

Exploring Project Success Factors in Housing

A Survey-based Study
on Construction
Projects in Riyadh,
Kingdom of Saudi
Arabia

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Dedication

I dedicate this project to Dr. Mona Mostafa El Ashry, whose [support, encouragement, inspiration] helped all student to see this result and all staff in Midocean University.

Abstract

Purpose: This study examines the critical success factors (CSFs) crucial for the effective deployment of public-private partnership (PPP) models in sustainable housing projects in the Kingdom of Saudi Arabia (KSA), underpinning the nation's Vision 2030. Through a robust methodology that incorporates a profound literature review, structured interviews, and a survey involving key stakeholders, the study prioritizes fourteen significant CSFs integral to PPP efficacy. Employing Analytical Hierarchy Process analysis, key outcomes underscore the paramount importance of technical aspects with an emphasis on sustainability, tailoring risk-sharing and allocation to encompass green technologies and eco-friendly practices, and economic stability in the light of long-term environmental sustainability in fostering successful sustainable housing projects. Notably, the Build-Operate-Transfer (BOT) model is categorized as the most effective PPP modality, attaining a mean importance score of 4.07. This model is contrasted with other modalities such as Design-Build-Operate (DBO) and Build-Own-Lease-Transfer (BOLT), which scored lower in effectiveness. This comprehensive evaluation provides crucial insights for policymakers and practitioners, emphasizing the strategic selection of PPP modalities and the prioritization of CSFs to enhance the sustainability and effectiveness of housing projects in KSA

Methodology: To effectively research housing in Saudi Arabia, a multi-pronged approach is crucial. First, a clear research question regarding affordability, sustainability, policy, or another facet must be established. Then, a deep dive into existing academic and government reports is needed. Following this, the research methods will be chosen, potentially including surveys, case studies, or data analysis. Data collection with proper permissions and ethical considerations is the next step. Finally, analysis and interpretation of the findings will culminate in discussions,

conclusions, and potential recommendations. This comprehensive approach ensures a well-rounded understanding of the Saudi housing landscape.

Findings: For the statistical analysis of the data of the current study, both SPSS V SEM-PLS programs were used. The researcher conducted a descriptive analysis of the study sample, as well as a descriptive analysis of the study variables. According to the results of the statistical analysis of this study, the validity and reliability of the scales used in measuring the study variables were achieved. Also, the main hypothesis of the study and the three sub-hypotheses were proven

Recommendations: To enhance the accuracy and depth of future research on housing in Saudi Arabia, it is recommended to collaborate with housing specialists and experts. These professionals can provide valuable insights, access to up-to-date data, and specialized knowledge to inform research design and analysis.

Keywords: *Affordable housing; Enabling approach; Housing challenges
Saudi Vision 2030 Kingdom of Saudi Arabia*

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1. Chapter 1: Introduction

Housing is among the basic human needs that should be affordable to all. The concept of affordable housing originated in the 19th century in response to the problem of housing shortage, slums, and inadequate housing amenities. Housing affordability can lead to delivery of adequate housing, which improves human health, work efficiency, and overall socioeconomic development (Mubarak F. Alhajri 2022)

It also fosters social stability by reducing crimes, and creating jobs. (Mubarak F. Alhajri 2022)

The quality of housing reflects a person's identity, cultural values, aspirations and future expectations which impact the community, and in turn leads to national development. Thus, access to affordable housing will lead to the growth and development of individuals and the country. (Mubarak F. Alhajri 2022)

In KSA, rapid urbanization and population growth, inadequate affordable housing, and low rates of home ownership mean that the housing sector faces significant challenges, most especially in providing adequate affordable housing for middle and low-income households. And on this issue, the government aims to transfer its role from direct housing provider to enabler in the Saudi Vision 2030, which led to establishing the Saudi National Housing Company to transform the housing sector through an enabling approach (Mubarak F. Alhajri 2022)

The enabling approach aims to achieve housing transformation through several incentives. The “Wafi” (on-map sale program) is a model public-private partnership (PPP) scheme between the Ministry of Municipalities, Rural Affairs and Housing (MOMRAH) and private developers to sell housing units at the design or construction stage. (Mubarak F. Alhajri 2022)

While the “Etmam” is a program that streamlined the process of obtaining licensing and approval for housing development by private developers, the White Land (Alarady albida) program applies fees to residential vacant land in order to inject more land into the housing market. (Mubarak F. Alhajri 2022)

There are also the ownership forms (Masaraat Altamalluk) program that matches the socioeconomic status of housing applicants and with appropriate housing solutions based on their financial capability and existing developmental housing program (Mubarak F. Alhajri 2022)

Adopting enabling approach can enhance the capacity of the private sector to provide housing for a large segment of low-income groups as well as middle- and higher-income groups (Mubarak F. Alhajri 2022)

The Saudi government is thus implementing an enabling approach based on the idea that works in developed countries such as the UK, the USA, Canada, and Australia (Mubarak F. Alhajri 2022)

However, the implementing the approach in KSA has been criticized in several studies. For example, it does not consider the affordability of low-income people that cannot afford housing in the existing market, and directly threatens the main objective of housing provision, which is poverty alleviation (Mubarak F. Alhajri 2022)

Another study concluded that housing provision through market mechanisms is likely to be inconsistent and may require seeming policy contradictions (Mubarak F. Alhajri 2022)

It has been five years since the launch of the enabling program, but no study investigated whether the initiatives are enhancing access to affordable housing in the country. Hence, this study aims to assess the extent to which this approach tackles the challenge of affordable housing in the country. According to Kavishe et al.,

different countries have experienced varied outcomes, with most of them experiencing failures in their partnerships with housing market actors. (Mubarak F. Alhajri 2022)

In the words of Hassan” many governments around the world have adopted the enabling approach; some with more success than others”. (Mubarak F. Alhajri 2022)

There is a dearth of studies on the role of the enabling approach in improving access to affordable housing in developing countries, as only a few countries have implemented this approach. In Kolkata, India, partnerships with market actors were challenged by a lack of access to finance, especially for low income people, which conflicted with the partnerships’ goal of delivering affordable housing to those in need In Lagos, Nigeria, Ibem found that the enabling approach provided affordable serviced plots and housing units for high-income groups but contributed slightly to the needs of low-income people. Conversely, the enabling approach is successful in Malaysia where the private sector’s performance in housing has been impressive in terms of the number of housing units completed (Mubarak F. Alhajri 2022).

The private sector accounts for over 90% of housing provision and a greater proportion of low-cost housing (Mubarak F. Alhajri 2022)

Thus, the successes and failures of the enabling approach is country specific. Only a few studies have discussed housing within context of the new transformation of the Saudi Vision 2030 (Mubarak F. Alhajri 2022).

1.1. Research Background

Housing is a fundamental human need and a critical element in a nation's development. In Saudi Arabia, a rapidly growing population and a dynamic economy have placed significant pressure on the housing sector. This research background will explore the current state of housing in Saudi Arabia, highlighting key trends, challenges, and opportunities.

Housing demand and demographics Saudi Arabia boasts a young and growing population. According to the World Bank, the median age in Saudi Arabia is around 30 years old, with a projected population exceeding 40 million by 2030. This demographic shift translates to a rising demand for new housing units.

Urbanization and spatial disparities The Kingdom is witnessing rapid urbanization. The General Authority for Statistics reports that over 80% of the population resides in urban centers.

This trend puts pressure on existing infrastructure and housing availability in major cities like Riyadh, Jeddah, and Dammam. Conversely, rural areas experience housing shortages with limited access to modern amenities.

Housing Policy and Initiatives The Saudi Arabian government acknowledges the importance of addressing housing challenges. Several initiatives and programs have been implemented in recent years.

Vision 2030 This ambitious national transformation plan aims to increase homeownership rates to 70% by 2030 through various measures, including increasing mortgage accessibility and promoting alternative housing models.

Sakkan Program Launched in 2017, this program offers financial assistance to Saudi citizens for purchasing or building homes.

Public-Private Partnerships (PPPs): The government actively encourages PPPs to leverage private sector expertise and resources to develop large-scale housing projects.

Key Trends in Housing: The Saudi Arabian housing market is undergoing significant transformations. **Shifting Preferences** Younger generations seek modern living spaces with amenities and proximity to job opportunities. This trend drives demand for apartments and mixed-use developments in urban centers.

Affordable Housing With a growing middle class, the demand for affordable housing solutions is rising. This includes initiatives promoting prefabricated housing and utilizing innovative construction techniques to reduce costs.

Sustainable Housing: Concerns about environmental impact and resource efficiency are prompting interest in sustainable housing practices. This includes energy-efficient designs and the use of eco-friendly materials.

Challenges and opportunities Despite ongoing efforts, several challenges persist.

Land Availability Access to suitable land for development, particularly in major cities, remains an issue.

Financing Difficulties Limited access to mortgages for some demographics can hinder homeownership aspirations.

Bureaucracy Navigating complex regulations and approval processes can slow down housing development.

These challenges present opportunities for innovation and improvement.

Technological Solutions: Employing technology in construction management, design, and financing can streamline processes and enhance efficiency.

Community Development Focusing on creating vibrant and well-equipped communities alongside new housing projects fosters social cohesion and resident satisfaction.

Financial Inclusion Tailoring mortgage products and developing alternative financing options can expand access to homeownership for a wider segment of the population.

Research Focus and Objectives This research project will delve deeper into a specific aspect of housing in Saudi Arabia based on the identified trends and challenges. Some potential areas of focus include:

The effectiveness of government housing programs in meeting the needs of specific demographics (e.g., low-income families, young professionals).

The impact of urbanization on housing accessibility and affordability in different regions.

The role of technology in transforming the housing design, construction, and financing landscape.

The specific research objectives will be tailored based on the chosen focus area. However, some overarching goals include conducting a comprehensive analysis of the current state of housing in Saudi Arabia.

Identifying key challenges and opportunities within the housing sector.

Formulating evidence-based recommendations to improve housing policies, practices, and outcomes. Housing in Saudi Arabia is a dynamic and evolving sector. Understanding the driving forces, challenges, and opportunities is crucial for shaping effective policies and developing sustainable solutions. This research will contribute to a deeper understanding of housing issues in Saudi Arabia and inform strategies for creating a more robust and inclusive housing market that caters to the needs of a growing population.

1.2. Research Problem

Despite significant government initiatives to increase homeownership rates, Saudi Arabia faces a complex housing challenge.

While urbanization drives demand for modern housing in major cities, concerns about affordability and access to financing persist.

Additionally, the needs of diverse demographics, such as young professionals and low-income families, might not be adequately addressed by current programs.

This research project aims to investigate the effectiveness of existing housing policies in meeting the specific needs of these demographics.

By analyzing factors like housing availability, affordability, and financing options, the research will identify potential gaps and propose evidence-based recommendations to ensure a more inclusive and sustainable housing market for all Saudi citizens

1.2.1. Population Growth in Riyadh

During the past three decades, Saudi Arabia has witnessed a rapid population growth which has a direct reflection on its cities, some of which have significant growth rates in excess of the national average. (Majed Ashwan 1990)

The population growth of the cities has not taken place at the same rate for several reasons, the differences in geographical location, the regional population distribution and differences in the volume of migration flow. (Majed Ashwan 1990)

In recent years planners and researchers have devoted insufficient attention to the subject of the population geography in Saudi Arabian cities since most of their studies have focused on the information available from the population census carried out in September 1974 and on a number of studies and research projects aimed to provide the essential statistical indicators needed for socioeconomic development plans. (Majed Ashwan 1990)

The prime purpose of this research is fourfold to undertake a geographic and demographic analysis of the population growth of Riyadh City to analyze the factors affecting it since 1962, especially migration and natural increase; to examine patterns and trends in that growth; and to examine the population structure of the city under such an unusually rapid growth. (Majed Ashwan 1990)

Considering the above-mentioned aim of this research, there are some other aims in studying the population growth of Riyadh City in Saudi Arabia, such as:

To fill a gap in the literature. During the past fifteen years research has been carried out and several studies have been made in university Introduction 3 departments and in academic research centers such as The Committee of Riyadh Research and Saudi Geographical Society at the King Saud University, about various aspects of Riyadh City in particular and Saudi Arabian cities in general. But there are still some aspects that have not been analyzed completely. For instance, most of the studies which analyze the population of Riyadh City (such as those of Al-Sheikh, 1981; Malik, 1973; Khraif, 1984; Al- Oteiby, 1988) are concerned with one aspect which is migration in Riyadh City. Other studies, such as the one by Al-Obeidy, 1985 deal with the incidence of infant mortality in Riyadh City. (Majed Ashwan 1990)

To provide a clear picture about housing conditions and public services in Riyadh City. (Majed Ashwan 1990)

To investigate the broad pattern of contemporary population distribution in Saudi Arabia in which the growth of Riyadh has taken place, and the major changes which have occurred in this pattern between 1930 and 1988; and to analyze those causative factors which have brought variation in distribution and density.

To analyze the level and trends of fertility, mortality and migration in Riyadh City and compare them with Saudi Arabia as a whole, and the factors affecting the elements of population growth. (Majed Ashwan 1990)

To analyze the population structure (age, sex, marital status, education and economic structure) of Saudi Arabia as a whole and Riyadh City in particular, and to find out to what extent these elements affect Riyadh City population growth (Majed Ashwan 1990)

1.2.2. Limited Affordable Housing in Riyadh

In KSA, in 2016 the Vision 2030, seeks to transform the housing sector to an enabling approach through which to work in partnership with market actors. (Mubarak F. Alhajri 2022)

According to the National Housing Strategy, “An efficient and effective housing sector based on partnership with the private sector contributes to the development of the kingdom enables all groups of society to obtain suitable housing for their needs and financial capabilities through a balanced and sustainable housing market based on knowledge and quality” (Mubarak F. Alhajri 2022)

In addition, the traditional mechanism of housing delivery in KSA, where the government worked as a direct provider and not as a market actor, does not guarantee affordable housing . (Mubarak F. Alhajri 2022)

However, since the implementation of the Saudi Vision 2030 agenda, little or no attention has been given to measuring the success of the enabling approach to face the Saudi housing challenges. (Mubarak F. Alhajri 2022)

Even though the Saudi government has responded to the housing demand by implementing public housing programs in which houses are either owned or allocated by a public body, house prices have been rapidly increasing, which means that an increasing proportion of citizens are unable to own a home. (Mubarak F. Alhajri 2022)

There is a lack of the availability of suitable housing units for various socioeconomic segments of society in KSA . (Mubarak F. Alhajri 2022)

Within the KSA housing market, affordability has been pushed beyond the reach of many new households . (Mubarak F. Alhajri 2022)

The gap between the demand and the supply of housing in the kingdom has not been bridged.

(Mubarak F. Alhajri 2022)

Since the development of the Real Estate Development Fund (REDF) in 1975, this fund has become the backbone of the country's housing development by providing total loans of SAR 269,852,662,615 (\$71,960,710,030.66) [41]. (Mubarak F. Alhajri 2022)

However, there has been a rapid increase in the number of applicants, and consequently, the waiting list has reached more than 15 years . (Mubarak F. Alhajri 2022)

As a result, the gap between supply and demand has been escalating. Furthermore, the growth of the housing sector and the government fund in KSA have been allied and can be tracked with the five-year development plan . (Mubarak F. Alhajri 2022)

Fig. 1 illustrates the gap between the supply and demand of housing in KSA from the implementation of the first development plan (1970–1974) to the ninth development plan (2010–2014).

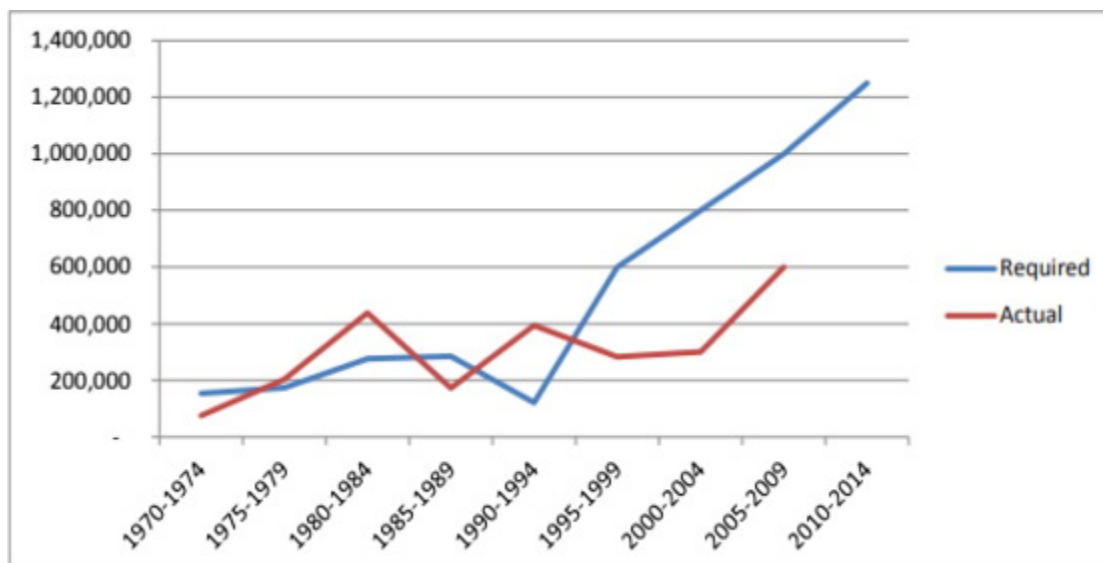


Fig. 1. Supply and Demand of Housing in KSA from 1970 to 2014 . (Mubarak F. Alhajri 2022)

According to Aleid [43], in KSA there was a shortage in housing supply since the 1990s for two reasons: the first was falling oil prices in the mid-1980, which resulted in significant cutbacks in financing housing, and the second was the economic consequences of the Gulf War, which can be clearly identified in Fig. 1. (Mubarak F. Alhajri 2022)

Similarly, the more recent drop in oil prices in 2014 reduced market liquidity, and budget tightening, which affected the delivery of housing and other critical infrastructure. (Mubarak F. Alhajri 2022)

On the other hand, there is little private investment in the delivery of affordable housing in the country. (Mubarak F. Alhajri 2022)

The chain of funding for housing development in KSA is still very slow and unstable and the contribution of private investment is limited . (Mubarak F. Alhajri 2022)

As a result, with the new Saudi Vision 2030, the government's commitment to shift to enabling approach and make the private sector participate in the delivery of the future demand for housing, as is evident in National Transformation Program 2020, which affirms the government's commitment to “providing housing units through public-private-partnerships” . (Mubarak F. Alhajri 2022)

Furthermore, in 2020 the demand for housing, according to the Saudi Housing National strategy for the thirteen regions of the kingdom, is 1.15 million units. (Mubarak F. Alhajri 2022)

The population growth rate of 1.6% annually and the current high urbanization rate (84%) , can be considered as significant challenges that contribute to housing issue . (Mubarak F. Alhajri 2022)

In addition, due to the population's rate of growth, MOMRAH needs to build a massive number of dwellings to respond to the increased demand . (Mubarak F. Alhajri 2022)

Furthermore, one of the major challenges for the housing sector in KSA is the rapid increase in the foreign labour force, which is now about one-third of the population . (Mubarak F. Alhajri 2022)

Other challenges that strain the gap between demand and supply in KSA include the increasing number of households: KSA has a moderately young demographic (over 60% of its population are under the age of 30 years), where more young people are getting married and seeking to leave their parents' homes . (Mubarak F. Alhajri 2022)

This leads to the formation of many new households, which will consequently create a huge demand for housing. (Mubarak F. Alhajri 2022)

Beyond the demographic character of KSA, social and cultural preferences have contributed to the country's housing challenges. Due to the traditional preference for villa-style homes, Saudi households are reluctant to live in some types of housing such as apartments, which are smaller and cheaper, due to shared entrances and joint spaces, which are considered disadvantageous. (Mubarak F. Alhajri 2022)

Furthermore, the most significant issues appear to be the high cost and shortage of housing units and the fact that available housing units are not compatible with the socioeconomic characteristics of Saudi families. (Mubarak F. Alhajri 2022)

The rapid increase in house prices has meant that about 53% of citizen unable to afford to own a home in 2018 . For example, a 4-bedroom villa with average size of 410 square meter in Riyadh, cost about by SAR 4,500,000 (\$1,200,000). (Mubarak F. Alhajri 2022)

In comparison with average monthly income of the Saudi citizen SAR 12,500 (\$3,333) , this equals 30 years of saving of the whole salary to purchase this villa not

to mention the other living expenses. However, only 30% spent on housing is considered affordable. (Mubarak F. Alhajri 2022)

The escalating house prices are aligned with the increasing price of land, which has become an investment channel for many households in KSA, as it is bought speculatively as an investment and kept empty in the hope of future price rises. Thus, large tracts of subdivided lands have witnessed very sparse development, but that has not stopped either the flow of investment or the escalation of land prices . (Mubarak F. Alhajri 2022)

Moreover, the absence of a comprehensive strategy for housing provision has contributed to the worsening of housing problem in KSA. According to Al-Mayouf et al. , the tasks of housing provision have been transferred through several authorities. Various government ministries and agencies have been cancelled or replaced by other agencies, that introduce different strategies. (Mubarak F. Alhajri 2022)

However, the government has recently introduced the Saudi Housing Strategy to develop the housing sector in the country. Therefore, the challenges of affordable housing in KSA can be recognized from four different perspectives: financial, socioeconomic, cultural, and political (Mubarak F. Alhajri 2022)

1.3. Research Significance

1.3.1. At the theoretical level

The significance of the research lies in developing a model that contributes to Riyadh's transformation into a smart and sustainable city, as successful implementation of the proposed model will contribute to economic growth, prosperity, global competitiveness, improving innovation rates, providing better and faster services, as well as transparency and creating great opportunities for various sectors. (Ajlan, & Al Abed 2023)

The current study is also significant because the proposed model will assist decision-makers in developing solid outputs that will lead a global revolution in the green economy, rebuilding, using renewable energy, developing new lifestyles, and benefiting from technological revolutions in critical sectors such as transportation and communications, all of which contribute to reducing harmful emissions into the environment. (Ajlan, & Al Abed 2023)

This improves things, and the proposed model's strategic planning includes developing advanced future visions for Riyadh that meet the needs of future citizens and provide advanced digital infrastructure. (Ajlan, & Al Abed 2023)

Furthermore, the study will provide a unique opportunity to assess and apply the large number of lessons learned from nearly three decades of dedicated research and planning on sustainable cities, development, and implementation, as well as nearly a decade of developing and applying advanced technologies in smart cities to improve sustainability (Ajlan, & Al Abed 2023)

1.3.2. At the practical level

Real estate developers also take the economic feasibility study into account to know and estimate the chances of success of the investment idea before starting its implementation. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

stressed that the stage of the economic feasibility study is one of the most important stages of the real estate development process because it shows the real estate developer whether the project is economically feasible and achieves the desired goals or not. Additionally, the good marketing of the project reflects positively on the financial flows and increases the financial capacity of the real estate developer to implement the project with fewer financing risks, as the financial flows resulting

from the buyers' payments contribute to reducing the interest resulting from borrowing to finance the project. (Alqahtany, A., Alshihri, F. S., Alshammari 2023) However, there remain several obstacles that would increase the risk of financing in the off-plan sales program (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Al-Shaalan highlighted some of these obstacles, such as low prices of real estate products of all kinds; high annual interest rates; the high cost of building materials; economic stagnation; the bankruptcy of the real estate developer; and building and construction at a time of high prices. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

As mentioned previously, the experiences of several countries have shown that the off-plan sales program is one of the methods of owning real estate that has proven successful in international experiences (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Graham studied off-plan sales in Australia, where the study touched on the most prominent risks and challenges facing developers in off-plan sales projects, such as the drop in the prices of housing units after the contract signing stage and before delivery, the difficulty of knowing the final form and the quality level of the building materials used, and the buyers' failure to pay the payments on due dates, which disrupts the real estate developer's financing sources. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

The study also emphasized the importance of reading all the details of the contract with the contractor executing the project, reviewing previous projects implemented by the contractor, knowing the final form of the project, determining the general location of the units, public parks, and future projects adjacent to the project. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Savage reviewed the off-plan sales program in the United Kingdom (UK), where the study touched on the advantages and disadvantages of this program and also

addressed the reasons for buyers' obtaining real estate units at lower prices compared to the prices of ready units, while at the same time exploiting payments by the developer to finance the project and obtain higher profitability. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

The study recommended those who wish to purchase real estate units with the off-plan sales program review the real estate market conditions and analyze the influencing factors to make the purchase decision at the most appropriate time. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Stucklin has prepared a study on the off-plan sales program in Spain, aimed at educating people who want to buy real estate units with the off-plan sales program and providing them with advice so that they do not fall into high-risk or unsecured projects. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Stocklin's study concluded with several recommendations, the most important of which are verifying the legality of the company developing the project, making sure that the developer owns the land on which the project will be built, and reviewing the projects completed by the developer.

In the Middle East, Limuasa studied the reality of the off-plan sales program in Algeria, which suffered from high unit costs due to inflation occurring in the country or due to the neglect of the real estate developer and an increase in the cost of implementation, which was reflected in the failure of projects and completion rates. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

The study identified the parties involved in the sale contract and the obligations of each party, in addition to the necessary permits that the real estate developer must obtain, namely: building licenses, retail licenses, construction certificates, in addition to a certificate of conformity. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

The real estate developer, upon receipt of the payments deposited by the buyers in the account of the Real Estate Development Operations Guarantee Authority, must spend them on completing the project and submitting it according to the agreed time plan, where the guaranteed authority guarantees the financial amounts paid by the buyer, according to the completion percentages of the project. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

In his study, AlSaidi [36] touched on the seller's obligations in the off-plan sales contract in the United Arab Emirates (UAE), starting from obtaining the license until the building is ready to perform the purpose for which it was established, noting that the construction and its completion should be based on what was agreed upon and on time and specified period. AlSaidi pointed out the importance of defining the property descriptions in sufficient and clear terms, and the developer must mention in the property contract the specifications that the property will have, such as the area of the residential unit, the number of bedrooms, the dimensions and windows, the type of doors used, balconies and corridors, and other specifications that the developer is committed to handing over to the buyer. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Given the large number of development projects and the multiplicity of developers who have experience and multiple development strategies, the UAE is considered one of the first countries to implement real estate projects under the off-plan sales system (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

In Saudi Arabia, the off-plan sales program is considered one of the systems that stimulate the real estate developer to implement projects and complete them within their implementation in the agreed period and with high quality. It helps developers in the speed of their marketing, which contributes to motivating them to constantly develop their real estate products and their commitment to the highest quality standards to gain the trust of the buyers. Off-plan sales contracts force the real estate

developer to abide by the requirements, which contributes to providing integrated and distinguished services and shortening many procedures, which is reflected in an increase in trust between the real estate developer and the buyer. It is believed that the developers should take advantage of the opportunity to obtain financing through the off-plan sales program in light of supporting this program and facilitating the procedures for obtaining the necessary licenses and permits, which aim in its entirety to reduce the gap between supply and demand for housing in the country. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Based on a review of the literature on housing and an exploration of the local housing context in Saudi Arabia and Riyadh, in particular, through some preliminary interviews with practitioners in the housing market, the questionnaire in this study was mainly built around four key issues (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

Financial challenges affecting the off-plan sales program in Riyadh.

Marketing challenges affecting the off-plan sales program in Riyadh.

Proposed measures to overcome financial challenges.

Proposed measures to overcome marketing challenges.

The questionnaire contained six main questions focused on these four key issues. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

These questions, as well as the characteristics of the experts participating in this study, were analyzed and discussed in depth during the following sections of this study. (Alqahtany, A., Alshihri, F. S., Alshammari 2023)

1.4. Research Questions

1.4.1. What are the primary drivers of housing demand in Riyadh?

The aim of the study to answer the main Research Questions

- a) How does the availability of affordable housing in Riyadh compare to the demand, and what factors contribute to housing affordability challenges in the city?
- b) What are the spatial patterns of housing development and urban expansion in Riyadh, and how do they impact access to amenities, transportation networks, and quality of life for residents?
- c) What are the key factors influencing housing tenure choices among Riyadh's population, and how do they affect residential mobility and community stability?
- d) What are the prevailing housing preferences and lifestyle choices of residents in Riyadh, and how do they shape housing design, neighborhood planning, and urban development initiatives?

What are the environmental sustainability challenges associated with housing development in Riyadh, and what strategies can be implemented to promote green building practices and reduce carbon emissions

1.5. Research Objectives

1.5.1. The Population Growth affect the primary drivers of housing demand in Riyadh

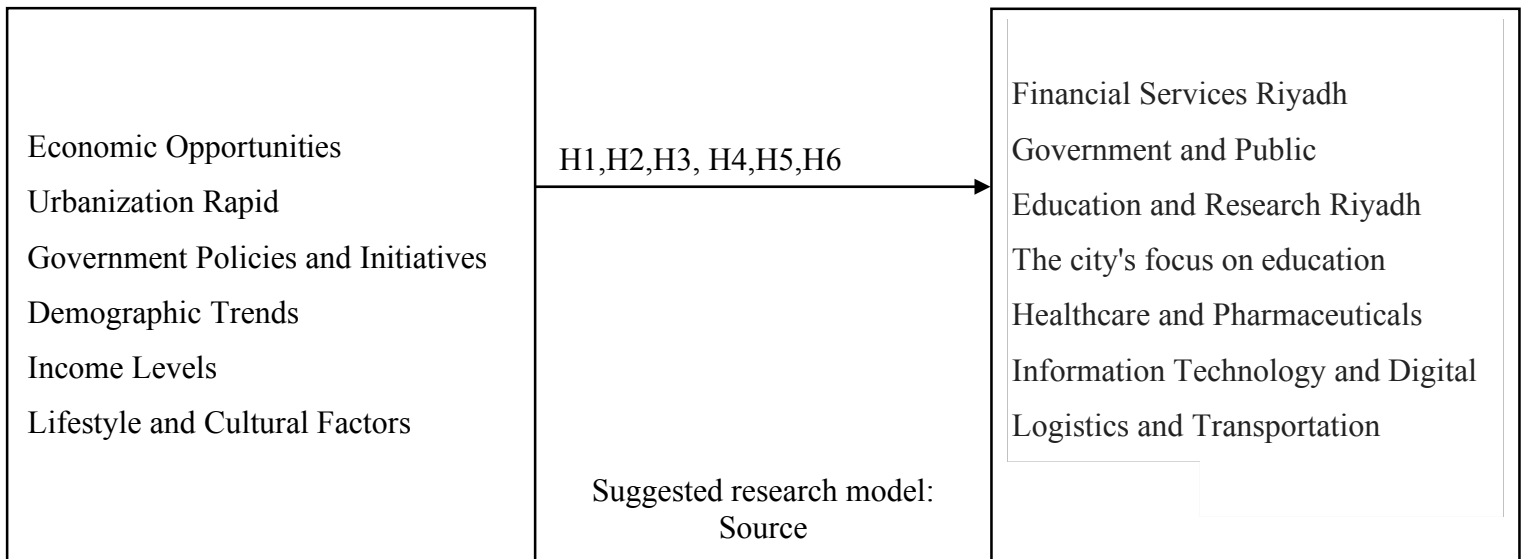
- a) Economic Opportunities
- b) Urbanization Rapid urbanization in Riyadh leads to increased demand for housing as rural populations migrate to the city in search of better livelihoods, educational opportunities, and access to services.
- c) Government Policies and Initiatives Government policies, such as initiatives to promote homeownership, provide housing subsidies, and stimulate real estate development, can influence housing demand in Riyadh.
- d) Demographic Trends Demographic factors such as household size
- e) Income Levels Socio-economic status and income levels play a significant role in shaping housing demand preferences and affordability.
- f) Lifestyle and Cultural Factors Lifestyle preferences, cultural norms, and social aspirations can impact housing demand patterns.

1.6. Research Hypotheses

1.6.1. Riyadh serves as the economic hub of Saudi Arabia

- a) Financial Services Riyadh is home to the headquarters of many banks, financial institutions, and investment firms
- b) Government and Public Sector As the capital city of Saudi Arabia, Riyadh hosts numerous government ministries, agencies, and public-sector organizations,
- c) Education and Research Riyadh hosts prestigious universities, research institutions, and educational organizations, offering opportunities in academia, research, teaching, and knowledge-based industries.
- d) The city's focus on education and innovation drives growth in sectors such as technology, healthcare, and knowledge economy.
- e) Healthcare and Pharmaceuticals Riyadh is a regional healthcare hub, with leading hospitals, medical centers, and pharmaceutical companies.
- f) Information Technology and Digital Services Riyadh is embracing digital transformation, leading to opportunities in information technology, telecommunications, e-commerce, and digital services.
- g) Tourism and Hospitality Riyadh is increasingly attracting tourists and business travelers, leading to opportunities in hospitality, tourism management, event planning, and cultural tourism.
- h) Logistics and Transportation Riyadh's strategic location and infrastructure networks make it a logistics and transportation hub

1.7. Research Model



1.8. Scope of The Study

- 1.8.1. Research philosophy interpretivist
- 1.8.2. Research approach deductive
- 1.8.3. Research strategy survey
- 1.8.4. Research choice qualitative
- 1.8.5. Time horizon cross-sectional
- 1.8.6. Data collection and analysis techniques

1.9. The Project Structure

Chapter 1: Introduction

Chapter 2: Literature Review

Chapter 3: Research Methodology

Chapter 4: Statistical Analysis

Chapter 5: Discussion and Conclusion



2.Chapter 2: Literature Review

2.1. Introduction

Housing requires a crucial and long-term investment by individuals for their families for its sense of privacy, safety and balance. According to Alqahtany (2019), housing is a declaration of social status following its current use in demonstrating family values and social prestige, apart from functioning as a shelter in traditional communities (Mnea & Zairul. 2023).

In addition, Al Surf, Susilawati and Trigunarsyah (2014) imply that land and housing be considered social resources rather than market commodities by the general public. Recently, housing has garnered significant attention as a key issue in both developed and emerging nations. This is because 54% of the global population currently resides in urban locations and this is projected to rise to 66% by 2050 (Mnea & Zairul. 2023).

Urbanization and pivotal global concerns such as climate change have resulted in concerns about housing access and housing design quality. (Mnea & Zairul. 2023).

The importance of literature on housing design quality is acknowledged by the Commission for Architecture and the Built Environment (2008), thus implying the

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Aysha Mnea and Mohd Zairul 318/PENERBIT UNIVERSITI SAINS MALAYSIA strong impact of building and dwelling quality on individual life quality(Mnea & Zairul. 2023).

Decisions on home design, planning and management could improve or inhibit an individual's sense of belonging and increase or decrease their safety and security-

based emotions, perceived boundaries, mobility, and health. Effective designing could simplify actual or imagined intricacies between communities and facilitate individuals' comprehension and generosity. (Mnea & Zairul. 2023).

Previous studies have examined housing design professionals' and architects' contributions in determining national-level housing intricacies, for example, in Nigeria (Fakere, Arayela and Folorunso, 2017). (Mnea & Zairul. 2023).

Architecture serves to resolve complexities based on scientific rather than aesthetic elements. Potential issues could be resolved with a sound understanding of users' activity patterns, behaviours and attributes matched against functional designs that complement behaviours and activities (Mnea & Zairul. 2023).

Architecture could also solve such issues through conducive living and working environments. For example, spatially functional architecture is essential in ascertaining design appropriacy for the target population. The psychological and sociological mechanisms underpinning human needs should be regarded in such designs to fulfil functional prerequisites (Mnea & Zairul. 2023).

Moreover, according to Fakere, Arayela and Folorunso (2017), users should develop their house designs for optimal functionality. As a result, settings that accommodate user preference would produce and form a housing design based on their socio-cultural attributes. In addition, government bodies have begun promoting optimal housing design. For example, the United Nations aims to promote safe and efficient housing on a global scale, specifically in lowincome countries with inadequate housing and a high prevalence of slums, which constitute approximately 828 million people worldwide (United Nations, 2018).

However, housing design presents a common issue in the housing industry as accessible housing units fail to match families' socio-economic characteristics. The availability of housing units denotes a primary challenge encountered by developed as well as emerging nations as suggested by (Alqahtany and Mohanna ,2019).

Alqahtany and Mohanna (2019) discuss several global studies that have determined the best approaches to optimise housing design delivery and resolve housing unit availability concerns in developed as well as emerging nations. Other substantial research has also been performed to ascertain the optimal methods to facilitate housing design delivery, with researchers emphasising housing policies of Switzerland, UK and US (Hilber and Schöni, 2016), Asian nations (Asher, 2002; Kobayashi, 2016; Phang and Helble, 2016; Phang and Kim, 2013; Samad et al., 2017) and Saudi Arabia (Aboukorin and Al-Shihri, 2015; Al-Mayouf and Al-Khayyal, 2011; Alzamil, 2014; Assaf, Bubshait and Al-Muwasheer 2010; Bahammam, 2018; Eskin, 2018; Ministry of Housing, 2016). Such empirical works indicate pivotal housing industry complexities regarding policies, delivery, challenges, supply and demand, homebuyer behaviours and housing attributes. (Mnea & Zairul. 2023).

Despite multiple studies on housing provision and affordable housing access, which have highlighted insufficient housing as one of the most palpable complexities encountered by developed as well as emerging nations (Alqahtany, 2019), research on housing design quality remains scarce (Ali, 2018). (Mnea & Zairul. 2023).

This paucity has led to the current thematic review with detailed qualitative and quantitative data on the current state of research and existing knowledge gaps, which implies a first step towards bridging these gaps. In the Kingdom of Saudi Arabia (KSA), KSA Housing Programme intends to offer alternatives for Saudi families to own houses that complement their individual needs and financial capacities and to benefit from owning them and improve housing conditions for current and future generations with suitable and Housing Design Studies in Saudi Arabia PENERBIT UNIVERSITI SAINS MALAYSIA/319 guaranteed financing alternatives. This programme, aimed at providing housing for underprivileged communities, reflects

the high and accessible supply of housing units at affordable rates. (Mnea & Zairul. 2023).

Additionally, the Ministry of Housing strives to optimise the legislative and regulatory contexts for the housing industry and maximise positive implications for the overall economy (Ministry of Housing, 2016).

Several other nations have implemented policies for vulnerable groups given the prevalence of housing issues that resembled those in Saudi Arabia. For example, Malta's Equity Sharing Programme served individuals over 40 years of age who had home-owning challenges. Moreover, Canadian policies, such as the Canada National Housing Strategy, strove to offer low-cost housing to disabled individuals, senior citizens and survivors of domestic violence, as well as improved housing for indigenous communities (OECD [Organisation for Economic Co-operation and Development], 2020).

Hence, the specific barriers highlighted in the KSA housing industry over the past 20 years necessitate prompt solutions. Research on housing design and architecture that complement KSA citizens' needs is scarce despite the significance of adequate housing designs. Accordingly, the current article review includes works that address and emphasise house design and architecture that complement Saudi citizens' needs based on their socioeconomic characteristics and ensure housing unit availability that corresponds to families' socio-economic attributes. This article thematically reviewed studies published between 2011 and 2021 on Saudi Arabian housing design to identify the knowledge and praxis gaps and provide recommendations for future works to bridge them. For example, studies on active collaboration between home designers and potential dwellers based on people's financial, social (ageing) and energy sustainability needs were examined (Mnea & Zairul. 2023).

2.2. The independent variable

There are a lot of example of independent variable for example Popularity, Government Initiatives, Market Trends, Cost , Location , Real estate agencies, Property listing websites ,and Government initiatives

- 2.2.1. Independent housing in Saudi" likely refers to detached houses or villas. These are single-family homes with their own private land, offering privacy and space.
- 2.2.2. Here's a breakdown of independent housing in the Saudi context:
- 2.2.3. Popularity: Studies show a high preference for independent housing in Saudi Arabia, particularly among families. This is likely due to a desire for privacy, space, and potentially separate living areas for men and women.
- 2.2.4. Government Initiatives: Vision 2030, a national transformation program, aims to increase homeownership rates. This could lead to more opportunities for independent housing development.
- 2.2.5. Market Trends: There's a potential shortage of housing units in Saudi Arabia, with a government goal of building millions more by 2030. This could impact the availability and affordability of independent housing.
- 2.2.6. Things to Consider:
- 2.2.7. Cost: Independent housing can be expensive, especially in major cities.
- 2.2.8. Location: Availability and pricing can vary depending on the area.
- 2.2.9. Finding Independent Housing:
- 2.2.10. Real estate agencies: Look for agencies specializing in villas or independent housing.
- 2.2.11. Property listing websites: Search online platforms for available properties.
- 2.2.12. Government initiatives: Check programs like Sakani, a Saudi housing program, for potential options.

2.3. The dependent variable

There are a lot of example of independent variable for example House price , Rent price, Time to sell a house, and Rate of vacancy

- 2.3.1. House price This is a widely used dependent variable, where factors like square footage, location, and number of bedrooms are used to predict the price of a house.
- 2.3.2. House price This is a widely used dependent variable, where factors like square footage, location, and number of bedrooms are used to predict the price of a house
- 2.3.3. Rent price: Similar to house price, this is the dependent variable when analyzing factors affecting rental costs.
- 2.3.4. Time to sell a house: This could be a dependent variable in a study on how house features or market conditions impact how long it takes to sell a property.
- 2.3.5. Rate of vacancy: This could be used as a dependent variable to understand how factors like interest rates or economic conditions affect vacancy rates in rental markets.

2.4. The relationship between the independent and the dependent variables

- 2.4.1. Effect of Housing Type on Price: Detached houses (villas) in Saudi Arabia are generally more expensive than apartments due to factors like space and privacy. (Independent Variable: Type of Housing; Dependent Variable: House Price)
- 2.4.2. Location and Housing Type: In major cities, due to land scarcity, there might be fewer detached houses available compared to apartments. (Independent Variable: Location; Dependent Variable: Availability of Detached Housing)
- 2.4.3. Government Initiatives (Independent Variable) and Housing Affordability (Dependent Variable): Programs like Sakani could potentially increase affordability of various housing types, including detached houses.
- 2.4.4. Demographic Trends (Independent Variable) and Housing Demand (Dependent Variable): A growing young population might increase demand for smaller housing options, impacting the relative demand for detached houses.

2.5. Conclusion

Examining the interplay between independent and dependent variables in Saudi housing research unlocks valuable insights. While "housing" itself is too broad, focusing on specific aspects like type (villas vs. apartments) or location unveils key relationships. By analyzing how these factors (independent variables) influence outcomes like price or vacancy rate (dependent variables), we can understand the Saudi housing market. This knowledge empowers stakeholders to make informed decisions about development, affordability, and ultimately, meeting the evolving needs of Saudi residents.

3. Chapter 3: Research Methodology

3.1. Introduction

To effectively research housing in Saudi Arabia, a multi-pronged approach is crucial. First, a clear research question regarding affordability, sustainability, policy, or another facet must be established. Then, a deep dive into existing academic and government reports is needed. Following this, the research methods will be chosen, potentially including surveys, case studies, or data analysis. Data collection with proper permissions and ethical considerations is the next step. Finally, analysis and interpretation of the findings will culminate in discussions, conclusions, and potential recommendations. This comprehensive approach ensures a well-rounded understanding of the Saudi housing landscape (AlQahtany A..2020)

3.2. Operational definitions for research variables

- 3.2.1. The latest Education level the citizens have completed which is data on the exact latest education level for all Saudi citizens for example High School, Diploma degree, Bachelor degree, or Master degree
- 3.2.2. The Monthly income of the citizens Saudi Arabia for example less than 4000 SR, 4001 SR - 10000 SR, 10000 SR - 15000 SR, 15001 SR - 20000 SR or above 20001 SR.
- 3.2.3. When looking at a home, considering practical amenities and facilities is crucial. The important needs to focus on Car Parking, Facilities, Stores and Shopping, Safety and Security and Maintenance and Upkeep

3.3. Research design (research onion)

In this template, we'll present a structure that covers five important methodological matters (as outlined above). This structure is loosely based on "research onion".

3.3.1. Research philosophy interpretivist

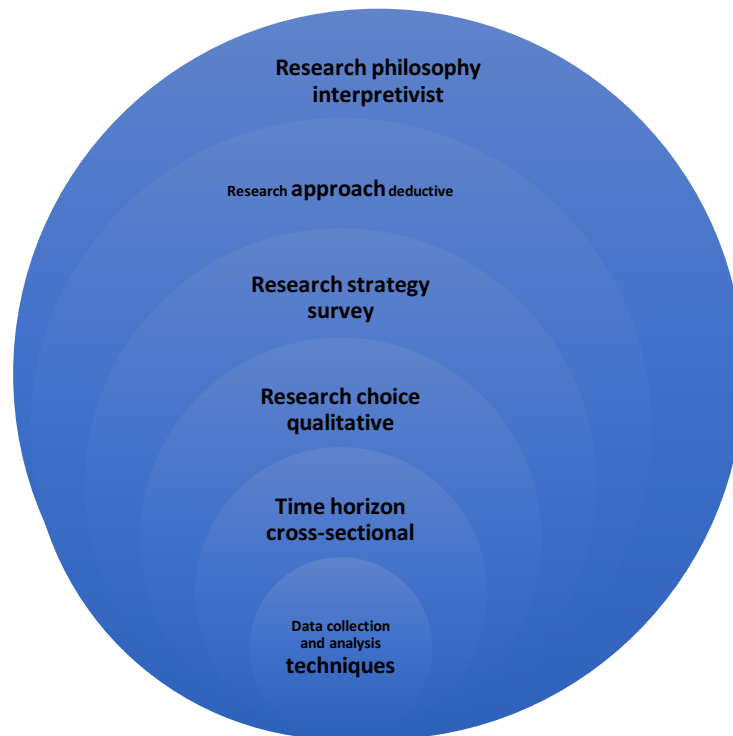
3.3.2. Research approach deductive

3.3.3. Research strategy survey

3.3.4. Research choice qualitative

3.3.5. Time horizon cross-sectional

3.3.6. Data collection and analysis techniques



3.4. Research population & Sampling methods and technique

This section provides information about the study population & sample. Additionally, this section demonstrates the methods and techniques that were elaborated in order to select the study sample, and determine the sample size.

3.4.1. Research Population

Understanding how Saudi Arabians view housing is crucial. To achieve this, researchers can employ a multi-pronged approach. Online surveys, translated into Arabic, can gather a wide range of data on demographics and preferences. Focus groups, facilitated by local partners, would delve deeper into challenges, desired features, and cultural influences on housing choices. Finally, interviews can provide detailed insights from specific demographics. This combined approach will provide a comprehensive picture of the Saudi population's housing needs and aspirations.

Administrative Region	Number of Households	Administrative Region	Number of Households	Administrative Region	Number of Households
Riyadh	5.175	Asir	2.250	Najran	1.600
Makkah	6.050	Tabuk	1.825	Al-Baha	1.500
Madinah	2.300	Hail	1.625	Al-Jouf	1.650
Qassim	1.650	Northern Borders	1.750	Total	33.350

Table 1

3.4.2. Research Sample

The research sample of your study Riyadh's housing market caters to a diverse population. While modern high-rise apartments are popular with young professionals, families often seek spacious villas in gated communities. Affordability concerns are a growing issue, with both renters and buyers facing rising costs. The government's housing programs aim to address this challenge and increase homeownership rates. Overall, Riyadh's housing market is dynamic, offering a variety of options but also facing pressure to ensure affordability and cater to the needs of its growing population.

3.4.3. Sampling Method & Techniques

The sampling technique is Probability and the sample method are

A mixed-methods approach will be used

- Online Survey:
 - A questionnaire (translated into Arabic) will be distributed through online platforms popular in Saudi Arabia.
 - The survey will target a representative sample of the population across different age groups, regions, and income levels.
- Focus Groups:
 - Two focus groups will be conducted, one in a major city (e.g., Riyadh) and another in a smaller town.
 - Each group will consist of 8-10 participants reflecting the target demographics identified in the survey.
 - A facilitator will guide discussions on housing preferences, challenges, cultural influences on housing choices, and information sources used for finding housing.
- Data Analysis:
 - Survey data will be analyzed using statistical software to identify trends and patterns.
 - Focus group discussions will be recorded, transcribed, and analyzed thematically to understand the lived experiences and perspectives of participants.

3.5. Data collection method

This section outlines the target audience for your research (study population) and explains how you'll select a representative group for analysis (sample). It will also detail the methods used to determine the optimal sample size

3.5.1. The independent variable (X)
the researcher is relied on the questionnaire of (Mubarak F. Alhajri 2022)
In order to measure the independent variable (X), in terms of three dimensions namely: a “Education level”, b “Monthly income”, c “important needs to focus with” overall 16 items for the whole variable. As, a dimension consists of 5 items, b dimension consists of 5 items, and c dimension consists of 5 items. Hence, 1= strongly disagree, while 5= strongly agree

Table (2) for the instrument of the independent variable housing challenges

Variable	Dimensions	Number of Items	Sources
X	a	5	(Mubarak F. Alhajri 2022)
	b	5	
	c	6	
	Over all	16	

Sources: The student

Table 2

3.5.2. The dependent variable

The dependent variable in housing research in Saudi Arabia will depend on your specific research question. However, here are some common dependent variables used in this context (Mubarak F. Alhajri 2022)

in terms of three dimensions namely: d “Housing affordability”, e “Homeownership rate”, f “Housing satisfaction” with overall 15 items for the whole variable. As, b dimension consists of 5 items, c dimension consists of 5 items, and m dimension consists of 5 items. the instrument type is 5 – points Likert- scale type. Hence, 1= strongly disagree, while 5= strongly agree

Table (3) for the instrument of the dependent variable housing challenges

Variable	Dimensions	Number of Items	Sources
y	d	5	(Mubarak F. Alhajri 2022)
	e	5	
	f	6	
	Over all	15	

Sources: The student Table 3

3.5.3. Research philosophy interpretivist

3.5.4. The independent variable

3.6. Types of data

3.6.1. Primary data

Original data collected for the purpose of the research problem Observation, questionnaire, interview and tape recording, experiment results

3.6.2. Secondary data

The secondary data came from The Housing Program Delivery Plan (2021-2025)

3.7. Data Analysis Methods & Procedures

After collecting data, it is essential to analyze the information gathered to draw meaningful conclusions. As, the Statistical Package for the Social Sciences (SPSS), specifically version 28, were used to analyze the collected data

3.8. Conclusion

This research proposal offers a robust approach to investigating Saudi Arabia's housing landscape. By combining various methods like surveys and focus groups, it provides a holistic understanding crucial for informing policy decisions and development strategies. Ultimately, this research can contribute to a more sustainable and accessible housing market for Saudi citizens.

This version streamlines the original text while maintaining its key points:

Focus on impact: It emphasizes the practical use of the research for policymakers and developers.

Conciseness: It removes unnecessary repetition and focuses on key points.

Strong verbs: It uses strong verbs like "offers" and "contribute" to convey the proposal's value.

4. Chapter 4: Statistical Analysis & Findings discussion

4.1. Introduction

This chapter presents the results of the field study that were statistically analyzed using: the software package SPSS statistics, version 28, and PLS-Smart 3.0. The current chapter of statistical analysis includes Descriptive statistics for the sample under study using 28V SPSS. Testing the validity and reliability of the questionnaires used to collect the required data from the current study sample using PLS 3.0. In addition, for testing the research hypotheses and the suitability of the model, a simple linear regression analysis was conducted via 28 SPSS and it was confirmed Statistical results through the use of PLS S 3.0

4.2. Sample profile (descriptive statistics for research sample)

The study sample items were distributed according to gender - age group - latest Education - Number of dependents - Monthly income- and important needs to focus on.

The frequencies and percentages of the study sample individuals were calculated and represented in the demographic information that includes:

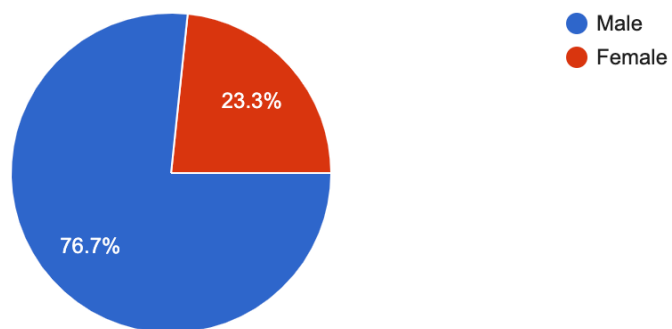
- Gender, which includes (male, female).
- Age group, which includes (20-29 years, 30-39 years, 40-50 years, 50 and above).
- Latest Education level you have completed (High School, Diploma degree, Bachelor degree, and Master degree)
- Number of dependents from (0-1)
- Monthly income (less than 4000 SR, 4001 SR - 10000 SR, 10000 SR - 15000 SR, 15001 SR - 20000 SR, and Above 20001 SR)
- Important needs to focus on (Car Parking, Facilities, Garden, Stores and Shopping, Safety and Security, and Maintenance and Upkeep)

The following table, graphs and paragraphs clarify the classification of the sample under study, as follows:

		Gender		
		Frequency	Valid Percent	Cumulative Percent
Valid	Male	23	76.60	76.60
	Female	7	23.30	23.30
	Total	30	100.00	

Gender

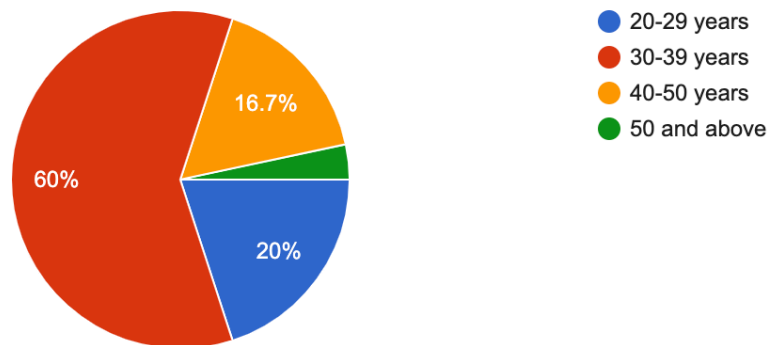
30 responses



		Age		
		Frequency	Valid Percent	Cumulative Percent
Valid	20-29 years	6	20.00	20.00
	30-39 years	18	60.00	60.00
	40-50 years	5	16.70	16.70
	50 and above	1	3.30	3.30
	Total	30	100.00	

Age

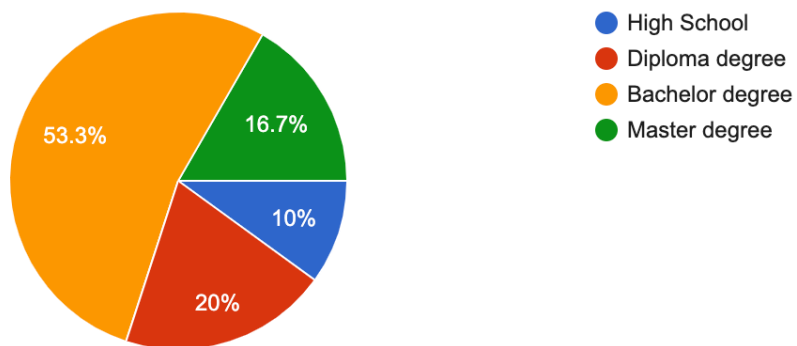
30 responses



latest Education level you have completed		Frequency	Valid Percent	Cumulative Percent
Valid	High School	3	10.00	10.00
	Diploma degree	6	20.00	20.00
	Bachelor degree	5	53.30	53.30
	Master degree	16	16.70	16.70
	Total	30	100.00	

What is the latest Education level you have completed ?

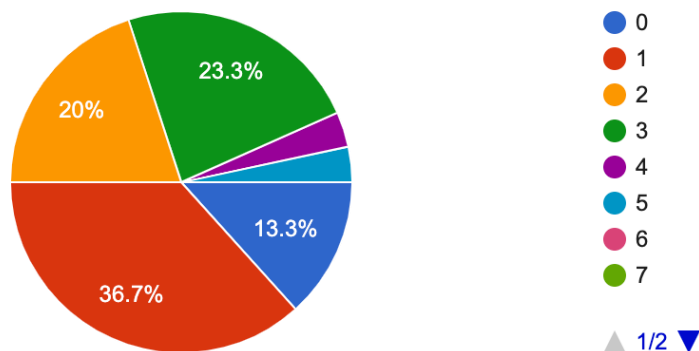
30 responses



Number of dependents			
Valid		Frequency	Valid Percent
	0	4	13.30
	1	11	36.70
	2	6	20.00
	3	7	23.30
	4	1	3.30
	5	1	3.30
	6	0	0.00
	7	0	0.00
	8	0	0.00
	9	0	0.00
	10	0	0.00
	Total		100.00

Number of dependents

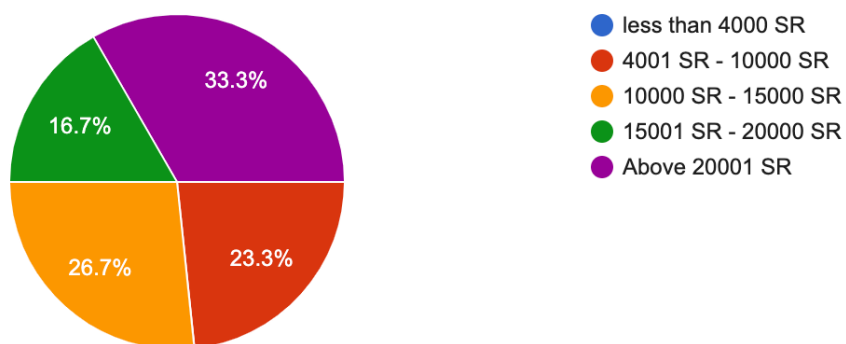
30 responses



		Monthly income		
		Frequency	Valid Percent	Cumulative Percent
Valid	less than 4000 SR	0	0.00	0.00
	4001 SR - 10000 SR	7	23.30	23.30
	10000 SR - 15000 SR	8	26.70	26.70
	15001 SR - 20000 SR	5	16.70	16.70
	Above 20001 SR	10	33.30	33.30
	Total	30	100.00	

Monthly income

30 responses



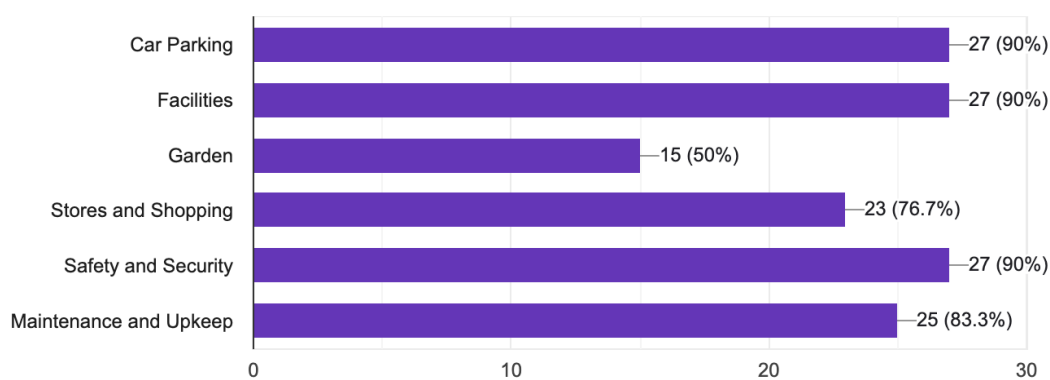
important needs to focus on		Frequency	Valid Percent	Cumulative Percent
Valid	Car Parking	27	90.00	90.00
	Facilities	27	90.00	90.00
	Garden	15	50.00	50.00
	Stores and Shopping	23	76.70	76.70
	Safety and Security	27	90.00	90.00
	Maintenance and Upkeep	25	83.30	83.30
	Total	30	100.00	

When looking at a home, considering practical amenities and facilities is crucial.

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What are some important needs to focus on

30 responses



4.3. Validity & reliability tests for the questionnaires

The internal consistency validity of the scales used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the average extracted variance (AVE).

- Internal consistency validity: It means the consistency of each statement of the questionnaire to the variable to which it belongs. Therefore, the researcher measured the internal consistency of the questionnaires by calculating the correlation coefficients between the score of each statement and the total score of the variable to which it belongs. According to the study of (1974) Kaiser, a correlation coefficient less than 0.5 is deleted from the questionnaire.
- Convergent validity: The average variance between the statements that measure the same scale is measured by calculating the average extracted variance (AVE), which must be greater than 0.5 according to (Hair et al. 2006).

The following tables show the statistical results for (correlation coefficients, standard deviation, calculated T value, the value of P-value (between the degree of each statement and the total degree of the variable) is calculated to measure the internal consistency validity of the questionnaires. Also, the value of the average variance extracted (AVE) is calculated to measure the convergent validity of the questionnaires, through the structural equation model PLS-SEM, as follows:

Descriptive Statistics				
	Mean	Std. Deviation	Analysis N	Missing N
Gender	1.2333	0.42295258	0	30
Age	30.333	7.0632067	0	30
latest Education level	2.7766	0.830209198	0	30
Number of dependents	1.766	1.209	0	30
Monthly income	2.6	1.158	30	0
important needs to focus on	.	.	0	30

4.4. Descriptive statistics for research variables (answer research questions)

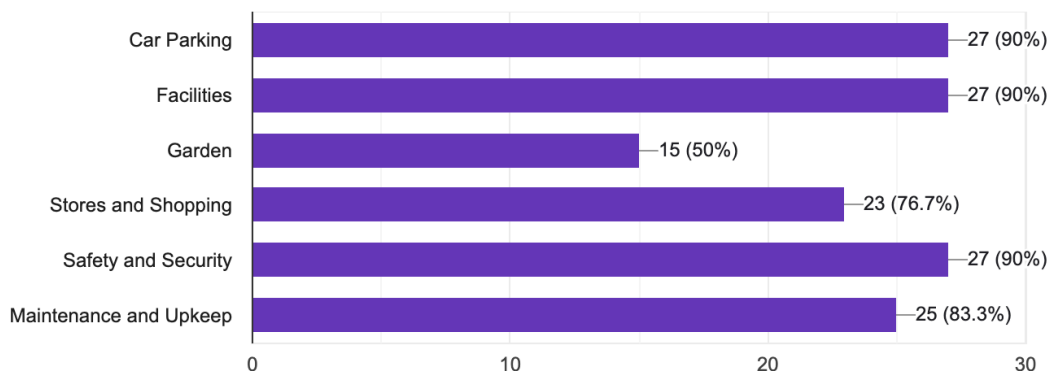
the stability of the questionnaire results and their non-change significantly if they were redistributed to the sample members several times during specific time periods. To measure the reliability of the questionnaires used to measure the study variables, the values of Cronbach's alpha, composite reliability, and rho-A were calculated using the SEM-PLS structural equation model. According to Hair et al (2010), the three values should be greater

When looking at a home, considering practical amenities and facilities is crucial.

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What are some important needs to focus on

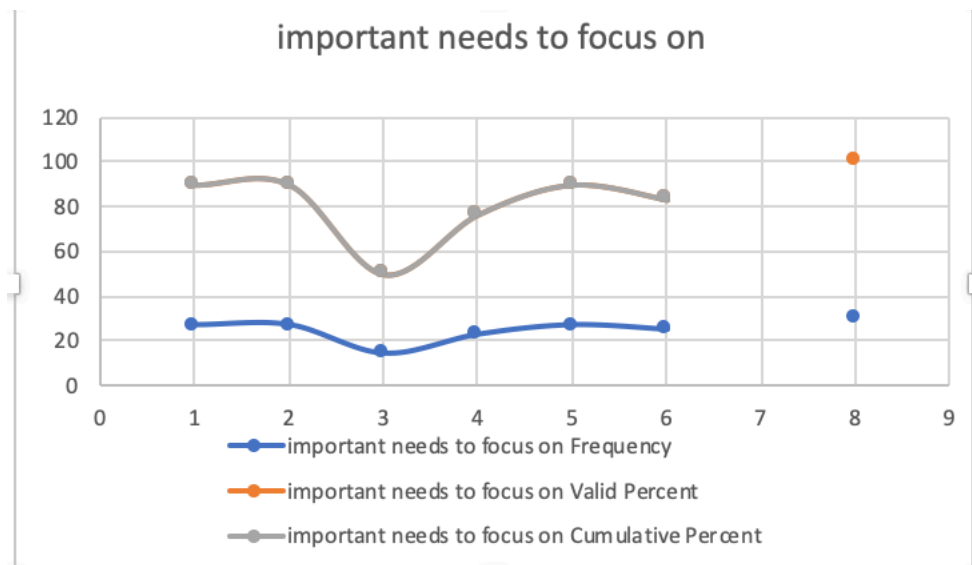
30 responses



4.5. Testing Hypotheses & Findings Discussion

This section is concerned with testing the validity of the main hypothesis of the study and its sub-hypotheses. The statistical results that were reached using both the statistical package 28.SEM-PLS and SPSS V are presented as follows:

There is a statistically significant positive relationship between practical amenities and facilities is crucial



4.6. Conclusion

For the statistical analysis of the data of the current study, both SPSS V SEM-PLS programs were used. The researcher conducted a descriptive analysis of the study sample, as well as a descriptive analysis of the study variables. According to the results of the statistical analysis of this study, the validity and reliability of the scales used in measuring the study variables were achieved. Also, the main hypothesis of the study and the three sub-hypotheses were proven.

5. Chapter five: Research limitations, Recommendations & Conclusion

5.1. Introduction

This chapter the inherent constraints or shortcomings of a study that may influence the interpretation and generalization of the findings. Acknowledging these limitations is crucial for maintaining research integrity and providing a comprehensive understanding of the study's scope and boundaries. By transparently discussing limitations, researchers demonstrate a critical awareness of the study's strengths and weaknesses, enhancing the overall credibility of the research.

5.2. Research Limitations

Research limitations can emerge from various factors such as methodological choices, sample size constraints, data availability, or research design flaws. These limitations can impact the study's reliability, validity, and generalizability. For instance, the reliance on Google Surveys in this research may have introduced sampling bias, limiting the study's ability to accurately represent the target population

5.3. Future Research

To enhance the generalizability and robustness of the findings, future research should consider expanding the sample size to encompass a wider geographical area. Conducting a survey across all cities in Saudi Arabia would provide a more comprehensive understanding of the housing landscape and mitigate the limitations associated with regional disparities. Additionally, exploring the use of alternative data sources, such as administrative records or big data, could offer valuable insights into housing patterns and trends

5.4. Research Recommendations

To enhance the accuracy and depth of future research on housing in Saudi Arabia, it is recommended to collaborate with housing specialists and experts. These professionals can provide valuable insights, access to up-to-date data, and specialized knowledge to inform research design and analysis.

5.5. Conclusion

This chapter comprehensively addresses the limitations, future research directions, and recommendations for the study. By acknowledging the potential shortcomings of the research design, such as the limitations imposed by using Google Surveys, the study demonstrates a critical understanding of its scope and boundaries. The proposed future research directions, including expanding the sample size and exploring alternative data sources, offer valuable avenues for further investigation. Finally, we use SPSS system and we recommendation to collaborate with housing specialists highlights the importance of interdisciplinary cooperation in advancing housing research. These elements collectively contribute to the study's overall rigor and credibility.

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Appendix

Questionnaires for research variables

Affordable housing contributes to the prosperity of any community

This study assesses housing challenges and enabling programs to affordable housing in the Kingdom of Saudi Arabia (KSA) within the Vision 2030

variables	variables dimensions	Number of statements	source
What is the latest Education level you have completed?	High School Diploma degree Bachelor degree Master degree Other:	5	(Mubarak F. Alhajri 2022)
Monthly income	less than 4000 SR 4001 SR - 10000 SR 10000 SR - 15000 SR 15001 SR - 20000 SR Above 20001 SR	5	(Mubarak F. Alhajri 2022)
When looking at a home, considering practical amenities and facilities is crucial. What are some important needs to focus on	Car Parking Facilities Garden Stores and Shopping Safety and Security Maintenance and Upkeep	6	(Mubarak F. Alhajri 2022)

Personal information

Gender	Male	Female
Age	20-29 years 40-50 years	30-39 years 50 and above
latest Education level	High School Bachelor degree	Diploma degree Master degree
Number of dependents	0-10	
Monthly income	less than 4000 SR 10000 SR - 15000 SR Above 20001 SR	4001 SR - 10000 SR 15001 SR - 20000 SR
Important needs to focus on	Car Parking Facilities Garden Stores and Shopping Safety and Security Maintenance and Upkeep	

Descriptive Statistics				
	Mean	Std. Deviation	Analysis N	Missing N
Gender	.	.	0	30
Age	30-39	.	0	30
latest Education level	53.3	.	0	30
Number of dependents	1	.	0	30
Monthly income	10-15	1.251	30	30
important needs to focus on	.	.	0	30