascent. During the 25-year period from 1950 to 1975, developing countries went from an urbanization level of 17.6 to 26.9 percent, which is very similar to today’s developed countries between 1875 and 1900, which experienced an increase from 17.2 to 26.1 percent. The difference being that the urban growth rate in developing countries during this time was averaging 4 percent; a rate that is significantly higher than the 2.8 percent experienced in developed countries. Similar trends were experienced during subsequent periods as well. This alludes to the fact that the speed of urbanization in developing countries in recent times is similar to that of developed countries during their peak, and it is the urban growth rates that are comparatively rapid.

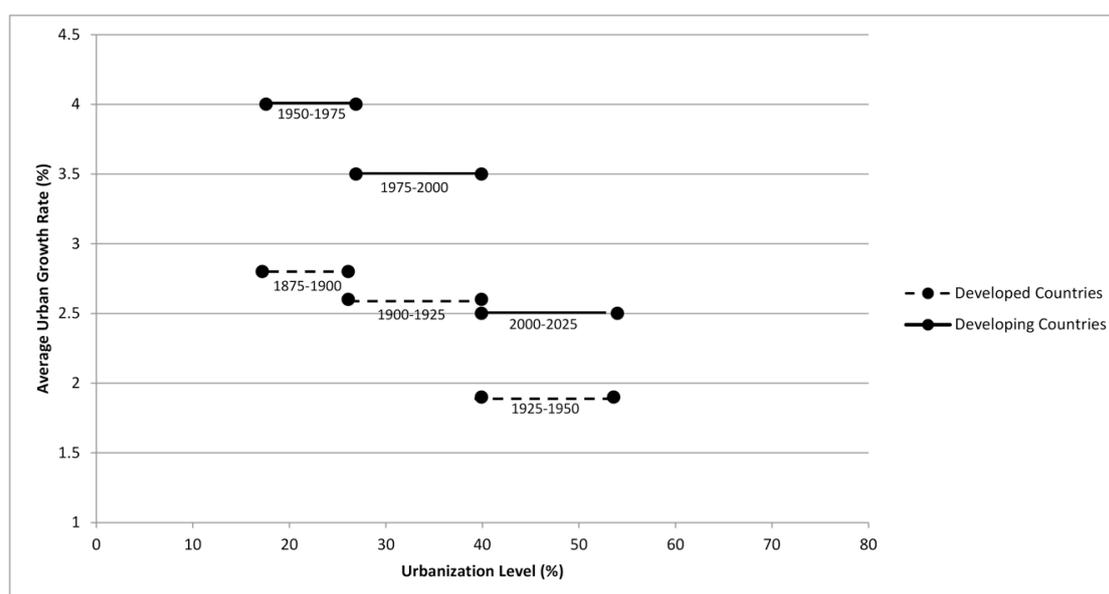


Figure 1. Urban transition illustrating average urban growth rates and urbanization level for developed and developing countries. Notes: Lines indicate the increase in the level of urbanization between two points in time (25-year increments), while remaining constant at average urban growth rates for that period. Source: developed country data is from United Nations [25] and developing country data is from United Nations [26].

Another common misconception is that the urban transition in developing countries is following a similar process to that of historical accounts, with rural to urban migration as the dominant driver [19]. Due to severe data limitations and methodological constraints, few studies have gone so far as to empirically test this. Table 1 provides an overview of a number of empirical studies decomposing the contributions of the components of urban growth in developing countries. Due to the limited availability of data, these studies tend to be confined to a rather small subset of research focused on the latter part of the 20th century. Unfortunately, due to the methodological limitations of the Census Survival Ratio Method, which is the preferred method for decomposing the components of urban growth, reclassification and migration are grouped together as a residual [27].

Table 1. Summary of empirical studies noting the contributions of migration/reclassification and urban natural population increase to urban growth in developing countries, 1950–2000.

Source	Census Pairs	Decades	Migration/Reclassification (%)	Urban Natural Population Increase (%)
United Nations (1980) [27]	39	1950s	37.2	62.8
Preston (1979) [14]	29	1960s	39.3	60.7
Rogers (1982) [4]	40	1960s	39.6	60.4
Chen, Valente and Zlotnik (1998) [7]	35	1960s	40.7	59.3
	39	1970s	43.2	56.8
	26	1980s	40.1	59.9
* Stecklov (2008) [28]	248	1960s	41.4	58.6
		1970s	38.0	62.0
		1980s	35.0	65.0
		1990s	38.3	61.7
Average among Sources			39.3	60.7

Notes: * Stecklov is an unpublished manuscript written for the United Nations, the findings have been presented in the 2014 World Urbanization Prospects report.

The overview in Table 1 reveals that urban natural population increase has been the dominant source of urban growth in developing countries in recent times, accounting for on average 60.7 percent of urban population growth. This differs significantly from comparable studies conducted in developed countries, which estimate that natural increase accounts for approximately 40 percent of urban population growth [8,29]. This helps to explain the misconception between rapid urbanization and rapid urban growth, because the principle effect of rural to urban migration is to establish the level of urbanization, whereas urban natural population increase is to increase the rate of urban growth [4]. Although the evidence shows that urban natural population increase has replaced migration/reclassification as the dominant contributor to urban population growth, this has not been adequately reflected in the policy arenas in developing countries (see below).

Another common misconception is the belief that restrictions on the influx of rural migrants to urban areas can serve as a viable strategy to alleviate the pressure on cities. However, past studies have shown that such approaches often do more harm than good [29,30]. Many countries have failed to recognize this and continue to implement policies that restrict internal migration, further exacerbating the problem. Figure 2 provides an overview of the number of countries in less developed regions with policies to reduce the rate of rural to urban migration and natural population increase between 1976 and 2013. It depicts a growing tendency for governments in less developed countries to favor policies geared towards restricting rural to urban migration over policies aimed at managing natural population increase. Since 1996, the number of countries implementing policies to lower population growth has largely gone unchanged, whereas, the number of countries implementing policies to lower rural to urban migration has continued to increase [31]. This exemplifies a misalignment when it comes to the sources of urban growth in Table 1 and the policies being applied to manage the urban transition.

With the current growth of cities already outstripping the capacity of many local governments to supply necessary services and infrastructure, and with projections noting that nearly all population growth over the next 30 years will occur in cities of the global south, planning and managing the urban transition is arguably one of the most significant challenges of the 21st century [9,32]. However, in order to offer effective strategies and sustainable solutions, researchers and policymakers must be aware of the facts and avoid falling victim to common misconceptions. By setting out to understand the complexity and multifaceted nature of the urban transition, this paper attempts to address these misconceptions and proposes a new framework for conceptualizing rapid urban growth in developing countries.

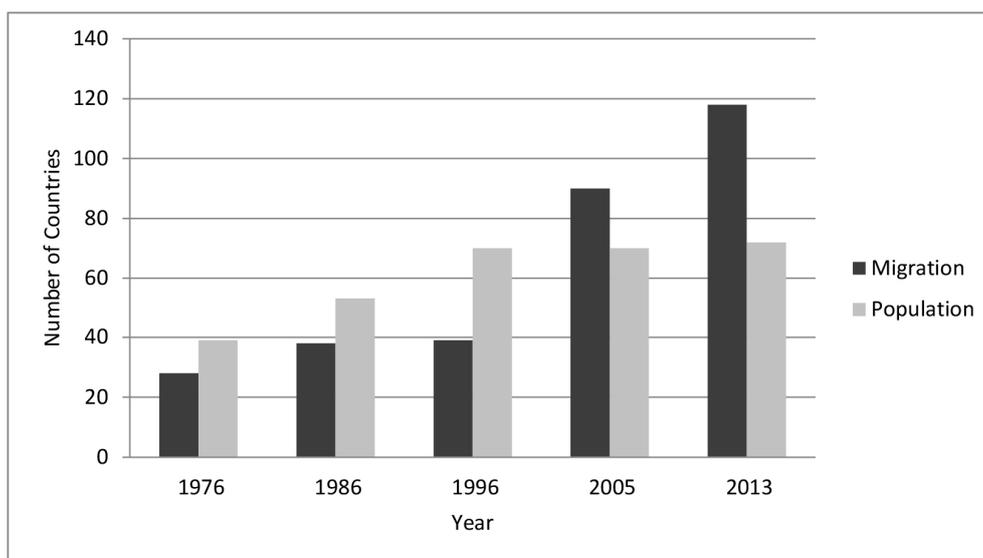


Figure 2. Number of countries in less developed regions with policies to reduce the rate of rural to urban migration and natural population increase, 1976–2013. Source: United Nations [31].

3. Material and Methods

The materials used for this study span a wide array of disciplines. Although urban studies and development studies are the primary points of departure for this research, economics, demographics and politics were turned to in order to achieve the aim of generating a multidisciplinary understanding of the urban transition in developing countries. According to Lawrence [33], the term multidisciplinary refers to an additive research agenda, which approaches a problem from the perspective of a combination of multiple academic disciplines that may or may not share the same goal.

The material for this paper comprises both primary and secondary data spanning the aforementioned disciplines. Secondary data, attained through a multidisciplinary literature review and document analysis, serves as a means of mapping out the research terrain, exploring the mainstream theories and policies, and identifying lacunas among the dominant paradigms. With the identified lacunas signalling a knowledge deficit, primary data in the form of interviews involving a range of regional and thematic experts was turned to in order to further advance our conceptual understanding of the contemporary urban transition. Ultimately this led to the establishment of a new integrated framework for understanding rapid urban growth.

The development of the conceptual framework utilized both grounded theory and systems thinking approaches. Grounded theory, which involves an iterative process of coding, comparative analysis and theoretical sampling, is a popular technique used by both qualitative and quantitative researchers, [34]. First made popular in Glaser and Strauss's [35] seminal work 'The Discovery of Grounded Theory', this technique has since lived two separate lives. With the aim of discovering emergent theory, Glaser [36] has strongly advocated for researchers to approach a phenomenon in a 'tabula rasa' manner, which actively avoids familiarizing oneself with the extant literature prior to exploring a phenomenon. Strauss and Corbin [37] on the other hand have acknowledged that prior knowledge yields certain benefits when advancing theory and have instead supported such techniques for the purpose of what they call 'useful description' and 'conceptual ordering'; as opposed to theory generation. The focus here is thus on systematically organizing data in order to examine how concepts, categories, properties and dimensions differ across a range of circumstances. This becomes particularly useful when viewing a phenomenon through different theoretical paradigms and across a diverse range of contexts. Bruscalioni [38] has noted that the fundamental divergence in approaches boils down to the logical structuring of arguments; with Glaser favoring inductive approaches and Strauss

favoring abductive approaches. The primary difference being that inductive reasoning involves theory generation as a result of data analysis, whereas abductive reasoning involves validation by grounding theoretical understanding within the contexts and perspectives of the data [34]. Following the practices of Strauss and Corbin [37], this paper takes an abductive approach to grounded theory.

An extensive overview of the literature combined with expert interviews have given way to a number of relevant concepts, categories, properties and dimensions. Given that the data spans a range of disciplines and contexts, a systems thinking approach was applied to systematically order the concepts, leading to the construction of the conceptual framework. Systems thinking offers a useful approach for selectively handling the detailed complexity of a situation, ultimately revealing underlying features and hidden relationships by framing it among a range of perspectives [39]. Two key attributes of systems thinking are holism and integration; both of which are essential to attaining a 'bigger picture' abstraction [40,41]. In the context of rapid urban growth, the 'bigger picture' view avails policymakers an opportunity to explore new solutions to problems they have not yet been able to solve.

Accordingly, this paper asserts that rapid urban growth can only be understood when it is framed as a multidisciplinary process comprising demographic, economic and political factors, each of which dynamically interact as a result of different stages of the urban transition.

4. Theoretical Background: Components of Urban Growth

The process of urban growth is often overshadowed by that of urbanization, leaving only a limited subset of research directed towards examining the components of urban growth [4,6,8,27,42,43]. Similarly, a number of scholars have noted that in general, the causes of the urban transition have received limited attention, with most studies taking for granted that this phenomenon is already underway [14,44,45]. Consequently, many tend to make the common mistake of assuming that the urban transition is a ubiquitous process, driven solely by rural to urban migration [3,5,9,45]. The neglect of the causes of urbanization and the contributions of the changing components of urban growth (namely, urban natural increase and reclassification) has come to represent a lacuna in the urban studies discourse.

This section explores each of the components of urban growth as they are framed within their theoretical debates. This overview attempts to serve two purposes: firstly, it demonstrates the extensive multidisciplinary research that can be turned to in order to understand how cities grow (economics, demographics, and politics); and, secondly, it underscores the fragmentation among these discourses, making it difficult to develop an integrated understanding of urban growth.

4.1. Migration—An Economic Transformation

Over the past two centuries, the world has gone from a population comprised of labour dispersed throughout the countryside to one in which labour has become concentrated in dense urban areas. As such, economic perspectives associate urban growth with changing labour markets involving an overall reorganization of the population [4,46,47]. The migration literature can largely be delineated between urban pull and rural push factors, primarily attributing migration to events underpinned by technological and economic change (i.e., agricultural revolution and industrial revolution).

Urban pull occurs when changing conditions in urban areas attract migrants from the rural countryside—this is most often associated with a search for higher wages [42]. The most prominent of these are the urban growth benefits that accrue as a result of agglomeration economies, which highlight the cost advantages and employment opportunities resulting from proximity [48]. The work of Walter Isard [49] further subdivided this into urbanization economies, which involve benefits for firms due to geographic proximity across industries, and localization economies generating benefits for firms within the same sector. Both of which contribute to a more productive economy, creating larger employment markets capable of absorbing an incoming population. Other popular pull factors include the bright lights theory, which describes migration as a response to elements of city life such as education,

recreation and access to amenities [50]; urban bias, which attracts migrants through disproportionate amounts of public investment in dominant cities [48,51]; the informal sector, providing employment opportunities for untrained and unskilled workers [52,53]; and, social capital, providing access to knowledge, opportunities and information through extended social networks [54].

Alternatively, rural push factors often arise as a response to limited economic opportunities in the countryside, thrusting migrants towards urban areas [30,42]. There are a number of reasons behind this including the green revolution [55,56], surplus labour [57], rural poverty [6], politics of land inheritance [58], Malthusian theory [14,16], natural or man-made disasters [59] and war and conflicts [50,60]. Rural push has largely been overlooked among the literature. What is important to recognize is that migration is not a uniform event, but instead is underpinned by a number of different determinants manifesting itself in a number of different forms—internal migration, permanent migration, seasonal migration, one-way migration and round-trip migration.

Two models have come to dominate the migration literature. The Dual-Sector Model developed by Nobel Laureate Arthur Lewis describes the process of urbanization as a transition in which surplus labour from the countryside migrates to urban areas in search of higher wages, contributing to industrialization and sustained economic development [61]. The main premise underpinning the dual-sector model is that surplus labour from the countryside will continue to migrate to cities until a wage equilibrium between rural and urban areas is achieved; after which, there will be low levels of migration. Henderson [62] has empirically shown that the urban transition occurs most rapidly at low-income levels when there is a large wage mismatch, and slows as this is reduced. This theory has enjoyed considerable attention when it comes to explaining the urban transformation that unfolded in many of today's developed countries; however, its inability to explain migration in light of rising levels of unemployment has challenged its applicability in developing countries.

The Harris-Todaro Model [11] rose to prominence in the 1970s, putting forward an alternative explanation for migration. Unlike Lewis's dual-sector model noted above, the Harris-Todaro model does not explain migration under full employment equilibrium. Instead, it attempts to account for unemployment, arguing that the decision to migrate is considered to be based on expected rather than actual earnings—this is calculated using predicted wages and probability of securing employment [11]. The Harris-Todaro model depicted in Figure 3 portrays both a demand for labour in the rural sector (reflected by the curve A, A'), and a demand for labour in the urban sector (reflected by the curve M, M'). The total labour force is represented by OA, OM. Unlike the flexible wages of the dual-sector model, full employment equilibrium (E) is considered unachievable due to the institutionally determined wages in urban areas, which set prices above market clearing rates. Assuming that there is no unemployment, at the institutionally determined wage (WM), a small proportion of the total labour force is employed in the urban sector (LM, OM), with the remainder employed in the rural sector (OA, LM) at a lower wage (WA**). It should be noted that this wage is lower than the equilibrium wage in a full employment market economy (reflected by WA*, WM*). However, in reality, migration will occur between markets until the differentials between actual rural wages and expected urban wages are equalized (portrayed by the q, q' curve). Subsequently, a new unemployment equilibrium will be achieved (Z), reflecting a new urban-rural actual wage gap (WM-WA). The final outcome will result in a new rural sector labour force (OA, LA), a new urban sector labour force (LM, OM), with the remainder of the labour force either unemployed or engaged in informal sector work (LA, LM). In the Harris-Todaro model, migration under high levels of unemployment can be further explained when taking into consideration other factors such as the willingness to work in conditions of underemployment, lowered costs of migration resulting from extended social networks, and calculating the probability of gaining employment on a longer time horizon [53].

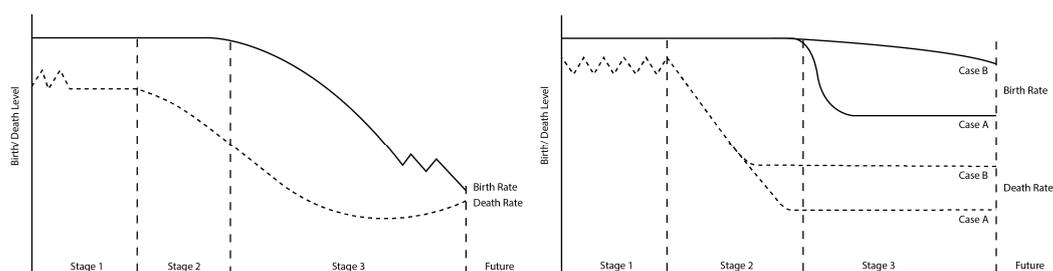


Figure 4. The demographic transition model for developed (**left**) and developing (**right**) countries. Note: In the developing countries model, Case A refers to those countries which experienced significant declines in birth and death rates (i.e., South Korea), whereas Case B depicts countries that are considered to be trapped in stage 2 of the demographic transition (i.e., many countries in sub-Saharan Africa). Source: Adapted from Todaro and Smith [53].

de Vries [65] further contributed to the demographic transition theory by introducing a stylized sector-specific model, which decomposes the demographic transition model into urban and rural. This model asserts that although fertility is lower in urban areas, it is the significant reduction in mortality in cities that has contributed to the unprecedented natural population increase in urban areas. This is because cities offer better services and infrastructure. Figure 5 demonstrates that in the pre-transitional stages, the crude death rate in urban areas is located above the crude birth rate in urban areas, implying that the urban population would not exist if it was not for rural to urban migration. However, as a country transitions to stage 2, urban death rates fall below urban birth rates; resulting in the process of urban growth as a result of natural population increase. Dyson [45] later elaborates on this model, highlighting a hypothetical scenario in which the final stage of the transition involves the urban death rate falling below the rural death rate, raising the possibility of urbanization occurring without migration. It is worth noting that rural to urban migration also characterizes a selection bias, as migrants throughout history have tended to be younger, meaning that they are more fertile and more likely to be of family bearing age, which in certain instances can lead to comparatively higher birth rates in urban areas [29].

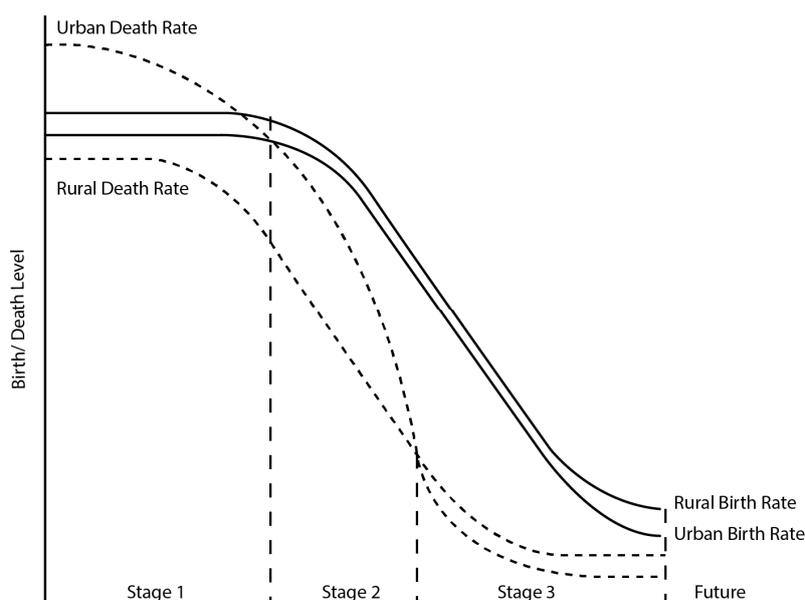


Figure 5. Stylized sector-specific model of the demographic transition. Source: adapted from Dyson [45], but first published in de Vries [65].

4.3. Reclassification—A Political Transformation

Although, it is largely considered a political/administrative process [66], the exercise of reclassification of rural areas as urban is often thought to be a productive strategy for stimulating economic development. This is based on the belief that adjustments to the overall structure of the system of cities within a country has the ability to influence a country's social and economic composition; thus leading to further growth and development [67]. Unfortunately, unlike migration and natural population increase, there exists very little research today on the reclassification of rural areas as urban; and even less when it comes to historical accounts. The increase in the number of countries in recent years implementing policies that contribute to this component are changing this trend, lifting its position as a notable contributor to urban growth [29].

According to the United Nations [8,27], reclassification can be broken down into three subcomponents: the expansion (or contraction) of existing urban boundaries, the annexation (or surrender) of adjacent settlements, and the addition (or subtraction) of new settlements that grow beyond a designated threshold. Montgomery [3] acknowledges that government adjustment of the definition of urban is another notable form of reclassification. These four typologies are illustrated in Figure 6 below. Due to the immediate impact of administrative adjustment, each of these approaches has the ability to provide an instantaneous boost to the urban population size [68]. Kulcsar and Brown [67] warn that the reclassification process can be somewhat arbitrary though, as the definitions of urban varies by country, and in some instances has changed within a country between different census periods. Although there are a number of criteria for distinguishing between 'urban' and 'rural' areas, population size, density and proportion of the population involved in industrial activity instead of agriculture remain the most common [26]. Further critique comes from Brenner and Schmid [69] in their recent thesis on 'Planetary Urbanization', which, cautions of the inherent risk in a universally defined 'urban-rural dichotomy', noting that references to definitionally fixed units are 'theoretically incoherent' and 'empirically untenable' in light of current urbanization processes. Due to the difficulty of measuring expansion, annexation, threshold and definitional changes, most research uses indirect methods to calculate the contribution of reclassification, presenting it as part of a migration residual; as is the case with the Census Survival Ratio Method estimates highlighted in Table 1. Subsequently, there exists rather limited empirical data on this disputed component.

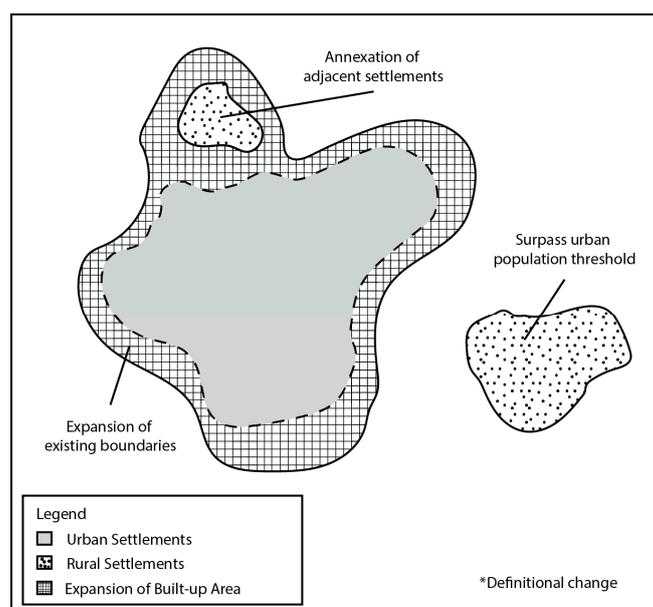


Figure 6. Reclassification typologies. Source: Created by author from United Nations [8,27] and Montgomery et al. [3].

Fan [17] highlights that in Western countries, it is generally agreed that urban growth was underpinned by economic factors; however, in the case of socialist and socialist transitional countries, institutional factors, such as policy, administrative institutions and state and local governments may offer more explanatory power to the development of urban systems. The country that underwent the most substantial transformation involving reclassification of rural areas as urban is China; largely as an attempt to make-up for Chairman Mao's anti-urban policies and what was aptly labelled 'the lost decade'. During this time, China underwent a series of economic and political reforms, part of which involved the government implementing three national/spatial policies underpinned by the notion of reclassifying areas as urban: city administering county, converting county to city, and in some cases, large cities annexing surrounding counties as districts [70]. Estimates by Kirkby [71] indicate that reclassification of rural areas as urban between 1978 and 1990 accounted for 40% of urban population growth in China during this period; resembling an outlier when it comes to the components of urban growth. Stemming from such policies, many local governments have been accused of artificially promoting a process of pseudo-urbanization in the hopes of elevating their urban status to attract future investment. In many cases, this has led to irreversible consequences such as overconsumption, excessive urban sprawl, urban areas that have predominantly rural qualities, and in the worst instances destroyed livelihoods in the form of 'landless farmers' [68,72].

What is to follow is the introduction of an integrated framework for examining rapid urban growth. The framework has been designed to examine the pluralistic relationship among the components of urban growth in hopes of better understanding their combined contributions and the dynamic interplay among them.

5. An Integrated Framework for Rapid Urban Growth

The abovementioned literature review provides a detailed overview of the components of urban growth grounded within their dominant theoretical discourse. With an initial set of concepts arising out of the literature, expert interviews and data analysis according to the 'Straussian strand' of grounded theory provided a means by which to examine the cross-disciplinary nuances that encompassed each of the concepts. Most notably, it was the process of 'axial coding', which involved linking categories based on their properties and dimensions in a wide range of circumstances [37], that allowed us to tease out the relationships among each of the components of urban growth. The organization of the concepts following a systems thinking approach further ensured that the framework adhered to the 'principle of holism', which underscores that a system as a whole works differently than that of its parts [39]. Collectively, this gave way to the key attributes of the framework—the 'direct and indirect contributions' of the components of urban growth.

The *Rapid Urban Growth Triad* presented in Figure 7 offers explanatory power to previously neglected components of urban growth (namely, natural increase and reclassification). Furthermore, it underscores both the direct and the indirect contributions of each component. Ultimately, this framework conceptualizes rapid urban growth as a multidisciplinary process influenced by the cumulative contributions of the components of urban growth and the dynamic interplay among them. Table 2 summarizes the direct and indirect contributions of each component of urban growth; both of which will be discussed in further detail in the following section.

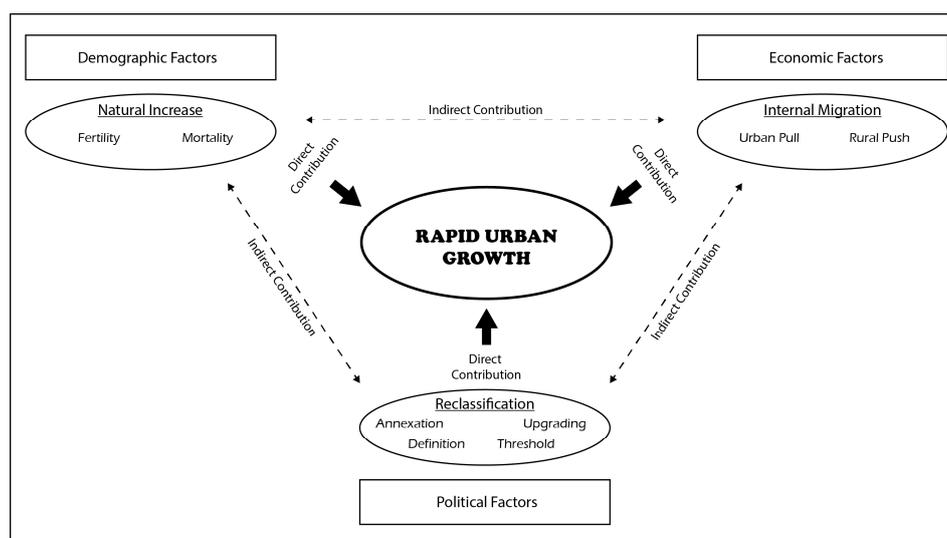


Figure 7. Rapid Urban Growth Triad.

Table 2. Overview of the components of urban growth and their contributions to the urban increment.

	Natural Increase	Internal Migration	Reclassification
Natural Increase	Urban births over urban deaths lead to a net gain in the urban increment.	A net gain in rural births over rural deaths puts pressure on resources and leads to a larger stock of future migrants in rural areas—contributing to internal migration.	A net gain in rural births over rural deaths can push settlements beyond rural population thresholds—contributing to reclassification.
Internal Migration	Rural to urban migrants tend to be younger and more fertile—contributing to natural increase.	Urban in-migration over urban out-migration leads to a net gain in the urban increment.	Due to a lack of available land, a disproportionate amount of migrants settle on the peripheries of cities; eventually being absorbed into city limits—contributing to reclassification.
Reclassification	Rural upgrading through reclassification leads to improvements in public health (reducing mortality rates)—contributing to natural increase.	Better connectivity and access to education, resulting from reclassification, can increase rural income and lead to higher out-migration—contributing to internal migration.	Reclassification over declassification leads to a net gain in the urban increment.

Notes: Direct contributions are displayed in the shaded boxes and indirect contributions are displayed in the white boxes. From a statistical standpoint, it is the direct contributions that matter; however, from a conceptual viewpoint, it is worthwhile to acknowledge the role the indirect contributions play in intensifying the circumstances.

6. Discussion

To account for the compounding effects of the changing components of urban growth (direct contributions) and the dynamic interplay among them (indirect contributions), this paper has argued for a more multidisciplinary understanding of the urban transition. It is hoped that a deeper understanding of the processes underpinning the growth of cities will lead to new policy levers for sustainably managing the rapid urban ascent currently unfolding in many of today’s developing

countries. Based on the previous sections, what can the conceptual framework tell us about rapid urban growth in developing countries?

6.1. Examining the Components of Urban Growth—The Direct Contributions

Compared to historical accounts, the urban transition today is a much more multifaceted process. Historically, the growth of cities was almost entirely a product of rural to urban migration [73]. This is because, alongside the simultaneous onset of the agricultural revolution and the industrial revolution, surplus labour from the countryside was absorbed into growing industry in urban areas [42,59]. During this time, poor living and working conditions and international out-migration resulting from ongoing crises created a natural ceiling which limited the growth of cities [1,5]. This created a situation in which urban areas required a continuous supply of rural migrants to serve as replacement for a declining labour force in urban areas [16]. Rural population growth outpaced urban population growth, producing a constant stock of migrants for cities to draw upon. Alternatively, in the absence of high levels of rural to urban migration during these times, city growth would not have sustained itself [45]. Due to the fact that the urban transition is a universal process unfolding in almost every country of the world, many have assumed that other countries would follow a similar path. It is this thinking that is likely responsible for the mistaken belief that rural to urban migration would also be the dominant contributor to the growth of cities today.

In the case of the contemporary urban transition unfolding in developing countries, a more multidimensional interpretation is required. According to Jedwab et al. [73], migration/reclassification represented a similar share of the overall urban increment as historical accounts. However, unlike historical accounts in which the relationship between urban and economic growth proved strong, recent studies have demonstrated that this relationship in many developing countries has weakened [1,3,60,74]. It is interesting to note that in developed countries, even though life expectancy was comparatively lower in urban areas, surplus labour was still willing to migrate to cities, demonstrating a revealed preference for higher earnings (urban pull). Contrary to this, in many developing countries, even in light of high unemployment in urban areas, migrants have still been willing to move to urban areas, indicating that economic factors alone cannot explain their decision (rural push). Conversely, it is the contribution of urban natural population increase in developing countries that is of unprecedented scale. Whereas declines in mortality in developed countries were achieved incrementally through improved standards of living, declines in developing countries were achieved much more rapidly through the widespread availability of modern drugs and medical practices following World War II [3]. Achievements in life expectancy that took 50–100 years in early industrializing countries occurred within 1–2 decades in the developing world [75]. In accordance with the demographic transition theory, a comparatively large window between the drop in mortality and the drop in fertility led to an excessive youth bulge; particularly in countries of Africa [16]. Economic, social and cultural practices in the form of early marriage, religion, a tendency towards larger families and reduced employment opportunities for women are believed to explain higher levels of fertility in developing countries [53]. This, of course, varies by region, with China's 'One Child Policy' (political determinant) representing an obvious outlier.

6.2. Examining the Dynamic Interplay—The Indirect Contributions

Beyond the compounding effects of the components of urban growth, the dynamic interplay among them has further intensified the urban growth experience in developing countries. This can be seen in the form of indirect contributions of each component. In the case of developed countries, these were not as prevalent, as the growth of cities was predominantly the result of rural to urban migration with mortality rates remaining high. However, in the case of developing countries today, this dynamic is serving an ever more significant function.

Indirect contributions of natural population increase—Natural population increase has indirect impacts on the other components of urban growth. Since natural population increase also contributes to the

growth of small towns, it creates a situation where many of these rural areas eventually cross population thresholds, and are immediately reclassified as urban areas [76]. In the case of Nigeria for example, between 2000 and 2010, 148 rural settlements crossed nationally defined population thresholds of 20,000 inhabitants and were subsequently reclassified as urban [77]. Not all of this is due to natural increase of course, but given the countries high fertility rates, it is likely a significant factor. It should be noted however, in the less common scenario of shrinking cities (due to low fertility rates and out-migration), there is also the potential for urban areas to undergo a process of declassification, deducting from the overall urban increment. Another indirect contribution of natural population increase can be noticed in rural to urban migration patterns. With high levels of population growth in rural areas known to put pressure on local resources, the likelihood of rural out-migration increases. A study of population movement and rural degradation in developing countries noted that the rural population per hectare rose by 35 percent between 1961 and 1998; and in many cases, this coincided with increases in out-migration [78]. When analysing the effects of natural population increase, one needs to acknowledge not only the direct contributions of net-gain in rural births over rural deaths, but also the indirect implications towards reclassification and migration.

Indirect contributions of internal migration—According to data from the United Nations [79], the composition of the rural population in less developed countries differs from that of the urban population, with the former representing younger age cohorts and more equal sex ratios. The effects of this can be seen in the demographic implications for migration, in which migrants primarily consist of younger and therefore more fertile populations [3,5]. A comprehensive study of 52 Demographic Health Surveys spanning a number of developing countries has underscored the significance of this. The findings show that among recent migrant women of reproductive age living in urban areas, 36 percent are under the age of 25, with only 9–12 percent in their 40s [3]. The effects of rural to urban migration should thus be viewed as two-fold; firstly, having direct impacts on urban growth through the net increase of in-migration over out-migration, and secondly, indirect impacts through the potential for future natural population increase due to migrants representing younger age cohorts. Additionally, a dynamic interplay can also be found between migration and reclassification. Due to a lack of affordable housing in central locations, there has been a tendency among migrants to settle on the peripheries of cities [76]. In instances where urban expansion is followed by the readjustment of metropolitan boundaries, this creates a situation where reclassification accounts for a disproportionate amount of inhabitants settled on the peripheries. An ongoing study of 120 cities around the world projects that the urban population in developing countries will double between 2000 and 2030, with the built-up areas of cities expected to triple [80]. Should this be the case, the indirect contributions of internal migration will thus have the potential to play a sizable role in future urban growth.

Indirect contributions of reclassification—Reclassification has the ability to indirectly contribute to rural to urban migration. This is because the effects of administrative upgrading are often followed by increased investment in rural amenities; most notably in the form of better communication and transportation infrastructure and increased access to educational opportunities. In the case of the latter, research has shown that higher educational attainment is often accompanied by increased earning potential and more ambitious aspirations; resulting in a tendency among educated rural inhabitants to migrate to urban areas in search of new opportunities [81]. Evidence of this can be seen in a recent analysis of a nationally representative household survey in Ethiopia, which found that internal migrants had both a higher level of education and higher earning potential than their non-migrant counterparts [82]. Given that reclassification is accompanied by improvements in the standard of living, one can also imagine a situation where public health investment results in lower mortality rates, leading to further natural increase and a larger stock of future migrants. Research in this area, unfortunately, has not yet received enough attention. Zlotnik [29], however, cautions of the history of failed policy interventions aimed at bringing amenities to rural areas to reduce rural to urban migration; which instead of achieving its intended objective of limiting migration, it experienced unintended consequences, with raised incomes and aspirations leading to a subsequent rise in out-migration. This

goes to show the complexity of the dynamics surrounding the components of urban growth and the importance of contextual awareness when designing appropriate policy interventions.

6.3. Unlocking New Policy Levers

Any analytical framework aimed at influencing policy dialogues in ‘developing countries’ needs to be cognizant of the diversity among them. In particular, this conceptual framework has been designed to assist those countries struggling to cope with the accelerated growth of their urban populations. Although, this framework has been built upon universal theories that have generally proved applicable across time and space, it will largely be dependent on those applying it to ensure that the contextual circumstances they are working in are accurately reflected (political, economic, social and cultural). Given that the conceptual framework has been designed as an analytical tool, much of this will also depend on the availability and quality of data and the overall interpretation of the findings. That being said, the use of grounded theory and systems thinking in the development of the framework helps to ensure that the initial conceptualization reflects a diversity of circumstances. It is believed that as the framework is applied in a diverse range of circumstances, it will demonstrate its ability to accommodate change and also its willingness to evolve.

The Rapid Urban Growth Triad should be considered an analytical tool designed to assist policymakers, planners and researchers to better understand the sources and intensity of urban growth, providing them with a wider range of policy responses to more effectively manage the urban transition. For example, by viewing urban growth from an economic perspective, policymakers have the ability to promote structural reforms outside of primary cities to promote a more balanced distribution of the population. Alternatively, turning to demographic perspectives, one could look to improve the status and earning power of women in urban areas, reducing the social pressure to get married and start a family earlier. The effects of this would be most significant among migrant women, which, as noted earlier, tend to make up a large proportion of the female population that is of child-bearing age. From a reclassification perspective, allocating resources to previously neglected areas could potentially reduce regional disparities and create more balanced urban development. It is important to recognize the diversity of urban growth experiences. Urban growth that primarily results from urban natural population increase, as is the case in Nigeria, will require very different policies than those where natural population increase has historically been limited, as is the case in China. This speaks to the importance of identifying the relative contributions of each component of urban growth, and applying targeted policies to sustainably manage the urban transition. As we have seen, natural population increase has played a dominant role in recent times, with complex interplays further exacerbating its contribution. Yet it is policies directed towards slowing migration that are becoming most prevalent. There is thus a need to look beyond the historical understanding of urban growth as a result of rural to urban migration, and come up with more effective solutions to fit a country’s respective context. Table 3 provides a selection of targeted policy options directed towards managing the components of urban growth.

Table 3. Select policies targeted to the components of urban growth.

Migration	Natural Population Increase	Reclassification
<ul style="list-style-type: none"> • Correct policy distortions to reduce urban bias • structural reforms outside of primary cities • Promote rural-urban linkages • Eliminate wage and price distortions 	<ul style="list-style-type: none"> • Initiate family planning programs • Create economic incentives/disincentives • Promote sex education • Raise status and empowerment of women 	<ul style="list-style-type: none"> • Forecast and establish urban growth boundaries • Prepare planned city extensions • Promote urban clusters • Address spatial disparities and promote balanced development

7. Conclusions

Acknowledging that the contributions made by previous urban studies literature have made significant strides, this paper has identified three vital shortfalls that prevent us from developing an integrated theory for understanding rapid urban growth in developing countries. Firstly, theories and policies that are commonplace in the development and urban studies discourses have been developed based on a historical understanding of the urban transition, failing to accurately capture the contemporary conditions of developing countries. Secondly, analysing the components of urban growth in isolation has prevented us from understanding the cumulative nature of urban growth in complex environments, such as that of developing countries. Thirdly, the concept of rapid urbanization has been used widely to describe the process unfolding in developing countries; however, given that urban natural increase has replaced rural to urban migration as the dominant driver, rapid urban growth has become a more accurate depiction.

This paper has contributed to the current research by reviewing existing theories, identifying lacunas in our contemporary understanding of the urban transition and proposing an integrated framework for examining the complexities of rapid urban growth in developing countries. It has cautioned against a single theoretical view of urban growth focused on migration and instead shifts the focus towards a pluralistic one. The framework offers explanatory power to previously neglected components of urban growth and serves as a diagnostic for examining the urban transition—ultimately revealing new policy levers for managing it in a more sustainable way. Unfortunately, due to space constraints, this paper has not undertaken a thorough discussion on the multiple growth trajectories followed by different developing countries, nor has it explored the changing relationship among the components of urban growth as they navigate the different stages of the urban transition; both of which, should be pursued as part of a future research agenda.

When understood through the conceptual framework presented above, rapid urban growth in developing countries is no longer such a mystery. Given the complexities of the urban transition in developing countries—unprecedented population growth, diversity of migration patterns, and the growing role of government in the urbanization process—this paper has demonstrated that it is necessary to take a more pluralistic approach to examining and managing the urban transition. An explanation of the rapid urban transition, without consideration of the multiple components of urban growth and the interplay among them is thus incomplete.

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