

Towards a Refined New Concept of New Urbanism in Egypt

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Abstract

This paper introduces a method to apply the principles of New Urbanism on an Egyptian neighborhood unit. It extends to their relationship with the common dimensions of urban design. It proposes four objectives: a) Interpret the new concepts of New Urbanism, b) Cite principles of Urbanism and trends emanating from it, c) Discover the structure of the philosophical concept of urbanization and d) Design a matrix inventories the compatibility of the principles of New Urbanism and urban design dimensions. Finally, the matrix tests the combination of the principles and the dimensions in a traditional Egyptian urban fabric, Basilica Church Plaza.

Keywords: New Urbanism; Urban Design; Urban Design Dimensions; Behavioral Dimensions; PRAV.

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1.0 Introduction

1.1 Urbanism Today

In the nineties, urban design and New Urbanism, as a new trend in Urbanism, emerged in synchronization (Duany, 2001). It integrates both of the perceptual, functional and behavioral dimensions with the sustainable environmental ideas. At the present time, the experts in urban design professional practice taking into account the people-related issues as a base to build cities (Carmona, 2010). Notably, this makes livable cities based on design solutions; convenient to the term of quality of life. The ABCs of urbanism is one of the current global trends emanating from the concept of urbanism that has emerged recently to (Artibise, 2010), as a summarizing method. It appears in twenty-six approaches arranged by spelling English letters (Fig. 1). The main thing is supporting the social life to make cities livable.

1.2 Pressing Global Problem

Since the beginnings of the twentieth century, the mixed land-use is the main purpose of planning and designing the neighborhood. With the emergence of modern architecture, the dominance was for the car. After the World War II, this trend named as sprawl or conventional suburban development (CSD) (Duany, 2001: 3-18). Researches criticized CSD because of lacking pedestrian priority (Urbanism, 1996:5-10; Duany, 2001). On the other side, many cities suffer from the overcrowding due to the dependence on cars (Panerai, 2004:141-143). The spread of the deteriorated areas that include social groups of low-level of education and ethics comes without any plans for manipulating in the communities of the developing countries. Not only mistiness of the ability of the project investments, but also the architectural character, traffic problems and environmental issues (Gilderbloom, 2005:40; Steuteviller, 2009). Therefore, the New Urbanism came to improve the communities to solve transportation problems in the forefront priorities. It suggests action plans to CSD in order to improve the communities within walking distances.

1.3 Research Problem and Hypothesis

Although New Urbanism is for livable cities, but there is an inappropriate use of the principles commensurate with the adequate uses of urban design dimensions. Therefore, the paper suggests a hypothesis addressed as "if each one of the group of the principles of New Urbanism and behavioral dimensions makes a livable city, the integration between both will provide solutions convenience to the quality of life". The paper inventories the principles of New Urbanism inside an Egyptian neighborhood. It extends to their relationship with the common dimensions of urban design. It provides a matrix addressed as "New Urbanism versus urban design dimensions" to be tested upon the case study from the behavioral milieu; it is the most tangible to the principles of New Urbanism.

2.0 New Urbanism Upbringing

The principles of New Urbanism started as a movement in urban design in 1980 (Carmona, 2010; Duany, 2001), to improve the pedestrian movement in the neighborhood. It continued

to grow in the course of reforming the aspects of urban planning. It influenced in areas according to standards of urban design. This theory comes to improve the built environment and fosters the quality of life in safe and pleasant places. It retrieves the notion of citizenries which include various activities within a short walking distance. It drives the citizenries towards the utopian city, within the range of uses, people, forms and meanings (Kelbaugh, 2001).

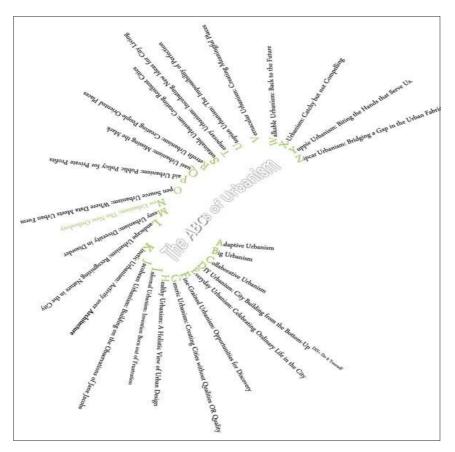


Figure 1: ABC's as a Trend of Urbanism

2.1 The New Urbanism Principles

The Charter of New Urbanism Congress (CNU) declared twenty-seven principles (The Congress of New Urbanism, 1996; Taarup, 2000). The principles are nine principles for each one of the region, the neighborhood and the buildings block. The principles declared to guide public policy, development, urban planning, and architecture design. According to a literature review pursued on CNU, the principles of New Urbanism, at the level of the neighborhood,

modified to be ten principles instead of nine (Carmona, 2010). The ten principles can be listed in five groups (Fig. 3). These are; first, enrich the community to provide choices for pedestrian with various activities for all users. Secondly, the comparability of urban component, thirdly, applying for the urban Infill, fourthly, holds smart transportation of connection. Finally, ensure the quality of life.



Figure 2: The Urbanization as a Global Problem: (a) the USA; (b) China; (c) Egypt; (d) Informal Transportation in Developing Countries (United Nations Human Settlements Program, 2009: 13); (e) India; and (f) Informal Settlement, Egypt.

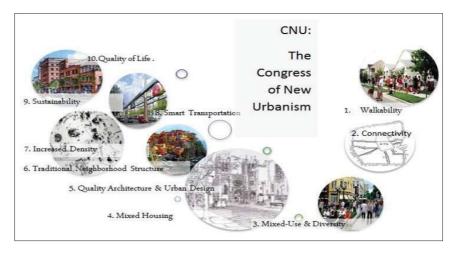


Figure 3: The Principles of New Urbanism from CNU Point of View

2.2 How Can CNU Applied?

Some projects adopted the principles of New Urbanism; these are Adelaide and Copenhagen. The developments in Copenhagen followed for turning a car oriented city into a walkable city (Kersi, 2000). The public realm and increased taxes were the most demands

catalysts for this development. In the city of Adelaide reclaiming, Gehl defines 4 terms to match the New Urbanism trends (Gehl, 2002). These terms are the walkability/connectivity, responsiveness, appropriateness and variety/ robustness (Fig. 4, 5, 6 and 7). The research can classify the principles of New Urbanism, from the point of view of CNU and its implication in Adelaide and Copenhagen, into 4 categories, address as PRAV, Table 1.

	Table 1: The Concluded Principles	
The let	rm Ubg Main Keywords	
(P)	Pedestrian friendly, walkability, connectivity and car oriented.	
(R)	Responsiveness.	
(A)	Aesthetics, appropriateness and quality of architecture.	
(V)	Variety and robustness.	

Ula	Copenhagen, 1993	Adelaide, 2002
Pedestrian Friendly Neighborhood should have Compact, pedestrian friendly, and mixed-use, pedestrian friendly, and mixed-use, single use, and should should be applied by use of the should be applied by the possible. Corridors are regioned Connectors of neighborhood design when possible. Corridors are regioned Connectors of neighborhood should be districts; they range from boulevards and rail lines to rivers and parkways. Appropriate building densities and land use should be wither walking distance of transist to become a viable alternative to the automobile. Schools should be sized and located to enable children to walk or bicycle to them.	Walkability and Car-Oriented 1. Converting street into pedestrian thoroughfares, 2? Reduce traffic and parking gradually, 3.Turn public lots into public square, 4. Make bicycle available. 5.Smart Transportation	Walkability and Cognectivity 6 Boomin to walk with dignity, integrity and without Vercrowding 7.Comfortable climatic conditions 8. Pleasant facades at street level to stroll alongside and observe 9.Good conditions for people with disabilities and prams 10. Clear structure of pedestrian system A pedestrian system that connects important destination promenade through the city 11.Good walking rhythm with few interruptions 12. Many well placed benches. Widespread secondary seating such as steps and edges of planter boxes 13.Well-situated cafes and outdoor restaurants 14. Beautiful and effective lighting.

Figure 4: This Represents the Interrelation between the Title P with both the CNU, Copenhagen and Adelaide Represented by a Dotted Line (Authorbased on Gehl, 2002;KersiF., 2000;Evans, 2012)

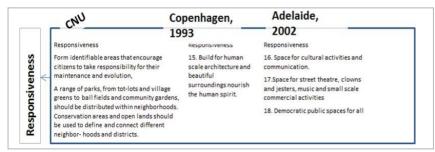


Figure 5: This Represents the Interrelation between the title R with both the CNU, Copenhagen and Adelaide Represented by a Dotted Line (Source: Ibid)

3.0 Urban Design Dimensions

The urban design through classified documents can be represented in six common dimensions (UDD) (Carmona, 2010). The UDDs are the perceptual, functional, visual, temporal, behavioral and environmental dimension (Banerjee, 2001; Baran, 2003; Bartuska, 2007; Carmona, 2010), Fig. 8. The present study focuses on the criteria of the behavioral dimension for the point of being the most striking feature to the principles of New Urbanism. Table 2 illustrates the two main descriptive indicators of the behavioral dimension.

S	CNU	Copenhagen, 1993	Adelaide, 2002
	Quality The economic health and	Quality Architecture & Urban	Appropriateness
if so	harmonious evolution of neighborhoods; districts, and	Design (Aesthetics) 19.Ensure that a code of aesthetics	22.Low level of noise and few disturbances
etics, priaten uality of ecture.	corridors can be improved	and esthetics standards,	23.Intimate public spaces
thetics, ropriate Quality o	through graphic urban design	20 Foster the human comfort	24.Fine views and good
opropr	predictable guides for	21.Create a sense of place; Special	details
Aestho Appro and Qu Archit	change,	placement of civic uses and sites within community,	25.Interesting facades, window displays and exhibits

Figure 6: This Represents the Interrelation between the Title A with both the CNU, Copenhagen and Adelaide Represented by a Dotted Line (Source: Ibid)

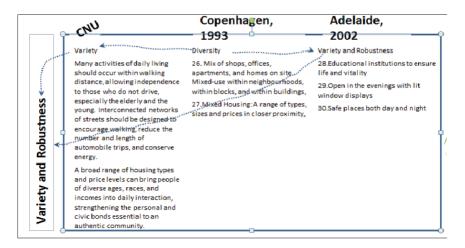


Figure 7: This Represents the Interrelation between the title V with both the CNU, Copenhagen and Adelaide Represented by a Dotted Line (Source: Ibid)

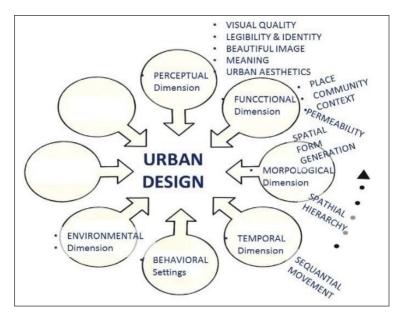


Figure 8: The Six Dimensions of Urban Design Table 2: The Behavioral Dimension Includes Certain Sub Issues and Indicators (Berison, 2008; Ilewelyn, 2010; Evans, 2012)

4.0 Approach Apparatus

The paper deals with New Urbanism principles in comparison with the one of the six urban design dimensions. Therefore, it assesses the principles of the mentioned theory on an Egyptian neighborhood. In addition, it extends to their relationship with the behavioral dimension. Thus, the paper formulates a matrix which called as "New Urbanism vs. Behavioral Dimension",

Fig. 9.^{*} This matrix tests the behavioral milieu and the principles of New Urbanism upon the case study. Since, it adapts an assumption which concedes that the behavioral dimension is the most adjacent to the theory (Dunham, 2000).

4.1 The Survey

The process of surveying aims at verifies the validity of the principles of New Urbanism in the Egypt. The field survey encompasses three main phases: appreciate the context, site survey and getting out the concluded remarks (table 2).

^{*} The matrix has two main axes: New Urbanism principles and the general framework of the behavioral dimensions. Fig. 10 shows the principles, which conclude from Fig. 4, 5, 6 and 7, list as thirty principles within four main axes. New Urbanism principles are in the vertical column and the behavioral dimensions ratio of relations between principles and dimensions rating getween high and low. The highest comes from high potentialities with low constrains; medium occurs from small potentialities with low constrains, and the lowest occurse from small potentialities with low constrains; medium occurs from small potentialities with low constrains, and the lowest occurse from small potentialities with one constrains with dots, no joint impact shows by blanked cells. One issue is out of author specialization; the physiological abilities (Fig. 10).

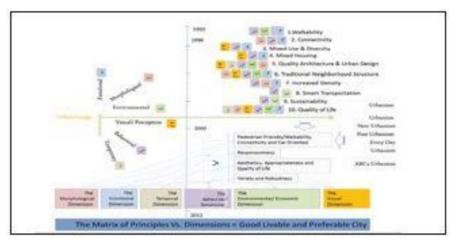


Figure 9: The Relationship between the Urban Design Dimensions and Principles of New Urbanism. It shows that the Behavioral Dimension is the Most Connected to all New Urbanism Principles

Table 2: The Behavioral Dimension Includes Certain Sub Issues and Indicators (Berison, 2008; Ilewelyn, 2010; Evans, 2012)

		The Indicators
		It depends on the followings. The physiological abilities of the users that hit the behavioral response.
		Aperson's presence that distinguish him from others, and give him unique in the way interacts with the surrounding environment (personalization).
		The social scene where the person resides determined by the rules by which routes, and the formation of relations between people which imposes on all of them.
	saues	The cultural background is as sets of values and beliefs of the society, in which the individual belongs to and that govern the behavior and from the experience. Human needs direct the
	al Iss	attitudes of citizens. Public participation in all design process and implementations.
	hysic	Theresemblancebetweenallusersincreases the effective interaction in the behavior context.
	Non-Physical Issues	Theright to operate within the public spaces. The right to make political practices.
	6	It depends on:
Denavioral Ulmension		Therangeoflandownership according to the form of land from public to sen i- private, reduce the effective interaction.
Ľ.		The limits of the surrounding buildings and trees make a powerful of the space (enclosure). The
Dial D	Issues	defined and connected edges create a point of containment increase the effective interaction between people and the external environment. Movement system which affects the
		performance of such places and means of access and transportation to the parking space
	ysical	around the pool of housing units or positions of other activities. The treatment used in the space raises the value of the efficiency.
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		Providegent Abit line	Personalization	Social Constant	Calanii Background	Haman Neterla	Public Purscipation	Equality Between all users	Presidentia set within the Public Bostonia	Preactorian the policical precisions	The overlanding	Enclosure	Monoment spectre	The Dasky of Instantic used methodo spece
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	Principle 3	1000		1	1	1				1	1	100	1	8
20	Principle 4				-	1							1	
8	Principle 5	100				1	2.3	- 33	1	S 8	- 83	- 83	1	8
3	Principle 5		18		1	1	1.11	- 8	1	5 3	- 23	1		1
1	Principle 7	100		1	1	1	100	1	1	1 13	. 33	. 33		0
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11	Principle 17		1	1	1	1		- 5	1	1	- 88	- 88		83
23	Principle 15	0.57	1	1	1	1	3.0	1	1	1	1	- 8	1	÷.
	Principle 19		1	1								1		1
2.5	Principle 20	192	1	1	1	1		1	1		- 12	1		1
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100	Principle 22	100	1	1	13	1	101	- 2		8 8	- 33	193		1
111	Principle 23	100	1	1	L	1	1.11	1	1	S 18	- 18	- 18		33
Aserbanca, Appropriatences and quality of Architecture	Principle 24		1	1	1	1		- 6	1	2 8	- 88	1		1
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2.2	Principle 30	1000		1	1	1			1	1	1	- 8	1	8

Figure 10: The Matrix "New Urbanism versus Behavioral Dimension"

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Figure 11: (a) The Basilica Church Plaza has the Dominance in the Site as a Landmark; (b) The Basilica Church appears from Al-Ahram Sreet;

(Source: Ibrahim Shewei);

(c) The Mode of Transportation passes by in Nazih Khalifa Street; (d) Haroon El-Rushed Street (source: Ibrahim Shewei); (e) The Metro line in El-Ahram Street; (f) Belgium Building Style;(g) Osman Ian Affine Street

(Source: Third year students, Ain Shams University, 2011)

4.2 Appreciate the Context

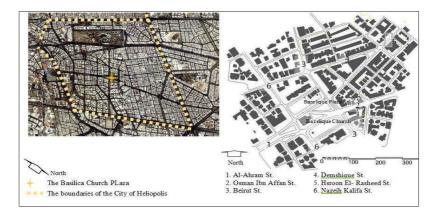


Figure 12: (a) The photo represents the city of Heliopolis, (source: the author based on (Dobrowlska, 2006); (b) shows the main feature in the study area (source: author and Sara Noeir) The Basilica Church Plaza is the most predominance, Fig. 12, 13, functionally and visually, square in the city of Heliopolis.^{*} The choice of the Basilica Church Plaza, as a study area, is for its location as a focal point. It contains controversial elements of behavioral aspects, which could be analyzed from the perspective of PRAV. In addition to its location, the cohabitation field of the researcher makes exploring the site more reliable.

4.3 The Survey Outcomes: Principles vs. Dimensions

This section answers the following question "to what extent does the Basilica Church Plaza conforms to the PRAV?" Fig. 14, 15, 16, and 17 find out results horizontally and vertically using a quantitative analysis. From Fig. 15, the paper concludes some remarks. There is no correlation between New Urbanism and both the properties and the public participation. Vertically, the issues equal between all users; enclosure and transportation are taking a high percentage of grades. Consequently, it leads to the percentage of a weak equity among all users. The percentage of the grades that follow express of the enclosure, the movement system, and the right to act in the outdoor public spaces range from medium to high. Ultimately, the following three principles; 6th, 9th and 13th received the highest percentage.



Figure 13: (a)Al-Ahram Street; (b) the occupation of sidewalks by shops extension and roadside parking; (c) bad treatment of sidewalk pavement; (c) The occupation of sidewalks by vendors (e) the greenery area nearby the Basilica Church surrounded by a fence; not accessible and not used as outdoor space; (f) Medan Egamaa district

(Source: Ibrahim Shewei); (g) The unsafe pedestrian movement (Source: third year students, Ain Shams University, 2011)

^{*} The city of Heliopolis atablished in the first decade of the previous century. The Egyptian government granted to Baron Empan a concession for the urbanization of (Ctrl) - Scaeser hectares. He gave a behest to Gaspar, the architect, to plan a new community. The ancient Heliopolis lies in the Cairo suburban of Media (Ctrl) - Scaeser hectares. He gave a behest to Gaspar, the architect, to plan a new community. The ancient Heliopolis lies in the Cairo suburban of the average and the above-average housing. The second districts Beinut Street separates between them. The first district is Korba, It lies to the south. It has both the average and the above-average housing. The second district lies in the northern part of the site. It addresses as Medan El-Gamaa. The second district devoted to economic housing and crafts areas. Baron Empan derived the idea of electrical tram to develop remote areas and raise their value by linking them to down town. The Basilica Church Plaza is in an intermediate zone between the two main districts, Korba and Medan Egganga.

Furthermore, the last sub issues received a small percentage of the grade of the behavioral dimensions in comparison with the New Urbanism principles. Horizontally, the relationships between both 8th and 13th principles comparing with the behavioral settings receive a high percentage (100 %). The same as the previous step, the principles such as 4th, 7th, 12th, and 14th have 0 % in with the behavioral issues. Therefore, these mentioned principles should have priority in redesigning process; especially, they have the highest achievements in the study area.

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Figure 14: This Address the Principle Pversus the Behavioral Dimensions

From Fig. 15, the matrix finds out some notes vertically and horizontally. Vertically, the public participation has no effect to the principles of the New Urbanism. The social context, cultural background and the ownership achieve 0% of the number of relations

between them and the principles of the New Urbanism. This percent is detectable with a serious issue which is achieving the responsiveness. Bad responsiveness may affect negatively on achieving the New Urbanism principles. The freedom to act within the Public spaces, the ownership and the quality of treatment has a high ratio (100%) on the responsiveness quality. Horizontally, all principles, except principle 17, have a poor relationship with the behavioral dimension. Principle 17 has no feedback on this matter.

Fig. 16 indicates some regards vertically and horizontally. Vertically, there is no correlation of the New Urbanism principles with the issues of public participation, ownership, and freedom in the political practices. The low percentage of the total number of relationships between the issues of personalization, social context, cultural background, human needs, and quality of treatment inside the space achieve with the New Urbanism principles. In spite of, the percentage of the most of the issues include strong impacts on the site. Medium percentage (50 and 60%) of the total number of relationships between the issues of the freedom to act within the public spaces and enclosure with the New Urbanism principles. Horizontally, a poor percentage of the behavioral milieu with the principles 20, 21 and 22. In spite of, the percentage of most of the principles before being poor, the principles 22 and 23 have medium impacts on the site. High percentage (85%) of the total number of relationships between the principles 24 and 25 with the behavioral milieu. Previously, the above provides a future vision to the urban designer to increase the values of the site. It provides a significant importance for testing and developing the matrix. That refers to the importance of the strengthening of the correlation between the New Urbanism principles and the urban design dimensions.

							В	ehavio	oral Dime	nsion					
		Personalization	Social Context	Cultural Background	Human Needs	Public Participation	Equality Between all users	Freedom to act within the Public Spaces.	Freedom in the political practices	The ownership	Enclosure	Movement System	The Quality of Treatment		
	Principle 15 (total points of	•	•	٠	•			×	×		•				
	achievement 5 points)	- 1	0	0 -	- 1						- 1			3/5	60
58	Principle 16 (total points of	•	•	•	•			•	•						
Responsiveness	achievement 4 points)	0 -	0 -	0 -	- 1			0 -	- 1					2/4	50
-NIS	Principle 17 (total points of	•	٠	•	•			•	•						
6	achievement 6 points)	0 -	0 -	0 -	0 -			0 -	0 -					0/6	0
csl	Principle 18 (total points of	•	•	•	•		•	•	•	•		•			
🗠	achievement 9 points)	- 1	0 -	0 -	0 -		- 1	- 1	- 1	0 0		- 1		5/9	55
		2/4 50	0/4 0	0/4 0	2/4 50		1/1 100	1/3 33	2/3 66	0/1 0	1/1 100	1/1 100			
	High Achievement Me Mutual Relationship	edium	ı Ach	ieven	nent]	Poor A	chievemer	nt >	< Cor	aflictin	g Rel	ationsł	

Figure 15: This Addresses the Matrix "Responsiveness versus Behavioral Dimension"

From Fig. 17, the matrix finds out some notes vertically and horizontally. Vertically, there is no any correlation between the public participation and New Urbanism principles. The

issues of social context, cultural background, human needs, the freedom to act within the public spaces and ownership obtain the percentage between 80-100% of the total percentage of the relationships between the previous dimensions and New Urbanism principles.

	22								Behav	vioral I	Dimension	L					
		Pe	So		8	Hu	Pu	Eq	- Spo	Fre	Fre	En	Ma	The	-		
				Personalization	Social Context	Cultural Background	Human Needs	Public Participation	Equality Between all users	Freedom to act within the Public Spaces.	Freedom in the political practices	The ownership	Enclosure	MovementSystem	The Quality of Treatment used	Total points of achievement	%
	Principle 26 (total points achievement are 6 points				•	•	•		•	•		•				6/6	10
SSS	Principle 27(total points achievement are 6 points				•	•	•		•	•	•	•				6/6	100
obustne	Principle 28 (total points achievement are 2 points				•		- 25		20			•				0/2	0
ariety and Robustness	Principle 29 (total points achievement are 3 points				•	•										2/2	100
V ariel	Principle 30 (total points achievement are 7 points				•	•	•			•	•	•		•		6/7	85
		° of poir Percenta		65	4/5 80	4/4 100	3/3 100		2/2 100	3/3 100	1/2 50	3/3 100		0/1 0			

Figure 16: This Addresses the Matrix "A versus Behavioral Dimension" Figure 17: This Addresses the Matrix 'V' versus Behavioral Dimension

Therefore, the principles 30 should take into account the political issues in Cairo. Horizontally, the percentage of the principles of variety and robustness in its relationships with the behavioral dimensions ranging between 80-100%. As well as, the principle 28 in its relationships with the issues human need and movement system has not taken any percentage.

5.0 Conclusion

This paper tried to find out the relationship between the principles of New Urbanism with one of the urban design dimensions. This was under a certain hypothesis. The hypothesis will be true if taken into account the following notes. First, the public participation can play a role in motivating the principles and dimensions, towards a real application. For examples, although the New Urbanism called for bicycle as a clean transportation, some communities are against the idea. Second, the principles of New Urbanism should respect the cultural context of the certain context. Third, the percentage of the mutual impact between the principles and the dimensions numerically needs to be done by a digital model.

Current work followed the inductive analytically and an empirically approaches. The first focused on the quantitative analysis whereas a case study analysis depends on the

results of the previous quantitative; by using the matrix that combines the principles of New Urbanism versus the human behavioral dimension. The second was the introducing the principles of New Urbanism in a comparative way with the urban design dimensions. The paper designed, for this purpose, a matrix which addressed as the principles of New Urbanism versus the behavioral dimension. In addition to, the matrix verified the validity of the principles of New Urbanism versus the dimensions of urban design in an Egyptian neighborhood unit, taking into account the of the urban design dimensions to accommodate the change in the human needs and rights.

The paper proposes future researches as improve the proposed integrated approach, evaluate a matrix that addressed the role of all urban design dimensions related to the New Urbanism principles, and provide expanded the matrix to cover all the Urbanism principles that exist within the urban design dimensions. In addition to, the PRAV may play a role in the constructive integration within neighborhood units inside the smaller Arab communities than Cairo.

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