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THE HUMAN ASPECT CRITERIA OF COURTYARDS IN SHOPPING CENTERS

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ABSTRACT

The courtyard is one of the main spaces in the shopping centers, as it is a central system that connects the spaces of the shopping center together and acts as a point of attraction where people interact and engage in many events and activities. The current study aims to build a model that defines the fundamental variables of the human aspect of shopping centers courtyards in order to explain the relationship between the human aspect and shopping centers courtyards and determine its role in enhancing the interactive relationship between the user and the courtyard. The resulting criteria can serve as a valuable tool for architects and designers to ensure compliance with the criteria of the human aspect of shopping centers courtyards. This was done by using the analysis method, which involved a review of scientific references, theoretical perspectives, and relevant research on human aspects and shopping centers. These variables can be organized and classified using the STEEP Analysis. Subsequently, the proposed criteria were presented in the form of a questionnaire to a panel of specialists for their feedback and refinement. Finally, data analysis using SPSS led to the final criteria defining the human aspect in shopping center courtyards. The research reached to criteria that can be relied upon to achieve the human aspect of shopping centers courtyards, including (identity, human behavior, quality of the internal environment, visual appeal, security and safety, etc.)

KEYWORDS: Shopping centersHuman behavior, Human aspect, Courtyard, Shopping behavior, Survey.

معايير البعد الإنساني للأفنية في المراكز التجارية

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الملخص

يعد الفناء أحد الفراغات الأساسية المكونة للمركز التجاري باعتباره منظومة مركزية تربط فراغات المركز التجاري ببعضها البعض ويعمل كنقطة جذب يتفاعل فيه الإنسان ويمارس العديد من الفعاليات والأنشطة، وتهدف الدراسة الحالية إلى بناء نموذج يوضح العناصر الأساسية المكونة للبعد الإنساني لأفنية المراكز التجارية وذلك لتفسير العلاقة بين البعد الإنساني وأفنية المراكز التجارية وتحديد دوره في تعزيز العلاقة التفاعلية بين المستخدم والفناء ويمكن استخدام نتائجها كأداة للمعماريين والمصممين لضمان الالتزام بتحقيق معايير البعد الإنساني لأفنية المراكز التجارية، وقد تم ذلك بالاستعانة بالمنهج التحليلي الذي يتضمن الرجوع إلى مجموعة من المرجعيات والدلائل العلمية بالإضافة لآراء المنظرين والدراسات والأبحاث التي تناولت الموضوعات

المتعلقة بالأبعاد الإنسانية والمراكز التجارية لدراستها وتحليلها للوصول إلى مجموعة من العناصر التي يمكن تنظيمها وتصنيفها بالاستعانة بـ (STEEP Analysis) ، يليه المنهج التطبيقي الذي يتضمن عرض العناصر المقترحة في صورة استبيان لعرضها على المتخصصين لإبداء الملاحظات والمقترحات ثم تحليل نتائج االاستبيان بالاستعانة ببرنامج الحزم الإحصائية للعلوم الاجتماعية (SPSS) للوصول إلى المعايير النهائية المكونة للبعد الإنساني في أفنية المراكز التجارية، حيث توصل البحث إلى مجموعة من المعايير التي يمكن الاعتماد عليها لتحقيق البعد الإنساني لأفنية المراكز التجارية ومنها (الهوية، السلوك البشري، جودة البيئة الداخلية، الجذب البصري، الأمن والأمان، وغيرها).

الكلمات المفتاحية : البعد الإنساني ، المراكز التجارية، السلوك الإنساني، الأفنية، سلوك التسوق، ، السياسات التسويقية.

1. INTRODUCTION

Achieving humanization in architecture, or making architecture capable of bringing happiness to humans, requires understanding the human aspects that should be provided to the user. Architecture has always been in direct contact with humans, expressing their needs and different requirements.

Therefore, architecture was a true and sincere expression of the prevailing ideas in society, meeting the psychological needs of humans, and was closely linked to nature around it.

Then, architecture began to separate from man and neglect his social and psychological existence as a result of the industrial and technological development that accompanied the Industrial Revolution in Europe and the subsequent political, economic, and social changes, which led to the dominance of materialistic thought overall spiritual aspects, which negatively reflected on human habits and behaviors. In the face of these circumstances, theories and ideas have turned to the need to restore the close relationship between man and architecture. Human architecture was one of the most important of these ideas, which called for the need for architecture to meet the spiritual and psychological needs of man and its harmony with customs and traditions while taking advantage of what modern technology offers to be in line with the spirit of the modern era.

The needs and requirements of society vary according to customs and cultures, but there are common human needs among these societies that are indispensable. Thus, the use of the courtyard and its design methods must achieve goals for its users so as to create strong relationships between the human being and the place. The architecture of the courtyard in the shopping centers is not a structure governed by technical elements or functional requirements, as well as by social, cultural and economic content that creates a kind of comfort and belonging to the courtyard. Accordingly, the courtyard is determined and designed to suit its needs and desires. The importance of taking into account the human aspect of the courtyard in the shopping centers is due, inter alia, to linking the shopping centers to society. It is difficult to create a space without social content and vice versa. Society also develops and shapes the spaces by various means and methods, developing and regulating the relationship of between users so that they can affect each other, providing comfort to the users of the shopping center, meeting their needs and linking them to their communities through design. The physical environment at the business centre itself affects the behaviour of persons because human behaviour is an inherent part of the social, cultural and sensory content [1].

Shopping centers have transcended their original purpose of providing a space for commercial transactions. They have evolved into intricate social hubs, attracting visitors beyond just shoppers. Despite this shift, the design of these spaces often neglects the human aspect, particularly within courtyards, which hold the potential to become centres for social interactions. This research understudied human aspect criteria for courtyards in shopping centers, aiming to

establish an objective criteria of the relationship between courtyards in shopping centers and their human aspect.

The research provides a valuable contribution to clarification the relationship between users and courtyards in shopping centers into a set of criteria that ensure the realization of the human aspect. These criteria were derived by referring to previous studies that have dealt with topics related to the human aspects of shopping centers. These criteria were analyzed and classified using STEEP analysis, then tested by a group of architects specialized in many architectural fields by conducting a questionnaire and conducting the necessary statistical analyses to ensure reaching the criteria that ensure the realization of the human aspect. This criteria can be used by designers and architects to test the extent to which the human aspect are achieved in the courtyards of shopping centers and to ensure that they are suitable for the needs of users.

Literature review involves studying and analyzing the opinions of theorists and researchers, identifying points of convergence and divergence among scientific references regarding the relationship between the human aspect and the courtyard of shopping centers. Therefore, To study the variables that constitute the human aspects of courtyards in shopping centers, global and local standards for shopping center design were utilized

Scientific references varied regarding the relationship between the human aspects and courtyards in shopping centers. The opinions of theorists and the research proposals regarding the variables related to the human aspects and how to link and benefit from these variables in courtyard design in shopping centers were diverse. Numerous studies, articles, and conferences have presented a wide range of criteria that call for considering human aspects in courtyard design for shopping centers, Table 1 provides a brief overview of some previous studies that have addressed the human aspect or courtyards in shopping centers. The table compares the goals, methodology, and main findings of each study to identify the research gap.

Table 1. Overview of previous researches on human aspects or courtyards in shopping centers

	Research	objectives	methodology	main findings
1	L. Wanos	Provide a range of important indicators for designers and developers during the program and design stages to ensure satisfaction of potential shoppers.	A survey was conducted to trace and analyze the effect of the independent variables of the spatial component on the dependent variables (emotional responses, cognitive responses, and behavioral responses).	A statistically significant relationship between independent and dependent variables, that is, architectural design as a spatial component influences the internal and behavioral responses as activities participation..
2	I. ElGhonaimy	This book is tailored to underscore the stipulated sustainability precautions in social, economic and environmental respects.	analyzing design projects, addressing savant readers in general and students in particular, and understanding the design process, to figure out a design solution for a small courtyard in multifarious visualizations.	Importance of open spaces in buildings in general and courtyard in particular. It answers the investigations the role of courtyards in buildings. It introduces the courtyard design as a main element in design of buildings.
3	M. Beiró	Assess the potential of shopping malls for social mixing and inclusion in Chile.	Used Data Detail Records (XDRs) provided by Telef_onica R&D to analyze the mobility patterns of people going to malls in its capital city, Santiago de Chile, in order to determine which	Results suggest that social mixing and inclusion can be promoted by improving accessibility and public transportation in order to reduce travel times for low and middle classes.

			factors inuence mall choice and what types of social mixing can be found in malls.	
4	L. Abou bakr	Achieving the general frame work about designing Malls through designing an attractive public space in Mall and providing the basic design requirements for the inner court (Atrium).	Discussing the factors that effect on the staying more in malls ,then focusing on Atrium and its Design factors (Architectural aspects ,form, space, Elements of Form and Space) in theoretical framework. While practical part of the research discuses history of Erbil Malls.	Concludes that architectural and design aspects of atriums enhance the overall attractiveness and usability of malls.
5	R, Meziani, J, Tei Pai	Understanding the relationship between the popularity and attractiveness of commercial buildings, shopping malls and any relationship with visitor satisfaction.	Surveys were conducted in the city of Abu Dhabi and the Structural Equation Modelling (SEM) technique was used to test the hypotheses.	The top indicators affecting a mall's popularity are a good ambiance and sense of joy, good location, easy access and availability of public transportation and taxis, and then the variety of brands.

After reviewing previous studies, the following observations can be drawn:

- Previous studies have discussed shoppers' behaviour and social aspects in the shopping center in general, none of which have specifically addressed the specific impact of the courtyard achieving the human aspect
- Research on courtyards in shopping centers has been diverse, focusing on architectural design, environmental, psychological, and social aspects, but it has not addressed the courtyard as an essential element in the design of the shopping center with multiple, interconnected human aspects.
- None of the previous studies have provided clear and reliable criteria that can be relied upon to achieve the human aspect of courtyards in shopping centers.

This highlights the urgency of establishing clear and reliable criteria that can be used to achieve the human aspect in shopping center courtyards.

Drawing from the literatures on human aspects and shopping centers, we can identify a rich set of variables that can be used to develop specific components for studying the human aspect in shopping center courtyards. **(Table 2)** outlines key concepts of the human aspect, such as social interaction, comfort, and human behavior, which can be used to develop specific components for human aspect of shopping center courtyards.

Table 2. Points of convergence and divergence among scientific references regarding research variables

	theorists and researchers / Variables	G. Awad, 2022	T. Hemeed, 2020	L.Wanos, 2019	Z. Abdellatif, 2019	N. Yosouf, 2018	O. Hussin, 2018	V. Canizaro, 2018	E.Ghonimy, 2017	H. Hamilton, 2007
1	Overall quality of life	●					●			
2	Personal quality of life	●								
3	Formal characteristics (harmony and proportion)		●			●				
4	Structural characteristics (visual and kinetic communication)		●			●				
5	Geometric characteristics (dimensions and containment level)		●		●					

6	Visual accessibility in all directions	●	●		●	●				
7	Human behavior			●						
8	Social image			●						
9	Attitudes and motivations			●						
10	Stimuli affecting visual attraction				●					
11	Expression of personality					●				
12	Richness of details					●				
13	Human and architectural adaptability						●			
14	Consideration of environmentally efficient designs									
15	Culture and local heritage							●		
16	Integration of local and contemporary architecture							●		
17	Environmental factors (available materials, available workforce)								●	
18	Social customs								●	
19	Variable nature of needs								●	
20	Creating spaces to accommodate activities							●	●	
21	Local architecture							●		●
22	Climatic factors							●		●

Based on (**Table 2)**, a set of variables related to the study of the human aspect of courtyards in shopping centers have been classified into main categories, each reflecting a distinct set of concepts from the table. (**Table 3)** presents this classification.

Table 3. classification proposed variables for human aspect of shopping centers courtyards

Overall quality of life	Internal environment quality
Consideration of environmentally efficient designs	
Climatic factors	
Personal quality of life	Identity
Expression of personality	
Richness of details	
Culture and local heritage	
Integration of local and contemporary architecture	
Local architecture	
Formal characteristics (harmony and proportion)	Legibility
Visual accessibility in all directions	Visual Attraction
Stimuli affecting visual attraction	
Richness of details	
Structural characteristics (visual and kinetic communication)	Permeability
Geometric characteristics (dimensions and containment level)	
Visual accessibility in all directions	
Human behavior	Human behavior
Social image	
Attitudes and motivations	
Social customs	
Variable nature of needs	
Human and architectural adaptability	Integration with the surroundings
Creating spaces to accommodate activities	

Local architecture	
Environmental factors (available materials, available workforce)	Intentions to return and connect with the place
Social customs	
Attitudes and motivations	

These variables have been mentioned in many previous studies that have focused on the study of the human aspect in architecture in general (**Table 4**).

Table 4. The research and theses that addressed the variables mentioned above related to the human aspect

	theorists and researchers / Proposed variables for human aspect	B. AlMajidi, 2020	L.Wanos, 2019	Z. Abdellatif, 2019	N. AlHessadi, 2019	O. Aoun, 2019	E.Ghonimy, 2018	O. Hussin, 2018	N. Yosouf, 2018	M. Maqdessi, 2015	E.Riyad, 2014
1	Permeability	●	●	●	●	●			●	●	●
2	Legibility	●			●	●			●	●	●
3	Visual Attraction			●	●		●		✓		
4	human behavior		●					●		○	✓
5	integration with the surroundings	●	●		●					○	
6	Identity						●				
7	internal environment quality				○		●	●	○	✓	
8	intentions to return and connect with the place		●								

- ● Exists
- ○ Exists partially
- ✓ Exists implicitly

2. Methodology

2.1 Analysis methods: Involved analyzing the proposed variables for human aspect of shopping centers courtyards by conducting STEEP Analysis. This strategic management tool helps researchers identify, analyze, organize, and monitor the main external factors that can have an impact on organizations and institutions now and in the future. The framework examines the opportunities and threats arising from Social, Technological, Environmental, Economic, and Political forces for planning and decision-making purposes.

- **Reasons behind choosing STEEP Analysis**

- It helps to understand the position of organizations and institutions in the field of trade and helps them to improve performance, work better, and plan strategically, and conduct research for new and current markets.
- It encourages and supports strategic thinking and helps to evaluate the strategy of shopping centers with broader and more comprehensive environments.
- It provides an overview of the critical external influences on the shopping centers.
- It allows the management of the shopping center to make more decisive and informed decisions.
- It is useful in all industries at the strategic, sectoral, administrative, and project levels, and for evaluating current and future markets, and can be used as a key input for planning, marketing,

organizational change, business and product development, project management, and research reports.

2.2 Applied method: Based on results of STEEP Analysis, the human aspect variables for shopping center courtyards can be selected and organized in the form of a survey to be presented to specialists from different architectural fields to express any observations or suggestions and confirm their impact and infl uence on the human aspect of courtyards in shopping centers.

2.3. Survey: This survey was conducted to determine the value of each of the proposed variables for measuring the human aspect of shopping center courtyards in relation to the other variables, Furthermore, The possibility of adding or removing other variables that will refine the proposed measurement process, Moreover, Adding complementary elements to the proposed elements in each variable of the human aspect, Eventually, the relative distribution and qualitative weight of each element of the proposed human aspect. Thus a three-pronged questionnaire was developed for the survey, the first axis monitored demographic data through 7 questions, while, the second axis consisted of 13 closed-ended questions designed with a five-point Likert scale by selecting a level of importance from (1 to 5), in addition to the third axis of the questionnaire (possibility of adding or deleting any of the proposed variables).

The survey was distributed to a selective sample of 48 individual of architects and planners specialized in the fields of academic teaching, scientific research, and freelance architectural work. The questionnaire included the proposed variables related to the human aspect of courtyards in shopping centers in Cairo, in order to determine the importance of these variables in defining and measuring the human aspect by determining a level of importance from 1 to 5, with the possibility of adding or deleting any of these basic or secondary variables. The responses of the survey were analyzed by SPSS to achieve survey goals. This will lead to the final criteria that define the human aspect in shopping centers courtyards.

3. Results

3.1. STEEP Analysis

Based on the previous explanation of STEEP Analysis and by referring to (**Table 2**) and (**Table 3**) a set of variables related to the human aspect in the courtyards of shopping centers can be concluded (**Fig. 1**). These variables can be tested to determine their impact on improving the functional performance of the courtyard and attracting visitors, thus raising the efficiency of the shopping center in general.

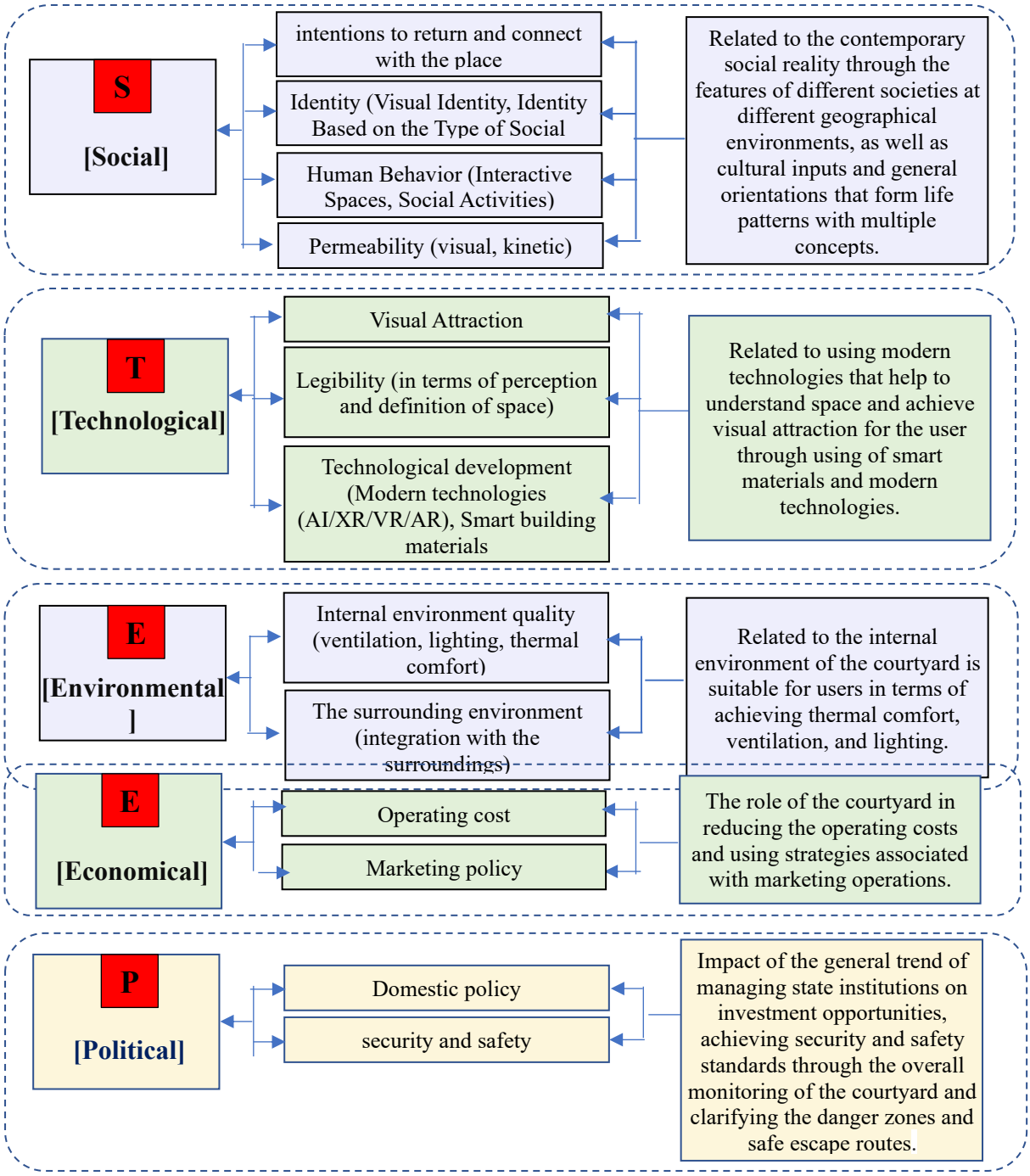

Fig. 1. Proposed variables for the human aspect of shopping centers courtyards according to steep analysis

Based on (**Fig. 1**), it is necessary to refer to the opinions of theorists and researchers regarding the following proposed elements (**Table 5**):

Table 5. The scientific references that addressed the added variables according to STEEP Analysis

	theorists and researchers / Added variables according to STEEP Analysis	A. waaz, 2021	T. Hemeed, 2020	L. Wanos, 2019	Z.Abdellatif, 2019	O.Aoun, 2019	E.Ghonimy, 2018	O. Hussin, 2018	M. Reikli, 2012	E.Mohamed, 2012

1	Technological development				✓		●	●		○
2	Operating cost									●
3	Marketing policy	●							●	
4	Domestic policy			✓					●	
5	security and safety		●	●		●				

- ● Exists
- ○ Exists partially
- ✓ Exists implicitly

3.2. Statistical Analysis

After conducting a survey to a sample of specialists from various architectural fields the variables were coded and entered into the SPSS statistical package, where the following statistical analyses were performed:

A. Stability test

Conducting a stability test, which means ensuring the ability of the questionnaire to give the same result if it is redistributed more than once under the same conditions and conditions. The stability of the questionnaire was verified through the Cronbach's alpha coefficient, as shown in (**Table 6**). It is worth noting that the value of the stability coefficient ranges from (1-zero) and the closer it is to one, the more it indicates stability, and the minimum agreed upon is (0.6).

Table 6. The value of the Cronbach's alpha coefficient

Reliability Statistics	
Cronbach's Alpha	N of Items
.775	13

B. Distribution of answers to questions of the first axis (demographic data)

Table 7. shows the distribution of responses to the questions of the first axis. It shows the distribution of the sample by gender, age, field of work, and years of experience.

Table 7. Distribution of the study sample by gender, age, field of work, employer, and years of experience

Variable	options	Frequency	Percentage
18- Age	20-35	25	52.1
	36-50	18	37.5
	51-65	5	10.4
	66+	0	0
19- Gender	male	20	41.7
	female	28	58.3
20- Field of work	Academic teaching	14	29.2
	Scientific research	10	20.8
	Practicing engineer	12	27.1
	Others	11	22.9
21-Employer	Universities	15	26.3
	Freelance engineer	4	8.3
	Architectural offices and companies	29	60.4
	1-5	13	27.1

22- Years of experience	6-10	13	27.1
	11-15	16	33.3
	16-20	3	6.3
	20+	3	6.3

The following (**Fig. 2**), shows the percentage distribution of demographic data for the sample

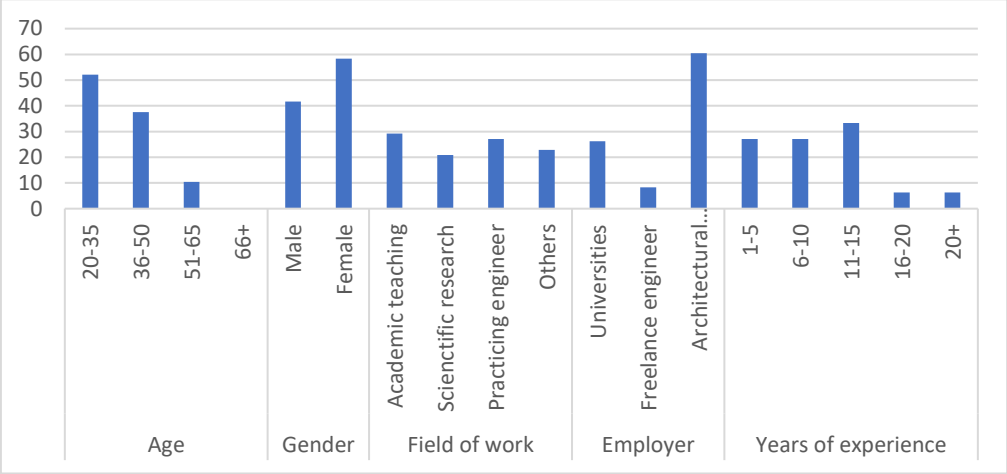

Fig. 2. The percentage distribution of demographic data for the survey sample

C. Distribution of answers to questions of the second axis of the questionnaire (the human aspect variables)

Table 8. shows the distribution of answers to the questions of the second axis, which are related to the human aspect variables. These variables are 13 in number, and their importance can be determined by choosing a number from 1 to 5. The numbers indicate (very important, important, neutral, less important, and slightly important). The results of the survey are as follows:

Table 8. The degree of importance, relative weight, and standard deviation of the human aspect variables according to the survey results

Variables		Very Important	Important	neutral	Less Important	Slightly important	Relative Weight	Standard Deviation	Rank	Importance Level
1. Permeability: a measure of the ability of a user to move within a space and includes visual and kinetic.	F	27	9	8	1	3	4.7	1.173	1	Very Important
	%	56.3	18.8	16.7	2.1	6.3				
2. Identity: A reflection of the user's culture and traditions, such that the user feels like they are part of the place, not a stranger, but feels a sense of familiarity and connection to the place. It includes visual identity and identity based on the type of social activity	F	12	19	9	3	5	3.63	1.231	10	Important
	%	25	39.6	18.8	6.3	10.4				
3. Human behavior: Human behavior is the study of the set of behaviors that the user performs during their time in the courtyard to satisfy their needs and desires. It is influenced by the presence of interactive spaces and the holding of social activities.	F	18	12	14	4	0	3.92	1.007	6	Important
	%	37.5	25	29.2	8.3	0				
4. intentions to return and connect with the place: Means the positive attitude of the users.	F	18	17	12	1	0	4.08	0.846	4	Important
	%	37.5	35.5	25	2.1	0				

5. **Visual Attraction:** The process of visual stimulation by attracting the user's attention by creating an unconventional relationship between the different parts of the courtyard.	F	14	21	6	5	2	3.83	1.098	8	Important
	%	29.2	43.8	12.5	10.4	4.2				
6. Legibility: The clarity of a space in terms of its perception and identification.	F	10	14	16	7	1	3.52	1.052	12	Important
	%	20.8	29.2	33.3	14.6	2.1				
7. Technological development: includes modern technologies (AI/XR/VR/AR), and smart building materials.	F	10	17	14	6	1	3.60	1.026	11	Important
	%	20.8	35.4	29.2	12.5	2.1				
8. Internal environmental quality: Internal environmental quality includes ventilation, lighting, and thermal comfort.	F	36	8	2	2	0	4.58	0.919	2	Very Important
	%	75	16.7	4.2	4.2	0				
9. Surrounding environment: integration between the courtyard and its surroundings in terms of the entrances leading to the courtyard and the facades overlooking it.	F	13	24	8	1	2	3.94	0.954	5	Important
	%	24.1	50	19.7	2.1	4.2				
10. Operational cost: Means the study of the role of the courtyard in reducing operating costs.	F	14	20	8	6	0	3.88	0.981	7	Important
	%	29.2	41.7	16.7	12.5	0				
11. Marketing strategy: In terms of exploiting the courtyard in determining the appropriate marketing strategy for the shopping center.	F	12	17	11	8	0	3.69	1.035	9	Important
	%	25	35.4	22.9	16.7	0				
12. Internal policy: It is the impact of the general trend in the management of state institutions on the private sector and investment methods.	F	5	13	18	10	2	3.19	1.024	13	Medium Importance
	%	10.4	27.1	37.5	20.8	4.2				
13. Security and safety: In terms of achieving security and safety standards through the overall monitoring of the courtyard and the clarification of danger zones and safe escape routes.	F	28	9	9	2	0	4.31	0.926	3	Very Important
	%	58.3	18.8	18.8	4.2	0				

D. Distribution of answers to questions of the third axis of the questionnaire (possibility of adding or deleting any of the proposed variables) :

Table 9. shows the distribution of answers to the questions of the third axis, which are related to the possibility of adding or deleting any of the proposed variables.

Table 9. The questions of the third axis that clarify the possibility of deleting or adding any of the previous variables

Variables								
14. Do you think any other variables should be added to the list?		Yes	No					
	F	5	43					
	%	10.4	89.6					
15. If the answer is yes, please mention these variables that you see the importance of adding.		Age needs	disabled needs	Human scale	Functional determinants	accessibility to spaces	Categories of users	Aesthetic determinants
	F	1	1	1	2	1	1	2
	%	2.1	2.1	2.1	4.2	2.1	2.1	4.2
16. Do you see that some of the mentioned variables are not important in the study?		Yes	No					
	F	10	38					
	%	20.8	79.1					
17. If the answer is yes, please mention these variables that		Internal policy	Marketing policy	Technological development	Operating cost			

you see are excluded from the measurement tool.	F	8	3	2	2	
	%	16.66	6.25	4.16	4.16	

E. Based on the results collected from the questionnaire; the following general indicators can be inferred

- Comparison of the importance of each variable based on the results of the questionnaire **Fig. 3**.

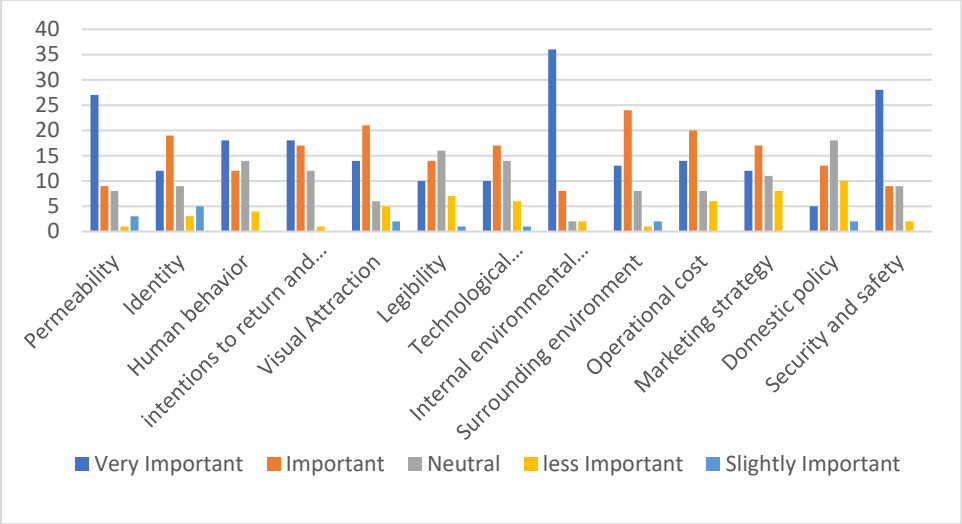

Fig. 3. The evaluation percentages for the proposed variables for the human aspect in shopping center courtyards.

- Ranking of importance by calculating the relative weight for the proposed human aspect variables **Fig. 4**.

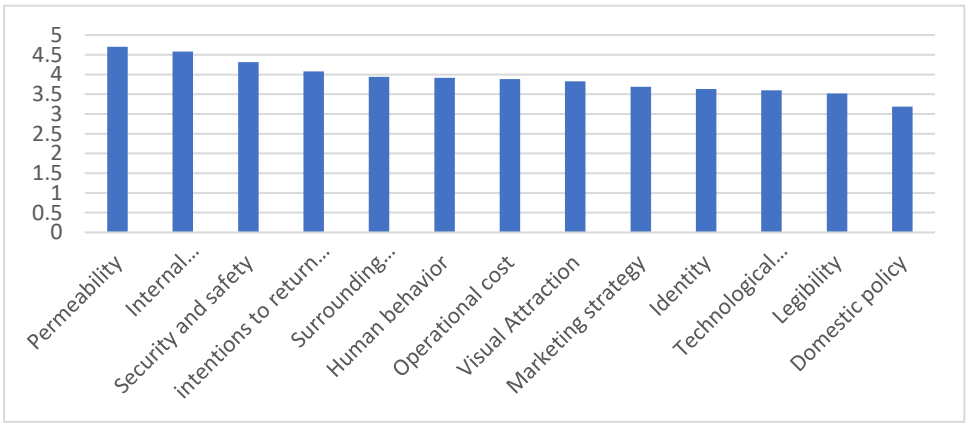

Fig. 4. The order of importance for the proposed variables for the human aspect in shopping centers courtyards

- Percentages and weights of each of the proposed variables for the human aspect of shopping centers courtyards **Fig. 5**.

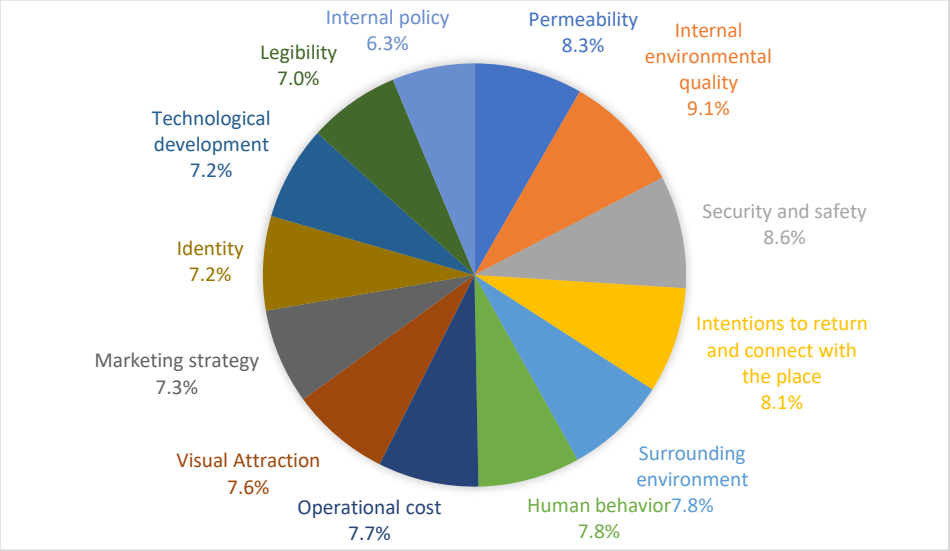

Fig. 5. The weights of the proposed variables for the human aspect of shopping centers courtyards

- Total percentages for evaluating the degree of importance for the variables **Fig. 6**.

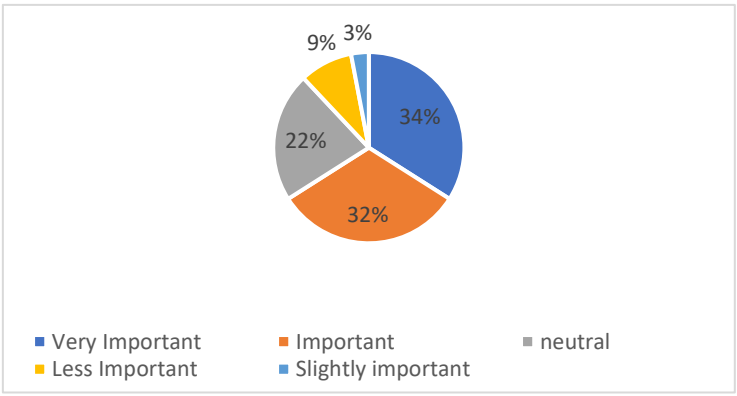

Fig. 6. The total evaluation percentages of the importance of the proposed variables for the human aspect of shopping center courtyards.

Table 8 and **Fig. 6**. show the convergence and divergence between the sample's assessment of human aspect variables. We note the high percentage of importance selection for the elements of (permeability, indoor environmental quality, and security and safety) with relative weight values (4.7, 1.58, 4.31) in order and values of standard deviation (1.173/0.919/0.926), which puts them as a priority compared to the rest of the elements. While the elements (intentions to return and attachment to the place, human behavior, and the surrounding environment) come in second in terms of importance, followed by the rest of the elements with converging importance ratios, and the internal policy takes the least value in importance ratios where the relative weight value is (3.19) and the standard deviation (1.024).

As for the second axis, we find that 89.6% believe that no other variables are required, while 10.4% suggest adding some variables such as (aesthetics, human scale, requirements of people of determination, ease of access to spaces, spatial ratios, functional aspects, sustainability) with percentages ranging from 2.08% to 4.16%, which are weak percentages that cannot be relied upon.

While 79.1% believe that the proposed variables are appropriate for the purpose of the study, and 20.8% believe that it is necessary to delete some variables such as the internal policy (with a percentage of 16.66%), the marketing policy (with a percentage of 6.25%), and both technological development and operating costs (with a percentage of 4.16%). Based on this, the internal policy variable can be deleted as it received the lowest importance ratio and the highest percentage for proposals for variables that need to be removed.

Based on the results of the survey, which tested the proposed elements of the human aspect, and the ranking of the importance ratios, the final image of the criteria of the human aspect can be reached, which is shown in **Fig. 7**.

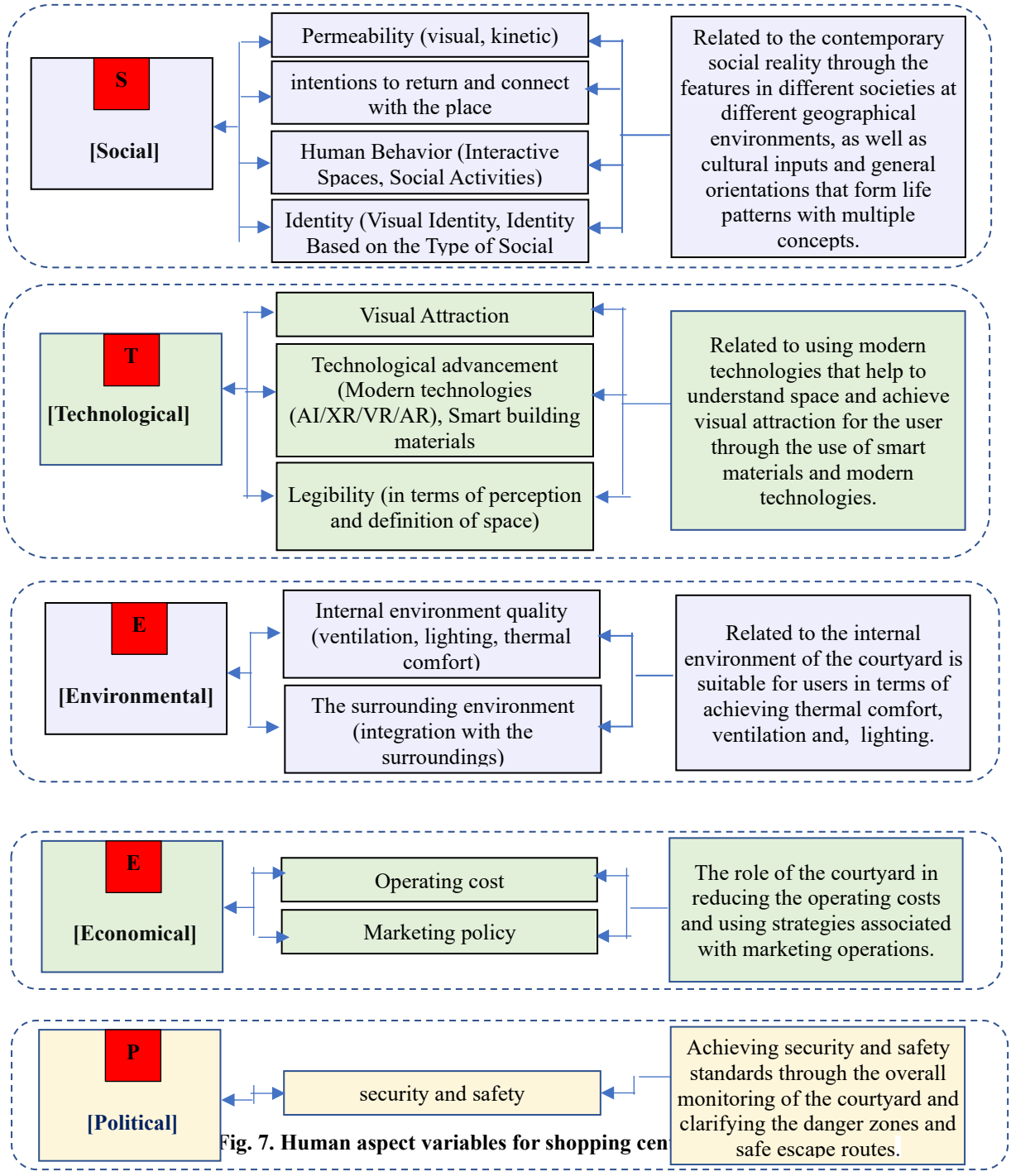

Fig. 7. Human aspect variables for shopping cen

It is expressed by the following drawing **Fig. 8**.

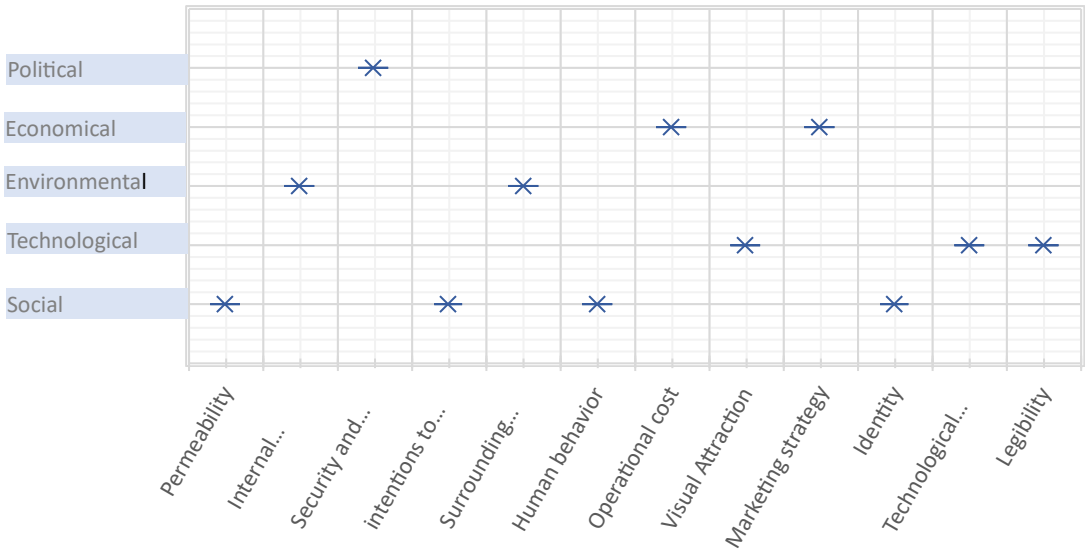

Fig. 8. Human aspect variables for shopping centers courtyards

The research results can be summarized as follows: the presentation of a criteria that ensures the realization of the human aspect in the courtyards of shopping centers, which includes the variables that form the human aspect and can be used by designers and researchers in the development and design of shopping center courtyards. The results of the previous literature included the study of many and scattered human factors that may relate to psychological, behavioral, environmental, or social aspects. The current research presents an integrated criteria of the human aspect in shopping centers that was reached through reference to specialists in addition to the opinion of the user himself (through a questionnaire) to ensure its effectiveness and clear expression of the human being.

Conclusions

The research findings provide a valuable contribution to the understanding of the human aspect of courtyards in shopping centers in addition to the interpretation of the relationship between the human aspect and courtyards in shopping centers.

The criteria identified in the research can be used to guide the design and development of courtyards that are more welcoming and engaging for users and measure its role in enhancing the interactive relationship between the user and the courtyard in terms of participation rates in activities, future intentions of return, and others.

This criteria (Figure 7) was built using STEEP Analysis as well as theorists' opinions and research on topics related to human aspects and shopping centers. Eventually, a survey was conducted for specialists from different architectural fields to express any observations or suggestions and confirm variables' impact and influence on the human aspect of courtyards in shopping centers, This process resulted in the final criteria that define the human aspect in shopping centers courtyards, which is the main objective of the research. The research reached to criteria that can be relied upon to achieve the human aspect of shopping centers courtyards, including Social,Technological, Economic, Environmental and Political aspects.

Based on the above, we note that all factors of considering the human aspect boil down to the comfort of the courtyard users and meeting their various needs. In other words, the human is the true measure of the success or failure of the courtyard in a shopping center. Therefore, the

importance of the human aspect and the need to focus on the users' desires and meet their needs become apparent.

So the research recommends considering the human aspect variables that the research reached as design principles that must be adhered to when designing courtyards in shopping centers, treating the courtyard of the shopping center as a social center where many activities and events have organized that suit the needs of all family members, considering the courtyard in the shopping center is one of the most important spaces related to humans, so its architecture must express the spiritual, psychological, and ideological needs of humans, The courtyard in a shopping center is not only an environmental and functional solution, but it is also one of the most important means of achieving human comfort in all its forms.

The research has provided a background to support further research and analysis in a philosophical research study on the Human aspect of courtyard architecture in shopping centers between authenticity and contemporary, conducting specialized studies for each of the variables of the human aspect of the shopping center courtyard individually, and development of practical application methods for implementing these criteria in real-world courtyard design.

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