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Challenges Faced by Homeowners in House Design Planning

Swati [a++*] and Kiran Singh [a#]

[a] Department of Resource Management & Consumer Science, COCS, CCS Harayana Agricultural University, Hisar, Haryana, India.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The planning stage of house design plays a crucial role in ensuring a successful and efficient building project. However, it is often accompanied by various challenges that can significantly impact the outcome of the construction process. This research paper examines the personal, economical, and technical challenges faced by homeowners at the planning stage of house design in two cities, Karnal and Hisar. The study aims to provide insights into the common challenges experienced by homeowners and compare the frequency of these challenges in the two cities. The data was collected through surveys conducted among 30 respondents in each city, resulting in a total sample size of 60 respondents. The challenges were categorized into personal, economical, and technical domains, and the frequencies of agreement, neutrality, and disagreement were recorded for each challenge. The research paper discusses the findings, presents the frequency percentages, and provides weighted mean scores (WMS) to compare the challenges between the two cities.

[++] *Student;*
[#] *Principal Scientist;*
**Corresponding author: E-mail: khatkarswati4@gmail.com;*

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1. INTRODUCTION

A house is more than just four walls and a roof—it is an extension of yourself, a reflection of your dreams, and a place where you can truly be yourself. A house not only provides a living space in it, but also has to deal with important aspects [9]. Building a house is an exciting endeavor, filled with limitless possibilities and the opportunity to create a space tailored to your unique needs and desires. [2] mentioned that are social and physical components to housing. The physical elements are the homes, amenities, and utilities, while the social elements are the family, neighbours, and community. In addition, housing has an effect on people's health, education, employment, economic development and growth, environment, and social life, among other aspects of society. [3] stated the most profound recent developments in construction are seen as: the increasing complexity of many of its projects and organizations, the increasing technological complexity of projects, more complex interdependencies and variations in the relationships between its organizations and institutions, and proliferating regulations from government. During the construction of a house, individuals encounter numerous challenges at various stages of the process. According to [4], the building process can be categorized into three primary phases: the phase of conception/design, the phase of construction, and the phase of operation or use. Construction practice has also undergone a great deal of development in response to the dynamic nature of human needs and infra-structure [5]. The challenges encountered were condensed into several key areas: resource allocation, scheduling, and budget management; ensuring compliance with quality and safety standards; managing complexity and organizational structure; handling change management; effectively managing risks and uncertainties; and establishing efficient communication systems [6]. Nevertheless, numerous risks plague construction projects, endangering their operations. These risks primarily stem from inadequate planning and management, impacting project advancement, leading to delays, escalated costs, and occasionally, compromised construction quality [7]. However, the path from envisioning your dream home to turning it into a tangible reality is not without its challenges, particularly during the planning stage. The planning stage of house construction is a crucial phase that sets the foundation for the entire project. It involves making critical decisions that will shape the design, functionality, and overall outcome of your home. During this phase, individuals and families often face various challenges, both practical and creative, that require careful consideration and problem-solving. To achieve this trend, it is crucial to consciously identify project schedules and plans, assessing their implications prior to the execution phase [8]. These projects can differ in terms of duration, scale, surroundings, intricacy, goals, circumstances, organizational frameworks, time constraints, financial pressure, uncertainty, and various other aspects [9]. Nevertheless, in construction projects where time is of significant value, effective time planning and management are indispensable [10]. However, the planning stage of house construction often presents a myriad of challenges that can test even the most prepared and enthusiastic individuals. From navigating complex regulations and permits to making critical design and budget decisions, the planning stage requires careful consideration and attention to detail. In this introduction, we will explore some of the common challenges faced by people at the planning stage of house construction, highlighting the importance of thorough preparation and offering insights into overcoming these obstacles. Whether it's financial constraints, architectural dilemmas, or logistical hurdles, understanding these challenges can help individuals embark on their construction journey with confidence and minimize potential setbacks along the way.

This research paper aims to shed light on the challenges faced by homeowners and compare their prevalence in Karnal and Hisar.

2. METHODOLOGY

The methodology for this study involved surveying respondents to identify the personal, economical, and technical challenges they faced during the planning stage of house construction. The sample consisted of 60 respondents who were at palnning stage of house construction, with 30 from each of the cities Karnal and Hisar. A survey questionnaire was used to collect data, and the respondents were asked to indicate their level of agreement or disagreement with each challenge. Frequency analysis was conducted to determine the number and percentage of respondents agreeing, neutral, or disagreeing

with each challenge in each city and overall. Weighted mean scores (WMS) were calculated to assess the average agreement level for each challenge in Karnal and Hisar. The results were presented in tabular form, providing the frequency, percentage, and WMS for each challenge. This methodology allowed for a comprehensive understanding of the challenges faced by respondents during the planning stage of house construction in both cities.

3. RESULTS AND DISCUSSION

The challenges were divided into three categories: personal, economical, and technical challenges. The frequency percentages and WMS were calculated for each challenge within these categories. The results indicated the following:

The Table 1 provides insights into the personal challenges faced by respondents during the planning stage of house design in Karnal and Hisar. The data reveals that a significant portion of respondents in both cities acknowledged facing a lack of information this could refer to insufficient understanding about design options, materials, construction techniques, or relevant regulations. The lack of comprehensive information can hinder effective decision-making and lead to suboptimal design choices; difficulties in setting or knowing priorities this suggests that homeowners might struggle with identifying their most important requirements and preferences, which could result in design decisions that don't align well with their actual needs and lifestyle; and in lack of proper research and feedback it indicate the importance of conducting thorough research on design possibilities, materials, and other factors that influence the construction process. Inadequate research can lead to uninformed choices and potential regrets later in the project. Moreover, a substantial majority disagreed with the challenge of being indecisive to follow Vaastu Shastra this recommends that while traditional beliefs might have played a significant role in the past, a decreasing number of respondents feel obligated to strictly adhere to these principles in their house design. Unrealistic dreams and contradictory likings among family members regarding house attributes were challenges faced by a smaller percentage of respondents. The conflicting wishes towards house attributes appeared to be a concern for a sizable portion of respondents which advocates that while traditional beliefs might have played a significant role in the past, a decreasing number of respondents feel obligated to strictly adhere to these principles in their house design. Additionally, a considerable number of respondents in both cities admitted to a lack of proper research and feedback. The weighted mean scores further indicate the intensity of these challenges, with slight variations between the two cities. Overall, these findings highlight the common personal obstacles encountered during the planning phase of house construction, emphasizing the importance of addressing information gaps, establishing clear priorities, and conducting thorough research. Overall, prioritization and information gaps emerged as the key challenges faced by individuals during the planning stage of house design in both Karnal and Hisar.

Table 2 provides insights into the economical challenges faced by respondents during the planning stage of house design in Karnal and Hisar. The table showcases four specific challenges: source of finance, fixed budget, access to loans from financial institutions, and affordability of land. In terms of the source of finance, around 50% of respondents in Karnal and 60% in Hisar agreed that acquiring adequate funds was a challenge as acquiring funds for construction projects can be difficult due to limited personal savings, restricted borrowing capacity, or the inability to secure favourable financing terms. This challenge is influenced by factors such as income levels, availability of credit, and economic stability in the respective regions. The fixed budget challenge saw a similar pattern, with 60% agreement in both cities construction costs can be unpredictable due to factors like fluctuating material prices, unexpected construction issues, and changes in design plans. Access to loans from financial institutions was perceived as a challenge by approximately 47% of respondents in both locations, difficulties in obtaining loans from financial institutions could be attributed to stringent lending criteria, creditworthiness assessments, and the overall economic environment. In terms of the affordability of land, 46.66% of respondents in Karnal and 53.33% in Hisar agreed it was a challenge as land affordability can be influenced by factors like urbanization rates, population growth, and regional development plans. These findings highlight the significance of financial considerations, such as securing funds and managing budgets, in the house construction

Table 1. Personal challenges faced by respondents at planning stage of house design

Sr. No.	Personal challenges	Karnal (n=30)	Hisar (n=30)	Total (N=60)	WMS (Karnal)	WMS (Hisar)
		Frequency (%)	Frequency (%)	Frequency (%)		
1.			**Lack of information**			
	Agree	12(40.00)	12(40.00)	24(40.00)	2.06	1.80
	Neutral	8(26.66)	12(40.00)	20(33.33)		
	Disagree	10(33.33)	6(20.00)	16(26.66)		
2.			**In setting/knowing priorities**			
	Agree	15(50.00)	11(36.66)	26(43.33)	2.23	2.06
	Neutral	4(13.33)	10(33.33)	14(23.33)		
	Disagree	11(36.66)	9(30.00)	20(33.33)		
3.			**In decisive to follow vaastu shastra**			
	Agree	10(33.33)	7(23.33)	17(28.33)	1.66	1.66
	Neutral	0	6(20.00)	6(10.00)		
	Disagree	20(66.66)	17(56.66)	37(61.66)		
4.			**Unrealistic dreams**			
	Agree	5(16.66)	3(10)	8(13.33)	1.66	1.36
	Neutral	10(33.33)	5(16.66)	15(25.00)		
	Disagree	15(50.00)	22(73.33)	37(61.66)		
5.			**Contradictory wishes towards house attributes**			
	Agree	11(36.66)	9(30.00)	20(33.33)	1.66	1.93
	Neutral	18(60.00)	14(46.66)	32(53.33)		
	Disagree	1(3.33)	7(23.33)	8(13.33)		
6.			**Lack of proper research and feedback**			
	Agree	16(53.33)	11(36.66)	27(45.00)	1.73	1.76
	Neutral	6(20.00)	15(50.00)	21(35.00)		
	Disagree	8(26.66)	4(13.33)	12(20.00)		

Table 2. Economical challenges faced by respondents at planning stage of house design

Sr. No.	Economical challenges	Karnal (n=30)	Hisar (n=30)	Total (N=60)	WMS (Karnal)	WMS (Hisar)
		Frequency(%)	Frequency(%)	Frequency(%)		
1.			**Source of finance**			
	Agree	15(50.00)	18(60.00)	33(55.00)	2.16	1.76
	Neutral	5(16.66)	5(16.66)	10(16.66)		
	Disagree	10(33.33)	7(23.33)	17(28.33)		
2.			**Fixed budget**			
	Agree	18(60.00)	18(60.00)	36(60.00)	2.33	1.76
	Neutral	4(13.33)	5(16.66)	9(15.00)		
	Disagree	8(26.66)	7(23.33)	15(25.00)		
3.			**Access to loans from financial institution**			
	Agree	14(46.66)	14(46.66)	28(46.66)	1.93	2.13
	Neutral	0	6(20.00)	6(10.00)		
	Disagree	16(53.33)	10(33.33)	26(43.33)		
4.			**Affordability of land**			
	Agree	14(46.66)	16(53.33)	30(50.00)	2.16	1.80
	Neutral	7(23.33)	8(26.66)	15(25.00)		
	Disagree	9(30.00)	6(20.00)	15(25.00)		

Table 3. Technical challenges faced by respondents at planning stage of house design

Sr. No.	Technical challenges	Karnal (n=30)	Hisar (n=30)	Total (N=60)	WMS (Karnal)	WMS (Hisar)
		Frequency(%)	Frequency(%)	Frequency(%)		
1.	**Finding suitable land in good locality**					
	Agree	17(56.66)	19(63.33)	36(60.00)	2.36	2.46
	Neutral	7(23.33)	6(20.00)	13(21.66)		
	Disagree	6(20.00)	5(16.66)	11(18.33)		
2.			**In accessibility of land**			
	Agree	14(46.66)	17(56.66)	31(51.66)	2.20	2.36
	Neutral	8(26.66)	7(23.33)	15(25.00)		
	Disagree	8(26.66)	6(20.00)	14(23.33)		

Sr. No.	Technical challenges	Karnal (n=30)	Hisar (n=30)	Total (N=60)	WMS (Karnal)	WMS (Hisar)
		Frequency(%)	Frequency(%)	Frequency(%)		
3.			**Finding right architect**			
	Agree	11(36.66)	18(60.00)	29(48.33)	2.13	1.76
	Neutral	12(40.00)	5(16.66)	17(28.33)		
	Disagree	7(23.33)	7(23.33)	14(23.33)		
4.			**Permitting and documentation**			
			Bank loan approval			
	Agree	11(36.66)	15(50.00)	26(43.33)	1.93	2.20
	Neutral	6(20.00)	6(20.00)	12(20.00)		
	Disagree	13(43.33)	9(30.00)	22(36.66)		
			House plan approval			
	Agree	20(66.66)	18(60.00)	38(63.33)	**2.56**	2.30
	Neutral	7(23.33)	3(10.00)	10(16.66)		
	Disagree	3(10.00)	9(30.00)	12(20.00)		
			Excess paper work			
	Agree	20(66.66)	19(63.33)	39(65.00)	**2.56**	2.40
	Neutral	7(23.33)	4(13.33)	11(18.33)		
	Disagree	3(10.00)	7(23.33)	10(16.66)		
			More time taken			
	Agree	17(56.66)	18(60.00)	35(58.33)	2.30	1.73
	Neutral	5(16.66)	4(13.33)	9(15.00)		
	Disagree	8(26.66)	8(26.66)	16(26.66)		
5.			**Finding right builder or contractor**			
	Agree	4(13.33)	20(66.66)	24(40.00)	1.80	**2.60**
	Neutral	16(53.33)	8(26.66)	24(40.00)		
	Disagree	10(33.33)	2(6.66)	12(20.00)		
6.			**Should go for contractor or wages**			
	Agree	3(10.00)	14(46.66)	17(28.33)	1.50	2.36
	Neutral	9(30.00)	13(43.33)	22(36.66)		
	Disagree	18(60.00)	3(10.00)	21(35.00)		

planning stage in both Karnal and Hisar. Additionally, the challenges related to loans and land affordability underscore the importance of accessible financing options and reasonably priced land for individuals undertaking house projects.

Table 3 presents the technical challenges encountered by respondents during the planning stage of house design in Karnal and Hisar, respondents encountered a range of significant challenges. A prevailing concern shared by a majority in both cities centered around the difficulty of identifying appropriate land in favorable localities and subsequently gaining access to it. This common hurdle reflects the complexity of securing desirable plots in locations that meet both practical and aesthetic criteria. Another notable challenge surfaced in the form of finding the right architect. Although this challenge was present in both cities, slight differences in agreement percentages hint at potential variations in architectural services and availability. The challenge of permitting and documentation revealed a multifaceted obstacle. It comprised sub-challenges such as obtaining approvals for bank loans, house plans, managing excessive paperwork, and grappling with extended processing times. The distinct percentages of agreement for each sub-challenge underscore the diverse set of complexities individuals face when dealing with regulatory procedures and administrative tasks. Unearthing a particularly significant hurdle, respondents in Hisar highlighted the challenge of identifying the suitable builder or contractor. This underscores the critical role that competent and trustworthy professionals play in ensuring the quality and success of construction projects. Furthermore, the decision-making process between employing a contractor or managing labor directly added another layer of concern, reflecting the intricacies involved in choosing the appropriate approach for the project. Collectively, these findings bring to light the technical obstacles individuals encounter during the house construction planning phase in both Karnal and Hisar. The emphasis on the importance of locating fitting land, enlisting skilled professionals, and adeptly navigating the intricate processes of permits and documentation signifies the intricate nature of construction endeavors. The provision of weighted mean scores offers a quantitative gauge of the challenges' severity, equipping builders and contractors with a tool to strategically tackle these obstacles and improve the overall construction process.

4. RECOMMENDED SUGGESTIONS

Based on the research study on challenges faced during the planning stage of house construction, the following recommendations can be made:

- Increase access to information about house construction.
- Provide support in setting priorities and making informed decisions.
- Promote realistic expectations and reduce contradictory wishes.
- Improve access to financial resources for construction.
- Streamline permitting and documentation processes.
- Encourage professional support and guidance.
- Consider regional-specific challenges and solutions.
- Foster continuous research and knowledge sharing in the field.

Implementing these recommendations can help individuals overcome challenges and achieve successful outcomes in their house construction process.

5. CONCLUSION

The research paper provides valuable insights into the challenges faced by homeowners at the planning stage of house construction in Karnal and Hisar. The findings suggest that homeowners in both cities encounter similar challenges related to information, setting priorities, source of finance, fixed budget, and finding suitable land. However, variations exist in challenges related to decisive factors like following Vaastu Shastra and contradictory wishes towards house attributes. Technical challenges related to finding the right architect, permit and documentation processes, and the choice between contractors and wages also showed some differences between the two cities. The results of this study can aid homeowners, architects, and policymakers in developing strategies to overcome these challenges and improve the efficiency of house construction projects. Further research can explore additional factors influencing house construction challenges in different regions.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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