

A LIFE STYLE THEORIES APPROACH FOR AFFORDABLE HOUSING RESEARCH IN SAUDI ARABIA

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عادة ما يمثل تقليل التكلفة العنصر الأساسي والوحيد في المدخل التقليدي للبحث في مجال الإسكان الميسر، بينما تشكل أنماط وأسلوب الحياة الخاص بالفئات المستهدفة، ورضاهم عن مساكنهم الحالية، وتفضيلاتهم في مساكنهم المستقبلية- عناصر عادة ما يتم تبسيطها أو تضمينها بأساليب مصطنعة أو تجاهلها في العملية البحثية. ولذلك تهدف هذه الدراسة إلى طرح مدخل تكاملي للبحث في مجال الإسكان الميسر بالمملكة العربية السعودية، ويعتمد هذا المدخل على مفهوم "عبر التخصصات" والذي يتخطى الحدود الفاصلة بين أنواع المعرفة المختلفة. وقد تم صياغة جدلية نظرية عن تأثير هذا المفهوم على تفهم الإسكان الميسر، والتي صيغت في سياق نظريات أنماط الحياة والمفاهيم المنبثقة عنها والمشتتة على الارتباط المكاني، والتوازن، والتفضيلات البصرية والرضا عن البيئة السكنية. وتجيب هذه الدراسة على التساؤل عن كيفية تضمين تلك المفاهيم في عمليات البحث في مجال الإسكان الميسر. ومن ثم تم صياغة إطار بحثي ترحم إلى أداة استبيان مسحية. ويوضح اختبار تلك الأداة البحثية المقترحة صحتها من الناحية المنهجية، كما يؤكد أهمية تضمين أنواع المعرفة المختلفة عند البحث في مجال الإسكان الميسر. ومن ناحية أخرى توضح نتائج اختبار الأداة البحثية أهمية تفعيل نظريات أنماط الحياة المنبثقة عن تخصصات مختلفة كنوع معرفي جديد يشكل أهمية قصوى في البحوث المستقبلية في مجال الإسكان الميسر.

The typical approach of affordable housing research views cost reduction as one single determinant. Other crucial factors such as lifestyles of the targeted populations, people satisfaction of their current houses and residential environments, and their aspirations and preferences in future houses are always oversimplified or superficially addressed. Therefore, the aim of this paper is to develop and present a comprehensive approach for investigating affordable housing in Saudi Arabia. The approach is based on a new paradigm of research: trans-disciplinarity; a form of inquiry that crosses the boundaries of different disciplines. An argument on the impact of trans-disciplinary thinking on understanding affordable housing is developed, then is placed within the perspective of how lifestyle theories and their underlying concepts including place attachment, appropriation, visual preferences, and people satisfaction, can be integrated into a comprehensive investigatory process. In turn, a framework of inquiry is developed while reflected on affordable housing knowledge types. An interpretation of the framework into a survey tool is conceptualized. The tool is introduced in the form of a questionnaire to be implemented in the context of Saudi Arabia. The testing of the questionnaire as a tool of inquiry reveals its validity, corroborates the value of integrating different knowledge types into affordable housing research, and accentuates the value of introducing lifestyle theories as a new form of knowledge necessary for future inquiry on affordable housing.

Keywords: Lifestyle Theories, Trans-disciplinarity; Preferences, Affordable Housing.

1. INTRODUCTION

The rising demands on affordable housing in Saudi Arabia and the increasing interest of developers to invest in affordable housing projects mandates a clearer understanding and appreciation of the lifestyles and cultural values of the local society. Dealing with affordable housing as products or commodities only results in less than appealing and depressing environments that do not meet basic needs or satisfy the preferences of potential users.

In Saudi Arabia, there has been a declining income from oil production that continued during the nineties, which has led to reduction in government revenues.

As well, the influx of rural and desert population into urban areas have exacerbated the problem of providing affordable housing to the populace. However, the recent boom in oil prices and the flourishing economy led to a surge in the construction of housing environments where many projects are currently undertaken by government agencies and through many private sector initiatives.

The Saudi environmental and socio-cultural contexts demand that affordable housing should not aim at merely providing shelters to lower income populations, it should also offer design solutions that are sensitive to the local context. Issues such as

privacy, social cohesion, and perceptions on residential density, preferences, and the lifestyles of the target populations should be considered in providing desirable, affordable and sustainable housing.

The basic premise of this paper is that affordable housing has not been addressed in a comprehensive manner; it has been approached from a professional milieu as well as from an academic perspective. At the two levels, it has been an issue of debate where numerous conferences, publications, and consultancy reports have addressed different aspects of affordable housing. Investigating the literature that has been developed over the past two decades reveals critical arguments on the way in which such an important subject has been approached in practice, or debated in academe over the years.

Discussions and methodological research on housing and affordable housing included took place through six approaches^[1]: aesthetic or formal interpretation, the typological approach; evolutionary theories and physical explanations such as building technology and climatic aspects; social explanations such as defense theory and household structure; socio-cultural factors; and religious practices. In the Arab world including Saudi Arabia, debates around housing of all types seem to have drifted into two domains that seldom meet^[2]: A) technical discussions about the problems of mass housing including land acquisition, services, credit, finance, and urban planning, or B) stylistic discussions of the cultural authenticity of housing production. However, issues are always addressed in isolation and many factors, critical to the success of affordable housing projects and essential for developing knowledge about existing projects, are oversimplified, superficially addressed, or ignored. Therefore, a new innovative and alternative approach is obviously needed; an approach that has the capacity to address multiple issues at a time while reflecting the thinking spirit of the present era that is based on trans-disciplinarity; the integration of different types of knowledge.

2. CONCEPTIONS AND MISCONCEPTIONS IN AFFORDABLE HOUSING RESEARCH AND PRACTICE

Despite the current surge in the construction of housing environments in the kingdom, the quest for affordable housing remains elusive for a large segment of Saudi society. Descent, affordable housing is emerging as a critical issue toward the social and economic well being of the kingdom of Saudi Arabia. Demands for such housing continue to far outstrip supply and those projects that are currently built suffer from severe cost constraints, while lacking important qualities that relate to people needs and cultural aspirations.

To many architects, engineers, and developers, the terms “affordable housing”, “design”, and “the preferences and lifestyles of the targeted populations” are exclusive and are looked at in isolation. Once the goal of providing quality design and once the goal of understanding people preferences and their lifestyles enter the discussion, it is generally assumed that the cost will automatically increase. When production techniques are developed to provide genuinely affordable housing, effort is often focused on cost reduction only while preferences and lifestyle aspects are overlooked. Theorists like Alexander, and Burnham argue that it has proven difficult to strike a harmonious balance^{[5],[6]}.

While recently there have been notable developments in housing design that demonstrate our increased understanding of social issues and construction techniques, cost efficiency is perceived as contradictory to the overall design quality and the lifestyles of potential users. There have been many explanations given. Most often it is first blamed on a lack of funding. However, another underlying reason may stem from the public perception of what affordable housing should look like. Some well-designed projects make people uncomfortable because they are ‘too nice’. “...The underlying belief is that people who do not have a lot of money do not deserve to live in nice housing”^[3]. This notion is a flaw since it is believed that quality design and meeting the preferences of users are critical to instill a sense of pride in potential occupants. “It must also bestow on its inhabitants a sense of dignity...To ignore this aspect of housing or to consider it a prerequisite for only those who can afford market-rate housing, is to invite both social and financial disaster”^[4].

People need to have a personal psychological investment in their houses and are well aware when asked to live in impersonal housing. Unattractive housing directly affects the self-respect of the occupants. “All people want to see themselves reflected, to express themselves on paper or canvass and in speech, dance, and their choice of car, clothing or built environment.”^[5]. If people are consistently told, through the kinds of housing offered, that they are only worthy of a certain level of quality, they may come to believe it. Understanding preferences and the lifestyles of people gives architects and planners the chance to create a sense of individual expression and thereby a pride at an affordable cost^[6].

The preceding discussion conveys that there are misconceptions in the conventional approach where affordable housing worldwide in general and in Saudi Arabia in particular is always understood from the perspective of cost reduction only as one single determinant, while other critical determinants such as the lifestyles of the targeted populations, their satisfaction of their current houses, and their preferences of the future houses need to be addressed.

This, in essence, requires an alternative approach that integrates these concerns in a comprehensive manner.

3. A RESPONSIVE ARGUMENT: TOWARD A PRODUCTION OF TRANS-DISCIPLINARY KNOWLEDGE

“... Architects who have aimed at acquiring manual skills without scholarship have never been able to reach a position to correspond with their pains...” Marcos Vitruvius Pollio, *Ten Books on Architecture*, 100 B.C.

Theorists and practitioners have been discussing the issue of architectural knowledge for several decades. Recent years, however, have witnessed an intensive debate in built environment literature. Donald Watson attempted to define a demand for knowledge in architecture and built environment. He argues that: “*The discipline of architecture needs a rigorous knowledge base by which to support its premises and principles that define the relationship between human and community health, and between building and urban design,*” (Quote from [7]). Henry Sanoff confirms this view when he argues that architecture should be based on knowledge of people needs; it should not be based just on the creative impulses of architects [8].

To date, the development of rigorous theory/knowledge building has been at the edge of the profession and frequently marginalized as something separate from the profession of architecture, that is: environment-behavior studies, building sciences, environment-technology studies, etc. As a result, most practitioners are not well equipped or even interested to understand the value of their professional services. Concomitantly, the standing of the profession is marginalized in the eyes of the public. That is, without research, scholarship and a rigorous knowledge base, the profession cannot take stands on significant health, economic, social, political or ethical issues.

Watson argues for the need for a rigorous knowledge base in architecture. He believes that this knowledge could strengthen architects potential to understand the object proper of their professional expertise and its value in relation to other fields of expertise [9]. Along the same line of Watson’s thinking Amos Rapoport (1994) argues for the need for the discipline of architecture to develop a quantifiable body of knowledge based on qualitative measures by calling for a dramatic departure from the art metaphor that the profession and its education are based upon to one based on science and research. Rapoport introduced a number of questions underlying the heading of “knowledge about better environments”; these are: what is better, better for whom and why it is better?^[10,11]

Recently, John Habraken introduced an argument similar to those of Watson, Rapoport, and Sanoff, but with a focus on the education of future professionals. Habraken argues, and rightly so, that “We need to teach knowledge about everyday environment. How it

is structured, what we can learn from historic and contemporary evidence, how different examples compare, how it behaves over time and responds to change of inhabitation or other circumstances... Teaching architecture without teaching how everyday environment works is like teaching medical students the art of healing without telling them how the human body functions. You would not trust a medical doctor who does not know the human body. Knowledge of everyday environment must legitimize our profession...” [12].

In essence, the preceding eloquent arguments call for a more stable basis for knowledge in architecture and in the creation of built environments and affordable housing is no exception. Such basis would be in the form of a more balanced and integrated types of knowledge. Therefore, an elaboration upon these arguments in the context of recent discussions on different modes of knowledge production and on different types of knowledge in architecture and the built environment is needed.

4. MODES OF KNOWLEDGE PRODUCTION

Planning and architecture, like other fields of vocational expertise, can be classified as professional disciplines, especially when we regard them as fields of inquiry^[13]. Ulf Sandström has followed the development in profession-related studies since he identified two trends in research and knowledge production in the field of professional expertise: one which is oriented towards the production of mono-disciplinary academic knowledge, and the other which is directed towards subjects derived from concrete life situations, these being solution-oriented [9].

Table 1 Definition of modes of knowledge production

Modes of Knowledge Production	Descriptive Definition
<u>Mode 1</u> Mono-Disciplinary Multi-Disciplinary	The complex of ideas, methods, values and norms that has grown up to control the diffusion of the Newtonian model of science to more and more fields of inquiry and ensure its compliance with what is considered sound scientific practice.
<u>Mode 2</u> Trans-Disciplinary	Knowledge production carried out in the context of application and marked by its: trans-disciplinarity; heterogeneity; social accountability and reflexivity; and quality control, which emphasize context – and use-dependence. It results from the parallel expansion of knowledge producers and users in society.

King and Burnell offer a broad and convincing representation of what constitutes an academic discipline. They propose several aspects that include a

community, a network of communications, a tradition, a particular set of values and beliefs, a domain, a mode of inquiry and a conceptual structure^[13]. Another definition, by Toulmin, focuses more on epistemological considerations, presenting disciplines like this "...each is characterized by its own body of concepts, methods and fundamental aims"^[13]. In his important work on trans-disciplinarity, Gibbons describes two parallel and competitive modes of knowledge production^[14]. He described them as outlined in Table (1).

The definition of Mode 2 introduces the notion of trans-disciplinarity that can be described like this: Trans-disciplinarity is a new form of learning and problem solving involving co-operation among different parts of society and academia in order to meet complex challenges of society. Trans-disciplinary research starts from tangible, real-world problems. Solutions are devised in collaboration with multiple stakeholders. Thus, trans-disciplinarity is about transgressing boundaries of disciplines.

As a practice-oriented approach, transdisciplinarity is not confined to a closed circle of scientific experts, professional journals and academic departments where knowledge is produced. Through mutual learning, the knowledge of all participants is enhanced, including local knowledge, scientific knowledge and the knowledge of concerned industries, businesses, and non-governmental organizations. The sum of this knowledge will be greater than the knowledge of any single partner. In the process, the bias of each perspective will also be minimized^[15,16].

The trans-disciplinary type of knowledge is partly based on epistemological research. While mono-disciplinary and multi / inter-disciplinary research is clearly encompassed by Mode 1, trans-disciplinary knowledge production is the very essence of Mode 2. Gibbons maintains that Mode 1 has its role mostly for providing a stable basic educational training and for instilling in individuals a sense of disciplinary identity. On the other hand, he argues that there is a demand for the aptitude to co-operate with experts from other fields and for the ability to see problems in a complementary manner. Such faculties rest upon the capacity to assume multiple cognitive and social identities. Thus, both modes of knowledge production are in demand and should find a mutual balance^[14,17].

5. IMPACT OF TRANS-DISCIPLINARITY ON UNDERSTANDING AFFORDABLE HOUSING

The preceding discussion on trans-disciplinarity as a thinking paradigm reveals that "trans" in the term is about transition and movement where the rigor of research and knowledge production is matched by the concerns for establishing connections and inter-relationships. This means that there is a "middle zone" of exchange between disciplines. It also means

shifting the grounds of research in both the sciences and the arts from a concentration on disciplinary needs and history of things/issues, to an emphasis on how needs of one discipline are connected to knowledge goals and aspirations of other disciplines. In other words, it can be argued that no discipline can make strong claims anymore about its own direction, value, and output in isolation from what is happening in other areas of research.

Looking at the latest literature on sustainable affordable housing as a field of research, one could trace its trans-disciplinary nature^{[18], [19], [20], [21], [22], [23], [24], and [25]}. It involves research paradigms that range from policy making, economics and financial concerns, to environmental and cultural aspects, to planning, design, management, and operations. This is due to the fact that the provision of sustainable affordable housing is always constrained by the need to consider social, environmental, and economic implications.

Affordable housing can be viewed as a web of influences and inter-relationships of a wide spectrum of issues and this reflects the trans-disciplinary nature of sustainable affordable housing investigation or development. For example, it is acknowledged in the literature that the morphology of residential production influences the development of cities and concomitantly generates environmental impacts and infrastructure stress. It is also acknowledged that the typology of houses influence the social and environmental performance of neighborhoods. These inter-relationships mandate a comprehensive understanding of sustainable affordable housing where the creation of trans-disciplinary tools of inquiry would be indispensable.

Within the preceding context it should be noted that while research studies on affordable housing highlight the multifaceted nature of the process of investigating or creating affordable housing projects, little emphasis was placed upon addressing the socio-cultural, economic aspects in an integrated manner and the way in which they influence one another as different disciplinary issues. This is clearly evident where one could see studies that place emphasis on policy and economic issues without looking at the impact on other critical concerns such cultural and environmental aspects. On the other hand, the authors notice other types of studies that place emphasis on the physical characteristics of dwellings or neighborhoods, again, without clear indicators of how physical aspects can be linked to socio-cultural concerns^[26].

While social and cultural issues are introduced in the literature as successful determining factors, very little is offered on how to introduce such issues either when investigating sustainable affordable housing in a research process, or when attempts are envisioned to develop sustainable affordable housing projects in a developmental process. The fact that affordable housing is always defined in economic terms or by the

relationship between household's income and expenditures does not mean that other issues, such as socio-cultural concerns including people preferences, lifestyles, and cultural aspirations are oversimplified or addressed in isolation. This suggests that creating affordable housing projects and that producing knowledge about affordable housing requires a new paradigm of thinking, which is based on trans-disciplinarity that crosses the boundaries between wide spectrums of issues that stem from different disciplines. In this context, the author asserts that the typical approach for investigating affordable housing adopts the perspective of cost reduction only as one single determinant, while other critical determinants such as the lifestyles of the targeted populations, their satisfaction of their current houses, and their preferences of the future houses are typically absent from the inquiry process. Therefore, emphasis is placed upon integrating economic, cultural, social, and behavioral aspects in addition to other contextual measures within which sustainable affordable projects are created.

6. AN ALTERNATIVE APPROACH: INCORPORATING LIFE-STYLE THEORIES INTO A COMPREHENSIVE RESEARCH PROCESS

Since the intention of this paper is to develop a new approach for investigating affordable housing in Saudi Arabia, it is essential to redefine the nature, direction, and orientation of knowledge about affordable housing to be more relevant to the socio-economic and cultural contexts of Arabia. It is therefore proposed that adopting a trans-disciplinary thinking requires that trans-disciplinarity is viewed as a realm of research that differs from other forms of inquiry. Concomitantly, investigating affordable housing in a transitory fashion that crosses the boundaries between different disciplines is paramount. It is also envisioned that the unique characteristics that the kingdom enjoys in terms of economic, social, and cultural particularities necessitates a comprehensive mechanism that addresses the misconceptions, which characterize other conventional approaches of inquiry that rely heavily on knowledge types emerging from one single discipline. Thus, a number of perspectives is incorporated in a proposed alternative approach, derived from different disciplines while at the same time crosses the boundaries between them. Such an approach is based on introducing lifestyle theories.

6.1. Life Style Theories

The proposed approach involves the introduction of lifestyle theories into other concerns including financial, cost reduction, and affordability issues. Understanding how the issue of affordability may relate to people preferences and lifestyles mandates an understanding of lifestyle theories that emerged from

other disciplines and branches of science such as ethnology, anthropology, and sociology. Ethnology is defined as *"the science that analyzes and compares human cultures, as in social structure, language, religion, and technology"*, while anthropology is defined as *"the scientific study of the origin, the behavior, and the physical, social, and cultural development of humans."*^[27]. It should be noted in this context that ethnology is also defined as a branch of anthropology that addresses cultural issues thereby is often referred to in the literature as "cultural anthropology." On the other hand, sociology is defined as *"The study of human social behavior, especially the study of the origins, organization, institutions, and development of human society."*^[27]. Sociology involves the analysis of a social institution or a societal segment as a self-contained entity or in relation to society as a whole.

Literature on lifestyle and social issues as they relate to geography and place reveals important perspectives^[28-30]. Giddens in 1984 introduced the theory of structuration in his book *"The Constitution of Society: Outline of the Theory of Structuration."* His theory is based on establishing a dynamic perspective of how different elements of a society interact. Such a work is based on a critical understanding of people, organizations, agencies, and the power that each element of a society would have^[28]. The introduction of the theory of structuration generated an intensive debate on linking issues that pertain to the relationship between the structure of society and the physical environment, namely the concept of place. Allan Pred in his article titled: *"Place as Historically Contingent Process: Structuration and the Time-Geography of Becoming Places"* introduced a framework that is based on an integration of time-geography (place) and the theory of structuration. He conceptualized place as a human product as well as a set of features visible on the landscape. In essence, what should concern researchers in this regard is the term *"human product"*^[29].

The views introduced by Giddens and Pred on the one hand, foster a deeper insight into affordable housing. For example, the assemblage of buildings in a housing environment, land use patterns, and arteries of communication that constitute that environment as a place cannot emerge fully or formed out of nothingness, stop or grow rigid, or indelibly etched in the once-natural landscape; they represent a human product. In other words, such an environment is seen as a place that involves an appropriation and transformation of space and nature; processes that are inseparable from the reproduction and transformation of society. On the other hand, such views invigorate an understanding that the social aspects of everyday life can be seen as rich realm that offers valuable theoretical, epistemological, and substantive contribution to how affordable housing environments

can be investigated. Three major theories appear to have influenced recent conceptions about lifestyles and human preferences. These are of the Danish ethnologist: Thomas Hojrup; the British anthropologist: Mary Douglas; and the French sociologist: Pierre Bourdieu.

Thomas Hojrup introduced the concept of life-mode in his book “*State, Culture, and Life-Modes: Foundations of Life Mode Analysis* (2003)”. He argues that our values are constrained by cultural-relational dialectics and are product of cultural life modes^[31]. He attempted to address the problem that different cultural values conflict when they are brought together. The three life modes he introduced are: self-employed life mode, wage earner life mode, and career oriented life mode.

The preceding classification shows that based on income level, work sector, and work style of an individual, house needs and preferences vary dramatically. Putting these three life modes into a house/home, or affordable housing perspective, one could relate them as follows:

- The first mode is *self-employed* where means of production are owned and included within the house. Therefore, the house acts as both living and working place, and no separation between working time and spare time.
- The second mode is *wage-earner* where the house is either regarded as a primary place serving recreational purposes, or as a place where important spare-time activities are undertaken.
- The third mode is *career oriented* where ideally the house reflects the personal progress in order to reflect position, social status, and past and recent experiences.

In 1996, Mary Douglas introduced a similar life style theory. Four different sub-cultures stem from this theory; these are: competition and individualism; isolation and avoidance of social controls; equity and negotiation; and hierarchical communities^[32]. These sub-cultures relate directly to how affordable housing environments could be understood and investigated. Housing typology in terms of house size, house integration within the neighborhood and community, and the overall house image are important elements when reflecting this theory on affordable housing.

Pierre Bourdieu’s theory corresponds with Douglas’s theory since he introduced in 1984 three key concepts for understanding the concept of lifestyle; these are: habitus, position, and distinction^[33]. Habitus refers to past experiences and embedded preferences as well as socio-behavioral practices. Position means what agents have in terms of different kinds of capital and he means by agents people and institutions.

Distinction involves being distinguished and being an individual. This understanding can be linked to affordable housing investigation, especially when developing mechanisms of inquiry about what housing environment people have experienced and what housing environment people would like to live-in in the future; inquiry about issues that reflect people past experiences and social practices and preferences of the future.

It is apparent that the three theories are based on different set of interests under different lifestyles aspects. Therefore, Hojrup’s theory can be labeled as a work-based theory, Douglas’s theory can be labeled as attitude based theory, while Bourdieu’s theory can be labeled as status based theory. All are conceived to dramatically influence the understanding of affordable housing in physical and social terms. Thus, they should be included in any inquiry aimed at knowledge production about affordable housing. Such understanding is illustrated in Figure (1).

Introducing lifestyle theories can be viewed as an enabling mechanism for a deeper investigation of affordable housing in the context of Saudi Arabia. However, two additional concepts appear to be crucial when establishing a comprehensive investigatory process; these are: a) place attachment and b) home appropriation since they collectively represent a critical relationship between the physical characteristics of a housing unit (which needs to be seen from a “home” perspective), the degree of satisfaction of the existing home environment, and the preference of the home and the overall residential environment of the future. The question that can be raised at this point is how lifestyle theories and their underlying concepts can be utilized in affordable housing research. The following section provides the answer in the form of a comprehensive framework that ultimately leads to designing a tool of investigation.

7. DESIGNING AND TESTING A TOOL FOR AFFORDABLE HOUSING RESEARCH

In light of the preceding crux of the argument, the three lifestyle theories, and the discussion of environmental psychology relevant literature, a framework for investigating affordable housing is conceptualized based on the fact that people current experiences and degree of satisfaction and people future needs and preferences should be integrated in a comprehensive investigatory mechanism. This is derived from the value of integrating lifestyle theories in a trans-disciplinary manner. The framework is structured in four clusters; each of which seeks out the development of a specific type of knowledge as illustrated in Figure (2). The four clusters of the framework can be outlined as follows:

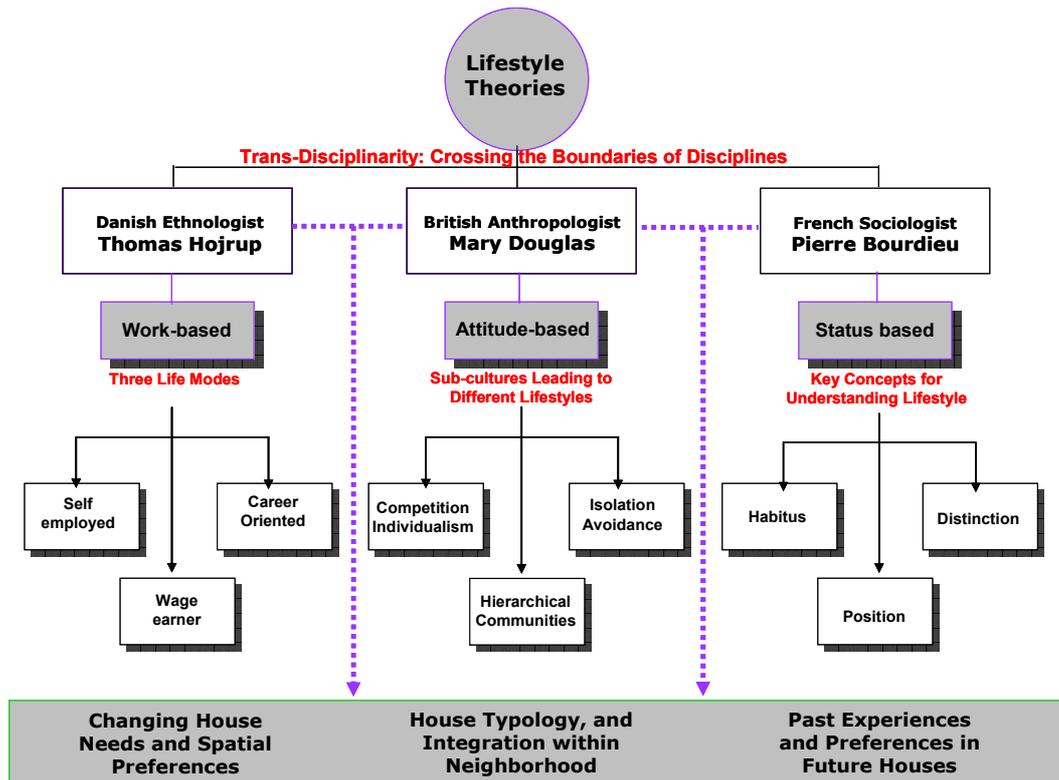


Figure 1. Incorporating trans-disciplinary thinking into a comprehensive investigatory process of affordable housing: Lifestyle Theories

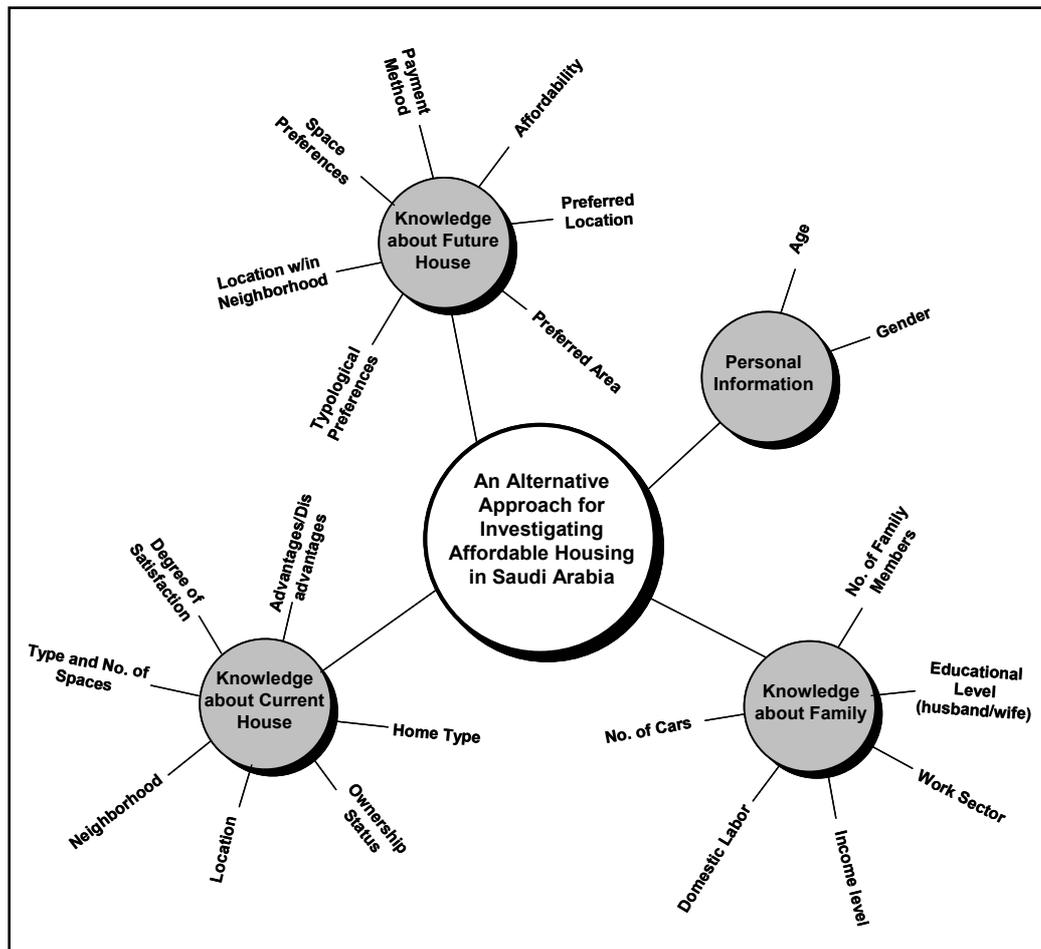


Figure 2. Framework for inquiry about affordable housing in Saudi Arabia.

- **Cluster (1):** addresses personal information including gender and age.
- **Cluster (2):** aims at developing knowledge about family that reflects different life-modes among other issues. It includes issues that pertain to number of family members, educational level, work sector, income level, presence of domestic labor, and number of cars used by family members.
- **Cluster (3):** investigates issues toward developing knowledge about current home that translates key concepts of understanding lifestyles including issues that pertain to appropriation and place attachment. Such issues are translated into a number of questions that involve home type, ownership status, space availability, and the degree of satisfaction.
- **Cluster (4):** seeks out the development of knowledge about future home that reflects the three life style theories. It includes issues related to future space needs, position within the community/neighborhood, and home typological preferences.

The proposed framework is translated into a survey tool in the form of a questionnaire, developed and designed based on the structure of the framework. In this questionnaire, questions are categorized in a manner that follows the sequence of the four clusters. The questionnaire was developed in Arabic since the intention is to address the Saudi context, and therefore it was examined in the same context. The city of Jeddah was selected for testing its validity. A large number of questionnaire sheets were distributed in a real estate exhibition where many real estate development companies display their projects; many of which are affordable housing projects. It should be noted in this context that sampling was not of concern since the main aim was to examine the validity of the framework and the tool. Over three hundred and fifty questionnaire forms were gathered from potential home buyers.

Several relationships that manifest a trans-disciplinary thinking and that establish links between wide varieties of issues can be conceptualized based on the responses received. An example of how more than one issue of concern to affordable housing knowledge production can be illustrated by developing a relationship between income level and house layout preferences. In terms of the layout and the overall house type, 27% of the respondents prefer a corner individual house (overlooking two streets) and the same percentage prefer living in a house within a group of houses that overlooks a public garden. 17% prefer to live in a typical private (individual) house that has its own boundaries, and only 9% prefer the duplex house type. Some interesting results are drawn when linking these figures to income levels as shown in Figure (3).

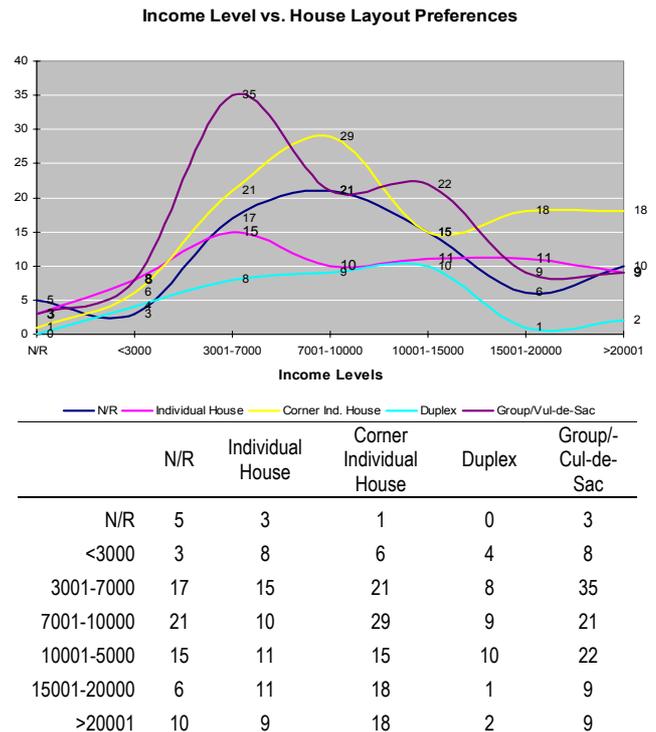


Figure 3. Relationship between income level and house layout preferences (developed based on testing the survey questionnaire and the responses received).

Linking house layout preferences to income levels, the following relationships can be drawn as follows:

- 15 respondents out of 64 who prefer individual house that has separate boundaries have income in the range of 3001-7000 SR a month.
- 29 respondents out of 87 who prefer individual corner house (overlooking two streets) have income in the range of 7001-10000 SR a month.
- 10 respondents out of 34 who prefer duplex type house have income in the range of 10001-15000 SR a month.
- 35 respondents out 104 who prefer a house within a group of houses that overlooks a public garden have income in the range of 3001-7000 SR a month.

8. CONCLUSION

It is clearly evident that a new paradigm of thinking is emerging where no one theory or discipline would have the upper hand in developing a comprehensive understanding of affordable housing. In the old paradigm, the value of affordable housing is assumed to be in the quantifiable attributes of dwellings and their related cost, while in the new paradigm affordable housing inquiry can be viewed within relationships between the process, the product, and the socio-cultural aspects of the targeted populations. Simply, the old paradigm views affordable housing in terms of what it is, rather than what it does for the local populations and the way in which they perceive

their current environment and aspire to environments more responsive to their social needs and lifestyles.

This study aimed at developing a comprehensive innovative approach for investigating affordable housing in Saudi Arabia. Such an approach was based on introducing a new paradigm of research: trans-disciplinarity as a form of inquiry that crosses the boundaries of different disciplines. An argument on the impact of trans-disciplinary thinking on understanding affordable housing was developed and placed within the perspective of how lifestyle theories and their underlying concepts can be incorporated into a comprehensive investigatory process. In turn, a framework of inquiry was developed while reflected on affordable housing knowledge types.

The proposed framework was conceptualized and translated into a survey tool which was then devised in the form of a questionnaire to be implemented in the context of Saudi Arabia. The tool was tested in the city of Jeddah since it was distributed in one of the major real estate exhibitions. The testing of the questionnaire as a tool of inquiry reveals its validity, corroborates the value of integrating different knowledge types into the investigatory process of affordable housing, and accentuates the value of introducing lifestyle theories as a new form of knowledge necessary for future inquiry on affordable housing.

It is important to shed light on the fact that the proposed approach involves a number of correlations that aim to reach reliable results. The approach represents a structured method for investigating affordable housing in Saudi Arabia that is based on a critical understanding of the issues involved. As well, it incorporates novel ideas where issues derived from different disciplines are integrated. The importance of such an approach lies in the value of how trans-disciplinary thinking in built environment related realms can be introduced, where the boundaries of different disciplines are crossed. In essence, planning and architectural aspects, social and cultural issues, and cost and financial issues are all incorporated into one mechanism toward a comprehensive inquiry on affordable housing.

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Making Affordable Housing a Reality in Cities. Cities, Urban Development & Urban Services Platform In Collaboration with PwC. June 2019.Â Given my work on the affordable housing file in Calgary, I am heartened that the World Economic Forum has undertaken an initiative taking such a holistic approach to the affordable housing challenge, covering both the supply and demand sides. I found this report useful and hope it proves equally helpful for other cities around the world that are facing similar challenges.Â The Australia Housing and Urban Research Institute has suggested a 30:40 indicator “when the household has an income level in the bottom 40% of the country’s income distribution and is paying more than 30% of its income in housing costs.”