

Perceptual Orientation for Housing Interior Walls Finishes Choice and Preference

Dr. ZINAS, Bako Zachariah¹ & ABUBAKAR, Aliyu²

¹Department of Architecture, Modibbo Adama University of Technology, Yola-Nigeria;

Abstract

Housing interior walls are decorated and finished with various decorative materials of paints of varying properties ranging from texture to coloration. In choosing the preferred finishing and decorative materials, housing owners, users and prospective owners have attendant underlying factors and reasons for their choices. These choice activities usually provoke and invoke certain perceptual orientations that underlie the choices. These perceptual orientations are normally very complex and can only be disentangled by elicitation. This paper presents perceptual orientations of prospective house owners' choice and preference for interior walls finishes in Yola, Nigeria. The study was conducted within the theoretical and conceptual framework of means-end chain (MEC) model. 15 prospective house owners were interviewed using the laddering interviewing technique after a structured questionnaire survey was carried out. The results showed that twelve (12) identified unique perceptual orientation pathways were established, motivated by four (4) user values, and intervened by four (4) expected functional affordances. The findings disentangled the design expectations of housing users/owners for finishing their housing interiors which can be pointers for designers and Architects for their design processes and decisions.

Keywords: housing interior walls, Means-End Chain, Laddering technique, perceptual orientation, & housing choice and preference.

I. Introduction

Building walls define boundaries for either external accessibility or internal operational limits within a building. They serve as structural and partitioning elements of any building enclosure, besides demarcating and separating the internal layout into usable and functional spaces and as well giving them their spatial configuration. Walls can also serve the function of security to the inhabitants from harsh environments and intruding enemies, and secured the housed property from thieves. Many a times in an effort of housing owner to personalized his housing space through spatial re-configuration by modification or remodelling, the internal walls elements become the target of these modification and remodelling activities. These activities subject the internal walls and the finishes to all forms of mutilation (Zinas & Jusan, 2014).

The complex and heterogeneous nature of the housing product, the complex cognitive structures of housing users for housing attributes choice, as well as their choice behaviours are varied and complex too. It has been said that choices are versions of our life expressions; and that we become versions of who we are based on the different choices that we make (Zinas & Jusan, 2010a). They further emphasize that preferences and choices are lifetime phenomena, and that every person lives and operates within the framework of choosing from alternatives of life's endeavours and that these choice and preference

activities are dynamic in modus operandi. Molin et al. (1996) state that choices are understood to echo preferences. The Means-End Chain (MEC) model has been found in its application to successfully handle and measure these complexities in housing research (Zinas & Jusan, 2010a, b). In making these choices, several perceptual orientations can be provoked. The aim of this paper is to present the perceptions of prospective house owners for choosing walls finishes for their would-be housing interiors.

II. Theoretical Framework

2.1 The Means-End Chain (MEC) Model

Gutman (1982) first introduced the concept, with a focus on qualitative in-depth understanding of consumer motives. Reynolds and Gutman (1988) made MEC model well-accepted by providing a hands-on description of how to conduct, analyze and use MEC interviews (Weijters & Muylle, 2008). Kaciak and Cullen (2006) assert that MEC has been a popular and ever-evolving research domain since its introduction. Gutman (1982) defines MEC as a model that seeks to explain how a product or service selection facilitates the achievement of desired end states. The variables or constructs of the original structure of MEC model (Gutman, 1982) are attributes, consequences and values (Fig. 1).



Figure 1: Structure of MEC (Source: Gutman, 1982)

The connection between values and consequences is of critical importance in the MEC model. Coolen et al. (2002) give the linkages as: firstly, that a certain product must be consumed or used to realize its attractive effect; secondly, it is the linkage between effects or benefits of a product and its attributes. MEC explores the relationship between user and product through the construction of a simple associative network between concrete and abstract product attributes, functional and psychosocial consequences linked with product use and, finally, consumers' instrumental and terminal values. Product attributes are but means through which consumers achieve their ultimate values, ends, via the positive consequences or benefits accruing from the attributes. In other words, goods/services are seen as means to satisfy needs that are conscious to a varying degree.

2.2 Laddering Technique

The method used for data collection in MEC is known as laddering. It was first introduced in the 1960s by clinical psychologists as a method of understanding people's core values and beliefs (Hawlev, 2009). Laddering refers to an in-depth one-on-one interviewing technique used to develop an understanding of how consumers translate the attributes into meaningful associations with respect to self, following means-end theory (Gutman, 1982; Reynolds & Gutman, 1988). It is qualitative in nature – utilizing a semi-structured interviewing technique aimed at eliciting responses from respondents' perception on the attribute-consequence-value (A-C-V) elements (Jusan, 2007a).

In conducting laddering interviews, the right questions may be difficult to come by, and the interviewee may be nervous or uncomfortable with the line of question. To ease this dilemma, Wansink (2003) suggests and sums up the main points that should be prioritized in a laddering interview as: a) ask questions that can reveal personal reasons; b) ask questions that lead the person to think and answer with a sentence, not just responding with a "yes" or "no"; c) keep asking "why"; d) question people's reasons for their answers; e) allow the questioning to flow; f) ask questions that give respondents' free reign to answer the questions as they feel is more appropriate; and g) watch the people's facial expressions as they answer the question and listen to the tone of their voices.

III. Methodology

3.1 Elicitation of Housing Attributes

Eighteen sets of interior finishes attributes were compiled and profiled under three attributes segments of floor, walls and ceiling, in a matrix of a structured questionnaire and distributed to 150 randomly sampled prospective house owners in the city of Yola, Nigeria. To make informed responses, a

supporting demonstration 3D technical model of a one bedroom bungalow house was shown to each of the respondents that are not technically inclined to clarify the technical terms of the interior finishes elements. The questionnaires were collated, and a semi-structured interview called 'laddering' was conducted with 15 of the respondents. The selection criteria for the fifteen respondents were on four levels: firstly, desire of respondent to build own housing; secondly, development stage of proposed housing below occupational stage; thirdly, frequency of preferred sets of interior housing finishes; and fourthly, willingness to oblige an interview. The laddering interview with each of the respondents was conducted either in the respondent's house or office depending on respondent's convenient venue and time. Each of the interviews was digitally voice recorded. These free responses voice recorded interviews were transcribed and content analyzed.

3.2 Data Analysis

Content analysis was used as the method for analyzing the data generated from the laddering interview. Neuendorf (2002 p. 1) defines content analysis as the systematic, objective, quantitative analysis of message characteristics; which involves the careful examination of human interactions. Weber (2004) describes content analysis as a research method that uses a set of procedures to make valid inferences from texts. The content analysis of the transcribed data was done within the context of that outlined by the traditional MEC methods (Reynold & Gutman, 1988) and Weber's (2004) methods. The basic element of analysis of the study is "word", "sense of sentence" and "sense of phrases" as posited by Jusan (2010).

Identifying unique pathways linking main attributes to user values provides the interpretive observation for the hierarchical value map (HVM) as revealed by Jusan (2007b). Reynolds and Gutman (1988) assess that identification of unique pathways permits a more meaningful identification of the important attributes, consequences (or functional affordances), and motivating user values. This is usually done by tabulating the items or elements integrated in the pathways and calculating the frequency of direct and indirect relation of linkages among them. These pathway linkages are derived from the summary of implication matrix (SIM) (not included in this paper). The higher the relation score of the pathway, the more important the items in the pathway are of significance to the choice and preference processes for interior walls finishes to the respondents.

IV. Results and Discussion:

4.1 Perceptual Orientation Pathways for Interior Walls Finishes

From the HVM (beyond the scope of this paper) for interior walls finishes, twelve (12) unique pathways can be identified (Table 1). “Beauty (B)” attribute; “environmental friendly (EF)” attribute, and “durability (D)” attribute have two (2) unique pathways each. “Hygienic (HG)” attribute and “affordability (AF)” attribute both have three (3) unique pathways each. Four (4) motivating user values of “hedonism (HD)”, “Benevolence (BV)”, “achievement (A)”, and “self-direction (SD)” were responsible for all these unique pathways. The pathways have four (4) intervening expected

functional affordances (consequences): “conductive environment (CE)” (makes the room conducive, cool atmosphere, conducive environment to live); “appealing environment (AE)” (the finishing is superb, makes an appealing environment, achieves desired beauty, appealing to me, painting comes out good); “saving resources (SR)” (I cut down cost, saves me energy, no spending on medication); and “healthy environment (HE)” (makes the house neat, promotes healthy environment, don’t fall sick, breathe fresh air). The relationship linkages for availability and flexibility pathways are not strong enough to be included in the walls finishes orientation pathways.

Table 1: Interior Walls Finishes Pathways (Source: Zinas 2012)

Pathways	No. of Pathways	Intervening Functional Affordances	Motivating User Values
i. Hygienic (HG)	3	Healthy Environment (HE); Appealing Environment (AE); Saving Resources (SR);	Hedonism (HD); Benevolence (BV); Achievement (A);
ii. Beauty (B)	2	Appealing Environment (AE); Saving Resources (SR);	Hedonism (HD); Achievement (A);
iii. Durability (D)	2	Appealing Environment (AE); Saving Resources (SR);	Hedonism (HD); Achievement (A);
iv. Affordability (AF)	3	Appealing Environment (AE); Saving Resources (SR);	Hedonism (HD); Achievement (A);
v. Environmental Friendly (EF)	2	Conductive Environment (CE)	Hedonism (HD); Self-Direction (SD)
TOTAL	12		

Due to the number of these pathways (12 of them), only a summary of the calculated relation score is included in this paper. For purpose of clarification, only one unique pathway is herein explained. The summarized unique pathways with the calculated relation scores are presented in Table 2. The relation score of the linkages shows the direct and indirect relations, as well as the total value of the score indicated in the parenthesis. The score value to the

left of the decimal is the direct relation score, while the score to the right of the decimal is the indirect relation score of the linkages of the elements in the pathway. The score in the parenthesis is the total of the direct and indirect relationship score of the pathway. For instance, the relation score for Durability – Hedonism pathway of 254.34 implies that 254 elements in the pathway are directly related, while 34 elements are indirectly related.

Table 2: Pathways Relation Scores for Wall Finishes (Source: Zinas 2012)

Walls Finishes			
Pathways	Relation Score	Pathways	Relation Score
Beauty - Hedonism	139.50(189)	Hygienic – Hedonism	268.44(312)
Beauty – Achievement	126.40(166)	Hygienic – Benevolence	214.22(236)
		Hygienic – Achievement	240.47 (287)
Durability – Hedonism	254.34(288)	Environmental Friendly – Hedonism	100.18(118)
Durability – Achievement	244.33(277)	Environmental Friendly – Self-direction	68.22(90)
Affordability-Hedonism	195.30(225)		
Affordability-Benevolence	169.30(199)		
Affordability-Achievement	192.36(228)		
Note: i. Attributes Codes: Beauty- B ; Environmental Friendly- EF ; Durability- D ; Hygienic- HG ; Affordability (AF) ii. Value Codes: Hedonism- HD ; Self-direction- SD ; Achievement- A ; Benevolence - BV ; iii. Relation score count: indicates the direct and indirect relations of the mentioned elements within a given pathway. For instance, 268.44 score for hygienic-hedonism pathway has 268 direct relations, and 44 indirect relations, giving a total of 312 relation score count.			

Durability pathways are the second strongest perceptual orientation pathways category is emphasized and explained in this paper. The two pathways are motivated by “hedonism” and “achievement” user values; followed by the affordability pathways category, motivated by three user values, “Hedonism”, “Benevolence”, and “Achievement”. Interestingly, beauty pathways category is the second weakest in strength of the walls finishes, motivated by user values “Hedonism” and “Achievement”; followed by the least strong pathways category of environmental friendly attribute motivated by user values “Hedonism” and “Self-direction”. The most important pathways of hygienic-hedonism with higher relationship score of linkages has not been emphasized in this paper though. The interesting point of note is the fact that user value “hedonism” has relation with all the main attributes of this space dimension; and “achievement” user value has relation with all but one main attributes reflected in the perceptual orientation pathways for walls finishes; suggesting that preferences for walls finishes are majorly for hedonic and achievement reasons.

4.2 Durability - Hedonism Perceptual Orientation Pathway

This pathway is the second strongest in the whole pathways setting, with a relation score value of 254.34 giving a total score value of 288 (Table 3) for walls finishes. The need for a having a durable walls finishes has been emphasized for this main abstract attribute since the wall structure serves several purposes in the enclosed spaces aimed at protection and security of lives and property, especially from

external forces and harmful environmental elements. One respondent connects durability to the expected lifespan of his intended housing structure, when he stated:

“...if you look at our old systems of houses, the type our parents built, they built those houses based on this factor (durability). You can see that some of them were built 40 or 50 years ago, but they are still strong..... It’s important so that it can last long – longevity.... I remember my father built a house for about 50 years ago.... So it has given him a lot of time to think and plan of building another one over time....it goes a long way for me to pass it over to my children, and it establishes the family history and heritage, as well as being a family asset”.

This statement connects durability of interior wall finishes to several perceptions. Firstly, it connects durability to longevity and lifespan of the building. This is emphasized by this statement, citing examples from his father to buttress his point. Walls finishes as a building component can contribute to the lifespan of the building as argued by Weldon (1998, p.184). She argues that building’s components (finishes inclusive) have a contributively range of life expectancies to the entire span of the building; therefore, according to her, “houses are required to be durable”. This requirement is based on the fact that buildings are always under constant influence of climate (wind, snow, and sunlight), attacks from vandals, and damage by fire, explosions and structural movements. Weldon submits that residential designs should incorporate elements which aim at ensuring that durability is not impaired (p.161).

Table 3: Durability – Hedonism Pathway (Source: Zinas 2012)

	D	AE	SR	HD	Total
D- Durability	14.00	4.00	2.10	0.05	20.15
AE- Appealing Environment	0.00	58.00	7.02	10.13	75.15
SR – Saving Resources	0.00	0.00	104.00	10.04	114.04
HD- Hedonism	0.00	0.00	0.00	45.00	45.00
Total					254.34

Secondly, longevity and durability of buildings as inferred by the respondent’s statement above connects to historical lineage of value orientation of the family, besides serving as a family reference point. This means that the family lineage will have a historical pointer even when the family head is long gone. It also establishes a family heritage, as well as serving as a family asset which can become an inheritance for the children over the years. It becomes a family’s archive where all family members will always come back to for family re-union. It serves as a family investment as argued by Aragonés et al. (2002, p.2). They argued that besides housing meeting our needs, it is also a major investment which can be an important part of the economic. The economic aspect of housing can be inferred in the statement attributed to the respondent above, where he stated “it has given him (his father) a lot of time to think and plan of building another one over time”. The “thinking and planning” of his father is on an economic (financial) context. This is true for any durable built environment, where it takes some time to spend money for either “rectifying works or replacement of the components that are no longer fulfilling their functional requirements” (Weldon, 1998, p.187). This will enable the housing owner to financially and economically plan his resources.

V. Conclusion

The interpretation of these pathways is that as the relation score of a given pathway is higher, it indicates the strength of the relationship of the linkages in the pathway. Interestingly, the pathways indicated in Table 2 reveals that the hygienic pathways’ pack for hedonism is the most important motivating value for hygienic walls finishes preference and choice, followed by achievement, and Benevolence in that pathways category. This implies that respondents attach more significance to the achievement of hygienic walls finishes that are driven by hedonic user value than any other perceptive orientation. The creation of a healthy indoor housing space guarantees a healthy living environment that keeps the family free from unhealthy environment related sicknesses and diseases.

Having interior walls finishes that are durable, motivated by hedonism with the intervening expected affordance of “saving resources”, reflected by “saving time” from frequent maintenance, “saving

energy” during frequent maintenance, and “saving money” that would have been otherwise used for frequent maintenance works of renewing the painting, fixing the vandalized walls finishes. The need to have an “appealing environment” is also an expected affordance expressed by having a “minimized walls distortions; and reduces vandalism due to nailing” which creates a housing environment that is “made always good”. An attractive indoor environment as argued by Skjaeveland and Garling (2002, p. 192) “invite people to stay thereby increasing the likelihood that they will meet those who have similar preferences or needs”.

The findings presented above suggest that the expected affordances (appealing environment and saving resources) for having durable walls finishes emphasized in the choice processes by respondents should be given consideration in walls finishes design decision suggestion. Walls finishes should be designed to incorporate materials elements that aim at ensuring that the durability characteristic is not made worse (Weldon, 1998). She further reveals that walls and floors should be designed to contain the fire for a minimum period normally one hour to allow people within the building to escape as well as allowing fire-fighters to arrive. This is significant for both designers and housing owners. The need to save resources was also emphasized as an expected affordance for durable walls finish. So design suggestions and proposals for design finishing materials for walls that enables the house owner to save resources (time, energy, and money) in the maintaining the interior walls finishes.

References

- [1.] Aragonés, J. I., Francescato, G., and Garling, T. (2002). Evaluating Residential Environments. In J. I. Aragonés, Francescato, G., and Garling, T. (Ed.), *Residential Environments: Choice, Satisfaction, and Behavior* (pp. 1-13). Westport, Connecticut: Bergin & Garvey.
- [2.] Coolen, H., Boelhouwer, P., and Kees, V. D. (2002). Values and goals as determinants of intended tenure choice. *Journal of Housing and Built Environment*, 17, 215-236.
- [3.] Gutman, J. (1982). A Means-End Chain Model based on Consumer Categorization Processes. *Journal of Marketing*, 46, 60-72.

- [4.] Hawlev, M. (2009). Laddering: A Research Interview Technique for Uncovering Core Values: Research That Works.
- [5.] Jusan, B. M. M. (2010). *Renovation for Personalization: A Development Arm for Sustainable Housing* (1st ed.). Johor Bahru: Universiti Teknologi Malaysia.
- [6.] Jusan, M., Mohd (2007a). Identification of User's Expectations in Mass Housing using Means-End Chain Research Model *Journal Alam Bina* 9(4), 1-19.
- [7.] Jusan, M. M. B. (2007b). *Personalization as a means of Achieving Person-Environment Congruence in Malaysian Housing*. Unpublished PhD Dissertation, Universiti Teknologi Malaysia, Skudai-Malaysia.
- [8.] Kaciak, E., & C. W., Cullen. (2006). Analysis of means-end chain data in marketing research. *Journal of Targeting, Measurement and Analysis for Marketing* (15), 12-20.
- [9.] Molin, E., Oppewal Harmen and Timmermans Harry. (1996). Predicting consumer response to new housing: A stated choice experiment. *Netherland Journal of Housing and the Built Environment*, 11(3), 297-311.
- [10.] Neuendorf, A. K. (2002). *The Content Analysis Guidebook*. California: Sage Publications, Inc.
- [11.] Reynolds, T. J., & Gutman, J. (1988). Laddering Theory, Method, Analysis, and Interpretation *Journal of Advertising Research*, 28, 11-31.
- [12.] Skjaeveland, O., and Garling, T. (2002). Spatial-Physical Neighborhood Attributes Affecting Social Interactions among Neighbors. In J. I. Aragones, Francescato, G., and Garling, T. (Ed.), *Residential Environments: Choices, Satisfaction, and Behavior* (pp. 183-203). Westport, Connecticut, London: Bergin & Garvey.
- [13.] Wansink, B. (2003). Using Laddering to Understand and Leverage a brand's Equity. *Qualitative Market Research: An International Journal*, 6(2), 111-118.
- [14.] Weber, P. R. (2004). Content Analysis. In C. Seale (Ed.), *Social Research Methods: A reader* (pp. 117-124). London: Routledge.
- [15.] Weijters, B., and Muylle, S. (2008). *A means-End-Chain analysis of pub visits in Belgium* Vlerick Leuven Gent Management School.
- [16.] Weldon, J. (1998). Housing Design and Development. In P. Balchin, and Rhoden, M. (Ed.), *Housing: The Essential Foundations* (pp. 154-208). London: Routledge.
- [17.] Zinas, Z. B., & Jusan, B. M. M. . (2010a). Choice Behaviour of Housing Attributes: Theory and Measurement. *Asian Journal of Environment-Behaviour Studies*, 1(2), 1-17.
- [18.] Zinas, B. Z., and Jusan, M. M. (2010b). *Theoretical Framework of Means-End Chain Model for measuring housing environment choice and preference*. Paper presented at the 4th International Conference on Built-Environment in Developing Countries. Universiti Sains Malaysia (USM), 1st-2nd December,
- [19.] Zinas, B. Z., (2012). *Housing Interior Finishes Attributes Preference and Choice*. Unpublished PhD Dissertation, Universiti Teknologi Malaysia, Skudai-Malaysia
- [20.] Zinas, Z. B., and Jusan, M. B. M. (2014). Perceived Affordances and Motivations for Housing Interior Walls Finishes Preference and Choice. *Journal of Civil Engineering and Architecture Research*, 1(1), 71-77.