

How traders seek for optimal location in informal as well as planned settlement in Cairo. The role of the structure of the street network and opportunities for dwellers in informal areas

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Cairo, one of the most densely populated cities in both Africa and Middle East, is a polycentric urban region with several socio---economic and urban planning challenges. Rapid growth of this metropolitan region contributed to the emergence of informal settlements. It took place on the outskirts of the city on a privately---owned ex---agricultural land and on a state---owned desert land. The inhabitants of unplanned urban areas seek for the spatial opportunities of the neighbourhoods to generate any kind of income for surviving. There is a social logic in both the geographical location of unplanned settlements and the structure of the spaces between buildings inside these settlements.

The spatial layout of built environments influences the distribution of commercial activities, independent on the social composition of dwellers. As research has shown, commercial activities can enhance the process of urban consolidation of informal areas. The purpose of this contribution is to reveal the correlation between spatial factors and the distribution of internal and edge commercial land use by applying some new methodological means, such as a combined space syntax analysis of the street

network with degree of inter-visibility between buildings and streets, statistical analysis and band analyses.

Three informal areas in Cairo are used as cases: Ezbet Bekhit, Ezbet Al-Nasr and Abu Qatada. These settlements are selected because they are predominantly self-grown and are not influenced by city plans or land use regulations. As a contrast to the informal areas, the throughout planned Al-Sharekat area in Nasr City is used as a case. This area has a different urban pattern, social composition of dwellers and syntactic values than the informal settlements. Therefore, Al-Sharekat is used as a test case for revealing the differences and similarities on how traders seek for an optimal location in informal areas in contrast to planned areas.

The purpose of this research is to reveal to what extent the distribution and rate of commercial activities is driven by the local spatial structure of the street network of the area itself or related to how the settlements are embedded in the overall structure of the city. As it turns out, the distribution of commercial activities takes place on plots located along the spatially most integrated, most distributed and most inter-visible streets of the neighborhoods in relationship to the whole of the city. The results of this study contribute to a theory of the optimal distribution of plots, in which effective land use is defined as an interaction of three core factors: distributedness, inter-visibility and spatial accessibility of the street network.

A natural urban transformation process for aggregating micro scale commercial activities in informal settlements is dependent on the following:

- Informal settlements well connected to movement thoroughfares have better possibilities for shaping economic opportunities than the poorly connected ones. The vehicular movement plays a role in connecting inhabitants to their workplaces and providing an economic gain through allowing informal micro scale economic activities to cluster along outward facing edges.
- A mixed land use zonation policy encourages a large variation of economic premises, whereas a mono functional zonation policy shapes few opportunities for the small-scale economic businesses. Sub-centers of informal areas, well linked to other neighborhoods, generate income from formal areas and shape economic opportunities for the metropolitan's various neighborhoods.

- An urban transport network that minimizes time consuming travels, maximizes economic gain and social interactions.
- Active functions with active frontages on ground floor level in buildings oriented towards streets generate lively local shopping streets inside a neighbourhood.