Cultural Adequacy and Visual Privacy in Public Housing Design: Between Integration and Isolation

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ABSTRACT

Cultural adequacy is one of the most undefined rights in adequate housing rights, as there is no certain definition, but it varies from context to another in the same country. This paper investigates the concept of cultural adequacy in public housing projects in Egypt, focusing specifically on visual privacy and segregation. It examines existing housing designs for recent public housing projects developed over the past 11 years. Analyzing their alignment and flexibility with the social and cultural needs of the residents, and special visual privacy. The research starts with literature related to cultural adequacy definition, especially in housing design. second, a comprehensive study to inventory recent public housing projects in Egypt. Four housing projects were then selected as a sample based on chosen criteria. Finally, architectural plans were analyzed using a justified plan graph as a tool to apply space syntax analyses to determine the extent of visual privacy achieved and to compare the different models. The significance of this research lies in its compilation of recent public housing projects in Egypt. By employing Graph tool, these projects are analyzed to determine whether calculating the depth variable can effectively reflect visual privacy in housing design or if other factors also significantly influence this aspect. Furthermore, the study sheds light on the limitations of using justified graphs for residential unit analysis, particularly in relation to cultural requirements for visual privacy and the separation of public and private zones within the dwelling.

1. INTRODUCTION

Public housing is a cornerstone in addressing Egypt's housing crisis. The public sector projects currently offer a diverse range of housing options to accommodate low, middle, and high-income residents. However, these projects often replicate a standardized design across the country, neglecting the varied socio-cultural needs of different populations.

Many researches focus on the meaning of adequate housing, and how to measure it (OHCHR, 2009),(Gan et al., 2019),others propose how indicators could be measured in different housing polices and conditions as Egypt(Hafez et al., 2021). Furthermore, some research also focus on the concept of privacy from different contextual and cultural point of view (de Macedo et al., 2022),or the level of residents' satisfaction in multicultural cities(Ahmadi, 2024).Other focuses on community identity in new settlements (Ettouney & Abdel kader, 1994).However, less research focuses on cultural adequacy as an important approach in housing design especially in Egypt.

The Egyptian code for housing design and residential compounds, Code No. 602 " (HBRC., 2009) focuses on visual and voice privacy and dividing the unit's spaces according to the privacy levels, namely: private space (sleeping zone and family living), and semi-private (space for receiving guests). However, it does not suggest design guidelines for designing according to socio-cultural aspects. Some research focuses on socio-spatial analytic of low-

income public housing in Egypt as (Elmorshedy, 2022) Or studying home boundaries in private housing sector in the Egyptian housing market as (Kamal & Nasreldin, 2024).

This paper explores the concept of cultural adequacy through visual privacy in public housing, focusing on the Egyptian context. Moreover, the research highlights the gap in tracking public housing prototypes design and analysis the units from 2013 till the present (2024) from the point of view of socio- cultural needs for low, middle and high public housing and how the physical dimension of privacy does not reflect the social and cultural dimension desired by users.

2. THE RIGHTT TO ADEQUATE HOUSING

Four walls and a roof are a start, but adequate housing means having a place you can truly call home, with all the things that make life good. The Office of the United Nations High Commissioner for Human Rights (OHCHR) divided the main elements of adequate housing into 7 main elements, they are clearly as essential as the basic supply and accessibility of housing. to be considered adequate, housing must fulfill the following core requirements, security of tenure, availability of services, affordability, habitability, accessibility, location and finally cultural adequacy as shown in figure 1.(OHCHR, 2014),while this paper focuses on cultural adequacy as one of the main requirements towards adequate housing in Egypt.
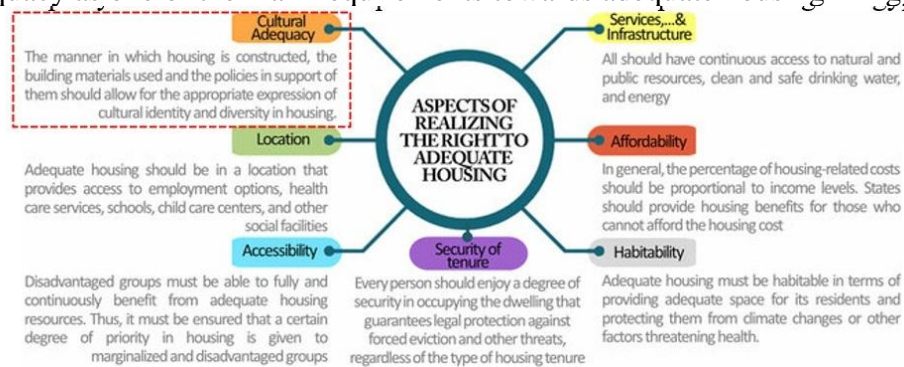
Figure (1): The seven key aspects of the right to adequate housing.
Source:(Hafez et al., 2021) according to(OHCHR, 2014).

The UN-HABITAT (2006b) noted that what constitutes adequate housing varies from one country to another and depends on specific cultural, social, environmental and economic context.(UN-HABITAT, 2006).

2.1 Cultural Adequacy in Housing Design:

Scholars and researchers have defined adequate housing in various ways. Fundamentally, adequate housing implies a living space that *sufficiently* meets residents' needs, desires, and expectations in terms of both quantity and quality.

Housing adequacy defined by the American Public Housing Association as "Housing that is decent, safe, habitable and affordable in meeting the four-fold functions of physiological and psychological needs, protection against contagions and accidents"(Onibokun, 1985)

According to (UN-HABITAT, 2006) adequate housing is housing that is private, spacious, accessible, secure, stable, durable, well-served by amenities, and situated in a healthy environment. Adequate housing should be considered a human right that respects and accommodates the expression of cultural identity and ways of life. This can be achieved by ensuring that housing reflects the community's cultural identity, employing building materials and techniques that are both suitable and familiar to its members. Furthermore, affordable housing initiatives must offer a variety of housing options to accommodate diverse social and cultural needs within the community, that it can be addressed by (UNECE, 2015)

- National housing policies that consider social and territorial irregularities and support the protection and improvement of landscapes, historical heritage and cultural heritage.
- Highlighting the improvement of public spaces for both cultural and social activities.
- Housing takes into consideration the background and culture of users.
- Homes and neighborhoods are created with active community input to foster emotional well-being for residents.

(Gan et al., 2019) identified 47 attributes of adequate housing were concluded from literature review, 3 of them are related to cultural adequacy as one of the nonphysical aspects:

- Design of residence in relation to residents' natural lifestyle.
- Materials and appearance of building express local cultural value.
- Spaces and facilities for cultural activities.

Cultural adequacy in housing recognizes the significance of housing in shaping individual and cultural identities, It plays an important role in shaping cultural identity, According to (Hafez et al., 2021) ,(UN-Habitat, 2016)(Ibem&Alagbe, 2015), many affordable housing projects for low-income residents rely on standardized designs that disregard regional climate and cultural factors. This approach creates homogenous housing estates lacking diverse land use and social mix. The underlying issue is the use of statistical averages for family size and socio -economic status to determine housing size and layout, overlooking individual needs and community diversity. (Oren & Alterman, 2022).

3. PUBLIC HOUSING DESIGN:

There are many design aspects that affect housing design, such as environmental, structural, economic aspects. etc...

3.1. Housing Design Principles:

Housing design should fulfill some design principles such as:

- **Efficiency:** efficient residential units require a careful balance between functional spaces. Lobby areas and circulation should be limited to no more than 20% to ensure maximum usable space for residents. (HBRC., 2009)
- **Overcrowding rates:** To ensure comfortable living conditions, overcrowding should be avoided. The maximum occupancy rate for residential units should be 1.5 person per room. (HBRC., 2009)
- **Flexibility and adaptation:** Flexibility could be a key solution for accommodating users with diverse social, cultural needs and lifestyle.(Nasreldin & Ibrahim, 2023),it can be also defined as the ability of space to adapt functionally or structurally to continuous changes in users, involving economic, social, and sustainability issues.(De Paris & Lopes, 2018) .
- **Privacy:** privacy is "the state in which one is not observed or disturbed by other people, or the state of being free from public attention. "It can also be defined as it is a process of improving social interaction or the sense of freedom (Gifford, 1987).the definition of privacy changes from context to another according to their cultural background and context. Privacy dimensions can be categorized into physical dimensions, social dimensions and psychological dimensions. (de Macedo et al., 2022)(Ozaki, 2002) (Wisniewski & Page, 2022)

Privacy in housing design could be the Protection and freedom in 4 main areas: sound (not to be heard), space not enough room space, encroachment by others, sight; being overlooked and security; not feeling safe. (Esmat, 2023).

This research focuses on social dimension, such as visual privacy and interaction between family members and segregation of guests and accessibility control through housing design which is considered as the common need in housing design in all housing level.
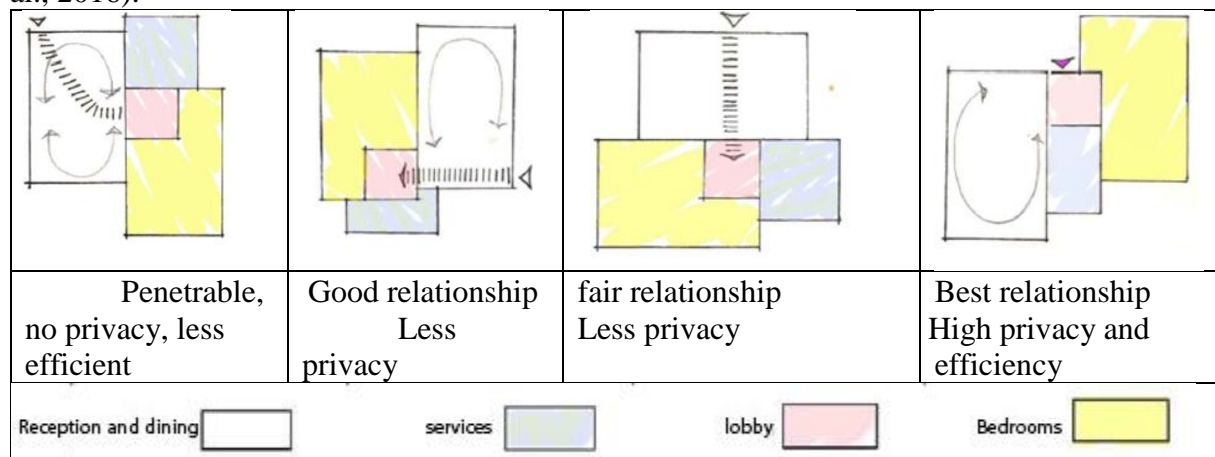
3.2. Housing Design Components:

Home constitutes a system of settings designed to facilitate human activities.(Hillier & Hanson, 1984) ,Many researchers divided housing unit zoning into 3 main zones, and they are constant in housing design, but its area and design aspects could change according to each housing level. The first zone is the public zone which contains the entrance lobby and reception zone, and this is for guests, it needs to be well designed and controlled. The second zone is services, kitchen and bathroom(s), it could be in the middle zone between public and private. The third zone is the private zone, and it's for the household and family only, it consists of master bedroom and bedrooms, sometimes it contains the family private living room. Others divided it into 2 main zones; private zone for family activities and bedrooms and public zone for guests.(Abdelmonem, 2017) as shown in figure 2.

For house zoning, no singular model of the home has ever prevailed universally across cultures, societies, or even urban environments. Rather, the concept of home is intrinsically tied to its specific cultural and contextual origins. While zoning regulations vary widely, they consistently reflect underlying sociocultural needs, with privacy and the separation of public and private spaces as common priorities.

3.3. Integration And Isolation in Housing Design:

Adequate housing is respect and consider the expression of cultural identity of user and his life style.one of the cultural needs of users is the isolation between guest zone like reception and the private zone, The meaning of integration is to allow all family members integrates together in a central space as family living, while segregation is a kind of visual privacy which prevent householders from being overlooked through passing between public zone and private one, as shown in figure 2.

The socio-cultural concept of public-private segregation defines the private realm and its spaces. Women's spaces are typically designed to provide a high degree of privacy, allowing for personal activities and interactions free from public observation.(Al-Thahab et al., 2016).

Penetrable, no privacy, less efficient	Good relationship Less privacy	fair relationship Less privacy	Best relationship High privacy and efficiency

Reception and dining		services		lobby		Bedrooms	

Figure (2): Different housing zoning.
source: the author.

4. METHODS:

To achieve the research aim, the research used the following scientific research methods, First, an in-depth review of existing literature was undertaken to ascertain the specific attributes of culturally adequate housing and the visual privacy aspect as one of the common need in housing design in Egypt, then using space syntax analysis as a tool for analyzing different housing prototypes in the Egyptian public housing in the last 11 years .

4.1 Justified Graph Analysis.

To investigate the cultural adequacy in public housing projects in Egypt, especially the visual privacy, the research used space syntax analysis, especially the justified graph analysis, because it's more effective in studying architectural drawings details for houses, and that led to a significant advancement in quantitative analysis, by recreating permeability graphs from various interior perspectives. (Hanson, 1999)(Van Nes &Yamu, 2021).

Justified graph is the simplest diagrammatic form, how the individual components of a system are linked to each other in an abstract manner. It can be used in studying mathematical formations between items, these items could be rooms, spaces, or streets, are represented as a circle (nodes). Between these nodes there are lines represented as edge (Zolfagharkhani& Ostwald, 2021)(Hillier et al., n.d.)

The justified graph also demonstrates the spatial relations and connections, specifically in the interior design of housing units. Lines represent the connections between the rooms, while circles (nodes) represent each space. It shows how the experience starts from the main entrance which represents the public zone and ends with rooms which are considered private as private zone (Mustafa et al., 2010). And that's why the research used this tool for analysis.

To analyze the housing plans using a justified access graph, assume standing in a space within the configuration, usually the outside. (home entrance). From this point, the other spaces (nodes) are graphically aligned upward according to their depth from the standing point (outside). These values are deduced from a justified plan graph to transfer qualitative analysis into quantitative analysis.(Van Nes &Yamu, 2021),

- The number of nodes (K): The number of rooms or defined spaces, including the exterior.
- The space-link ratio: The number of links in a justified plan graph divided by the number of spaces.
- Level (L): The level at which a node exists in a justified plan graph, which is defined by the number of steps from the root to the relevant node.
- Total Depth (TD): The sum of the links between a certain node (carrier) and each one of the remaining nodes in a configuration, as shown in Eq. (1). It is relative to the carrier.

$$TD = (0 \times nx) + (1 \times nx) + (2 \times nx) + \cdots + (X \times nx) \qquad (1)$$

- Mean Depth (MD): The average depth of a node in a justified plan graph. It is calculated by dividing the Total Depth by the number of nodes as shown in Eq. (2).

$$MD = \sum_{k=1}^{\infty} TD / K - 1 \qquad (2)$$

- Relative Asymmetry (RA): Measures how deep an organization is compared to a balanced model of the same organization. It indicates the degree of isolation of the

relevant room. the normal state of the relative depth, so that it creates a method for comparison with other buildings having various zonings as shown in Eq.(3).

$$RA = \frac{2(\text{MD}-1)}{\text{K}-2} \qquad (3)$$

- The integration value (i): as shown in Eq. (4).

$$i = \frac{1}{RA} \qquad (4)$$

5.CASE STUDY: PUBLIC HOUSING PROJECTS IN EGYPT

The research scanned the recent public housing project from 2013 till now. For all housing levels (low, middle, and high-income groups). While social and cultural needs may vary across income levels, the research focuses on visual privacy, which can be considered a core need across all housing segments.

5.1. Case Study Selection

The selected case study was chosen based on specific criteria:
- Multi- family housing (complete housing projects)
- Date of construction between 2013 till now.
- Public housing was constructed and designed by the government.
- Area between 90 and 180m^2
- Apartments are on one floor does not duplex or penthouse.

Four projects selected,11prototype, first project is "social housing for low-income group "(P1), Dar Masr project for middle income (P2, P3, P4, P5), they both applied in all Egyptian new cities, and high-income housing project in the new administrative capital (P6-P9), and Arabesque Housing project for high income group (P10- P11) in Cairo.

5.2. Selected Case Study:

Despite a slow initial rollout, the Social Housing Program (SHP) has remained a cornerstone of the government's agenda. Launched in 2013 as a comprehensive replacement for previous initiatives, the SHP is poised to shape the future of subsidized social housing in Egypt. SHP offers a 3-bedroom unit with area 90m2 after it was only 64 m2, and this project applied in all governance in Egypt and still offered. And it is considered as the main low-income housing in Egypt from 2013 till now.(United Nations Human Settlements Program, 2016) as shown in Figure 3.

Figure (3): social housing project
Source: NUCA

For middle income groups, the government offer "Dar Masr" project in 2015, as shown in Figure 4, it targets middle income group and applied in all governance in Egypt, its area started from 110 m^2 up to 130m^2.(Adel et al., 2022).

Figure (4): Dar Masr project

Source: NUCA.

In 2021, the government launched "the residential district R3 "in the new administrative capital, it targets middle and high income, with area from 110 up to 180m2(NUCA, n.d.)as shown in Figure 5,6.

Figure (5): The residential district, prototype A6 , A6'
source : https://www.nile.eg/ accessed 9/2024

Figure (6) : The residential district ,prototype B6 , B6'.
source : https://www.nile.eg/ accessed 9/2024

To enhance the living conditions of residents in informal settlements, the government has implemented projects aimed at relocating communities and transforming these areas into sustainable residential neighbourhoods, many projects applied this concept as" Arabesque "project as shown in Figure 7.
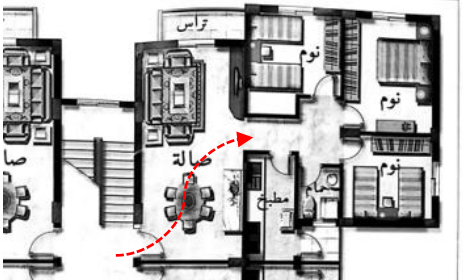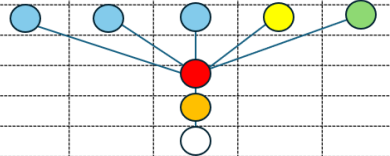
Figure (7): Arabesque housing project
source: Ministry of Housing, Utilities & Urban Communities 2024

5.3. Prototypes Analysis Using Justified Graph.
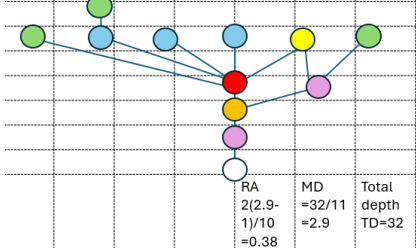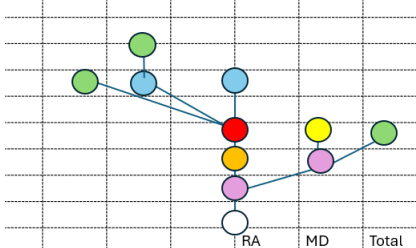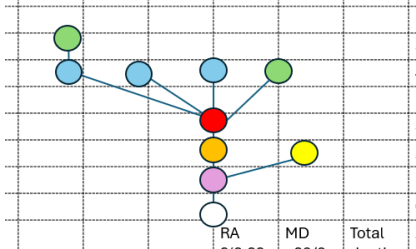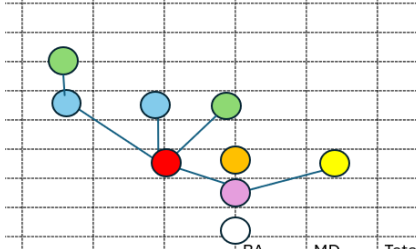
This paper seeks to analyze public housing prototypes to determine their cultural suitability for users, focusing on the segregation or integration of guests and households and the visual privacy between public and private spaces.as shown in Table 1, 11 housing apartments were analyzed using justified graph tool as one type of space syntax, the analysis is by calculating 5 different values ; the depth D, total depth TD, mean depth MD, relative asymmetry RA, and the integration value (i).

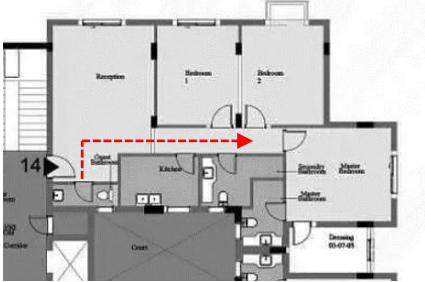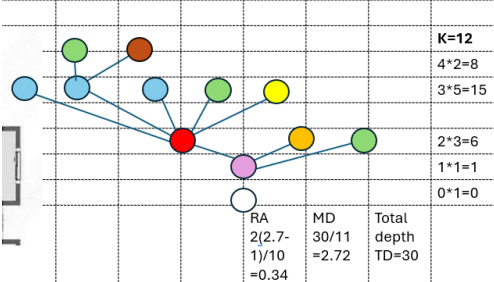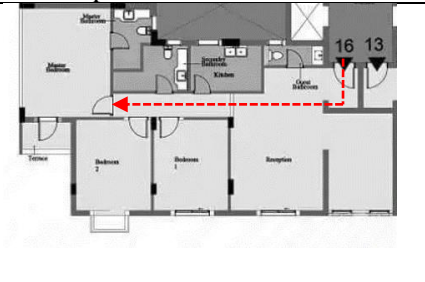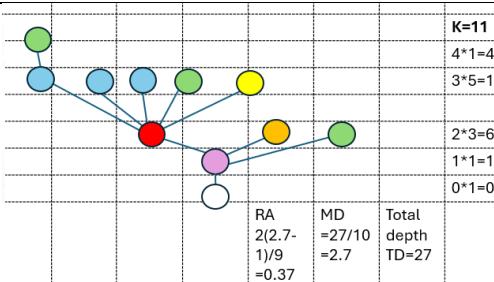**Table 1.** Public housing plans _analysis using justified graph.

Low-income prototype (social housing)		
AREA	**PLAN**	**JUSTIFIED GRAPH /CALCULATION**
P1 Unit area 90 m^2		
COMMENTS	There is penetration to reach the private zone through the public one and this effect privacy and efficiency, there is no segregation between zones.	
MIDDLE INCOME HOUSING (DAR MASR) prototype A		

P2 Unit area = 130 m²		

P2 graph values:

K=10
5*1=5
4*4=16
3*1=3
2*2=4
1*1=1
0*1=0

RA =2(3.22-1)/8 = 0.55	MD =29/9 =3.22	Total depth TD=29	29

Legend: Lobby, Bathroom, Kitchen, Bedrooms, Corridor, Reception, Entrance

The kitchen door from the public zone only, so the circulation for household to it is not private.

P3 Unit area = 115 m²		

P3 graph values:

K=8
4*1=4
3*3=9
2*2=4
1*1=1
0*1=0

RA =2(2.57-1)/6 =0.52	MD =18/7 =2.57	Total depth TD=18	18

Legend: Bathroom, Kitchen, Bedrooms, Corridor, Reception, Entrance

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comments	There is a problem inn visual privacy, as the entrance (public zone) connected visually with bedroom zones, also kitchen is connected directly with the public zone.

MIDDLE INCOME HOUSING (DAR MASR) prototype B

P4 Unit area = 130 m²		

P4 graph values:

K=11
5*1=5
4*5=20
3*1=3
2*2=4
1*1=1
0*1=0

RA =2(3.2-1)/9 =0.49	MD =32/10 =3.2	Total depth TD=32	32

Legend: Lobby, Bathroom, Kitchen, Bedrooms, Corridor, Reception, Entrance

Comments	Kitchen is in a middle zone between public and private, and this prototype contains a master bedroom with increase the total depth.

P5 Unit area = 100 m²		

P5 graph values:

K=7
2*5=10
1*1=1
0*1=0

RA 2(1.83-1)/5 =0.33	MD =11/6 =1.83	Total depth TD=11	=11

co

Legend: Bathroom, Kitchen, Bedrooms, Corridor, Reception, Entrance

Comments	Adding partitions between corridor and reception adding privacy to kitchen and the private zone

High income housing -new capital housing project type B8

P6 Unit area = 170 m^2		
Comments	Double doors in the kitchen increase privacy and connect the kitchen to both zones, private and public. There is kind of integration between public and private zone through the kitchen double door.	
P7		
Comments	The lack of segregation between public and private zones is evident in the kitchen's placement within the public area, far from the private spaces. This design inefficiency results in excessive circulation areas.	

High income housing -New Capital Housing project type A6

P8 Unit area = 152 m^2		
Comments	No segregation between guests and residence, less privacy. Kitchen is in public zone and far away from private zone.	
P9 Unit area = 142 m^2		
Comments	Adding partitions between corridor and reception adding privacy to kitchen and the private zone	

Arabesque housing project .

P10		K=12 4*2=8 3*5=15 2*3=6 1*1=1 0*1=0	Dressi Lobby Bathr Kitch Bedro Corri Rece Entra
		RA 2(2.7-1)/10 =0.34 | MD 30/11 =2.72 | Total depth TD=30	
Comments	While the kitchen offers more privacy than P9, it remains within the public zone, and there is still no clear separation between the entrance and the private areas		
P11 Unit area 176 m2		K=11 4*1=4 3*5=10 2*3=6 1*1=1 0*1=0	Lobby Bathroo Kitchen Bedroom Corridor Receptio Entrance
		RA 2(2.7-1)/9 =0.37 | MD =27/10 =2.7 | Total depth TD=27	
Comments	The presence pf an entrance lobby increases the sense of privacy, the kitchen is in the intermediate zone between public and private.		

source: author

6. RESULTS

By applying justified graph on public housing in Egypt, from 2013 till now, the results indicate some significant results.

Table 2. The results of Justified graph analysis.

prototype	TD	MD	RA	i
P1	18	2.6	0.52	1.92
P2	29	3.22	0.55	1.81
P3	14	2.3	0.52	1.92
P4	32	3.2	0.49	2
P5	11	1.83	0.33	3
P6	32	2.9	0.38	2.6
P7	31	3.1	0.46	2.17
P8	29	3.22	0.55	1.81
P9	20	2.5	0.38	2.6
P10	30	2.72	0.34	2.9
P11	27	2.7	0.37	2.7

source: author.

As shown in table 2, The lowest MD is the integration value is P2 (1.81), while the highest value is P5, despite having the same integration value as P1, P3 exhibits superior circulation and visual privacy. And the same in P6 and P9, they have the same value, while P6 is more efficient and used the double door of kitchen to connect household with public zone with private zone in private way.

7. DISCUSSION

Hypothetically, the mean depth of a space within a floor plan can be considered an indicator of its spatial isolation. A higher mean depth suggests that a room or space is more spatially isolated from other areas. Designers can achieve this isolation by locating bedrooms further from the entrance or by employing strategies such as avoiding doors that face each other directly. Designers or homeowners also can modify existing spaces to enhance spatial flow. For instance, by removing or adding walls and partitions between the reception and lobby, they can create a corridor that improves movement outside

the reception area and increases the efficiency of space utilization. The lobby is an independent transitional space for movement that acts as a buffer zone between the public and private zones. To provide visual and acoustic privacy, the lobby could be connected to the reception and the corridor to the private zone. Designers could prioritize allocating space to the entrance lobby as it is the most critical circulation space in determining the relationship between visitor and inhabitant zones. The topological depth between private zones and public zones seems to increase in highly segregated private areas such as master bedrooms and bedrooms.

As shown in P6, the presence of double doors in the kitchen increases visual privacy through connecting private and public zones, and this helps households to move from rooms to the kitchen without passing through reception.

8.CONCLUSION

Cultural adequacy is one of the seven key pillars within the United Nations' definition of the right to adequate housing. However, it is widely considered the most challenging element to measure, primarily due to the variability of cultural needs and lifestyles among households, even within the same socioeconomic group. The research focused on visual privacy as one of the most common cultural needs for all users in different housing level, this privacy could be achieved by segregation between public and private zone in housing design; by adding an intermediate reception lobby plus revising the relationship between different elements as even the door place could affect the degree of visual privacy. Also, kitchens can help in increasing visual privacy by adding two doors connecting between public and private zones. Designers are currently unaware enough of the boundaries between inhabitant and visitor zones, assuming that all inhabitants should attend to guests while they're hosted.

Housing design and planning consider not only the diverse needs of social and economic groups but also the cultural context and unique local environment of each community. The wide-ranging cultural and social needs of families make it difficult for designers to accommodate each household's unique requirements. Therefore, design flexibility is crucial to ensure that these needs are met.to cater to diverse needs, designers could offer a variety of housing options with different zoning and design features, allowing users to select the most suitable design for their preferences.

Additionally, while Space syntax is a powerful tool that provides a quantitative and objective method for measuring design quality and structure, reducing subjectivity in design, and Justified Plan Graphs (JPGs) have been a cornerstone of Space Syntax analysis for years, certain limitations and criticisms have emerged throughout the analysis of different prototypes.

Conceptual and Theoretical Limitations:
- Oversimplification: JPGs transform complex spatial configurations into a simplified graph and admit all urban systems or architectural plans to be compared with each other but potentially losing crucial spatial information visual privacy through passing between zones.

- Lack of Depth; The method primarily focuses on connectivity and accessibility, neglecting other spatial qualities like form, size, and orientation.

Methodological Concerns:
- Sensitivity to Root Space Selection; The choice of root space significantly influences the resulting graph, affecting analysis outcomes.

- Computational Intensity, especially for large and complex spaces, generating JPGs can be computationally demanding.

- Limited Application as JPGs is primarily suited for analyzing planar layouts and may not be suitable for complex, multi-level buildings.

Practical Critiques:
- Correlation vs. Causation; While JPGs can identify spatial patterns, establishing causal relationships between spatial configuration and human behavior remains challenging.

- Neglect of Social and Cultural Factors, JPGs often disregard the influence of social and cultural factors on spatial use and perception.

Despite these concerns, JPGs continue to be a valuable tool in Space Syntax analysis and can help in demonstrating the impact of depth in housing design, and comparing between different prototypes, but it can't reflect a complete vision about visual privacy. By understanding these limitations, researchers can employ the method more effectively and critically.

Conflicts of Interest: The author declares no conflicts of interest.

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الكفاية الثقافية والخصوصية البصرية في تصميم وحدات الإسكان الحكومي : بين التكامل والعزلة

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ملخص البحث

تعد الكفاية الثقافية واحدة من أكثر الحقوق غير المحددة بوضوح في حقوق السكن اللائق، حيث لا يوجد تعريف محدد لها، بل تختلف من سياق إلى آخر داخل نفس البلد. تستكشف هذه الورقة البحثية مفهوم الكفاية الثقافية في مشروعات الإسكان العام بمصر، مع التركيز بشكل خاص على الخصوصية البصرية والفصل المكاني. وتدرس التصميمات السكنية الحالية لمشروعات الإسكان العام الحديثة التي تم تطويرها خلال الأعوام الـ11 الماضية، وتحلل مدى توافقها ومرونتها مع الاحتياجات الاجتماعية والثقافية للسكان، وخاصةً متطلبات الخصوصية البصرية.يبدأ البحث بدراسة الأدبيات المتعلقة بتعريف الكفاية الثقافية، خاصة في تصميم المساكن. تلي ذلك دراسة شاملة لحصر مشروعات الإسكان العام الحديثة في مصر. ثم تم اختيار أربعة مشروعات سكنية كعينة بناءً على معايير محددة، تضم 11 نموذجًا تتراوح مساحاتها بين 90 مترًا مربعًا و180 مترًا مربعًا لمستويات سكنية مختلفة. أخيرًا، تم تحليل المساقط الافقية باستخدام "المخطط المبرر" كأداة لتطبيق تحليلات التركيب المكاني، لتحديد مدى تحقيق الخصوصية البصرية ومقارنة النماذج المختلفة.تحدد الورقة مجالات التحسين وتقدم توصيات لتصميم إسكان حكومي عام ذي ملاءمة ثقافية يعزز الإحساس بالانتماء والكفاية. تكمن أهمية هذا البحث في جمعه لمشروعات الإسكان العام الحديثة في مصر، حيث يتم تحليل هذه المشروعات باستخدام أداة الرسم البياني لتحديد ما إذا كان حساب متغير العمق يعكس بشكل فعال الخصوصية البصرية في التصميم السكني، أم أن عوامل أخرى تؤثر بشكل كبير على هذا الجانب. بالإضافة إلى ذلك، تسلط الدراسة الضوء على قيود استخدام المخططات المبررة في تحليل الوحدات السكنية، خاصة فيما يتعلق بالمتطلبات الثقافية للخصوصية .

الكلمات المفتاحية: الكفاية الثقافية – الخصوصية البصرية – الفصل المكاني – التركيب المكاني – المخطط المبرر