

UNDERSTANDING AND FORMULATING GATED COMMUNITIES INSIDE GCR' NEW TOWNS URBAN FABRIC

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1. INTRODUCTION

This paper is interested of analyzing Gated Communities, criticizing their efficiency as a holistic pattern for urban development, hence question their contribution to urban development, and their compatibility in Egyptian context. With question how to enhance their contribution to urban development, and how to reduce their negative impacts on urban development.

In a previous published paper (ghonimi 2010), the process that privatization has affected the formulation of gated urban form in the city are explored, gated communities are comparing with open communities in the ways in which these types of developments are collectively reshape the public and private realms, and finally gated communities are criticized in their reference to traditional Egyptian early stages for development, in their compatibility for unique characteristics of Egyptian new towns, and their reference to dimensions of good urban form theories.

It is concluded that gated communities are not a holistic approach for urban development. There is a division between practice of gated communities and theories of good communities; there is a division between inserted westernized gated pattern and required supposed compatible pattern with unique characteristics of G.C.R new towns. And that gated communities always make micro interest on the cost of macro spillovers, this is not only in livability but also in safety, sustainability, and other different characteristics of good urban form. Finally we concluded that the authority don't have any awareness of the impact of varied physical characteristics of gated communities.

From this point, and as the spread of this pattern and its problems has to be appeared, a great theoretical trend has started to discover this phenomena. As a planners, we should deal with this phenomena, discover and measure its impact on micro community and adjacent community, discover its potentialities and constraints, and define its role in urban development. Beside, the sheer variety and diversity of Gated Communities physical forms that are springing up in urban fabric of our cities, give rise to a diversity of negative impacts on urban development. This raises a very challenging question about development criteria for plan and land-subdivision approval, about the best use of Gated Communities physical characteristics that could reduce their unwanted impacts on urban development. We should find the suitable planning response to deal with this phenomena, directing it to the sake of sustainability, integrity, livability of urbanism.

Examining the impact of gated communities on urban development, and their impact on the determination of Gated Communities physical characteristics is a critical point, what factor is affecting their efficiency. Two arguments are answered in this research. The first argument is about gated communities impact on urban development for micro private community versus adjacent public community. Do gated communities has a one way impact only on adjacent community or micro community? Or there is a double impact on both macro public community and also micro private community?. The second argument is about these impacts relation to gated communities physical characteristics? What characteristics could minimize these negative impacts?. Is there a relation between micro and macro utility through it we can compromise the suitable physical characteristics of gated communities?.

This paper question the role that Gated communities physical characteristics, and hence development control tools, can make to formulate the right and most efficient strategies for using gated communities taken in mind the measurement of their impact on micro community and adjacent community. In fact many will be impatient with question such as: do the big size has the same impact like the minimum size? How big should gated communities be?, where they should locate? And how they should relate to the city?. What efficient characteristics should gated communities have?. What is the efficient characteristics, that have low negative impacts on development, all these questions is a problematic echo. A significant lack of research on this point exist, So this research intends to contribute to fill this gap.

2. METHODOLOGY

In order to discuss the main argument of this research, the study need to answer the following: Firstly, to deduce evaluation criteria to evaluate and examine gated communities contribution to urban development. Secondly, to examine the two side impact of gated communities on micro community and adjacent community, then theorize the relation between micro impact and macro impact, as a constraint for determining gated features physical characteristics. Thirdly, to develop analytical tool to conceptualize the impact of gated communities on the determination of Gated Communities physical characteristics in order to achieve urban development, ending up with development criteria that enable planners to choose individual, location, and grouping characteristics that can reduce the negative impacts of Gated Communities on urban development. This model provide not only richer information on the design character of gated communities and offer new, interesting insights into how characteristics has affected micro and adjacent community development, but also it suggests equilibrium effecient charachterstics in which land subdivision, land use and transportation policies might be most needed and influential.

3. UNDERSTANDING THE IMPACT OF GATED FEATURES ON URBAN DEVELOPMENT

Extending our previous criticism, and with reference to the requirements of the aim of this paper, here we will make a new classified criticism for gated communities impacts on two levels the first on micro level aspects and the other on macro level aspect separately. And then compare these two poles to find the relation between them. As a primary stage to measure their relationship with gated communities physical characteristics.

On the one hand, Some argue that both reveal popular strategies that developers use for creating new suburbs as attractive commodities; both respond to the same fears and concerns about the contemporary city; both reflect a popular search for civility, character, and authenticity in the urban environment and a reliance on surveillance for social control in the contemporary city (Christopherson 1994); both respond to the perceived loss of a sense of community in industrial cities (Morris 1996; Talen 2000). Some argue that Gated Communities offer promises of healthy, comfort, convenience, various services, peace and quiet environment (Kuppinger & College 2004, p. 46). Other emphasize lush manicured landscape, architecture character, security, and distinctive amenities and services facilities (Yousry 2009: p. 3). Other argue that Gated Communities provide the desire for an imaginary or imagined community leads consumers to look for enhanced suburban environments of the kind promised by these contemporary movements (Christopher 1994; Knox 2005; Kohn 2004).

On the other hand, some argue that for micro community, Gated Communities introduce good micro community and resulted in visually attractive and open communities. On the contrary, Gated Communities have negative impacts on adjacent community, they tended to privatize the public realm, and turned away from the city. Others argue that Gated Communities have a destructive impact on the long-term sustainability of cities (Landman, 2003). For some planners Gated Communities constitute opportunities for urban innovation with new solutions and, for others, their spread represent a strong threat to our cities and our urban way of life, and they need to be restricted, discouraged and prevented. There is a strong normative element in this debate; conflict and different points of view to Gated Communities, conflict between opponent point of view and supporter point of view.

Based on theories of good urban form (Ghonimi 2011), different evaluation development criteria are deduced on urban, functional, social, economic, and environmental aspects of development. These criteria are used to evaluate and examine gated communities contribution to urban development on micro community and adjacent community.

3.1. Micro community scale

3.1.1. Urban aspect

To improve the urban, perceptual, and visual performance of micro community, planners and designers need to improve sufficient vital and efficient diverse spaces, promote perceptual character of urban form and life, to be attractive, human, urbanized, urban vitality, health and quality of life:

Sufficient urban spaces

Refers to sufficient area of the community that provides sufficient urban spaces to be attractive, human, and urbanized (Urbed 1997). Improved by making a network of streets and squares that are will observed and accessed, a critical mass of activity to animate streets and public spaces, Encourage urban greening in ameliorating pollution, improve public transportation needs, encourage compact and mixed use forms of development

(Michael Brheny 1992). Creative relationship between building, routes, open spaces.

Efficient urban spaces	Refers to efficient community size that enable a critical mass of activities to animate streets and public spaces and efficient and diverse activities spaces that ensure diversity and choices, vitality, variety and complexity.. Improved by build densities to support critical mass of activity able to support viable range of uses and facilities, maintain variety and activity create a livable community by including mix of uses. (Frey 1999, Newton 2000, Buxton 2000, Urbid 1997). The viable size not only according to high density but also due to the multiple interaction and exchange between different parts in the city.
Diversity and choices	Refers to creates change and verities so as to achieve pleasure and choices. Improved by making mixed uses, support diversity in character, localize facilities and services. Integrate travel modes, variety in services and facilities, fine grained street network (Steele, 1981).
Vitality	Refers to making place as safe as possible (Evans, 2001), with the presence of other diverse persons on the street to sustain services and urban spaces and animate streets as possible (Bentley, 1990). Improved by A critical mass of activity, diverse mix of uses and housing types.

3.1.2. Functional aspects

To improve the functional performance of micro community, planners and designers need to improve sufficient and efficient provision of services and facilities, low frequent and short trips, and alternative movement systems:

Sufficient provision of services and facilities	Refers to sufficient quantitative provision of services and amenities. Improved by creating and preserving sufficient densities, compact forms that strive for range of services and facilities. The viable size not only according to high density but also due to the multiple interaction and exchange between different parts in the city.
Efficient provision of services and facilities	Refers to efficient qualitative provision of services, to provide wide range of diversity and choices, variety and mix of services and facilities. Improved by diversity and mix of land use and housing types (Jacobs, 1961). Designed for walking, and remove barriers to local access, and a fine grained street.
Alternative movement systems	Refers to the degree that urban form could encourage potential for alternative transportation options and alternative movement systems (pedestrian, cycling, public transport).
Low frequent and short trips	Refers to not to isolate people without vehicles, create efficient “day” and “night” districts. Improved by Providing a mix of land uses (Masnavi, 2000).

3.1.3. Social aspects

To improve the social performance of micro community, planners and designers need to improve social interaction, promote safety, social equity, sense of community, sense of belonging and social contraction, which can be summarized in the following indicators:

Encourage interaction between city parts	Refers to the qualification of public environment to encourage social interaction. Improved by shared public facilities, services, public spaces, transportation options, walking, and other facilities that increase the opportunities for interaction for residents. Improved by permeability, variety, robustness, visual appropriateness, richness, personalization and legibility (Bentley et al., 1985). Legibility, Publicness, Visual appropriateness and Management, diversity, robustness (Sarkar, 2005).
Encourage interaction between diverse social groups	Refers inclusionary socio–spatial process that promote integrated socio-economic diversity environments to the amount and the type of human activities, i.e. walking, sitting, doing commercial exchanges, making pictures on a sidewalk, talking. That is shared between them. Improved by including mix of land uses, housing levels, pedestrian circulation, traffic calming, sheltered public space for functional, social, and political public interaction

and complex neighborhoods. (Masnavi, 2000)

Social equity	Refer to the notion of social justice of opportunities in development, the fair distribution of resources in society. It is related to access to key services (health, education, housed, transportation, and recreational areas), (Mckenzie 2004:120). Improved by making variety and mix of housing types, socially mix communities. Making land-use disposition, service disposition.
Safety and security	Refers to crime reduction, displacement of crime and response time (Landman) being safe during walking trips from crime and attack and being secured from traffic accidents, and crime and attack during the walking trips. Improved by making spaces to enhance personal safety and pedestrian/vehicle conflict, mix of uses that make continuous eye on streets.
Distinctiveness in community	Refers to sense of community, sense of belonging, sense of place, sense of identity. Improved by making settlement image and enhance legibility through design visually interesting network space with landmarks and spaces disposition. Improved by Create and preserve higher density, compact forms(Frey 1999, Newton 2000, Buxton 2000)
Stewardship	Refers to Contraction, Involvement, responsibility and Civic participation Improved by increasing sense of identity, and belonging.

3.1.4.Economic aspects

To improve the economic performance of micro community, planners and designers need to improve benefits of economic of size and diversity, equity of economic growth, to meet local need, and reduce resources costs:

Benefits of economic of size	Refers to services and amenities cost reduction through promoting the size that ensure self sufficiency of the community. Improved by build densities to support viable range of services and facilities to improve services cost reduction. Also it is improved by enhance public realm to support opportunities for economic exchange, (Jacobs, 1961).
Benefits of economics of diversity	Refers to services and amenities diversity and size cost reduction through promoting agglomeration and exchange of different and diverse parts that ensure efficiency and variety of services. Improved by the variety of commercial activities, cultural opportunities, inhabitants, visitors as well as the variety of tastes, abilities, and needs are the engine of urban development, diversity a more favorable environment for economic development (Jacobs, 1961, p 137).
Reduce resources consumption	Refer to environment consumption reduction Improved by enhance economic efficiency in the use of resources provided by natural resources, (CEC, 1999).
Enhance economic interaction	Refer to promote mutual exchange between different adjacent and diverse parts Improved by enhance public realm to support opportunities for economic exchange, (Jacobs, 1961).

3.1.5.Environmental aspects

To improve the Environmental performance of micro community, planners and designers need reduce resource consumption, reduce environmental pollution and improve healthy environment:

Reduce resources consumption	Improved by reduce parking standards, provide local access to public transport, use passive energy, minimize external resources consumption in construction and use (air, water, minerals, energy), and maximize ambient solar energy use for self cleaning (Carmona, 2003; Bently, 1990).
Reduce environmental pollution	Improved by reduce travel energy movement systems, match projected co2 emission with tree planting. Control private motorized transport and give public transport priorities. Promote planting (CEC, 1990).

Improve health and quality of life Improved by making appropriate linked public and private open and civic connected spaces networks (commission of the European community 1990).

Consultation to Egyptian unique environmental characteristics Improved by making provide maximum shade, to allow minimum reflection in streets and open spaces and minimize indirect solar radiation to avoid heating the air, (Golany 1978), and reduces water consumption (El-Zamly 1994, p.47).

When measuring these aspects in respect to gated communities micro level we find the following conclusions:

Gated communities in micro scale are single use mostly residential, single housing type mostly high class, that are inward oriented treed street network area that is based on private domain so they create new socio-spatial conditions on spatial and social fabric of micro community. They are spatially restricted area, that lack multiple exchanges with their adjacent area so they are restricted to their own resources which are limited. Furthermore, they are socio-spatially restricted area, they concentrate on homogeneity and neglect diversity and choices, accordingly they impact urban development in different aspects.

Urban wise, their spatial restriction make them lack sufficient amount and efficient diversity of urban spaces and visual images that lack communication between different residents. Furthermore, they do not have sufficient community densities and size that enable the critical mass of activities, they do not support viable range of uses and facilities, they do not maintain variety and activity, and they do not animate streets and public spaces. Furthermore, their socio-spatial restriction make them lack efficient diversity of urban spaces and visual images.

Functionally, their spatial restriction make them lack sufficient amount and efficient diversity of services provision. Furthermore, their socio-spatial restriction make them lack efficient diversity of services standards. Furthermore, Their residents depend completely on motor car for every day needs, and discourage transportation alternatives (public transportation, walking, byc).

Socially, their spatial restriction make them lack sufficient amount and efficient diversity of social interaction. Furthermore, their socio-spatial restriction make them lack efficient diversity of social interaction;

Economically, their spatial restriction make them lack benefits of economic of size. their socio-spatial restriction make them lack benefits of economic of diversity. Furthermore, they are not balanced and affordable for all housing groups.

Environmentally, they are not regarding environmental requirements, it use huge area of land, causing more commute distances that consume more time and fuel, use large amount of water for green irrigations.

3.2. Macro Community

3.2.1. Urban aspects

To improve the urban performance of macro community, planners and designers need to improve place-based quality of urban form and life to be attractive, human, urbanized, urban vitality, and health, which can be summarized in the following indicators:

Sufficient urban spaces Refers to sufficient size that enable a critical mass of activities to animate streets and public spaces, that ensure the sufficient amount of spaces and efficient diversity of spaces (Urbed, 1997). Improved by build densities to support viable range of services and facilities. Also viable size not only according to high density but also due to the multiple interaction and exchange between different parts in the city.

Diversity and choices Refers to creates change and verities so as to achieve pleasure and choices. Improved by making mixed uses, support diversity in character, localize facilities and services. Integrate travel modes, connected route networks, variety in services and facilities, Fine grained street network (Steele, 1981). Remove barriers to achieve accessibility. use a broad range of activities one can create animation, inspiration and foster a vital public life.

Vitality Refers to making places as safe as possible (Evans, 2001), with the presence of other diverse persons on the street to sustain services and urban spaces and animate streets as possible (Bentley, 1990). Improved by a critical mass of activity, diverse mix of uses and

housing types. Making the presence of other people and eyes on the street. Designed for walking, cycling and public transportation.

Strong interactive public realm	Refers to encourage public community and mobility and support opportunities for economic exchange. Improved by making a framework of streets and squares that are mixed use so will be observed and accessed (Urbed, 1997), a critical mass of activity to sustain facilities and animate streets and public spaces (Michael brheny 1992). In addition provide minimum open spaces standards
Urban distinctiveness	Refers to protect any regional identity and landscape character, Improved by Design visually interesting networks of space.
Pedestrian Movement behavior	Refers to a framework of streets and urban spaces to be easy, safe, and pleasure. Improved by designing safe, livable pedestrian network, and urban spaces movement network, mixed uses and housing types, high density (Urbed 1997,).
Alternative transportation options	Refers to walking, biking and public transportation. Improved by well connected street network, diverse land use to make streets secure and safe for walking, and biking (Frey 1999, Newton 2000, Buxton 2000)

3.2.2.Functional aspects

To improve the functional performance of macro community, planners and designers need to improve, permeability, connectivity, accessibility, variety, diversity and legibility:

Enhance Movement behaviors	Refers to reducing travel distances, time and cost, reduce traffic volumes. Improved by intensify around transport intersections corridors. Using compact and mixed forms of development, well connected fine grained street network, using public transportation, remove parries to accessibility. Energy efficient movement networks- taking circulation of people in integrate travel modes on foot, bike, and public transportation as a starting point.
Permeability	Refers to a property of how easy it is to move through an environment and depends heavily upon the paths and objects placed within the space. There are two types of permeability: physical properties (e.g. a path) and visual appearance. For example although a path may exist in some environment, if it is not visually obvious it may remain unused (McCal et al, 2005). Improved by increasing the choices of routes through making places accessible to a variety of alternative routes (Evans 2001, Ian Bertly 1990).
Accessibility	Improved by removing barriers and obstacles, encourage mixed uses and mixed housing types.
Connectivity	Refers to connect people with each other and to facilities. Improved by providing accessibility to services and connecting people with each other, providing range of choices of safe routes, and removing barriers for movement.
Low frequent and short trips	Refers to don't isolate people without vehicles, create efficient "day" and "night" districts. Improved by providing a mix of land uses (Masnavi, 2000), Using compact and mixed forms of development, Connected route network, Using Public transportation, Remove parries to accessibility. Energy effecient movement networks- taking circulation of people in Integrate travel modes on foot, bike, and public transportation as a starting point.
Encourage alternative transportation options	Refers to the degree that urban form could encourage potential for alternative transportation options and alternative movement systems (public transportation, pedestrian, bicycling). Improved by reduce car dependency and increase improve pedestrian oriented public realm to satisfy both urban livability and sustainability (Engwicht, 1991), and provide well connected street network, and safe livable paths

3.2.3.Social aspects

To improve the social performance of macro community, planners and designers need to improve social interaction, promote safety, social equity, sense of community, sense of belonging and social contraction:

Encourage interaction between city parts Refers to the qualification of public environment to encourage social interaction. A real community is socially self sufficient if it depends on social equity, justice, and interaction. Improved by shared public facilities, services, public spaces, transportation options, walking, and other facilities that increase the possibilities for gathering residents. Co-existence of strangers and higher density (Talen, 1999).

Safety and security Refer to being safe during walking trips from crime and attack and being secured from traffic accidents, and crime and attack during the walking trips. Improved by making spaces to enhance personal safety and pedestrian/vehicle conflict, mix of uses that make continuous eye on streets, and rediscovering street as social space.

Social equity and justice Refers to attention to the equitable distribution of opportunities in development, the fair distribution of resources in society in the present and in the future. Improved by fair access and distributed of jobs, housing and local services (health, education, housed, transportation, and recreational areas), (Mckenzie 2004:120), ensure all people participate in governance, and have fairly accommodation, and Promote disposition of land-use, and service.

Sense of identity and belonging Refers to unique quality of a place that gives its particular character (Lynch, 1981). Improved by making spaces have a clear perceptual identity, one space should not feel like many others, difference, variety, and change between different places (Benerjee and Southworth, 1990). Design visually interesting networks of space and character image that enhance legibility.

Sense of community Refer to membership, influence, integration and fulfillment of needs, and shared emotional connections (McMillan an Chavis 1986). Refers to shared values, norms, meaning, and identity (Etzioni 1995).

Sense of place Refers to sense of place. Improved by Create and preserve higher density, compact forms(Frey 1999, Newton 2000, Buxton 2000)

3.2.4.Economic aspects

To improve the Economic performance of macro community, planners and designers need to improve Benefits of economic of size and diversity, Equity of economic growth, to meet local need, and reduce resources costs:

Benefits of economic of size Refers to the size that ensures self-sufficiency of the community. Improved by build densities to support viable range of services and facilities not only according to high density but also due to the multiple interaction and exchange between different parts in the city so it is important to enhance public realm to support opportunities for economic exchange and build sense of macro community to involve and participate in vision and decision making, and civil responsibility.

Benefits of economics of diversity Refers to economic of agglomeration that ensure efficiency and variety of services. Improved by the variety of commercial activities, cultural opportunities, inhabitants, visitors as the variety of tastes, abilities, and needs are the engine of urban development, diversity a more favorable environment for economic development (Jacobs, 1961, p 137).

Equity of economic growth Refers to meet local unique economic characteristics. Improved by meeting local housing needs for all social levels and housing types. Improved by making disposition of land-uses for all social levels and housing types. respect traditions, tap resources, economic situations

Reducing resources costs Refers to enhance economic efficiency in the use of resources provided by natural resources. Improved by designing well-connected street network, alternative public transportation, bicycling, walking. Compact forms to reduce air condition consumption.

3.2.5. Environmental aspects

To improve the environmental performance of macro community, planners and designers need to reduce resource consumption, reduce environmental pollution and improve healthy environment:

Reduce resources consumption	Improved by making invest in public transport infra structure, provide local access to public transport, create connected fine grained street network that enhance public transportation and alternative traveling options walking, biking, public transports, remove barriers to provide access and reduce travel distance. Reduce parking standards, provide local access to public transport, use passive energy, and minimize resources consumption in construction and use (air, water, minerals, energy).
Reduce environmental pollution	Improved by reducing travel energy movement systems, control private motorized transport. Match projected co2 emission with tree planting. Give public transport priorities.
Health and quality of life	Making appropriate linked public and private open and civic connected spaces networks (commission of the European community 1990).
Constulation to Egyptian unique environment	provide compact, mixed use easy connected urban pattern to provide maximum shade and allow minimum reflection in streets and open spaces and minimize indirect solar radiation to avoid heating the air, (Golany 1978), and reduces water consumption(El-Zamly 1994, p.47).

Measuring these aspects in respect to gated communities macro level we find the following conclusions:

Gated communities in macro scale create inaccessible buckets inside urban fabric that are based on private domain and neglect public domain, which have relevant impact that cut the continuity of spatial and social fabric, so they create new socio-spatial conditions on spatial and social fabric of macro community. They are spatially excluding adjacent community and segregating macro community. Furthermore, they are socio-spatially excluding adjacent community and segregating macro community. Furthermore, they affect connectivity, accessibility, and permeability, as follow:

Urban connectivity to inside: Gated Communities reduces connectivity between the Gated Community residents and the city, It eliminate connectivity between inside residents and outer neighboring. Also remove the existence of passengers and strangers.

Urban accessibility to inside: Gated Communities reduces accessibility of external residents to services, facilities, and urban spaces inside the Gated Community, reducing the degree to which "ability to access" and possible benefit of services, amenities and urban environment is accessible by as many people as possible. Hence it affects the urban, economic and social mutual and exchange benefit of the community in this urban fabric.

Urban permeability to behind: Gated Communities create islands that reduces permeability inside urban fabric, it causes restrictions that distort the continuity of city urban fabric, and distort traffic movement, and make the residents looking for alternative roads that could be longer and has barriers on its sides which make it unsafe, and uninteresting, which reduces the movement functional efficiency. "Freezes" the urban fabric forever.

Accordingly Gated community impact urban development in different aspects as follow:

Gated Communities concentrate on private domain and neglect public domain, so accordingly they eliminate public life from the city. Accordingly their Adjacent areas are not livable, healthy and safe in moving in; they negatively impact movement behavior causing long communizing distance and costs, discourage public transportation, discourage alternative transportation options, depend completely on motor car for every day needs, do not encourage civic participation, are not accessible.

They are spatially excluding and segregating society, hence they cut the continuity, exchange, interaction and contact between city parts; accordingly they are not connected to major urban facilities and services and major nodes of urban

functions and service centers or other members of the society, they create insufficient and in efficient urban spaces, provision of services, and interaction between city residents.

They are socio-spatially excluding and segregating society, hence they cut the continuity, exchange, interaction and contact between diverse housing types, between the rich and the poor; accordingly, they create insufficient and inefficient urban spaces, provision of services, for low income residents and reduce social capital of the society, they are not socially stable, balanced and affordable for all housing type groups, and they are not economically efficient.

3.3. The impact on micro community versus adjacent community

Gated Communities appeared in two distinctive ways. The first in their impact on micro community that reflects a way for curing the public provision of goods, and the contemporary problems of sense of identity and community in our cities. The second in their impact on adjacent community, they are physically closed-off from their surroundings, and manly socio-spatial homogeneous. Gated Communities highlight many debatable echoes that explored the division between micro private community and adjacent public community development, on social, economic, urban and functional levels, and that this is opposite:

1. Urban aspects:
 - a. Debate between improving micro place-based quality of life; and removing macro urban vitality.
 - b. Debate on urban liveability, Gated Communities increasing micro urban liveability, and dimensioning macro liveability, which transformed into merely continuous set of walls, that have no life.
 - c. Debate between internal multi-activity on the cost of external no activity.
2. Functional aspects:
 - a. Debate on Functionality, Gated Communities increased internal functional quality on the cost of external no functional quality.
 - b. Debate on Functionality, Gated Communities converted the city into a large number of clubs that are restricted to its residents, no public access to services or urban space. And which accumulatively affect the overall functionality of the city.
 - c. Debate on movement behaviour, Gated Communities increase between internal inaccessibility on the cost of external low permeability.
 - d. Debate between internal multi-activity on the cost of external no activity.
3. Social aspects:
 - a. Debate on Social relations, Gated Communities increased internal stress social cohesion on the cost of large social segregation.
 - b. Debate on Sense of community, Gated Communities increased micro sense of community on the expenses of sense of being part of the bigger community.
 - c. Debate on safety and security, Gated Communities increased micro internal safety on the expense of safety of the bigger community.
4. Economic aspects:
 - a. Debate between micro ability of self sufficiency on the expenses of macro no self sufficiency.
 - b. Debate between micro high costs on the cost of external low affordability.

Through the previous theoretical analysis, it is concluded that Gated Communities are not a holistic approach for urban development, and they have a negative urban, functional, social, economic, and environmental impact on both micro community and adjacent community. For the micro community residents, different positive impacts are deduced with a few number of negative impacts. On the other hand, for the macro community residents, limited positive impacts are deduced mainly the negative impacts are traced. It is clear that Gated Communities have no design reference in history, theory of good urban form and not appropriate for development in Egypt. This evident gap between what these theories and what Gated Communities impose on urban development, necessitate a process of deep understand and tools for regulations.

So the important question is, is there any relationship between both of these impact, through it, we can optimize our choices and holistic solutions for choosing the most efficient gated communities characteristics that enhance development?.

4. FORMULATING THE IMPACT OF GATED FEATURES ON URBAN DEVELOPMENT

Municipal urban legislation has been changing all the time in order to meet private interests, without consideration about impacts on the achieved development for micro private, adjacent public, and macro public community. There are no indicator for how efficient are some physical characteristics than other. There is a problem of lack of knowledge and responsibility that come from conceptual difficulty. There is a need for a concept and technique that enable to describe and examine planners' proposals. The Plan approval and land subdivision approval, should consider the visualization of spatial impacts of Gated Communities on urban development. Visualization of spatial impacts on development could provide evidences, which are not considered in plan approval and the land subdivision process.

This chapter proposes a hypothetical spatial structure analysis model that can simulate, illustrate and measure the impacts of gated features through artificial data. According to this model, it is possible to test and measure the variation of impacts according to variation in each of these features separately, and measure how their negative impacts are changed in different Gated Communities individual, location allocation and grouping characteristics. A group of assumptions will be developed, and used to resemble and measure Gated Communities specific features with specific urban, functional, social, and economic negative affects urban development.

This section describes the concept of measuring urban form spatial configuration and spatial interacting techniques through spatial structure analysis models. The configuration analysis based on Space Syntax concepts and methodology which are able to measure urban space accessibility, connectivity, permeability, and other factors. It simulates different development scenarios for plan approvals and land subdivisions of cities exploring use potentialities, densities of land occupation and townscape modification. The proposed framework help answering these questions letting the planner and decision makers able test different development proposals. Each time the model return by showing the planner what is the impact of his assumptions on the development achievement.

The space syntax technique begins with Bill Hillier and Laura Vaughan (1984 & 1987) in "The Social Logic of Space". The main theoretical argument is that building forms are embodied in the considerable influence of socio-cultural norms on the spatial organization of societies. It is a theory, technique and method for investigating society-space relation, reveal the social rules that regulate the interface among people. It is about cities and how they function.

The space syntax offers a significant contribution to the advancement of research in the field of environmental design as it allows researchers to rely on objective concepts instead of those offered by the social sciences. It enables them to measure the relation between spatial attributes and patterns of human activity. It enables them to deduce the correlations between a built environment's spatial layout of its street and road net and the location of economic activities, crime dispersal, land use along streets and property values (Hillier et.al. 1998).

Finally, it offers a useful design tool to warn planners about some criteria that should be taken in territorial policies. Hillier (1984) present an analytical method, for reading, quantifying, describing, and comparing morphological patterns of buildings for projecting the social norms of their inhabitants.

Researchers all over the world have applied the space syntax method in order to draw some general conclusions on the relationship between space and society for a present urban context, which are useful for interpretations of the spatial analyses of Gated Communities. The Spatial measurement of Gated Communities impact on urban development represents a useful instrument for analyzing patterns, causes and consequences on urban development. These measurements model about Gated Communities optimal individual, location allocation and grouping modeling solution and choices.

The model takes account of the various constraints of negative urban, functional, economic, and social impacts. These factors are used to determine the different physical characteristics of Gated Communities. Therefore, these measures can play an important role in development speculation control policies, which can be used by policy analysts to measure differences in these impacts according to the deference in their characteristics, to help them design and evaluate the proper development control tools for gating urban form.

Gated Communities is a pejorative term that connotes the undesirable features of contemporary urban development patterns. Such features include, for example in micro level: low density and separated land uses, and automobile orientation, beside in macro level: urban connectivity, permeability, visual appearance, safety and security. Many of

these features, however, are difficult to be measured or defined. For the purposes of this chapter, a number of quantifiable spatial characteristics are used.

The following spatial assumptions and scenarios are put forward to simplify and facilitate the visual interpretation and the understanding of the impact of each gated community feature represented in barriers, spatial segregation, social segregation, on urban development. As a primary step to be used in examining the relation between each of varied physical characteristics and urban development.

4.1. Micro Private Community

Developers through gating communities try to create a real community, they seek to enhance and characterize it with self-sufficiency, social cohesion, economic efficiency, and enhancing urban aspects, which can satisfy its consumers and residents in isolation from the city. However, as the developers do this, the barriers start to impact on micro community with the barriers, spatial and socio-spatial restriction. Based on the previous criticism of Gated Communities, the essence of micro urban form design is to be connected to the city for integrated, interrelation and interdependency. A significant aspect of their identity is their dependent position in the structure of the city of which they are a part.

In the absence of these aspects, under gating conditions, Gated Communities become inward acting, self contained and fully separated by physical barriers from surrounding areas and from the city. These impacts turned the city into dead street network that do not provide any services or urban spaces; hence micro community need to be self sufficient community and behave in an isolated circumstances out from the city. Beside the Gated Community focuses on their own inner resources, which are limited, hence they lack the necessary resources, services and functions to provide a true community life.

Achieving low negative impacts on micro community are influenced by individual, location and grouping characteristics. Then the purpose of this chapter is to reach criteria for these characteristics that can reduce the unwanted impacts on micro community.

The following model will examine the impact of gating feature and conditions represented in barriers, spatial restriction, socio-spatial restriction on the determination of Gated Communities individual characteristics represented in size, area, density, x-y ratio, land use pattern, housing type pattern, street network pattern, and other; so as to achieve micro private community development.

Measurement Assumptions		Measuring Scenarios
Assump. (1)	Negative affected area approach	No. Of areas perpendicular to the wall
Assump. (2)	Negative affected paths parallel to wall approach	No. of affected paths parallel to the wall
Assump. (3)	Negative affected paths perpendicular to wall approach	No. of affected paths perpendicular to the wall, number of access points
Assump. (4)	Variation factor approach	No. of diverse housing type
Assump. (5)	Isolation factor approach	No. of segments between diverse housing types
Assump. (6)	Exposure factor approach	No. of segments between diverse housing types
Assump. (7)	Level of self-sufficiency approach	No. of gated area and its density as factor of population size
Assump. (8)	level of Internal connectivity approach	No. of street network intersections
Assump. (9)	level of land use and services allocation efficiency approach	No. of left continuous not affected area values

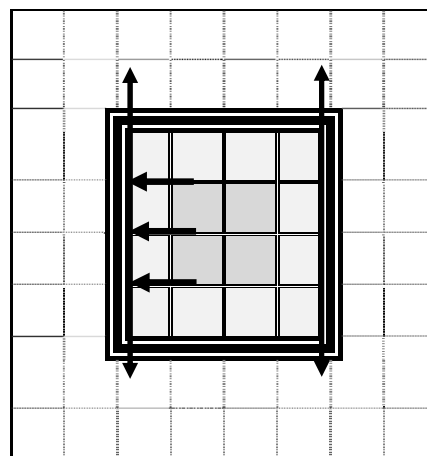
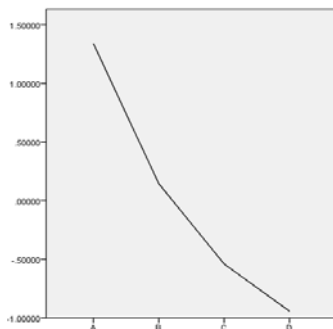
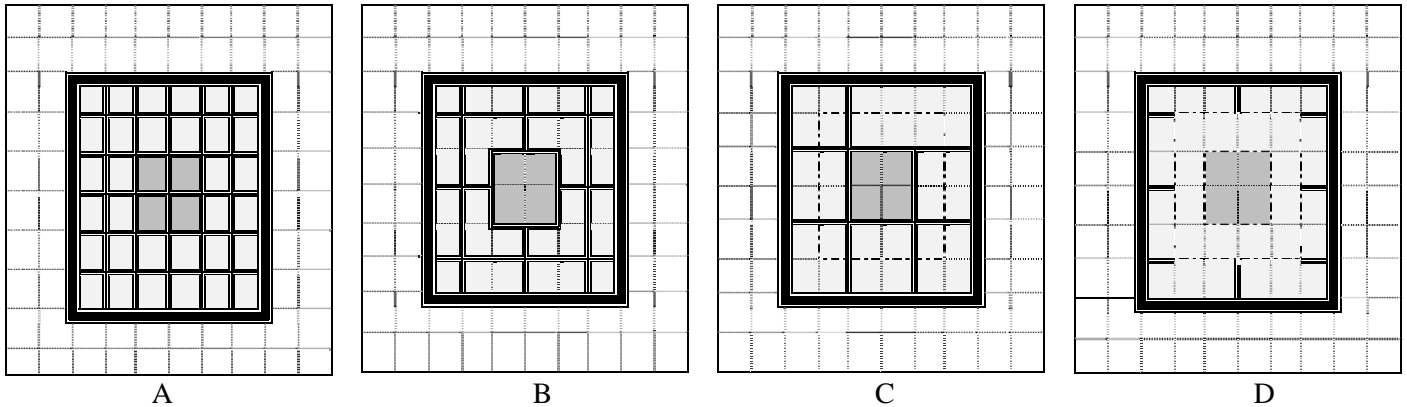


Fig. (9- 1): Measuring assumptions and scenarios. ..

The following section uses the proposed spatial assumptions, examines the correlation existed between each varied physical characteristics and urban development. Related to each physical characteristic, four alternatives are developed, the development assumptions are measured for each alternative, factor analysis for all assumptions are done, and the relation between factor score representing the impact on development and each alternative are traced on a diagram to deduce the relation between them.

4.1.1. Street Network Pattern



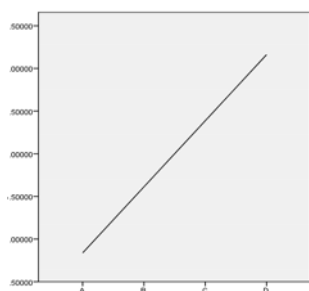
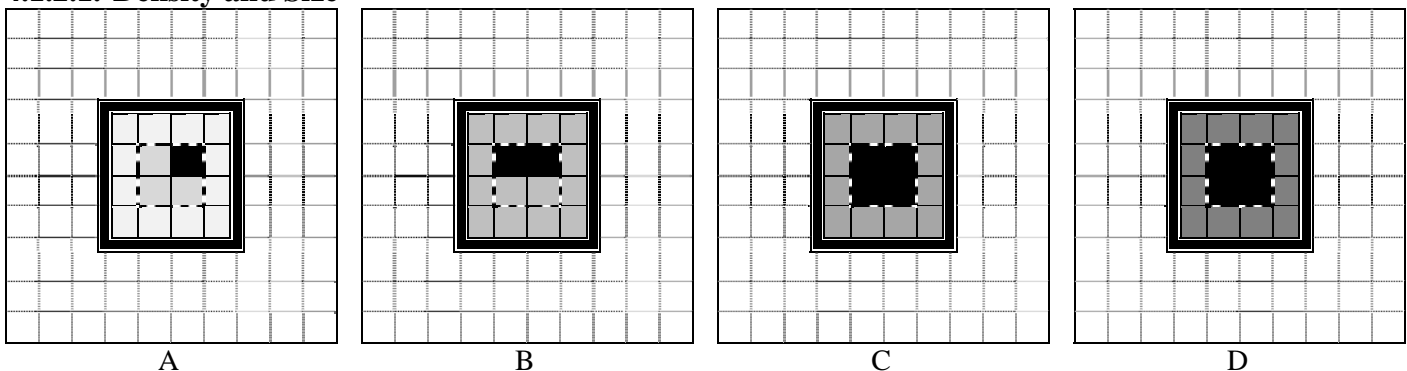
	Barriers					Socio-Spatial restriction			Spatial restriction						
	Movement behavior		Visual impact			Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services	
Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation										
A	25	20	-20	-24	-20	16	1	1	1	36	1	1	1	4	1
B	12	12	-12	-24	-20	16	1	1	1	36	1	1	1	4	1
C	4	8	-7	-24	-20	16	1	1	1	36	1	1	1	4	1
D	0	8	0	-24	-20	16	1	1	1	36	1	1	1	4	1

It is evident that grid model is more efficient in achieving urban development, since it is more intersection points that reflect short distance and time for commuting which could achieve efficient movement behavior in micro community (internal connectivity, external connectivity).

4.1.2. Size

Size is usefully be discussed under three headings of size and density, size and area, and size and (area-density), which are as follow:

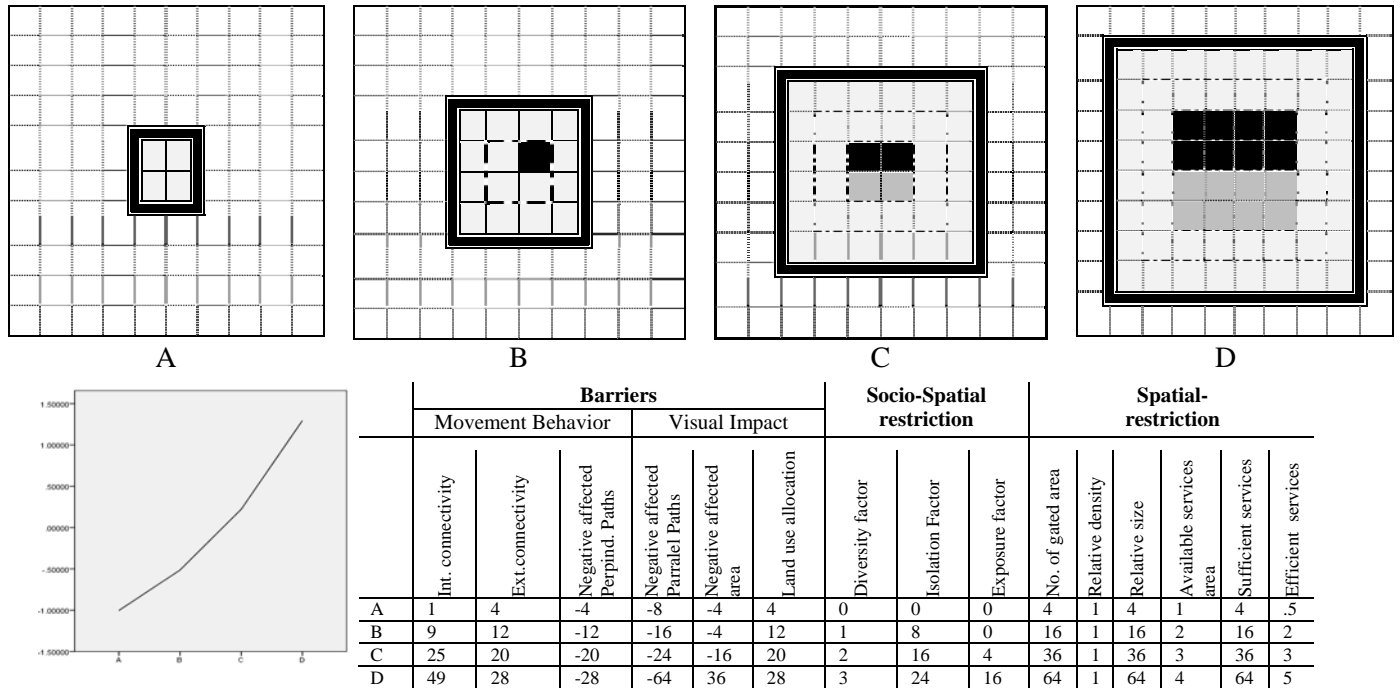
4.1.2.1. Density and Size



	Barriers					Socio-Spatial restriction			Spatial restriction						
	Movement behavior		visual impact			Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services	
Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation										
A	9	12	-12	-16	-12	12	-	24	-	16	1	16	1	16	16
B	9	12	-12	-16	-12	12	-	24	-	16	2	32	1	32	32
C	9	12	-12	-16	-12	12	-	24	-	16	3	48	1	48	48
D	9	12	-12	-16	-12	12	-	24	-	16	4	64	1	64	64

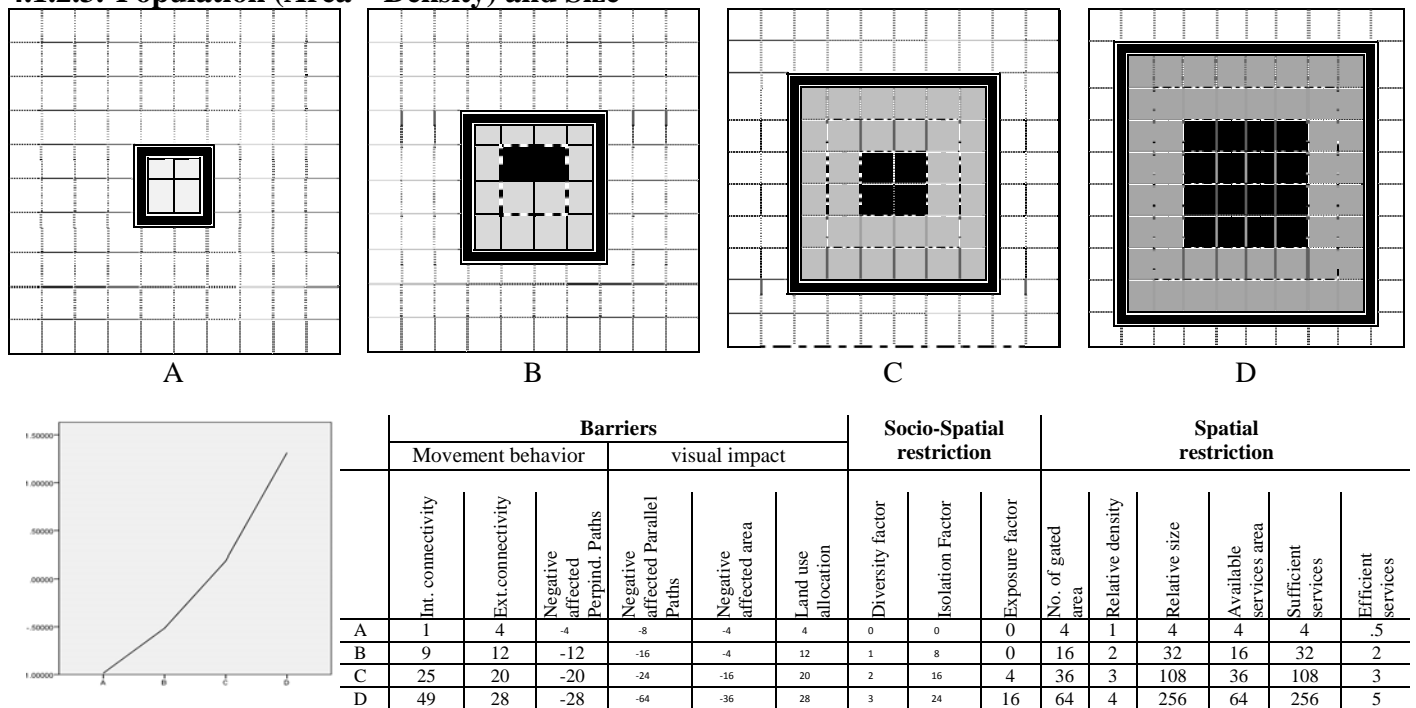
It is evident that increasing density of the community is more efficient in achieving urban development, since it increases size of the community that can animate streets, and increase level of self-sufficiency, social interaction between residents. It is evident that micro community development is directly proportional with Gated Communities density.

4.1.2.2. Area and Size



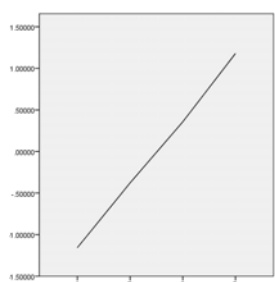
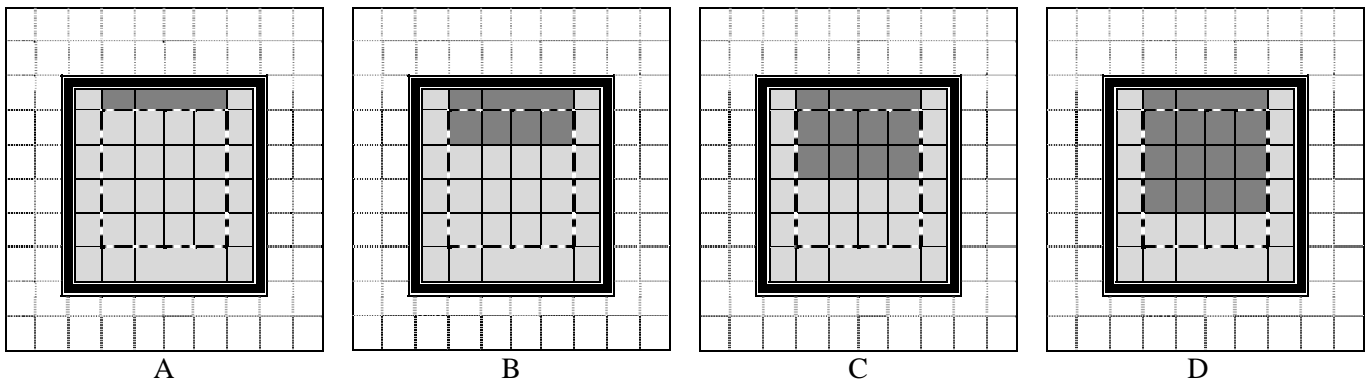
It is evident that increasing area of the community, are more efficient in achieving urban development, since it is on one hand increases size of the community that can increase animated streets, level of self sufficiency, and social interaction between residents, and on the other hand increase available area for public spaces. It is evident that micro community development is directly proportional with Gated Communities area. Furthermore, although they create large negative affected paths and area, they create larger number of continuous not affected area.

4.1.2.3. Population (Area – Density) and Size



It is evident that increasing area and density of the community is more efficient in achieving urban development, since it is on one hand increases size of the community that can increase animated streets, level of self-sufficiency, and social interaction between residents. On the other hand, increase available area for public spaces. It is evident that micro community development is directly proportional with Gated Communities area. Furthermore, although they create large negative affected paths and area, they create larger number of continuous not affected area.

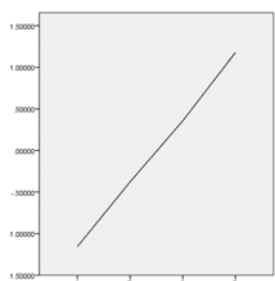
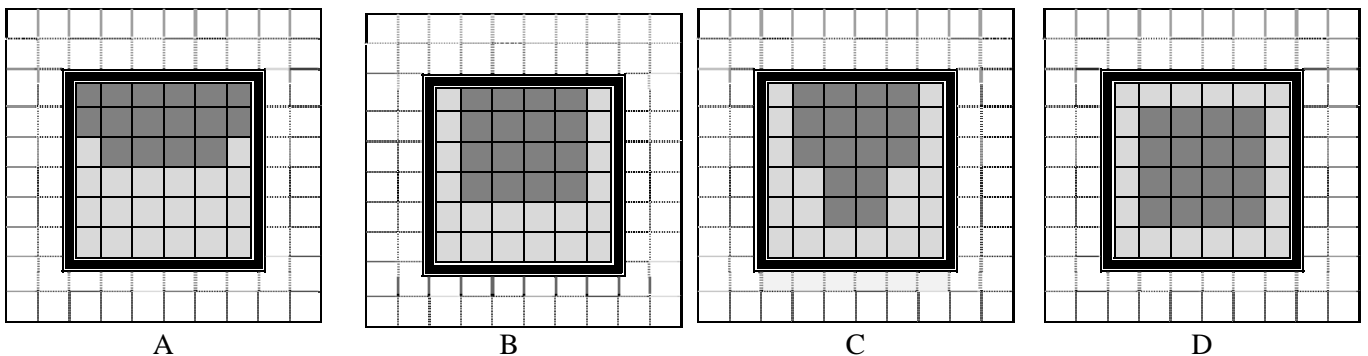
4.1.3. Housing Variation Pattern



	Barriers						Socio-Spatial restriction			Spatial- restriction					
	Movement behavior		visual impact				Diversity factor	Isolation Factor	Exposure Factor	No. of gated area	Relative density	Relative size	Available services	Sufficient services	Efficient services
Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation										
A	9	12	-12	-16	-12	12	4	60	6	36	1	36	4	36	36
B	9	12	-12	-16	-12	12	8	60	8	36	2	72	4	72	72
C	9	12	-12	-16	-12	12	12	60	10	36	3	108	4	108	108
D	9	12	-12	-16	-12	12	16	60	12	36	4	144	4	144	144

It is evident that increasing housing type's variation is more efficient in achieving urban development; since it increases diversity in services and urban spaces. Furthermore, it increases exposure factor between diverse housing types that increase social capital. It is evident that micro community development is directly proportional with variation of housing type.

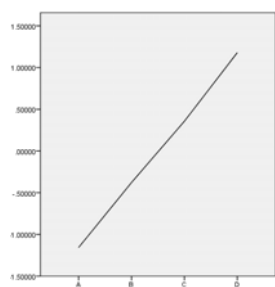
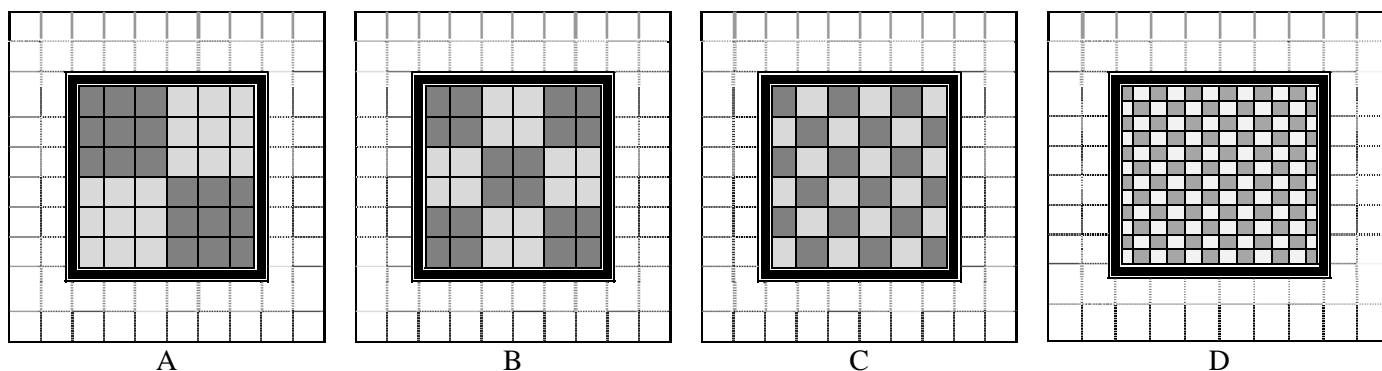
4.1.4. Housing Mix Pattern



	Barriers						Socio-Spatial restriction			Spatial- restriction					
	Movement behavior		visual impact				Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation										
A	25	20	20	24	16	20	2	16	8	36	3	108	4	108	1
B	25	20	20	24	16	20	2	16	12	36	3	108	4	108	2
C	25	20	20	24	16	20	2	16	14	36	3	108	4	108	3
D	25	20	20	24	16	20	2	16	16	36	3	108	4	108	4

It is evident that increasing housing mix is more efficient in achieving urban development; since it increases exposure factor between diverse housing types that increase social capital. It is evident that micro community development is directly proportional with mix of housing type.

4.1.5. Housing Mix (Evenness\Clustering)



	Barriers						Socio-Spatial restriction			Spatial- restriction					
	Movement behavior		visual impact				Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
	Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation									
A	25	20	20	24	16	20	2	48	12	36	3	108	4	108	1
B	25	20	20	24	16	20	2	36	24	36	3	108	4	108	2
C	25	20	20	24	16	20	2	-	60	36	3	108	4	108	3
D	25	20	20	24	16	20	2	-	120	36	3	108	4	108	4

It is evident that increasing housing mix evenness, are more efficient in achieving urban development; since it increases exposure factor between diverse housing types, that increase social capital. It is evident that micro community development is directly proportional with evenness mix of housing type.

Through the hypothetical model, variation and mix of housing type are a function in size of the residents. As size of the community increase, the chance for residential variation is increased, so it affects the variation of housing types.

4.1.6. Land Use Pattern

Among critics of Gated Communities, it lacks a mix of land uses; depend on single land use (residential). To such critics greater mixing of uses facilitates walking and biking, lowers vehicle miles traveled, improves air quality, and enhances urban aesthetics. Similarly, in the absence of land use mixing, homes are often located at great distances from commercial establishments, which further discourage walking and increases dependence on the automobile.

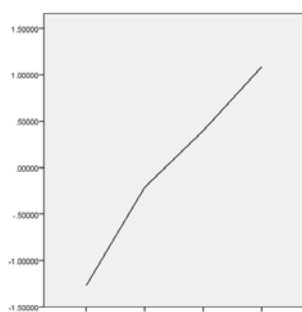
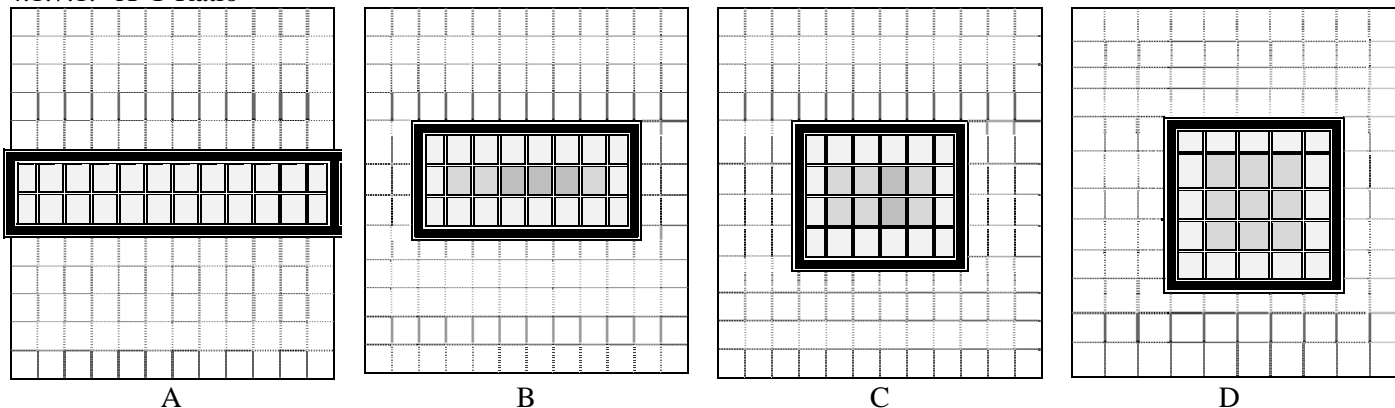
Based on the hypothetical model, density, variation and mix of uses are a function in size of residents. As land use is composed of residential uses and other uses. According to the size of the residential area and size of the community, the variation of land use exists. As size of the community increase the size and type of services and other non-residential land uses increase. Therefore, size and variation of uses is a function in size of the community. This is in within limits of economics of size.

In addition, land use services variation is varied according to residential density and variation; as density and variation in housing type increase the probability for have variation in housing type also increase. So land use variation is a function in housing density and type.

4.1.7. Boundaries

Boundaries are usefully being discussed under the headings of access gates, boundary land use, and x-y ratio.

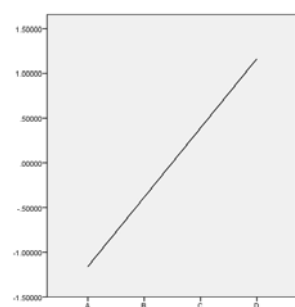
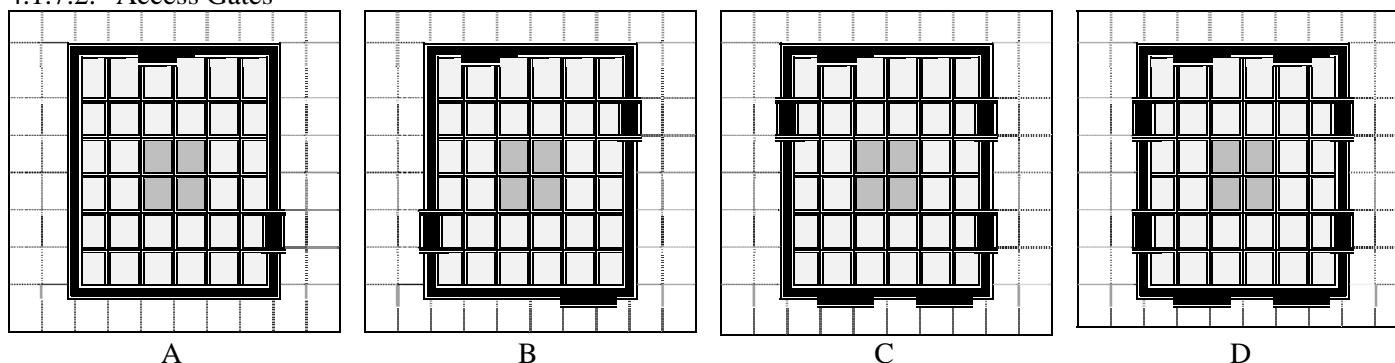
4.1.7.1. X-Y Ratio



	Barriers						Socio-Spatial restriction			Spatial- restriction				
	Movement behavior			Visual impact			Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services
	Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation								
A	9	20	-20	-24	0	20	34	10	25	1	25	3	25	-
B	14	18	-18	-22	-6	18	37	-	25	1	25	3	25	-
C	15	16	-16	-20	-8	16	38	-	25	1	25	3	25	-
D	16	16	-16	-18	-9	15	50	1	25	1	25	3	25	-

It is evident that the more compact ratio is more efficient in achieving urban development; since they reduce parameter length, and affected area, and increase non-affected area, so it distributes services equally to all residents, and increases number of continuous not affected area, and increase interaction between residents. It is evident that micro community development is directly proportional with compaction.

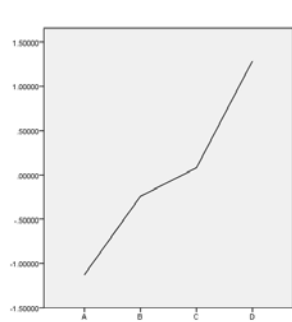
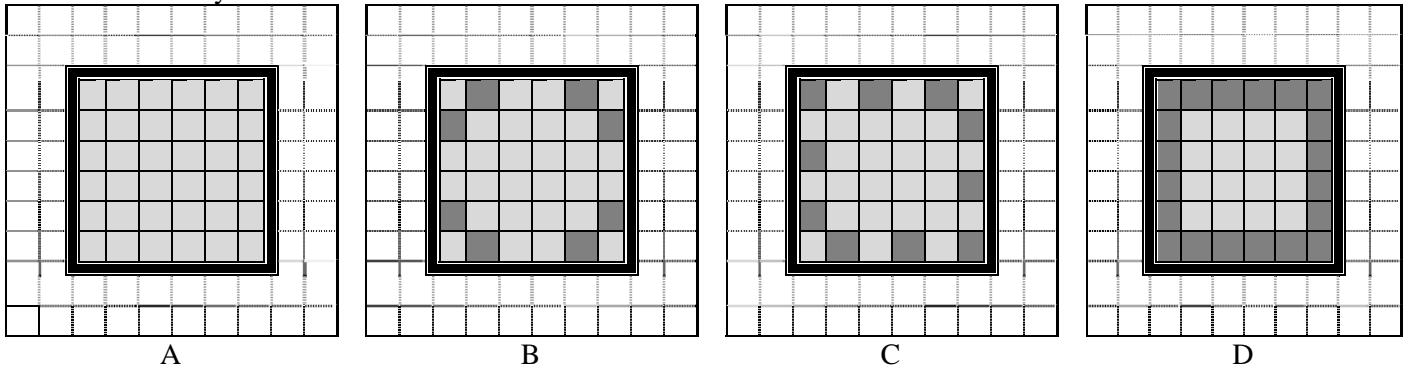
4.1.7.2. Access Gates



	Barriers						Socio-Spatial restriction			Spatial- restriction					
	Movement behavior			Visual impact			Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
	Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation									
A	25	2	-18	-22	-18	20	1	16	-	36	-	108	4	108	-
B	25	4	-16	-20	-16	20	1	16	-	36	-	108	4	108	-
C	25	6	-14	-18	-14	20	1	16	-	36	-	108	4	108	-
D	25	8	-12	-16	-12	20	1	16	-	36	-	108	4	108	-

It is evident that increasing number of entrances is more efficient in achieving urban development; since they reduce median distance between entrances, and increase relevant external connectivity between micro and adjacent area.

4.1.7.3. Boundary Land Use



	Barriers						Socio-Spatial restriction			Spatial- restriction					
	Movement behavior		visual impact				restriction								
	Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation	Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
A	25	20	-24	-24	-20	20	1	16	-	36	-	108	4	108	-
B	25	20	-16	-16	-12	20	1	16	-	36	-	108	4	108	-
C	25	20	-12	-12	-10	20	1	16	-	36	-	108	4	108	-
D	25	20	0	0	0	20	1	16	-	36	-	108	4	108	-

It is evident that increasing boundary land use is more efficient in achieving urban development; since boundary full of use its if full of life and hence be safe to be walk-able.

4.2. ADJACENT PUBLIC COMMUNITY BEHAVIOUR

Developer through gating a community changes its relation with the city, separate a specific area from its context and create areas that are restricted access inside urban fabric, they exclude adjacent community, and segregate spatial fabric. As the developer does this, the barriers start to impact on micro community with the barriers, spatial and socio-spatial restriction.

Based on the previous criticism of Gated Communities, the low porous blocks, integrated, interdependence and transit oriented development is a good tool for achieving connected, accessible, and permeable spatial fabric that increases urban and functional connectivity and improve social and economic situations. Finally, making uses in these streets is a good tool for livable, sustainable urban fabric, also increasing urban ability.

Similarly, in the absence of this aspects, under conditions of gating. Gated Communities impact on adjacent area, First: they create pockets and close perpendicular paths that reduce urban accessibility to inside, permeability to behind and connectivity with its neighbours. Second: they exclude adjacent neighbor and eliminate relation and interaction with them. Third: they use fences in its boundaries external paths, eliminating any use from it so they make these sides dead edges inside urban fabric reducing its livability.

Achieving low negative impacts on adjacent community are influenced by individual, location and grouping characteristics. Then the purpose of the following paragraph is to reach criteria for these characteristics that can reduce the unwanted impacts on adjacent community.

The following model will examine the impact of gating features and conditions represented in (barriers, Spatial restriction, socio-spatial restriction) on the determination of Gated Communities individual characteristics represented in (area, x-y ratio, boundary land use pattern and number of entrances); Location characteristics represented in (Public to private, central to periphery, and fine grained to super block); and urban fabric characteristics represented in (street network, housing type, and other), so as to achieve adjacent public community development.

Measurement Assumptions		Measuring Scenarios
Assump. (1)	Negative affected area approach	No. of areas parallel to the wall
Assump. (2)	Negative affected paths perpendicular to wall	No. of restricted paths perpendicular to the wall (connectivity, permeability, accessibility)
Assump. (3)	Negative affected paths parallel to wall approach	No. of affected paths parallel to the wall (visual impact, security and safety, number of uses reduce economic efficiency of adjacent public open spaces)
Assump. (4)	Level of adjacent community self-sufficiency approach	No. of rest not affected public area and its density as factor of population
Assump. (5)	The exposure factor approach	No. of segments between Gated Community and the adjacent open community
Assump. (6)	The exposure dissimilarities factors	No. of segments between gated community and the adjacent open community from diverse housing types
Assump. (7)	The isolation factor approach	No. of segments between Gated Community and the adjacent Gated Community
Assump. (8)	The isolation dissimilarities factors	No. of segments between gated community and the adjacent gated community from diverse housing types

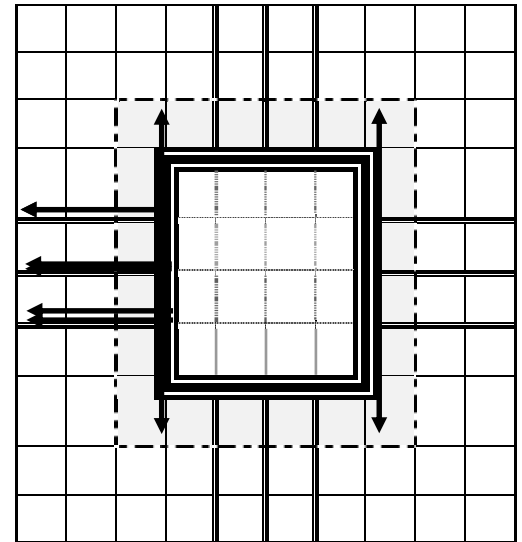


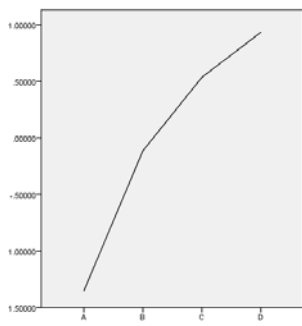
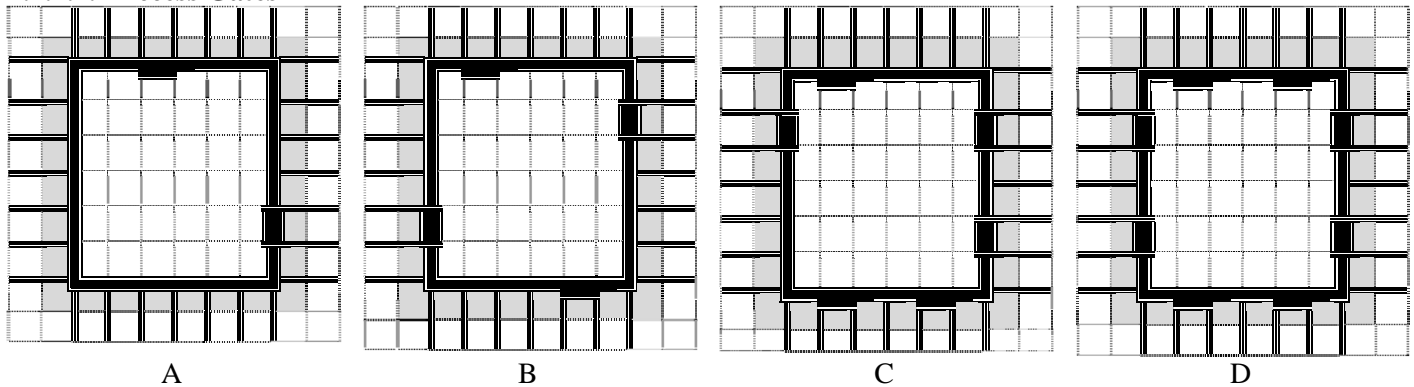
Fig. (9- 2): Measuring assumptions and scenarios.

The following section uses the proposed spatial assumptions to examine the correlation existed between each varied physical characteristics and urban development. Related to each physical characteristic, four alternatives are developed, the development assumptions are measured for each alternative, factor analysis for all assumptions are done, and the relation between factor score representing the impact on development and each alternative are traced on a diagram to deduce the relation between them.

4.2.1. Boundaries

Boundaries are usefully discussed under the headings of access gates, boundary land use, x-y ratio, and area.

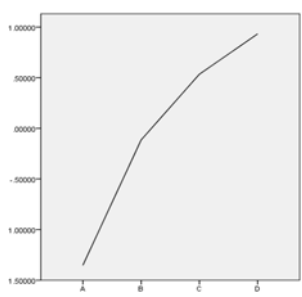
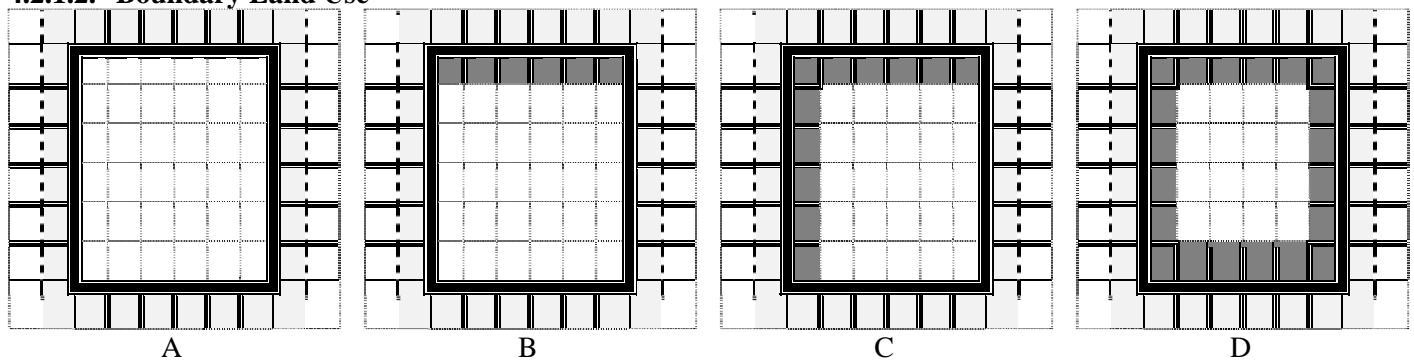
4.2.1.1. Access Gates



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion										
	Movement behavior			visual impact			Isolation		Exposure		left public continuous not affected area		Relative density		Relative size		Available services area		Sufficient services		Efficient services
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services					
A	2	2	20	-26	-	-22	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-
B	4	4	20	-24	-	-20	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-
C	6	6	20	-22	-	-18	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-
D	8	8	20	20	-	-16	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-

It is evident that increasing number of access points is more efficient in achieving development for adjacent community since it decreases negative affected area, paths that differently affect (accessibility-connectivity-virtual appearance).

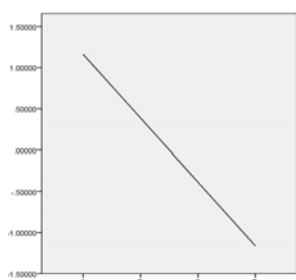
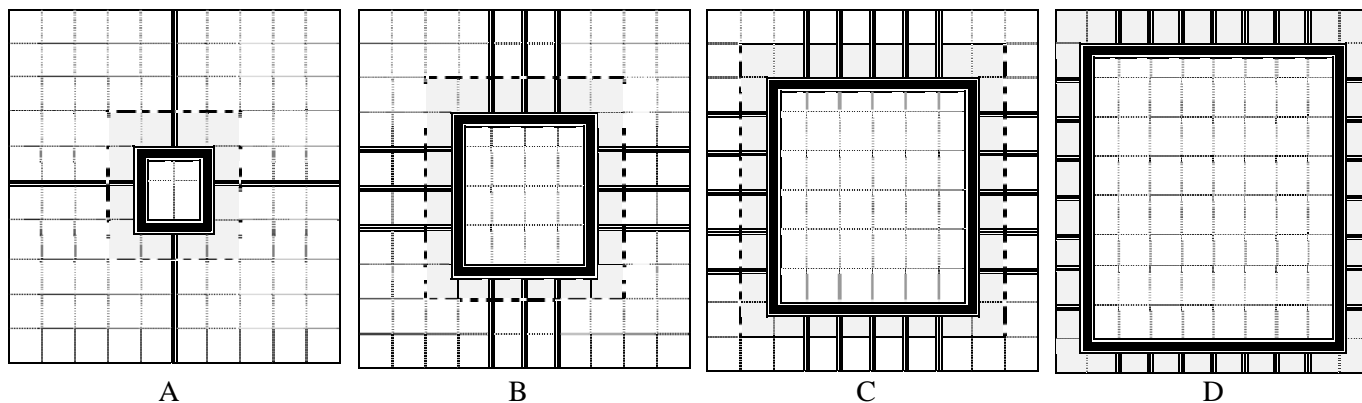
4.2.1.2. Boundary Land Use



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion										
	Movement behavior			visual impact			Isolation		Exposure		left public continuous not affected area		Relative density		Relative size		Available services area		Sufficient services		Efficient services
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel	Negative affected paths parallel	Isolation	Exposure	Isolation	Exposure	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services					
A	2	2	20	-24	-	-22	-	24	-	-	-	-	-	-	-	-					
B	4	4	20	-8	-	-20	-	24	-	-	-	-	-	-	-	-					
C	6	6	20	-12	-	-18	-	24	-	-	-	-	-	-	-	-					
D	8	8	20	0	-	-16	-	24	-	-	-	-	-	-	-	-					

It is evident that increasing boundary land use is more efficient in achieving development for adjacent community. since it reduces negative affected area, and paths so it makes streets fill of live through variety mix of activities, and make a continuous eye on street, hence enhance security and safety, visual appearance of street, and rediscovering street as social space, which affect public life in the city. This impact is parallel to the parameter, and depends mainly on the nature of the boundary (land use, height, nature).

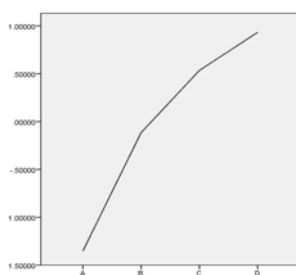
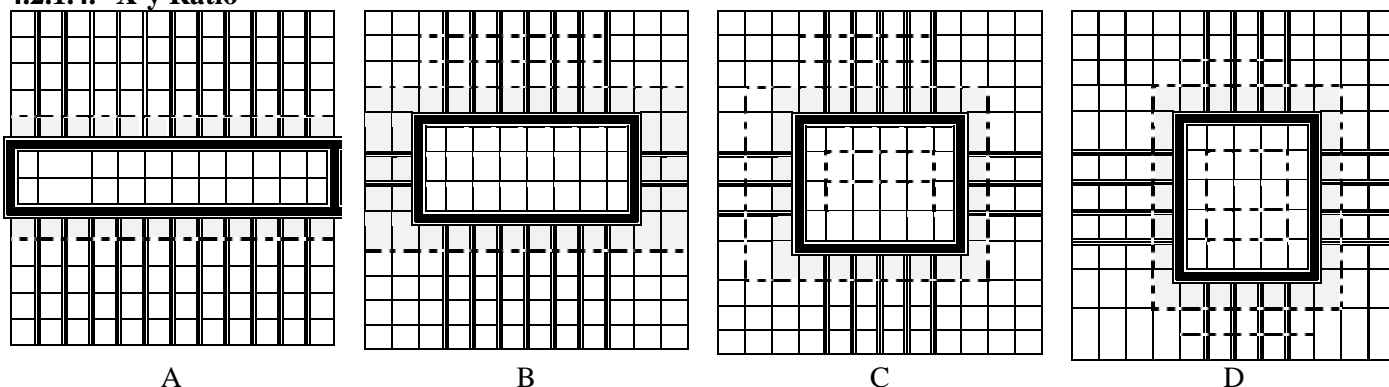
4.2.1.3. Area



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion									
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area		Sufficient services		Efficient services	
	Int.connectivity	No. of continuous negative affected perpendicular paths	Negative affected area	Negative affected paths	Negative affected paths parallel	Isolation Factor	Exposure Factor	Isolation	Exposure	continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services					
A	-	-	-4	-12	-8	-22	-	-	-	-	-	-	-	-	-	-	-	-	-	
B	-	-	-12	-20	-16	-20	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	-	-	-20	-28	-24	-18	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	-	-	-28	-36	-32	-16	-	-	-	-	-	-	-	-	-	-	-	-	-	

It is evident that increasing area is less efficient in achieving development for adjacent community. Since small area increases public spaces on behave of private one, reduces fences length and parameter and hence reduce affected neighborhood area. It improves permeability, connectivity of urban fabric, hence reduces economic cost of time and fuel consumption. Similarly, using large area community increases (restricted paths, affected neighborhood area, and negative affected paths), which affect public life in the city.

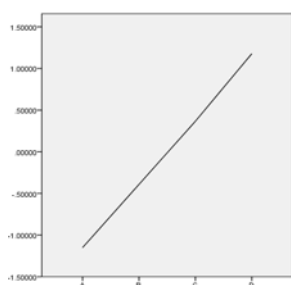
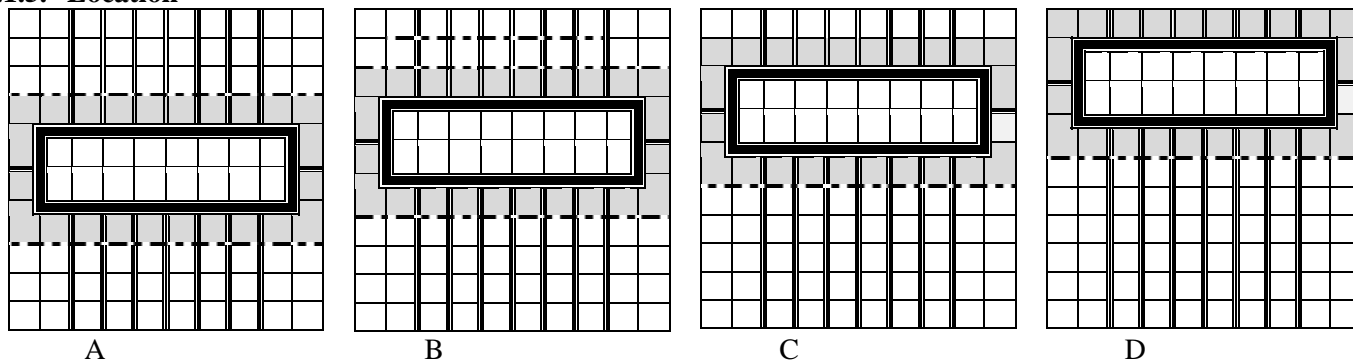
4.2.1.4. X-y Ratio



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion									
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area		Sufficient services		Efficient services	
	Int.connectivity	No. of continuous negative affected perpendicular paths	Negative affected area	Negative affected paths	Negative affected paths parallel	Isolation Factor	Exposure Factor	Isolation	Exposure	continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services					
A	9	-	-20	-20	-24	2	14	-	-	-	-	-	-	-	-	-	-	-	-	
B	14	-	-18	-18	-22	-	14	-	-	-	-	-	-	-	-	-	-	-	-	
C	15	-	-16	-16	-20	-	12	-	-	-	-	-	-	-	-	-	-	-	-	
D	16	-	-16	-15	-18	-	12	-	-	-	-	-	-	-	-	-	-	-	-	

It is evident that the more compact ratio is more efficient in achieving development for adjacent community. since it reduces negative affected area, and parallel paths, so it makes streets full of live through variety mix of activities, that make a continuous eye on street, hence enhance security and safety, visual appearance of street, rediscovering street as social space, which affect public life in the city. Besides, it increases perpendicular paths it improves permeability, connectivity of urban fabric, hence reduces economic cost of time and fuel consumption this impact is parallel to the parameter, and depend mainly on the nature of the fence area (land use, height, nature).

4.2.1.5. Location



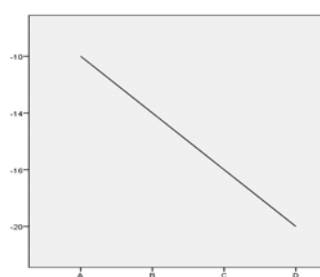
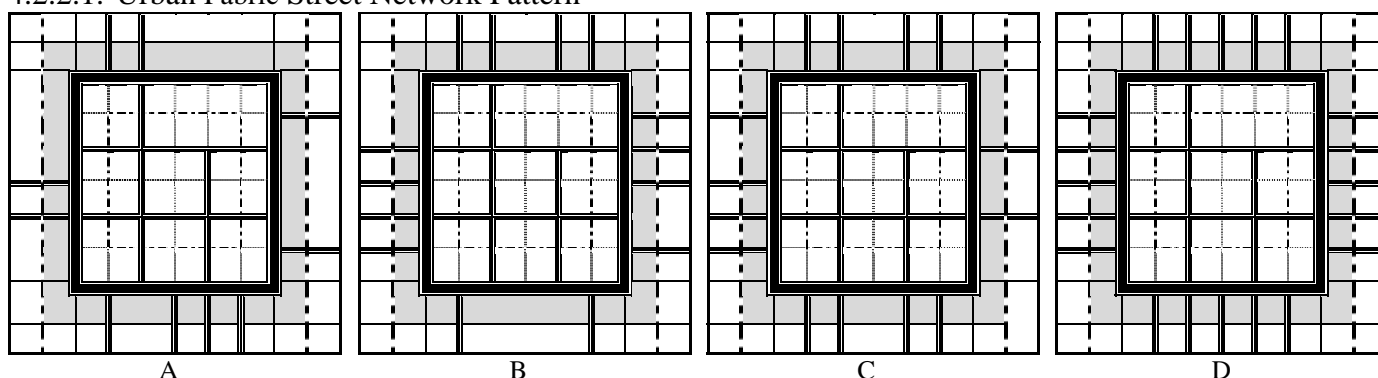
	Barriers						Socio-Spatial discontinuity				Spatial- exclusion					
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area	
	Int.connectivity	No. of continuous negative affected perpendicular paths	Negative affected area	Negative affected paths	Negative affected paths parallel		Isolation	Exposure	Isolation	Exposure	Relative density	Relative size	Available services area	Sufficient provision	Efficient provision services	
A	16	-	-16	-24	-	-20	-	20	-	-	40	1	40	4.8	40	12%
B	16	-	-16	-24	-	-20	-	20	-	-	50	1	50	6	50	20%
C	16	-	-16	-24	-	-20	-	20	-	-	60	1	60	7.2	60	28%
D	16	-	-16	-24	-	-20	-	20	-	-	70	1	70	8.4	70	39%

Based on the previous hypothetical model analysis it's evident that the more periphery location of Gated Community in relevance to public area is more efficient in achieving development for adjacent community (Accessibility-permeability-connectivity-visual appearance). Since it increase size of the left public area, increase self-sufficiency of public area and reduces economic cost of time and fuel consumption.

4.2.2.External Fabric Patterns

The impact on adjacent community depends on the type of the fabric (totally private, semi, totally public), street network pattern (fine grained, semi, super block), land use pattern (single use, semi, varied mixed use), housing type pattern (single residential, semi, varied mixed residential). all these features have to be tested.

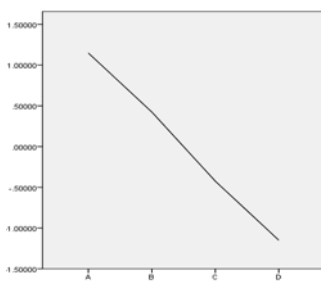
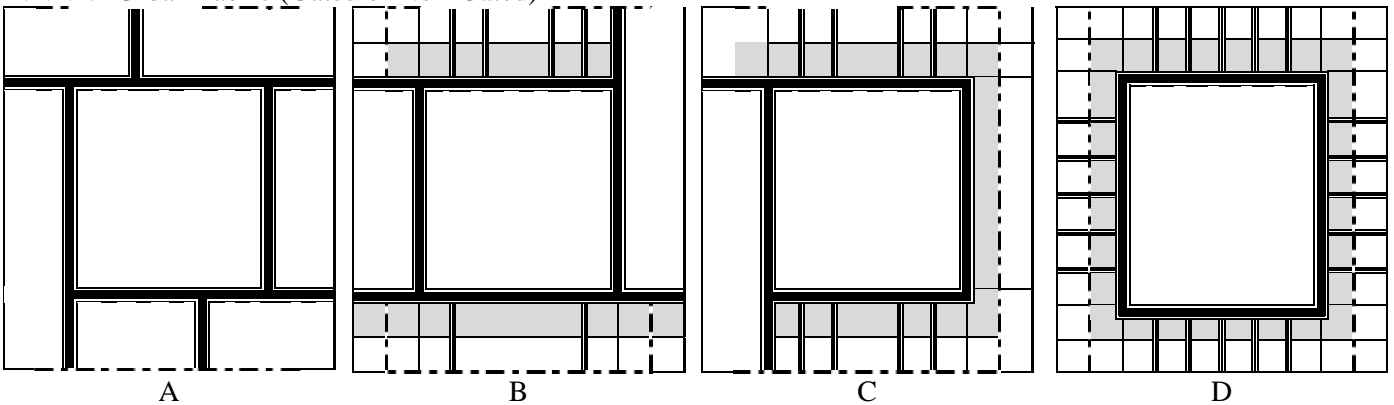
4.2.2.1. Urban Fabric Street Network Pattern



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion				
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area
	Int.connectivity	No. of continuous negative affected perpendicular paths	Negative affected area	Negative affected paths	Negative affected paths parallel		Isolation	Exposure	Isolation	Exposure	Relative density	Relative size	Available services area	Sufficient services	Efficient services
A	16	-	-10	-28	-	-24	-	24	-	-	-	-	-	-	-
B	16	-	-14	-28	-	-24	-	24	-	-	-	-	-	-	-
C	16	-	-16	-28	-	-24	-	24	-	-	-	-	-	-	-
D	16	-	-20	-28	-	-24	-	24	-	-	-	-	-	-	-

It is evident that the more fine-grained street network is less achieving development for adjacent community. Since the more porous street network is more restricted due to gated features, accordingly it reduces accessibility-permeability-connectivity.

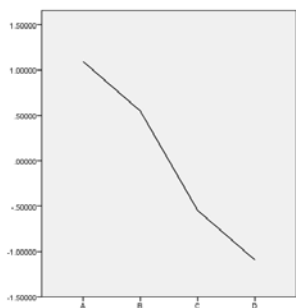
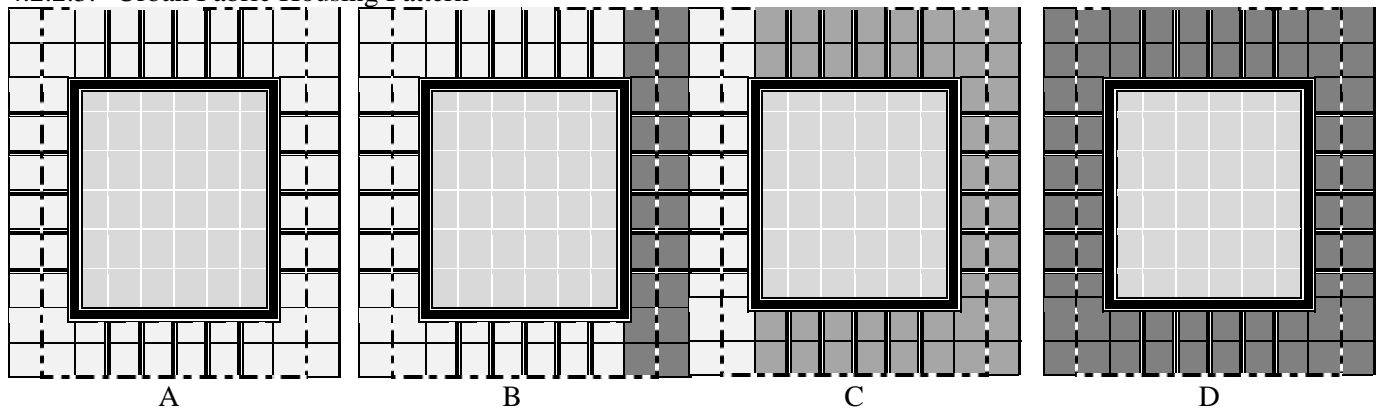
4.2.2.2. Urban Fabric (Gated or Non-Gated)



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion					
	Movement behavior			visual impact												
	Int.connectivity	No. of continuous negative affected perpendicular paths	Negative affected area	Negative affected paths parallel	Negative affected paths parallel (Exposure)		Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
A	16	-4	-12	-24	-24		24	0	-	-	-	-	-	-	-	-
B	16	-12	-20	-18	-24		18	-12	-	-	-	-	-	-	-	-
C	16	-20	-28	-6	-24		6	-18	-	-	-	-	-	-	-	-
D	16	-28	-36	-0	-24		0	-24	-	-	-	-	-	-	-	-

It is evident that locations within gated area is more efficient in achieving development for adjacent community, since the more porous street network the more its street network are restricted and the more is affected by Gated Communities physical features, increase accessibility, permeability, and connectivity, visual appearance.

4.2.2.3. Urban Fabric Housing Pattern



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion					
	Movement behavior			visual impact												
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
A	-	-	-20	-28	-24	-	-	24	-	0	-	-	-	-	-	-
B	-	-	-20	-28	-24	-	-	18	-	-6	-	-	-	-	-	-
C	-	-	-20	-28	-24	-	-	6	-	-18	-	-	-	-	-	-
D	-	-	-20	-28	-24	-	-	0	-	-24	-	-	-	-	-	-

It's evident that locations within dissimilar housing types is less efficient in achieving development for adjacent community. Since it increase number of negative dissimilarity exposure, which increase sense of social tension between micro and adjacent community.

4.2.2.4. Urban Fabric Density, Variation, Land use and Housing Pattern

As long as the community in external urban fabric has the needed size to achieve its self-sufficiency, it can work best without the connection to micro community need. To achieve this it depends on the process of collecting Gated Communities inside urban fabric; the more public area, the more the community could have development indicators. This is reflected on land use variation, land use density, and services availability, which are related functions in size of public area.

The less self-sufficient urban fabric network the more it is affected by Gated Communities physical features. The less density or variation of use in adjacent neighborhood the more it is affected by gated physical features. This point would be discussed in the following section when discussing macro scale and the process of land subdivision for open and Gated Communities, to answer questions about, location, ratio, and other factors of Gated Communities that could affect the development of urban fabric.

4.3.MACRO PUBLIC COMMUNITY BEHAVIOR

The problem of Gated Communities, on macro scale is in their impact on the overall city, public-private distribution, paths appearance, access, permeability, and connectivity, inside urban fabric, efficiency of left public networks (services, urban spaces ...). These problems are reflected on macro development reducing its efficiency. As the state allowed doing this, Gated Communities start to impact on macro community with the barriers, spatial and socio-spatial segregation. Based on the previous criticism of Gated Communities, First: integrated interdependence transit oriented development is a good tool for achieving connected, accessible, permeable urban fabric, that increase urban and functional connectivity, and improve social and economic situations. Second: low porous blocks is a good tool for connecting, accessible, permeable urban fabric that increases urban and functional ability. Third: making uses in these streets is a good tool for livable, sustainable urban fabric, increase urban ability. Fourth: Affect overall services. Fifth: impact on overall social mix. Six: impact on overall density of residents.

Similarly, in the absence of these aspects, under conditions of gating a community inside urban fabric, the macro pattern of the city changes from connected one to a divided one, from fine grained one to super block one, and from connected integrated to socio-spatially segregated. The matter that affected public life and overall image of the city. They convert large areas of the city into dead area that has no life, losing its interdependency. This impact development as follow: First: they create buckets and close perpendicular paths that reduce urban accessibility to inside, permeability to behind and connectivity with its neighbours. Second: they exclude adjacent neighbor and eliminate relation and interaction with them. Third: they use fences in its boundaries external paths, eliminating any use from it so they make these sides dead edges inside urban fabric reducing its livability. Fourth: they disposition services, urban spaces, and TOD networks, Fifth: they affect overall density, housing pattern, land use pattern.

Achieving low negative impacts on macro community are influenced by individual, location and grouping characteristics. Urban fabric of the city, which is divided into zones, differs in its impact according to grouping, allocation methods in three main strands: (totally private area, combination of public and private areas, and public

area), and the distribution between public and private, and finally the allocation of public and private. Then the purpose of the following paragraph is to reach criteria for these characteristics that can reduce the unwanted impacts on adjacent community.

The following model will examine the impact of gating feature and conditions represented in (barriers, Spatial restriction, socio-spatial restriction) on the determination of Gated Communities grouping characteristics represented in (Proximity, division and other), so as to achieve macro community development, Fig. (9-2). It is important first to determine the impact of each of these characteristics, separately, on urban development indicators, through the previous hypothetical theoretical assumptions. Then studying the probabilities of combinations among them.

Measurement Assumptions		Measuring Scenarios
Assump. (1)	Negative affected area approach	No. Of areas parallel to the wall
Assump. (2)	Negative affected paths perpendicular to wall	No. of restricted paths perpendicular to wall (connectivity, permeability, accessibility)
Assump. (3)	Negative affected paths parallel to wall approach	No. of affected paths parallel to the wall (visual impact, security and safety, economic efficiency of adjacent public open spaces)
Assump. (4)	Level of attaining self sufficiency for public urban area	No. Of left continuous not affected public area and its density as factor of population
Assump. (5)	The exposure factor approach	No. of segments between Gated Community and the adjacent open community
Assump. (6)	The exposure dissimilarities factors	No. of segments between gated community and the adjacent open community from diverse housing types
Assump. (7)	The isolation factor approach	No. of segments between Gated Community and the adjacent Gated Community
Assump. (8)	The isolation dissimilarities factors	No. of segments between gated community and the adjacent gated community from diverse housing types

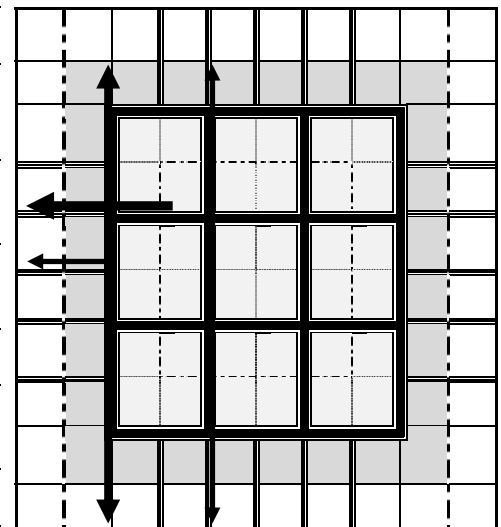
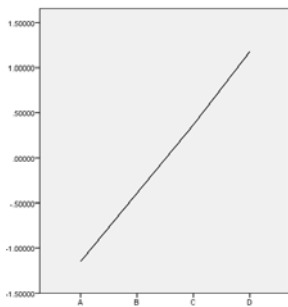
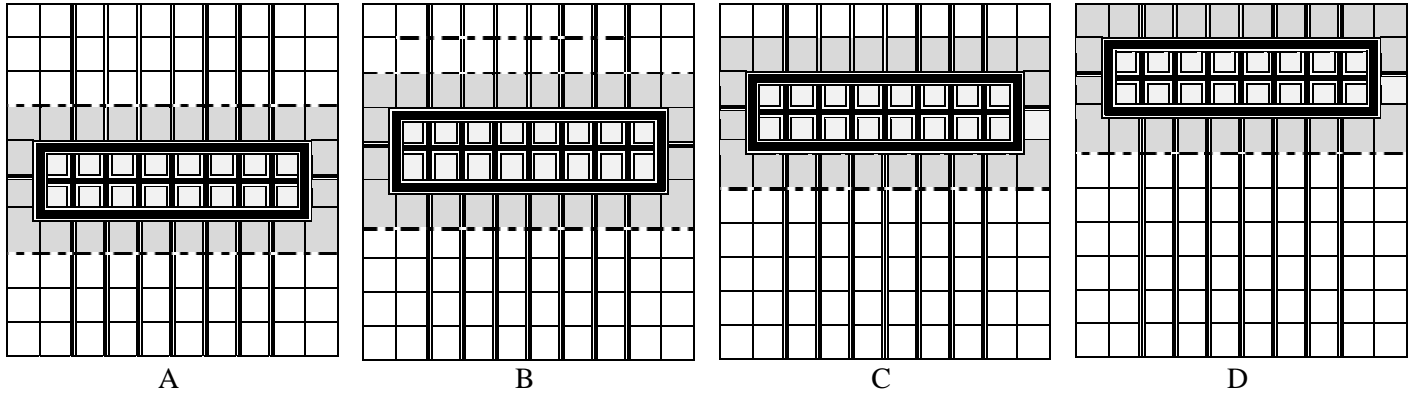


Fig. (9- 3): Measuring assumptions and scenarios. ..

The following section examines, using the proposed spatial assumptions, the correlation existed between each varied physical characteristics and urban development. Related to each physical characteristic, four alternatives are developed, the development assumptions are measured for each alternative, factor analysis for all assumptions are done, and the relation between factor score representing the impact on development and each alternative are traced on a diagram to deduce the relation between them.

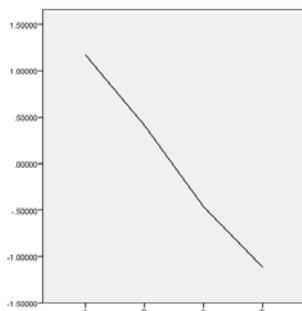
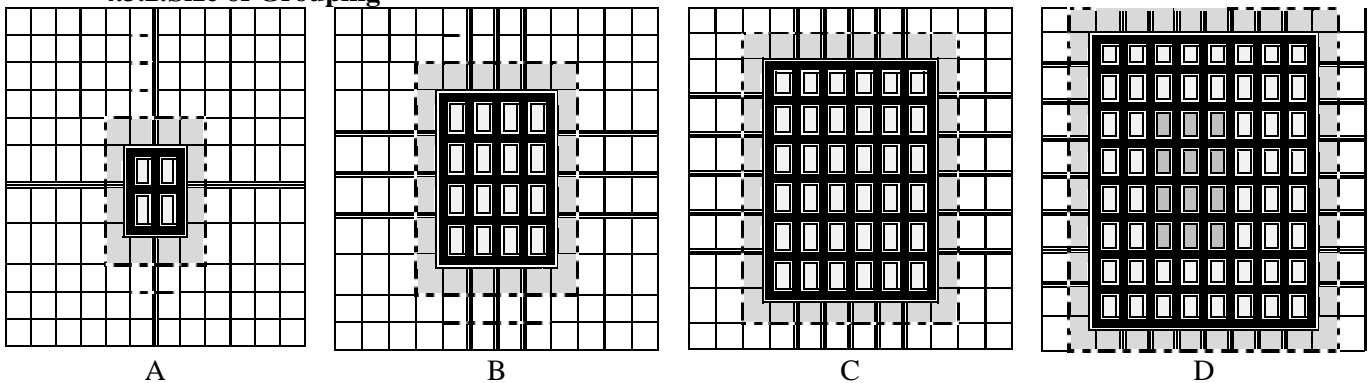
4.3.1. Location inside urban fabric



	Barriers					Socio-Spatial discontinuity				Spatial- exclusion						
	Movement behavior		visual impact			Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services	
Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected parallel paths (isolation)	Negative affected parallel paths (Exposure)											
A	16	16	-	-24	22	-20	24	20	-	-	40	1	40	4.8	40	12%
B	16	16	-	-24	22	-20	24	20	-	-	50	1	50	6	50	20%
C	16	16	-	-24	22	-20	24	20	-	-	60	1	60	7.2	60	28%
D	16	16	-	-24	22	-20	24	20	-	-	70	1	70	8.4	70	39%

It is apparent that the periphery location is more efficient in achieving development for macro community. Since it reduces division of public realm, and increase its size, so promote its permeability, connectivity. Hence, periphery location reduces economic cost of time and fuel consumption. Similarly, in the using of central locations, increase the double direction impact on the public realm, it also divide the size of connected public realm, affect public life in the city.

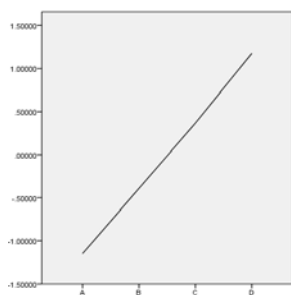
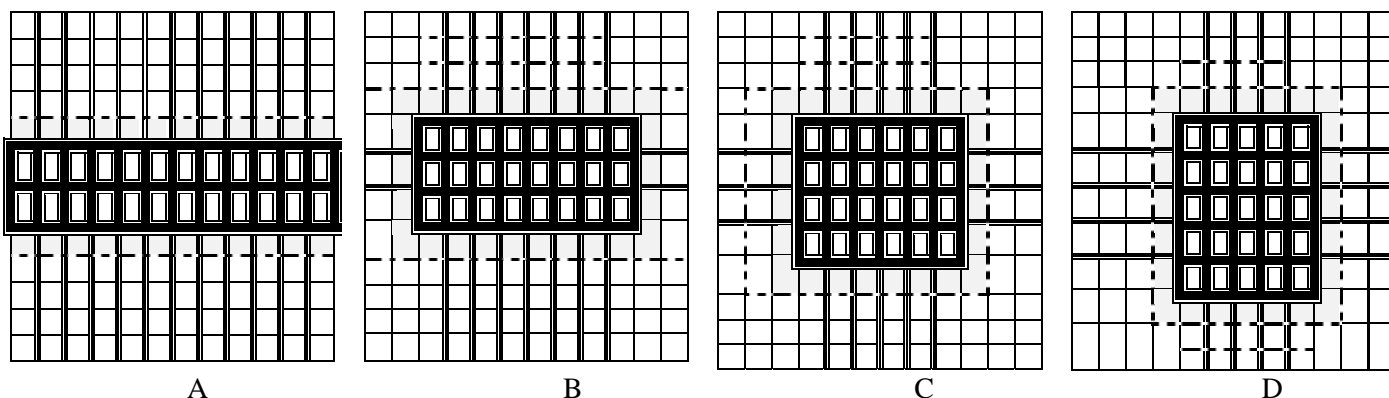
4.3.2. Size of Grouping



	Barriers					Socio-Spatial discontinuity				Spatial- exclusion						
	Movement behavior		visual impact			Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services	
Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected parallel paths (isolation)	Negative affected parallel paths (Exposure)											
A	-	4	-	-12	12	4	-1	-4	-	-	48	1	48	5.8	48	54%
B	-	12	-	-20	50	16	-24	-16	-	-	36	1	36	4.3	36	30%
C	-	20	-	-28	84	36	-60	-36	-	-	24	1	24	2.9	24	14%
D	-	28	-	-36	144	32	-112	-32	-	-	11	1	11	1.2	11	2%

It is evident that low area of grouping is more efficient in achieving development for macro community, Since it creates lower exposure on macro community, lower number of affected area, lower exposure for adjacent community, and lower isolation for in between community. It is less negative impact on accessibility, permeability, and connectivity.

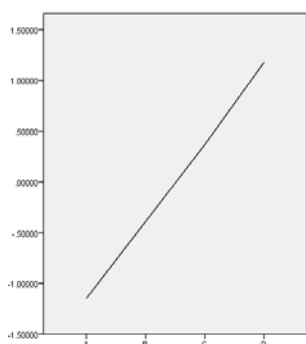
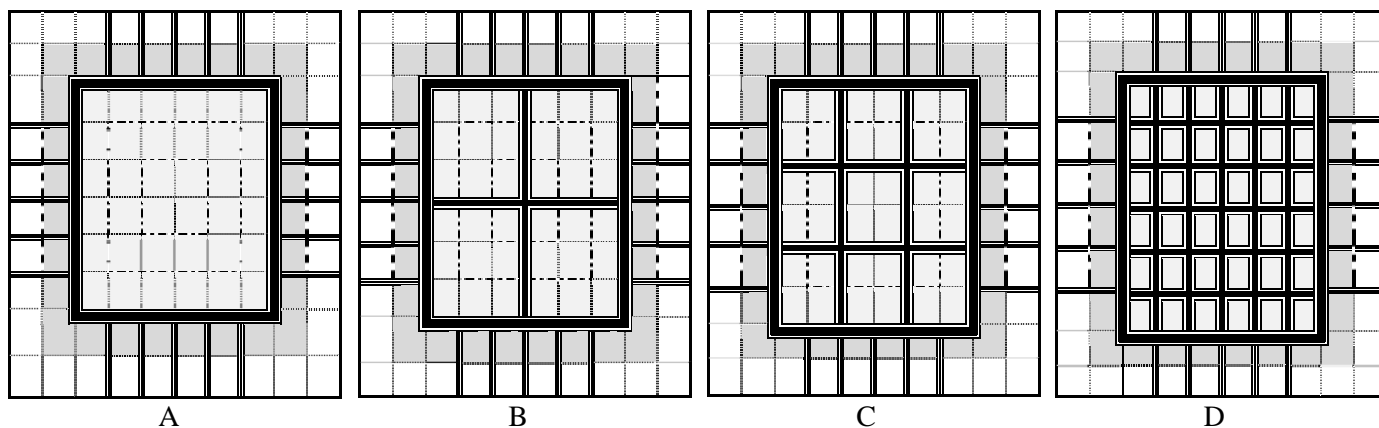
4.3.3.X-Y Ratio of Grouping



	Barriers					Socio-Spatial discontinuity				Spatial- exclusion						
	Movement behavior		visual impact			Isolation Factor		Exposure Factor		left public continuous not affected area		Relative density		Relative size		
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	Relative density	Relative size	Available services area	Sufficient services	Efficient services	
A	-	26	-	-28	-34	-28	-34	-28	-	-	48	1	48	5.8	48	54%
B	-	18	-	-26	-39	-22	-39	-22	-	-	36	1	36	4.3	36	30 %
C	-	16	-	-24	-38	-20	-38	-20	-	-	24	1	24	2.9	24	14%
D	-	15	-	-22	-40	-20	-40	-20	-	-	11	1	11	1.2	11	2%

It is evident that the compact ratio of grouping is more efficient in achieving development for macro community. Since it creates low exposure on macro community, lower number of affected area, lower exposure for adjacent community, and lower isolation for in between community. It is less visual impact, it is less negative impact on accessibility, permeability, connectivity.

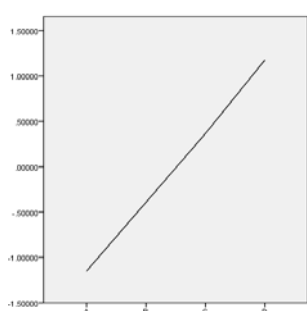
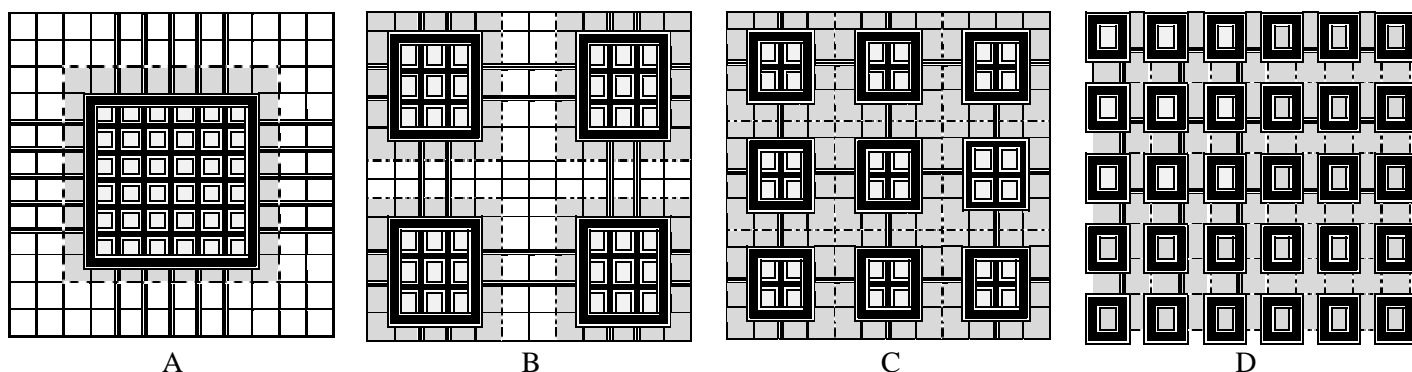
4.3.4.Division size of grouped units: (continuous or Segregated)



	Barriers					Socio-Spatial discontinuity				Spatial- exclusion					
	Movement behavior		visual impact			Isolation Factor		Exposure Factor		left public continuous not affected area		Relative density		Relative size	
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	Relative density	Relative size	Available services area	Sufficient services	Efficient services
A	-	-	-20	-	0	-24	0	-24	-	-	-	-	-	-	-
B	-	-	-16	-	-12	-24	-12	-24	-	-	-	-	-	-	-
C	-	-	-12	-	-24	-24	-24	-24	-	-	-	-	-	-	-
D	-	-	0	-	-60	-24	-60	-24	-	-	-	-	-	-	-

It is evident that the more divided grouping is more efficient for achieving development for public community, since it creates low restricted paths. On the contrary it impacts negatively on micro community residents and the area between them, since it create high isolation lines that impact negatively on the in between.

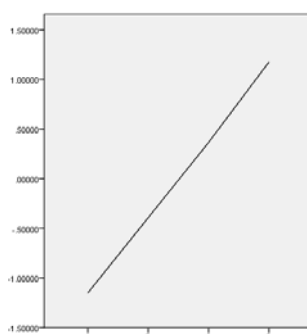
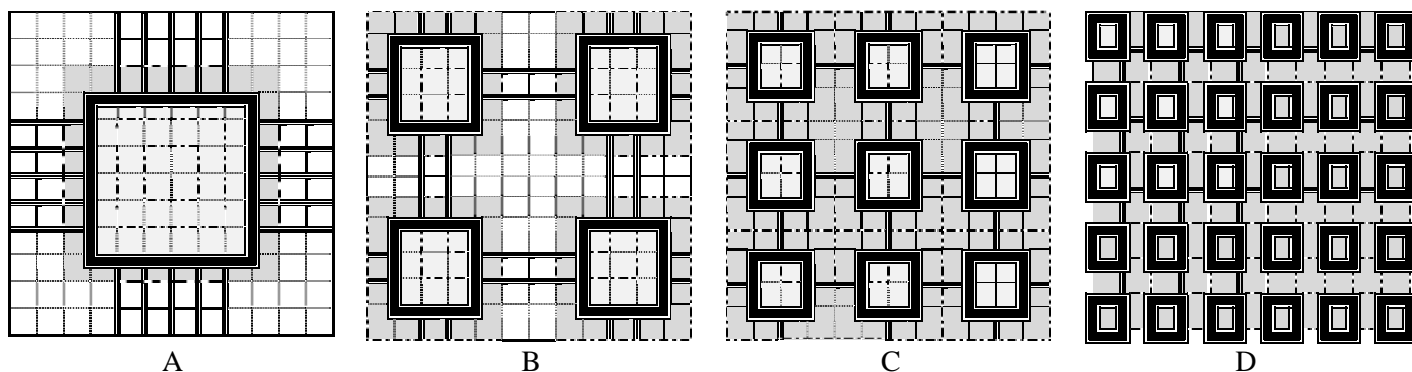
4.3.5. Clustered :(Clustered or Evenness)



	Barriers						Socio-segregation discontinuity				Spatial-segregation									
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area		Sufficient services		Efficient services	
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation	Exposure	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services				
A	-	-	-20	-	0	-24	0	-24	-	-	-	-	-	-	-	-	-	-	-	
B	-	-	-16	-	-12	-24	-12	-24	-	-	-	-	-	-	-	-	-	-	-	
C	-	-	-12	-	-24	-24	-24	-24	-	-	-	-	-	-	-	-	-	-	-	
D	-	-	0	-	-60	-24	-60	-24	-	-	-	-	-	-	-	-	-	-	-	

It is evident that the more clustered grouping is more efficient for achieving development for public community, since it create low restricted paths, parallel paths and affected area and create more continuous gated and public area. Unlike Evenness, that creates more affected exposure paths, and area, and create more division small public open units.

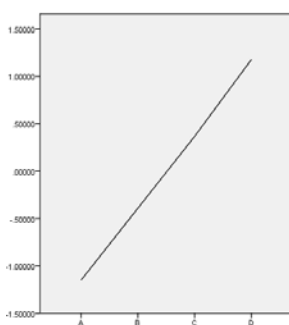
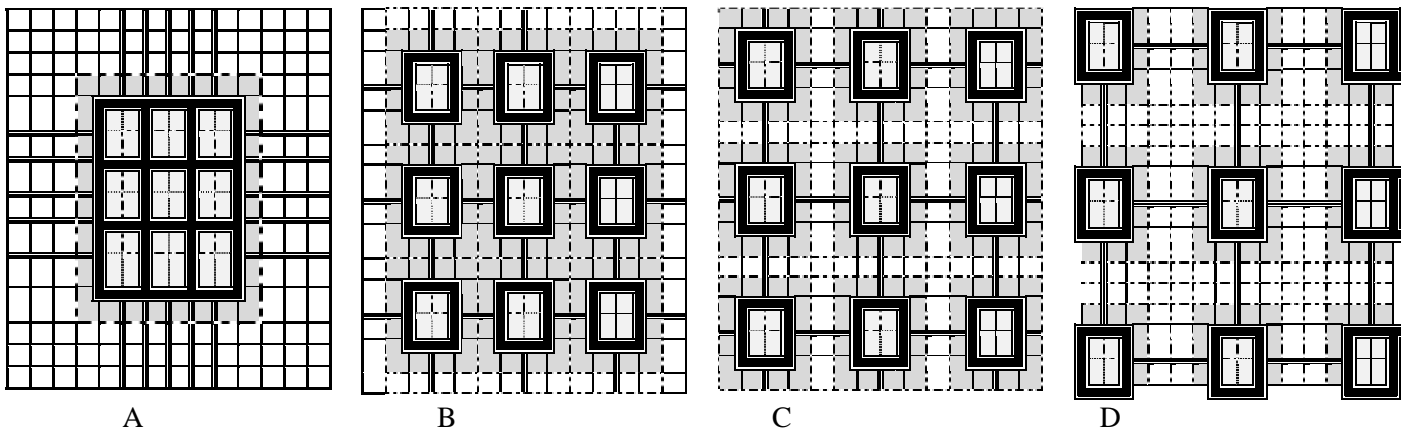
4.3.6.Division:(Continuous Clustered - Evenness)



	Barriers						Socio-segregation discontinuity				Spatial-segregation									
	Movement behavior			visual impact			Isolation Factor		Exposure Factor		Relative density		Relative size		Available services area		Sufficient services		Efficient services	
	Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)	Isolation	Exposure	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services				
A	-	-	-20	-	0	-24	0	-24	-	-	-	-	-	-	-	-	-	-	-	
B	-	-	-16	-	-12	-24	-12	-24	-	-	-	-	-	-	-	-	-	-	-	
C	-	-	-12	-	-24	-24	-24	-24	-	-	-	-	-	-	-	-	-	-	-	
D	-	-	0	-	-60	-24	-60	-24	-	-	-	-	-	-	-	-	-	-	-	

It is evident that the more continuous grouping is more efficient for achieving development for public community, since it create low restricted paths, exposure parallel paths and affected area and create more continuous gated and public area.

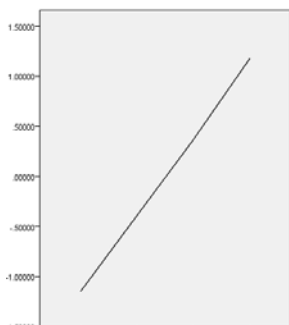
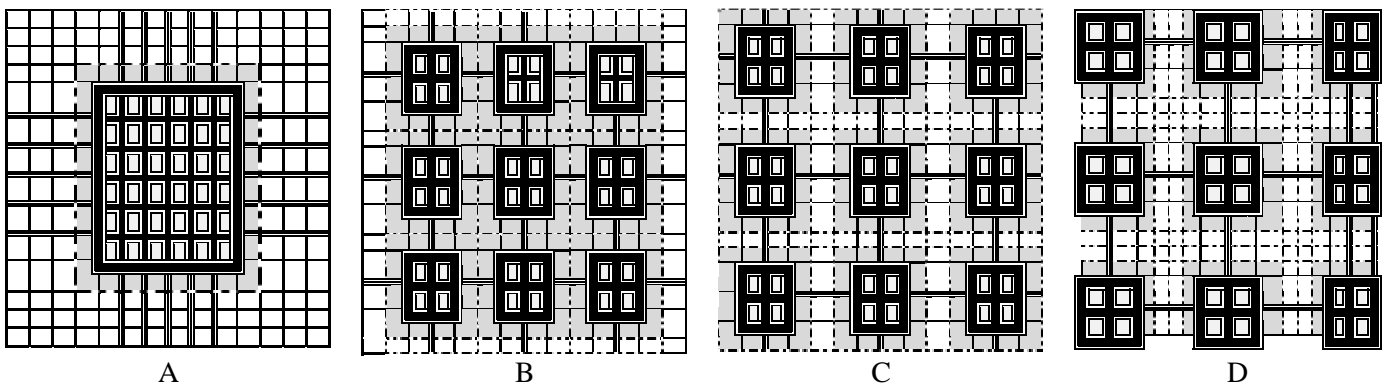
4.3.7. Proximity:(Attached or Spaced)



	Barriers						Socio-segregation discontinuity				Spatial-segregation				
	Movement behavior			visual impact			Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services
Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)										
A	-	-	-20	-	0	-24	0	-24	-	-	-	-	-	-	-
B	-	-	-16	-	-12	-24	-12	-24	-	-	-	-	-	-	-
C	-	-	-12	-	-24	-24	-24	-24	-	-	-	-	-	-	-
D	-	-	0	-	-60	-24	-60	-24	-	-	-	-	-	-	-

It is evident that the more attached grouping is more efficient for achieving development for public community, since it creates low exposure affected parallel paths and area and creates more continuous public area.

4.3.8. Promimity 2:(Continous attached or Spaced)



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion				
	Movement behavior			visual impact			Isolation Factor	Exposure Factor	Isolation Dissimilarity	Exposure Dissimilarity	left public continuous not affected area	Relative density	Relative size	Available services area	Sufficient services
Int.connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel (isolation)	Negative affected paths parallel (Exposure)										
A	-	-	-20	-	0	-24	0	-24	-	-	-	-	-	-	-
B	-	-	-16	-	-12	-24	-12	-24	-	-	-	-	-	-	-
C	-	-	-12	-	-24	-24	-24	-24	-	-	-	-	-	-	-
D	-	-	0	-	-60	-24	-60	-24	-	-	-	-	-	-	-

It is apparent that the more continuous grouping is more efficient for achieving development for public community, since it creates low restricted paths, parallel paths and affected area and creates more continuous public area.

4.4. An Equilibrium Model Between Gating Micro Impact And Gating Macro Impact

The previous parts have deduced the impact of gated features on achieving urban development for micro private community, adjacent public community, and macro public community, separately; Furthermore it determined the influences of these impacts on the determination of Gated Communities physical characteristics, from each scale point of view; and reached a specific criteria for physical characteristics that could confirm achieving development from each point of view.

However, since some of these characteristics are responsible for achieving development for different scales, and since this responsibility not always come in the same direction, where some deduced criteria are helpful for achieving development for micro private community, and on the other hand unhelpful for achieving development for adjacent community. Hence, the impact of these characteristics should be examined from different perspectives.

These criteria can be classified into two groups; the first group of criteria has positive impact on development for both micro and adjacent community, just like (x-y ratio, boundary land use, number of entrances), where as these variables increase a relevant increase on both micro community and macro community development happen. The second group of criteria has different orientation in its impact on development for micro community and adjacent community, just like (Area, Proximity, and Division); whereas these criteria increase negative impacts exist on adjacent community and a positive impact exist on micro community.

As the first type has positive relation in its impact on both micro and macro development, it will not be matter to test this variable and compromise its relation with development, whereas the second type need to be tested, to reach a clear answer about the most efficient ranges that achieve development for micro and adjacent community in an optimum manner.

In this part, we will concentrate on size as the most common gated physical feature that has double impact, and is the most affecting factor in micro- macro impact, it will be tested for equilibrium. Through utility Functions, we will discuss deferent points of view of gated communities size, is the large size better or the small size.

In economics, Indifference curve a graph of the various levels of development achieved at different combinations of two commodities, for example, private and public area. It is possible to imagine, at a given level, various combinations of the two which would yield the same amount of development; for example, we might get the same utility from 18 private area and 7 public one as from 6 private area and 19 public one, or 13 private area and 12 public one.

The graph would show public development on one axis and private development on the other, and would have a negative slope, moving downwards to the right. Each combination at a given area gives the same utility, the decision maker then selects one of these combinations, within the limitations of urban resources.

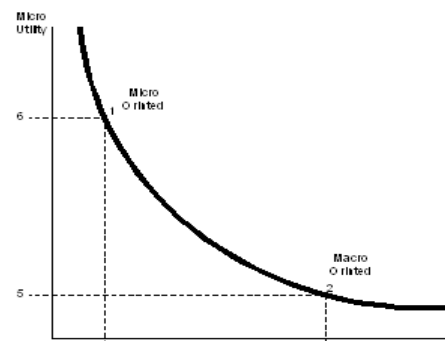


Fig. (0): Indifference curve

Indifference curve is one of the most important analysis techniques in microeconomic theory to analyze how a rational chooses between two contradicting benefits. In other words, how the change in the gating rate will affect the choice between public utility and private utility. To explain this one can consider that distributing area of urban form into two extremes, the public macro urban fabric, and the private micro urban pattern. According to utility theory, the resident satisfaction is related to the distribution of public to private. That is, at each point on the curve, the consumer has no preference for one bundle over another. In other words, they are all equally preferred.

Development	Point (1)	Point (2)	Point (3)
Micro community	18	12	6
Macro community	7	13	19

- Point (1) explores Maximum micro development with minimum macro development.
- Point (2) explores Minimum micro development with maximum macro development.
- Point (3) explores optimum or neutral micro and macro development.

Using this technique to examine the contradicting criteria represented in Size is compromised to reach criteria for achieving development.

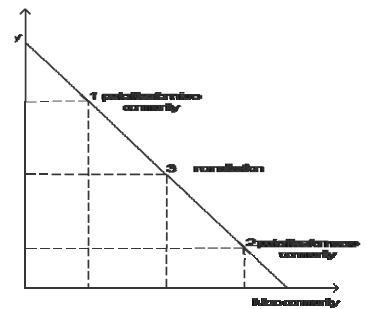
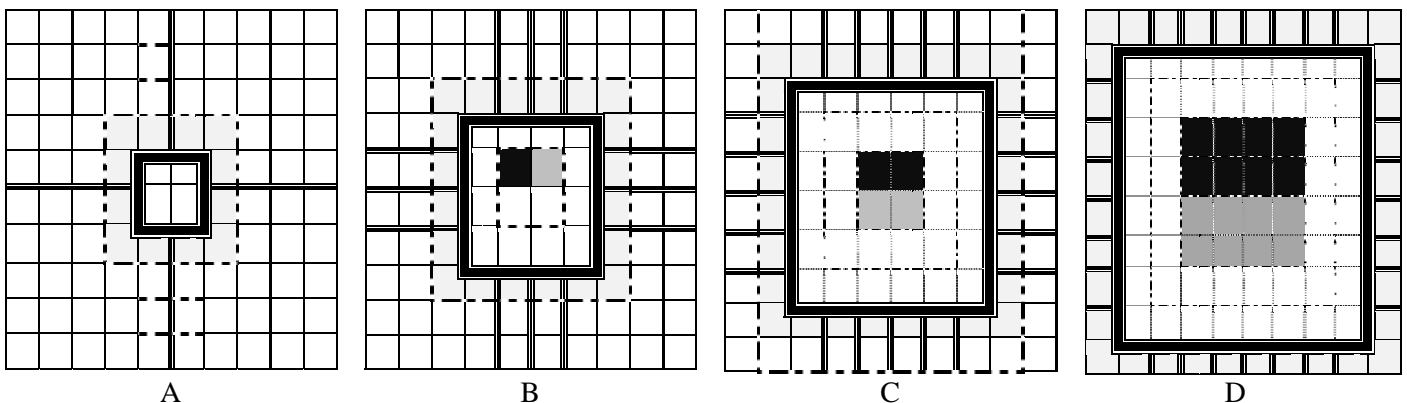
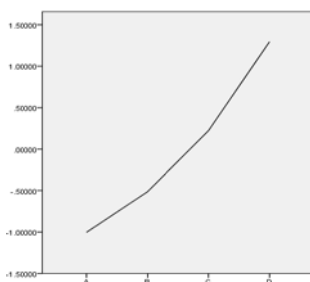


Fig. (): Indifference curve.

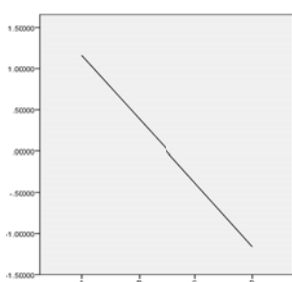


Area From Micro Community Perspective



	Barriers						Socio-Spatial restriction			Spatial-restriction					
	Movement Behavior		Visual Impact				Diversity factor	Isolation Factor	Exposure factor	No. of gated area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
Int. connectivity	Ext. connectivity	Negative affected Perpend. Paths	Negative affected Parallel Paths	Negative affected area	Land use allocation										
A	1	4	-4	-6	-4	4	0	0	0	4	1	4	1	4	5
B	9	12	-12	-16	-4	12	1	8	0	16	1	16	2	16	2
C	25	20	-20	-24	-16	20	2	16	4	36	1	36	3	36	3
D	49	28	-28	-64	36	28	3	24	16	64	1	64	4	64	5

Area From Adjacent Community Perspective



	Barriers						Socio-Spatial discontinuity				Spatial- exclusion					
	Movement behavior			visual impact			Isolation Factor	Exposure Factor	Isolation	Exposure	continuous not affected area	Relative density	Relative size	Available services area	Sufficient services	Efficient services
Int. connectivity	No. of continuous streets	Negative affected perpendicular paths	Negative affected area	Negative affected paths parallel	Negative affected paths parallel (Exposure)											
A	-	-	-4	-12	-8	-22	-	-	-	-	-	-	-	-	-	-
B	-	-	-12	-20	-16	-20	-	-	-	-	-	-	-	-	-	-
C	-	-	-20	-28	-24	-18	-	-	-	-	-	-	-	-	-	-
D	-	-	-28	-36	-32	-16	-	-	-	-	-	-	-	-	-	-

The area of community is a contradicting variable, on the one hand, the larger area is helpful for achieving development for micro community, and on the other hand, it is unhelpful and not supporting development for adjacent community. Here the decision maker is faced with the task to indifferentists between micro development and adjacent community development, the curves give recommended range between B and C.

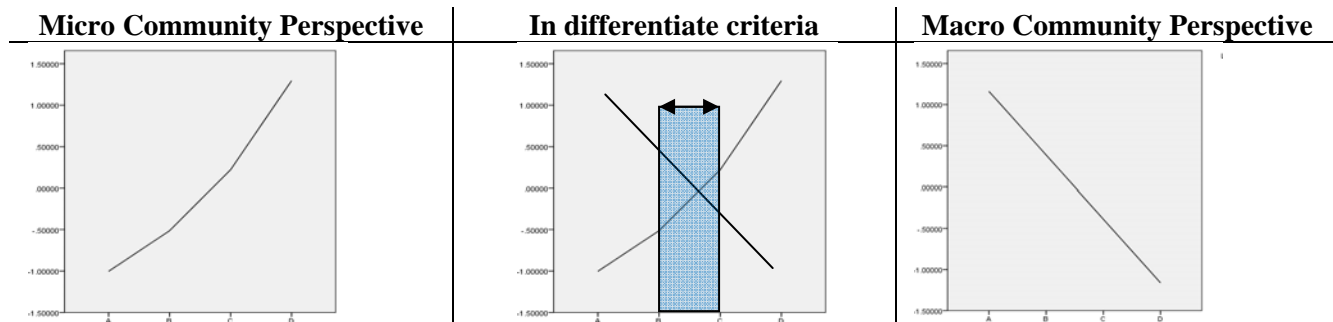


Fig. (): Recommended range for area of the community.

4.5. CONCLUSION

projecting Good urban form development indicators and their supposed successful socio-spatial characteristics on Gated Communities unique features and conditions, it is evident that Gated Communities stand short when be measured to these characteristics. It is theoretically evident that Gated Communities features impose negative impacts on urban development, for both micro private community and adjacent public community. It is concluded that private sector through Gated Communities strive for achieving development for their residents, which are small number of the society and discard many negative impacts that they could impose on the public community and the rest majority of the society. It is concluded that Gated Communities are not a holistic approach for urban development.

This elaborates the vital importance of analysing Gated Communities concept and find method for visualization and representation of their negative impacts, and then measure their true role and impact on urban development, together with determining the factors responsible for their efficiency in achieving urban development. Which could help decision makers and planners in selecting the right strategies for dealing with it.

Gated communities are not a holistic approach for urban development, they have negative urban, functional, social, economic, and environmental impact on both micro community and adjacent community. So when we try to determine gated communities physical features characteristics we need to put in mind both of these impacts, to make a degree of some holistic solutions for urban development.

Based on simulation spatial analysis model in visualizing of the previous deduced negative impacts, it is possible to test and examine the impact of Gated Communities physical features on the determination of Gated Communities physical characteristics. The developed model is not an optimization, it does not automatically produce optimal development path for the planner, whether in micro or macro urban scale. Rather, it is a predictive tool that answers “what if” questions related to Gated Communities (size, location, xy ratio, etc)

Authority can judge through land subdivision and plans approval the proposed plans by showing the planner the micro and macro impact of this proposals. Including land subdivision size and location, gated physical characteristics for micro and macro community, on the equilibrium achievement. The model is a predictive tool that answers “what if” questions related to gated communities size, location,... . for example, a developer interested in maximizing micro community utility, will increase its size, systematically, external utility costs with this objective in mind, to find the suitable solution for macro community.

Another developer, interested in small size communities, this is subjected to a cost in micro community, to be in mind. The advantage of the model that it generates alternatives quickly, and hence it becomes feasible....the model supplies the planner with the information to find out the impact of gated features, such as size , allows the planner to determine the gated communities physical characteristics.

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