



An Assessment of Street Design With Universal Design Principles: Case in Aswan / As-Souq

Evrensel Tasarım İlkeleri Bağlamında Cadde Tasarımı Üzerine Bir Değerlendirme: Asvan / As-Souq Örneği

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ABSTRACT

The street is the backbone of the successful community. The design of an urban street should accommodate all people. This study focuses on the concept of "Universal Design for streets and outdoor spaces". Besides, illustrates the basic considerations for "urban street design". In the paper a case study, to examine urban public space, focusing on universal design is presented. The case study was conducted in AS-Souq street, Aswan, Egypt. For the case study, a descriptive research methodology was used. The field research encompassed: "questionnaire" as a quantitative technique and "observations" as qualitative strategies. A questionnaire was conducted in August 2015 with 330 respondents in total. The statistical analysis of survey questionnaire was achieved by using SPSS program. Discussing the findings of the case study is thought to lead a way to other public spaces specifically streets to be more inclusive in design. This study confirms that applying UD as a strategy ensures equal and democratic rights in society for all, consequently encouraging full participation in social life by ensuring access to and usability of all aspects of society, including the built environment, thus improving "quality of life" in the urban fabric and the entire community.

Keywords: *As-souq Street; public space; Universal Design Principles.*

ÖZ

Bu çalışma "Sokaklar ve Diğer Açık Alanlar için Evrensel Tasarım" kavramı üzerinde yoğunlaşmıştır. Çalışma aynı zamanda " sokak tasarımı" ile ilgili birtakım temel düşüncelere de değinmektedir. Bu çalışma için evrensel tasarım bağlamında, kentsel kamu alanlarının bir parçası olan sokakları incelemek üzere Mısır-Asvan'daki AS-Souq Caddesi'nde bir alan çalışması uygulanmıştır. Çalışmanın nicel yöntemi olarak "anket", nitel yöntemi olarak ise "gözlem" kullanılmıştır. 2015 yılının Ağustos ayında toplam 330 katılımcıya bir anket uygulanmıştır. Anket sonuçlarının istatistik değerlendirmeleri SPSS programı ile yapılmıştır. Makalede, çalışma sonuçları ayrıntılı biçimde sunulmaktadır. Bu çalışma aynı zamanda şunu göstermiştir ki; Evrensel Tasarımın strateji olarak benimsenmesi, toplumdaki herkese eşit hakların sunulmasını ve demokratik bir ortamın oluşmasını sağlamaktadır. Böylelikle herkesin toplum hayatına katılımı teşvik edilmekte, yapılı çevre de dahil olmak üzere her alana erişimi sağlanmakta ve kentsel doku ve tüm toplumda "yaşam kalitesi"ni arttırmaktadır.

Anahtar sözcükler: *As-souq Caddesi; kamu alanı; Evrensel Tasarım İlkeleri.*

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Introduction

Universal Design (UD) is not a trend, but an enduring design approach that assumes the range of human ability is ordinary, not special. The intent of “UD” is to simplify life for everyone by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost.¹

After the Second World War, the universal human rights were declared officially in the developed countries of America and Europe, and as a result of that declaration, studies increased significantly to overcome the difficulties faced by people with disabilities.

Elderly people and people with disabilities in Egypt absolutely have the same rights as in the other developed countries, such as living in community without being discriminated from the social life, engaging the social activities, enjoying their built environments, receiving services equally, and utilizing outdoor spaces.

With the significance and the role of the universal design in mind, the objectives of this study are determined as follows:

- To find the requirements for a high-quality accessible and a legible street that directs and assists the most casual of users in finding their way around,
- To lead a way in achieving an attractive and inclusive street for all people.
- To draw the attention, to the concept of universal design, of professionals, which cover architects, city planners, industrial designers, lecturers, academicians, administrators, and investors.

Concerning the methodology of the study, the field research was precisely designed with regard to the concept of “UD for streets and outdoor spaces”. In this paper a case study to examine streets as a part of urban public space, focusing on universal design is presented. The case study was conducted in AS-Souq street, Aswan, Egypt. For the case study, a descriptive research methodology was used. Also, the study’s methodology encompasses two parts: “the questionnaire study and direct observations of the researcher”.

The theoretical framework of this paper is shown in (Figure 1) which displays concepts together with their definitions. Besides, the context, design principles, and qualities that are used for this study are presented in the figure. All mentioned elements of the theoretical model overlap with each other which lead to “Universal Pattern” of the study.

Related Design Concepts

Recently, several terms have appeared which describe

similar though somewhat distinct design concepts. These concepts apply to the design of the products, built environments, and outdoor spaces.

“Barrier-free design” is the absence of obstacles in an environment, therefore allowing persons with physical, mental or sensory disabilities safer and easier access into buildings and then the use of those buildings and related facilities and services.² While, “Accessible Design” is the design of entities that satisfy specific legal mandates, guidelines, or code requirements with the intent of providing accessibility to the entities for individuals with disabilities.³

“Adaptable design” Provides design features that are usable by groups with disabilities, however, remain concealed or omitted until needed.⁴ Besides, “Usable design” serves to create products that are easy and efficient to use.⁵

Also, “Life Span-Design” is the design for all ages which accommodates all ages, sizes, and abilities. Thoughtful product design, so that it can be used by anyone to its greatest extent possible.⁶ Also, “Inclusive Design” is defined as products, services, and environments that include the needs of the widest number of consumers.⁷

“Design for all” is about ensuring that environments, products, services and interfaces work for people of all ages and abilities in different situations and under various circumstances.⁸

Finally, “Universal Design concept” is explained in the following part of the article.

Universal Design & Outdoor Spaces

The term “Universal Design” originated in the USA,⁹ and was first entered into usage in the mid-1980’s by the American architect, “Ronald L. Mace”.¹⁰

“UD” is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people, regardless of their age, size, ability or disability.¹¹

(Figure 2 and 3) explain the differences and relationships between universal design and related design concepts mentioned above.

UD concept has its roots in the field of architecture. It

¹ <http://www.adaptiveenvironments.org/universal-design/history-universal-design>.

² Alberta Municipality affairs and Safety Codes Council, 2008.

³ Erlandson, 2008, p. 18.

⁴ Carr and Weir and Azar, 2013, vol 2013, p. 1-8.

⁵ <http://www.washington.edu/doit/what-difference-between-accessible-usable-and-universal-design>.

⁶ <http://interiordesign-jeanette.blogspot.com/tr/>

⁷ <http://www.inclusivedesigntoolkit.com/betterdesign2/>

⁸ <http://www.inclusivedesign.no/practical-tools/definitions-article56-127.html>

⁹ <http://www.inclusivedesign.no/practical-tools/definitions-article56-127.html>

¹⁰ Skavlid and Olsen and Haugeto, 2013, p. 6.

¹¹ <http://access.ecs.soton.ac.uk/blog/training/universal-design/>

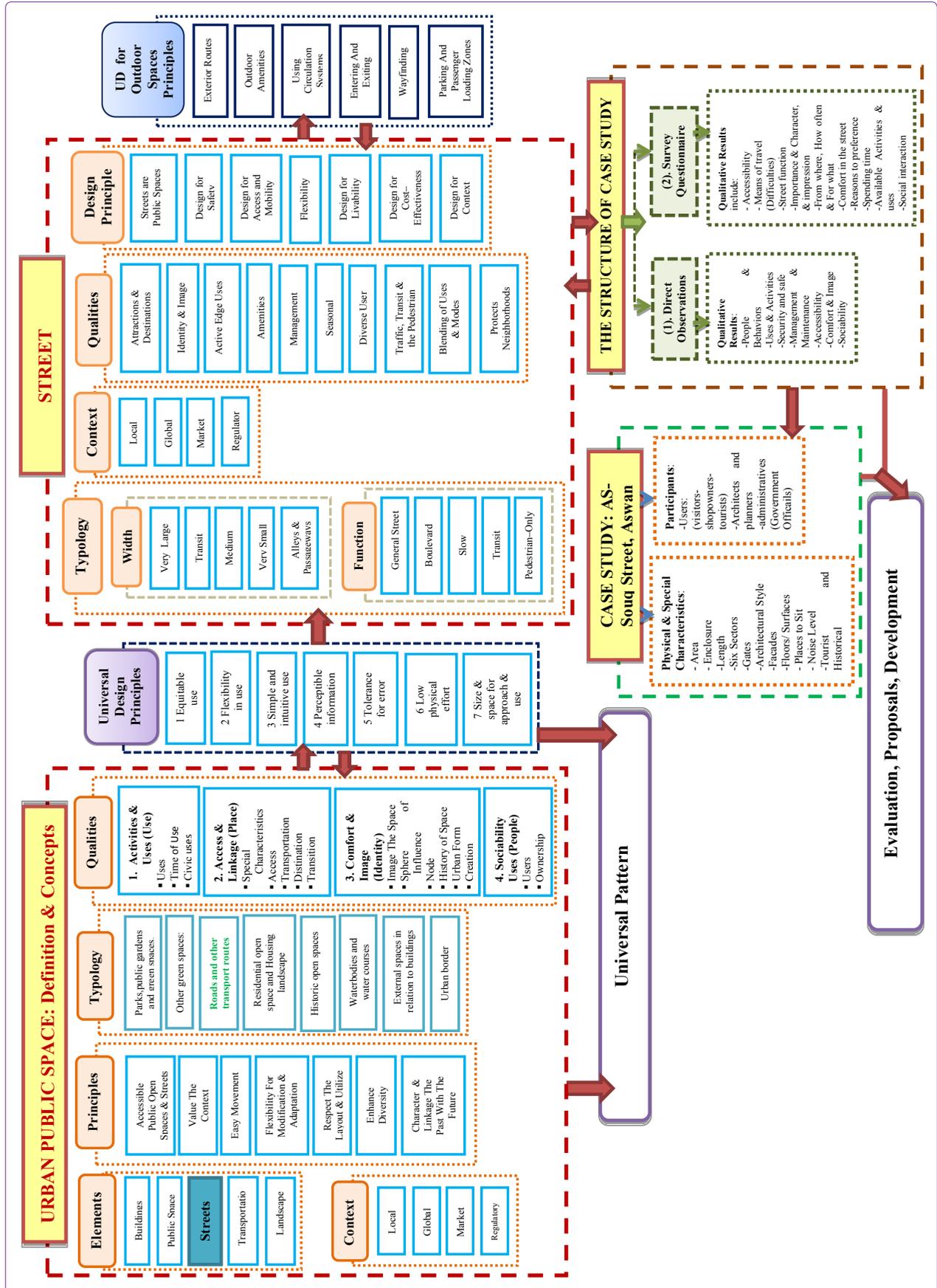


Figure 1. The theoretical framework of this study.

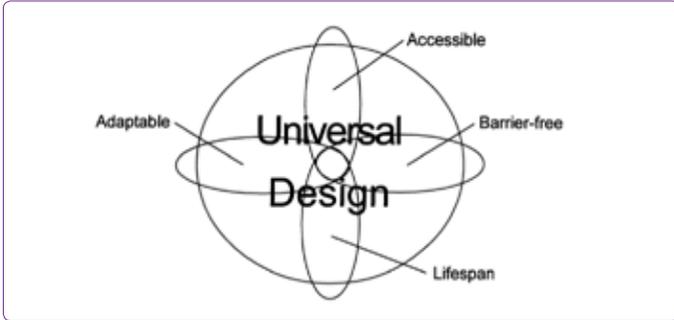


Figure 2. The relationship among universal design, accessible, adaptable, lifespan, and Barrier-free design.¹²

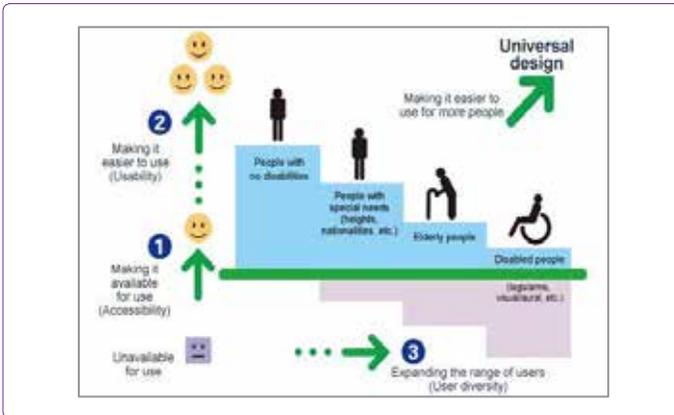


Figure 3. The difference among Usability, Accessibility, and Universal Design.¹³

encompassed removing obstacles for people with disabilities, which entailed retrofitting buildings as well as changing the methodology for designing new ones.

It is also a strategy that aims to make the design and composition of different environments and products usable for everyone. It attempts to do this in the most independent and natural manner possible, without the need for adaptation or specialized design solutions.¹⁴

There are numerous benefits to be gained from making innovative designs have universal appeal and be as inclusive as possible, such as (Individual, Social, Business Benefits, and Compliance with Legislation and Standards).¹⁵

There are seven principles of Universal design as shown in (Figure 4).

A universal city is “A city of inclusion where everyone is welcomed to participate and contribute”.¹⁶ According to OPENspace a UK-based research center, there’s growing evidence that well-designed outdoor spaces can enhance the long-term health and wellbeing of the people that use

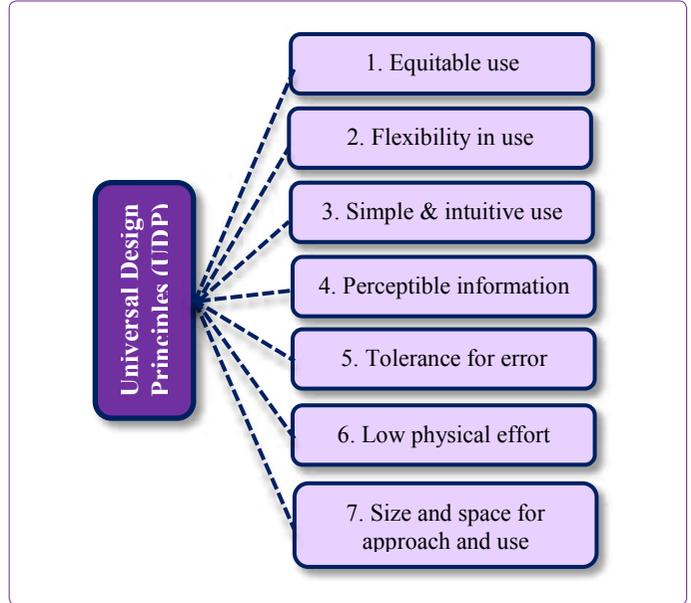


Figure 4. The seven principles of UD.

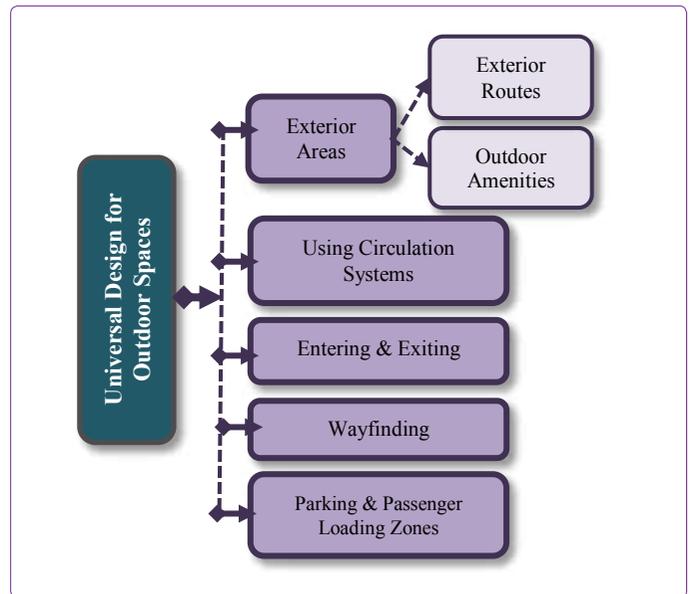


Figure 5. Universal Design for outdoor spaces.

them regularly.¹⁷ Therefore, there can be some elements should be taken into account when designing universally for outdoor spaces as shown in (Figure 5).

Street Design and Considerations

A street is multi-functional and is a place to live, work, walk, cycle, interact and spend time.¹⁸ Also, streets are typically lined with buildings and public spaces.¹⁹ Besides, Projects For Public Spaces (PPS) mentioned that “Great streets are the backbone of successful communities”.²⁰ In

¹² Deardorff and Birdsong, 2003, vol. 30, no. 2, p. 119–138.
¹³ <http://access.ecs.soton.ac.uk/blog/training/universal-design/>,
¹⁴ https://www.ncsu.edu/project/design-projects/sites/cud/content/UD_intro.html
¹⁵ <http://access.ecs.soton.ac.uk/blog/training/universal-design>
¹⁶ Giuliani and Mayor, 2001, p. 25.

¹⁸ Grey and Siddall and O’Shea, 2011.
¹⁹ Communities and Local Government, Department for Transport, 2007b
²⁰ <http://www.pps.org/transportation>

addition, streets are the lifeblood of our communities and the foundation of our urban economies.²¹

“Jane Jacobs” declared that “Streets and their sidewalks, the main public spaces of a city, are its most vital organs”.²² “Jennifer Lawandus” explained the ten qualities that contribute to the success of a street as follows (Attractions & Destinations, Identity & Image, Active Edge Uses, Amenities, Management, Seasonal Strategies, Diverse User Groups, Traffic, Transit & the Pedestrian, Blending of Uses and Modes, and Protects Neighborhoods).²³

Accessible Streets For People

Public spaces should be easily accessible and integrated into the surrounding urban fabric.²⁴ Accessible public spaces include specific features that make it easier for everyone people with disabilities, seniors and families to use public spaces. Some of these features are: “Sidewalks that are free of barriers and wide enough to move around; Pedestrian signals at intersections with both audible and visual cues to move people safely across the street; Gentler ramp slopes; Wider accessible parking spaces for people with mobility limitations; and Service counters that a person seated in a mobility device can use”.²⁵

Good public spaces are planned and designed from the beginning with accessibility in mind. Accessibility by design can provide people with disabilities with more opportunities to work, shop, travel and play independently.²⁶

Streets are places too and can contribute significantly to the quality of the built environment.²⁷ Streets should be designed to incorporate elements that enhance human scale, embrace neighborhood character, provide green infrastructure and balance needs for many modes of sustainable transit, including pedestrians, bicyclists, automobiles, and transit. “Allan B. Jacobs” stated that “A great street should be a most desirable place to be, to spend time, to live, to play, to work, at the same time that it markedly contributes to what a city should be”.²⁸

Design principles of an Inclusive Urban Street:

In an urban context, the street design must meet the needs of people walking, driving, cycling, and taking transit, all in a constrained space. Designing world-class streets begin with a restatement of the problem and the means by which to understand that problem. The seven principles of urban street design establish a clear understanding of the primary goals, ideals, and tenets of world-class street design (Figure 6).²⁹

Case Study: As-Souq Street

A street is the main part of our community which plays a vital role in our daily life. When a street is not qualified to accommodate all people this directly affects on the street’s users and maybe lead to segregation.

“As-souq street or Saad Zaghoul” was chosen to be examined as the case study of the paper. It is the main artery of Aswan city and has a special significance over the ages. It is regarded as a historic, commercial and touristic street in the city. The unique physical characteristics of AS-Souq and the participants are shown in (Figure 7).



Figure 6. The seven principles of Principles of Inclusive Urban Street Design.

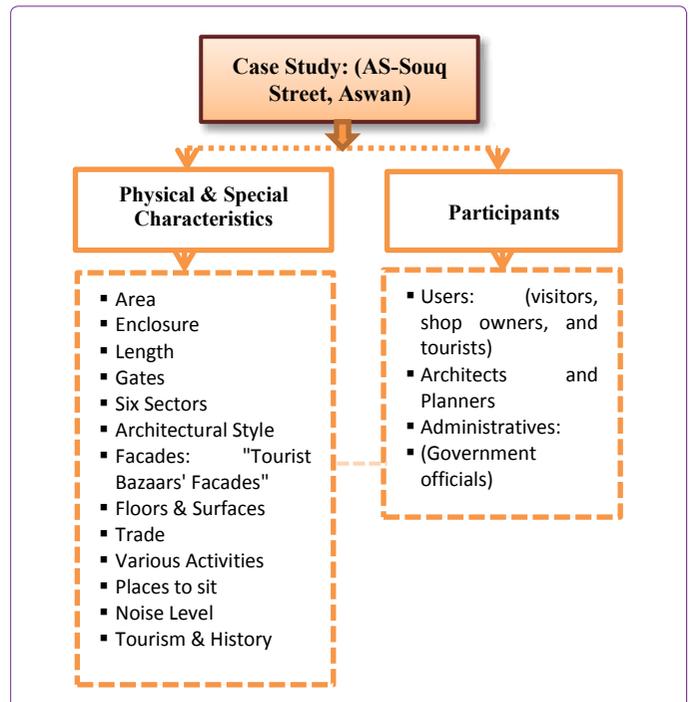


Figure 7. Physical characteristics and participants of AS-Souq.

²¹ (NACTO) National Association of City Transportation Officials, 2012.
²² Grey and Siddall and O’Shea, 2011, p. 22.
²³ <http://buffalorising.com/2008/08/ten-qualities-of-a-great-street>
²⁴ Urban Design Team, Sycamore House, 2010.
²⁵ (AODA) Accessibility for Ontarians with Disabilities Act, 2014.
²⁶ (AODA), 2014.
²⁷ Urban Design Team, Sycamore House, 2010
²⁸ City of Los Angeles Department of City Planning, 2011.
²⁹ (NACTO) National Association of City Transportation Officials, 2012.

The Structure Of The Case Study comprises of two sections: "Survey questionnaires" as a quantitative technique and "Direct observations" as qualitative strategy (Figure 8).

A questionnaire was conducted in August 2015 with 330 recipients in total (Figure 9). Also, the questionnaire was divided into five sections (Figure 10).

At the end, the data of the survey were statistically analyzed by using SPSS program.

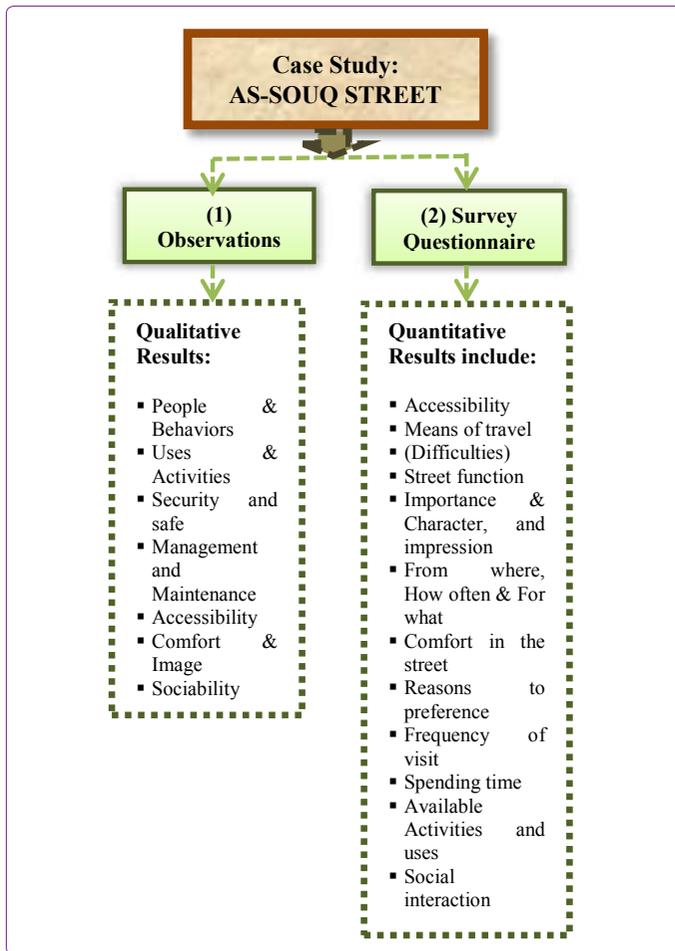


Figure 8. The structure of the case study of this paper.

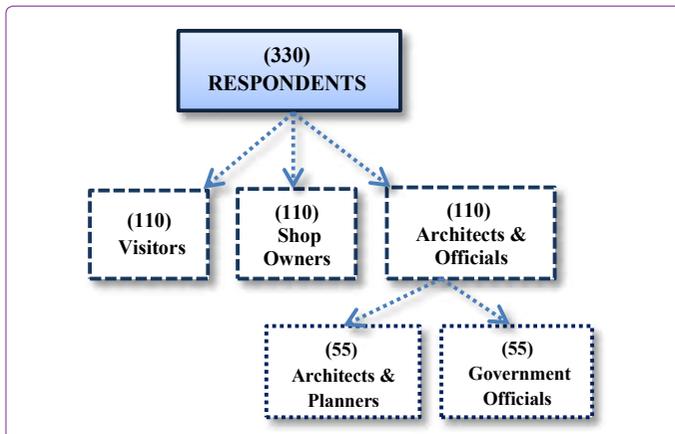


Figure 9. Distribution of the study's sample size.

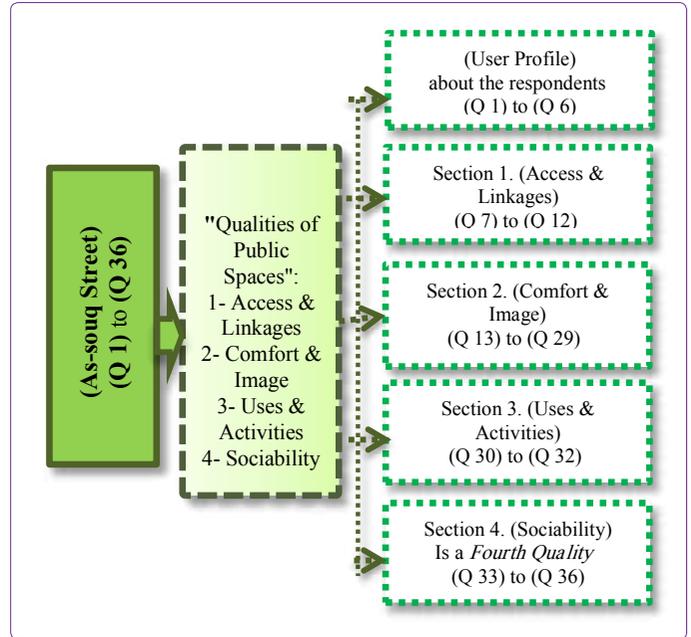


Figure 10. Organization of The Survey Questionnaire.

Overview about As-souq Street:

AS-Souq street is located in the heart of Aswan city, which connects "The Train Station Square" in the north to "Abbas Farid Street" in the south (Figure 11). AS-Souq is

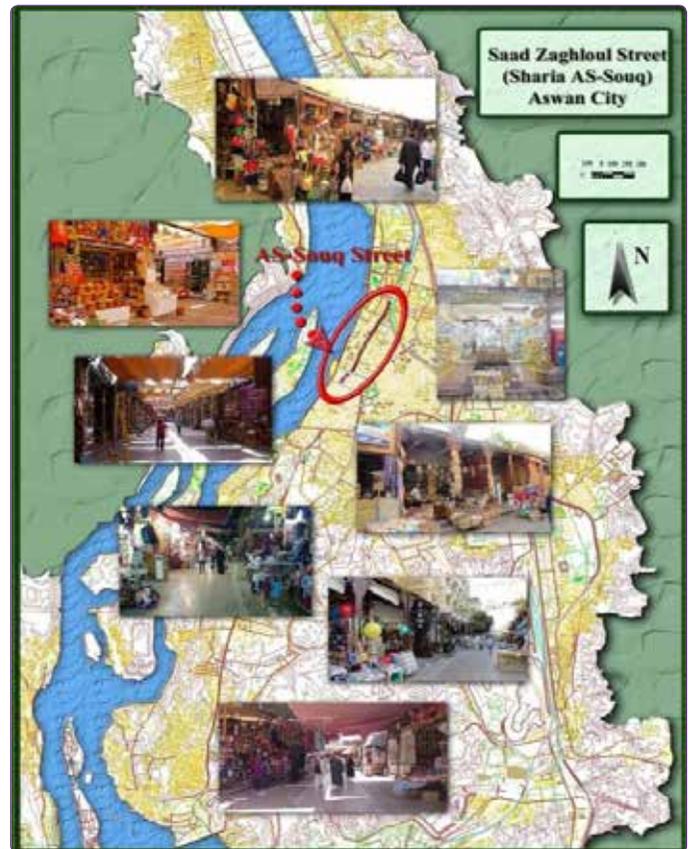


Figure 11. The distinguished location of AS-Souq street at Aswan city center.

divided into six sectors by diverse gates and intersections such as "Hmiami Gabalawy st.", and "Salah El-Din st.,...etc" as shown in (Figure 12 & 13). As-souq extends along more than 1300 m, and it provides various kinds of services and activities such as commercial services, tourist services,.. etc.

Results and Discussion

In this part, this paper discusses the obtained results from the questionnaire and observations. The results of the questionnaire are statistically analyzed by using SPSS program. Prevalent statistical techniques such as "descrip-

tive statistics", "cross-tabulation", "Chi-Square tests" and "One-sample t-tests" have been used to examine the data collected from the questionnaire.

The survey findings of the questionnaire are based on two phases of analysis. In the first phase, the statistical analysis of the questionnaire's questions was carried out "individually". As for the second phase, the statistical analysis of the survey's questions was done "comparatively". This phase divided into two parts. Phases of descriptive statistics of this paper are given in (Figure 14).

In (Table 1), the holistic statistical analysis of the 36 questions of the questionnaire was achieved individually, according to urban public space qualities. Whereas, (Table 2) explores the significant relationships between some questions of the survey questionnaire and each other. Finally, the observations of the study are given in (Table 3).

As underlined by this research, to provide the inclusiveness of street or other urban public space, the necessary intervention should be on the issues of Access & Linkages; Comfort & Image; Uses & Activities; and Sociability.

Regarding "Access & Linkages", It is crucial to remove all barriers and difficulties in entering and reaching As-souq, also to provide eligible roads for all citizens leading to the street. In addition, to supply different kinds of mass transportation in order to facilitate the arrival to the street and dispose of lots of the street's vendors which disturb all users.

Concerning "Comfort & Image", it is significant to provide safety, security, and comfort to the user. It is also vital to supply enough number of accessible outdoor amenities

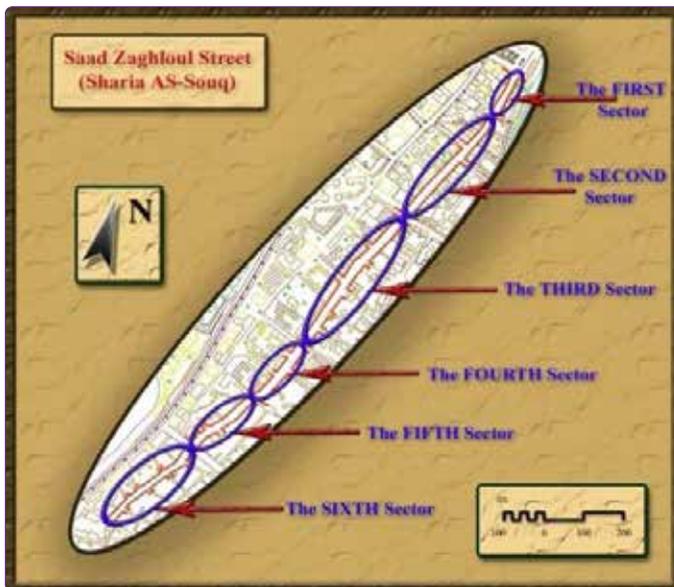


Figure 12. The 6 sectors of As-souq st.

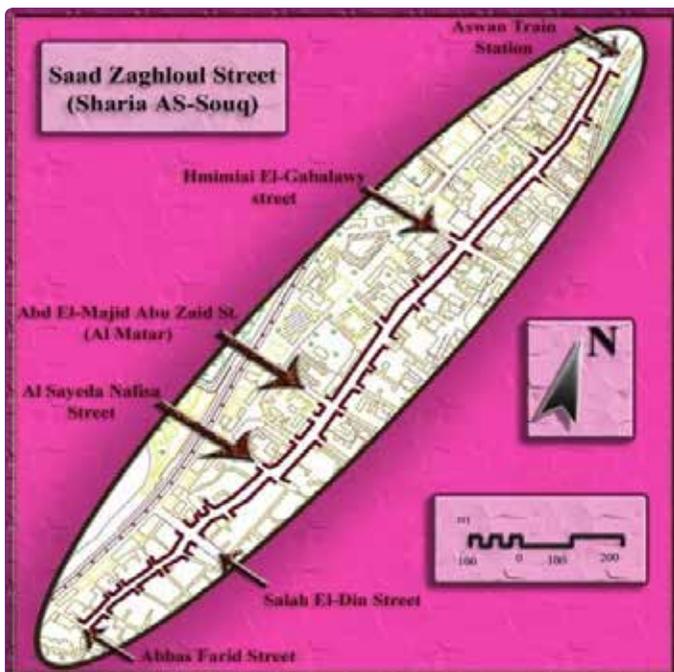


Figure 13. The intersecting streets with As-souq.

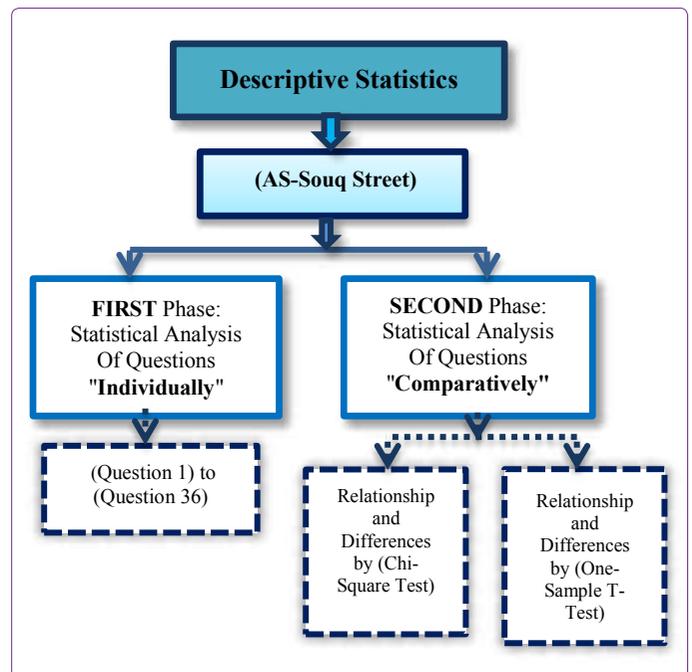


Figure 14. Phases of Descriptive Statistics of this study.

Table 1. The holistic statistical analysis of the 36 questions of the questionnaire

User Profiles					
No	Question Title		Frequency	Valid Percent	
1	Gender	Male	259	78.5	
		Female	71	21.5	
2	User Type	Visitor	110	33.3	
		Shop Owner	110	33.3	
		Architect / Planner	55	16.7	
		Government Official	55	16.7	
3	Age Group	10-25	36	10.9	
		25-40	147	44.5	
		40-65	126	38.2	
4	Level of Education:	Over than 65	21	6.4	
		none	6	1.8	
		Primary	7	2.1	
		preparatory	20	6.1	
		Secondary	73	22.1	
		Undergraduate	12	3.6	
		Graduate	181	54.8	
5	Profession/occupation	Postgraduate	25	7.6	
		PhD	6	1.8	
		Employee	51	15.5	
		Student	14	4.2	
		Self-employed	126	38.2	
		Professional	8	2.4	
		Housewife	13	3.9	
		Retired/ Unemployed	8	2.4	
		Architect or Planner	55	16.7	
		Government Official	55	16.7	
6	Physical Disability:	None	288	87.3	
		(Yes)	42	12.7	
	Disability Kind:	Hearing	11	26.2	
		Vision	14	33.3	
		Motion	8	19.0	
		Disabled or handicapped	5	11.9	
		Amputated arm	1	2.4	
		Infantile paralysis	3	7.1	
Section 1. (Access & Linkages)					
No	Question Title		Frequency	Valid Percent	
7	Can you see AS-Souq street from a distance?	No	135	40.9	
		Yes	195	59.1	
8	From which district or city did you come to the street?	Aswan & its villages	309	93.6	
		Outside of Aswan [Cairo, Menia, Sohage,...]	21	6.4	
9	How did you arrive at the street?	On foot	162	49.1	
		Private car	64	19.4	
		Bike/motorcycle	14	4.2	
		Mass transport	90	27.3	
		Kind of "Mass Transport"	Bus	10	11.1
			Minibus	62	68.9
			Taxi	15	16.7
			Train	2	2.2
10	Did you arrive at the street easily?	Boat or Sailboat	1	1.1	
		(No)	203	61.5	
	What are the difficulties in reaching?	Yes	127	38.5	
		No pedestrian crossing close to the street	25	12.3	
		There are no bus stops close to the street	7	3.4	
		Sidewalks are not good enough or not existing	37	18.2	
		There are no pedestrian paths available	17	8.4	
		The street floors are not qualified well	44	21.7	
		There are physical disabilities	10	4.9	
		Traffic jam	16	7.9	
11	Do you confront any difficulties in entering the street?	Inconvenient roads	31	15.3	
		Insufficient parking	11	5.4	
		Waiting period for buses or minibusses	5	2.5	
		No	147	44.5	
		Yes	183	55.5	

Table 1. The holistic statistical analysis of the 36 questions of the questionnaire (Cont.)

Section 1. (Access & Linkages)				
No	Question Title		Frequency	Valid Percent
12	How long did your trip take? (in minutes)	From 5 to15 min.	175	53.0
		From 15 to 30 min.	104	31.5
		From 30min. To 1 hour	39	11.8
		From 1 hour to 2 hours	12	3.6
Section 2. (Comfort & Image)				
No	Question Title		Frequency	Valid Percent
13	Do you feel that AS-Souq street has a unique character & special importance?	No	12	3.6
		Yes	318	96.4
14	Is the street qualified for all people of different ages and abilities?	No	285	86.4
		Yes	45	13.6
15	Are there enough places to sit on the street?	No	318	96.4
		Yes	12	3.6
16	Do you agree with dividing the street into “Six sectors” by a number of new gates?	No	83	25.2
		Yes	247	74.8
17	Do you agree with allocating most of the street sections for pedestrian only?	No	87	26.4
		Yes	243	73.6
18	Are there ramps for the entry of urgent services to the street?	No	188	57.0
		Yes	142	43.0
19	Are there accessible sidewalks support the diverse needs of people of all abilities?	No	264	80.0
		Yes	66	20.0
20	Are there Curb ramps provided when there is a level difference?	No	291	88.2
		Yes	39	11.8
21	Are there public toilets in most sectors of the street?	No	258	78.2
		Yes	72	21.8
22	Do you feel comfortable and safe on the street?	No	110	33.3
		Yes	220	66.7
23	Is there a security presence?	No	198	60.0
		Yes	132	40.0
24	Are there Accessible Pedestrian Signals and signage at As-souq?	No	274	83.0
		Yes	56	17.0
25	Are there any prominent landmarks to remember the street and its location? The <i>existing landmarks</i> at AS-Souq street	No	108	32.7
		Yes	222	67.3
		Gates	72	32.4
		Train Station	90	40.5
		Artwork	28	12.6
		Statue	5	2.3
		Shops facades or Tourist Bazaars	23	10.4
		Murals	2	.9
		Shrine	2	.9
26	Are "parking spaces" provided at the street?	No	304	92.1
		Yes	26	7.9
27	Do you clearly notice the billboards through passing the street?	No	113	34.2
		Yes	217	65.8
28	Are there sufficient Lighting Elements at the street?	No	107	32.4
		Yes	223	67.6
29	Do you feel that “The Floor Material” of the street are safe and durable?	No	215	65.2
		Yes	115	34.8
Section 3. (Uses & Activities)				
No.	Question Title		Frequency	Valid Percent
30	How frequently have you been visiting this street? (Average times per month)	Less than 10	83	25.2
		From 10 to 25	45	13.6
		Every day/ Daily	197	59.7
		Throughout the visit	5	1.5
31	How long do you usually spend on this street?	Just pass through it	62	18.8
		Around half an hour	68	20.6
		More than one hour	86	26.1
		All-day	114	34.5
32	Are there different types of activities occurring at the street? <i>Kind of Activities</i>	No	27	8.2
		Yes	303	91.8
		Walking	22	7.3
		Shopping	88	29.0
		Eating or having a meal	27	8.9
		Entertainment/ Fun	23	7.6

Table 1. The holistic statistical analysis of the 36 questions of the questionnaire (Cont.)

Section 3. (Uses & Activities)		Frequency	Valid Percent
No	Question Title		
	Meeting friends or visiting relatives	11	3.6
	Visiting physician (doctor), Lawyer, or Engineer, ..etc.	14	4.6
	Going to work	7	2.3
	All the above mentioned	111	36.6
Section 4. (Sociability)		Frequency	Valid Percent
No.	Question Title		
33	AS-Souq street's visit is preferable for you.	Strongly Disagree 21 Slightly Disagree 41 Neutral 4 Slightly Agree 10 Strongly Agree 254	6.4 12.4 1.2 3.0 77.0
34	Walking with relatives and friends is a desirable activity for you at the street.	Strongly Disagree 32 Slightly Disagree 71 Neutral 3 Slightly Agree 20 Strongly Agree 204	9.7 21.5 .9 6.1 61.8
35	Knowing people by "face or name" is spontaneously happened on this street.	Strongly Disagree 50 Slightly Disagree 34 Neutral 6 Slightly Agree 28 Strongly Agree 212	15.2 10.3 1.8 8.5 64.2
36	Interaction with foreigners is done easily on the street.	Strongly Disagree 86 Slightly Disagree 44 Neutral 4 Slightly Agree 45 Strongly Agree 151	26.1 13.3 1.2 13.6 45.8

Table 2. The matrix of the significant relationships between some questions

	Q 1 Gender	Q 2 User Type	Q 3 Age Group	Q 5 Profession	Q 6 Physical Disability	Q 23 Security presence
Q 10 The arrival to AS-Souq"		●	●		●	
Q 11 Difficulties in entering	●	●				
Q 13 Importance of AS-Souq		●				
Q 14 Qualification of As-souq for all		●			●	
Q 17 Allocation most of the street's sectors for pedestrian		●	●			
Q 29 Durability of the floor material"		●			●	
Q 18 Ramps for the urgent services' entry		●			●	
Q 24 Accessible pedestrian signals & signage		●				
Q 22 Sense of comfort and safety						●
Q 30 Frequency of visit	●		●	●		
Q 31 Spent time inside As-souq street	●	●		●		
Q 33 preference of visit	●		●			
Q 34 Preference of walking with relatives&friends	●		●			

Table 3. Brief of the study's observations

OBSERVATIONS		
Item	Characteristic	Explanation
Section 1. (Access & linkages)	AS-Souq Street's Visibility/ Length of the trip	AS-Souq street can be seen from a distance, by reason of its distinguished and central location in Aswan city center which connects "The Train Station Square" northward with "Abbas Farid Street" southward. Also, most of its visitors can reach easily in a short period of time.
	Visitors of As-souq/ Arrival's means	The street's visitors encompass the locals, foreigners, and international tourists. Besides, they can arrive at the street by diverse kinds of transport such as (Bike, motorcycle, bus, minibus, private car, on foot,...etc).
	Difficulties in reaching and entering	Most of the street's visitors encounter many obstacles in reaching and entering As-souq as follows: <ul style="list-style-type: none"> ▪ Closing some of the street's gates by steel chains. ▪ A traffic jam. ▪ They are inaccessible, inconvenient and ineligible roads which leading to AS-souq street. ▪ No parking spaces are existing. ▪ The random parking of diverse species of transport besides the street's gates. ▪ Lots of streets vendors. ▪ The uncomfortable and ineligible street's floor materials in some of the street's sectors. ▪ "Non-standard sidewalks/ pavements" in most sectors ▪ The shortage of the basic qualifications of the street for disabled, urgent patients and elderly. ▪ The overcrowded street.
Item	Characteristic	Explanation
Section 2. (Comfort & Image)	Importance of AS-Souq	Locals and tourists feel a strong sense around the unique character, and distinguishing features of AS-Souq street.
	Qualification for all	Even though, the frequent occupancy removal campaigns, and punishment the outlaws and legislations by the municipality, plus the last improvements and modifications which were being achieved within the different sectors of AS-Souq, but this street is considered unqualified and incompetent for all people of different ages and abilities. The obstacles which encountered the street's visitors had been mentioned above in (Difficulties in reaching and entering).
	Outdoor Amenities	<ul style="list-style-type: none"> ▪ Benches and Seats: A few seats are existing in the third sector of AS-Souq street, however, those benches are being used by the shop owners and street vendors, not by the visitors. ▪ Automated Teller Machines (ATM): They are two inaccessible ATM machines on the second & third sector of AS-souq street. ▪ Public Telephone, Mail Box, Fire extinguisher, and Recycling Bin: No public phones and mailbox are existing at AS-Souq street. Further, there can be a lack of garbage bins and containers in most parts of the street. Also, there is no fire extinguisher at the street. ▪ Wooden pergolas and sunshades: Most of the street's sections are covered by sunshades that are made from cloth and textile. Further, wooden pergolas which extend along most of the street's pavements. Also, the street's trees that are apparent intensely in some sectors.
	Allocation the street to pedestrian only & its division into 6 sections	Although, allocation most of AS-Souq's sectors just for pedestrian and its division into 6 sectors causes difficulty of entering the urgent services, and difficulty of maintenance works inside the street, but those actions have many advantages for instance: "facilitate walking freely within the street, provide an aesthetic and civilized appearance, decrease the feel of bored, and achieving kind of safety and comfort, support many activities especially tourism sector at the street".
	Ramps & Curb Ramps	In spite of the non-standard ramps at the entrances of the street's sectors "gates", but manual one appears at the entrance and exit of the second sector only. Also, I never had seen curb ramp at AS-Souq street before.
	Accessible sidewalks, pavements & crosswalks	No standard sidewalks/ pavements are existing at the first sector of AS-Souq, whereas, this sector only is allocated to both pedestrian & vehicle. Additionally, there are few inaccessible pavements/ sidewalks at most sectors of the street, however, not all people can benefit from. Also, no crosswalks at "the intersecting streets" with AS-Souq.
	Public Toilets	There is one public toilet at the street's third sector, but it is unqualified for all people with different ages & abilities.
	Sense Of Comfort and Security Presence Accessible Pedestrian signs, and signals	Most visitors feel secure, safe and comfortable at As-souq, despite a security presence is shown just at one point of the street. There is just four accessible signs along the whole street and located inappropriately. Besides, no visible or audible signals are existing at As-souq which indicates to the direction of travel "left or right".

Table 3. Brief of the study's observations (Cont.)

OBSERVATIONS		
Item	Characteristic	Explanation
Section 2. (Comfort & Image)	Prominent Landmarks	AS-Souq has plentiful of prominent landmarks from its beginning to the end for instance (Train station, artworks, and gates)
	Accessible parking	No accessible parking spaces are located in AS-Souq street.
	Billboards	AS-Souq has an abundance of the billboards which display advertisements about: [shop, tourist bazaar, hospital, pharmacy, and cafeteria,..etc]. Some of those billboards can appear clearly through passing the street, while, the other ones unobserved.
	Lighting Elements	In spite of the existence of sufficient lighting elements at the street, but some sectors are illuminating completely while the other sectors complain from the darkness because of closing those lighting elements.
	Floor Material	Some of the street's sectors are suffering from unstable, slipping and inconvenient floor materials, whereas, the other sectors' materials are firm, stable, slip resistance and convenient.
Section 3. (Uses & Activities)	AS-Souq's Visit/ Spent Time/ Species Of Activities	Most visitors come to As-souq street owing to the various species of activities which occur, such as: (shopping, Eating, Walking, Entertainment, ..etc). Besides, As-souq's visitors spend a long time through their trip at the street.
Section 4. (Sociability)	Preference of AS-Souq street's visit/	The overwhelming majority of the street's visitors prefer traveling to AS-Souq repeatedly.
	Preference of Accompanying relatives and friends/	The street's visitors affirm on their sense of security and safety through the street's visit. Moreover, they prefer to visit the street with their relatives and friends which refer to the great social relationships occurring at the street and its sustainability.
	Recognizing people to each other& Interaction with strangers/	people can interact with the foreigners Spontaneously at AS-Souq street, and they tend to recognize each other easily by face or name.

at the street such as (Automated Teller Machines “ATM”, recycle bins, public telephones, mail box, fire extinguisher, benches and seats, and wooden pergolas and sunshades).

It is found that the allocation of the commercial street for pedestrian only makes troubles in entering the urgent services and maintenance performance at the street, whereas, being a street just for pedestrian encourages passers to walk comfortably and freely, also it accomplishes safety for the visitors throughout the trip. Besides, the street’s floor materials should be stable, durable, safe, slip resistant and eligible for all citizens.

It is critical also to qualify As-souq street for all people by providing: “Enough places to sit and in a comfortable position; ramps for the entry of urgent services to the street; accessible sidewalks support the diverse needs of people; curb ramps when there are level differences; public toilets in most of the street’s sectors; accessible pedestrian signals and signage; parking spaces boost the varied needs of people; the billboards and conveniently located; prominent landmarks; and sufficient lighting elements”.

As for “Uses & Activities”, people without disabilities and young people could engage easily in the available street’s activities, therefore, a variety of uses and activities

should be located on the street. Additionally, disabled and elderly should be taken into consideration when providing and designing such those activities.

Despite As-souq has different kinds of activities and uses such as (shopping, walking, meeting friends and visiting relatives,..etc), but the street lacks other types of uses such as (children games and fitness & health club). Therefore, availability of various species of activities at the street leads to visitors’ enjoyment and spending long nice time throughout the visit.

When it comes to “Sociability”, It is necessary to strengthen the social relationships among the visitors inside the street by achieving social participation for all and reducing social segregation of elderly and disabled people. Access to resources in the community is the key way for supporting participation. Universal Design targets social participation and access to goods and services by the widest possible range of users.

As this case study revealed many aspects of “universally designed streets”, a future study that investigates the design inventions and new technologies would lead to many more findings in street design.

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