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The end consumer's choice of floorcovering in the Netherlands and the United Kingdom: a comparative pilot study of substitute competition

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Abstract In order to understand the competitive situation of wood, it is essential to consider the end consumer of building materials. The knowledge of factors affecting the end consumer's choice of building material for specific purposes, i.e., the mechanisms of substitute competition, is limited. Field studies of the British and Dutch floorcovering markets revealed that context, usage context as well as the general life situation, is of crucial importance in substitute competition. This contextual character severely limits the usefulness and adequacy of interviews with fixed-reply alternatives, as well as classical statistical methods of analysis. In this article, a qualitative approach to data gathering is combined with multivariate analysis. The results indicate that by using this methodology it is possible to determine which are the decisive predictors of material preferences, make cross-cultural comparisons, and apprehend the underlying motives or perspectives. The results further show that, unlike the other floorcovering materials studied, the determinant reasons for choosing wood appear to be exclusively nonfunctional in nature.

Key words End consumer · Substitute competition · Context · Multivariate analysis · Cross-cultural

Background

The end consumer of building materials, in the sense of a house or apartment resident, plays an essential role in the supply chain, as the ultimate user and payer of the product or services in question. The market for reconstruction and conversion is expected to grow markedly in Europe. In this type of building activity the house or apartment residents' (i.e., the household's), assessments are generally more cru-

cial than in the construction of new houses. This further highlights the importance of the end consumer.

A number of studies concern the attitude of architects and building contractors toward wood and substitute materials.^{1,2} The general attitude of end consumers toward wood as a building material,³ as well as the visual impressions and attitudes toward wood⁴ have also been investigated. However, the knowledge of factors affecting the latter group's choice of material for specific purposes or applications, i.e., the mechanisms of substitute competition,⁵ in different cultural settings, seems to be limited. Consequently, a methodology that allows assessment of decisive determinants of application material preferences and cross-cultural comparisons is called for.

In this study a qualitative approach to data gathering, to apprehend underlying motives, is combined with a multivariate method of analysis, partial least square discriminant analysis (PLS-DA). The objective is to demonstrate the potential of the methodology in determining decisive predictors of material preferences and in making cross-cultural comparisons. The influence and involvement of the end consumer seems to increase as one moves from the construction sector toward the design sector, i.e., visible parts of the building.³ Floorcovering is a material application with a pronounced design profile, and the household typically makes the choice of floorcovering material. This makes floorcovering a good illustrative example.

Materials and methods

The interview data

In social sciences, there are two main methodological approaches, nomothetic and idiographic. The nomothetic approach emphasizes quantitative analysis of a few aspects to test hypotheses and make statistical generalizations. The idiographic approach, in contrast, relies on a case-study approach to achieve the in-depth understanding of complex phenomena, and is the preferred strategy when little is

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known about a phenomenon.^{6,7} An idiographic approach to data gathering was consequently used in this instance. Observational units⁸ were thus selected for theoretical reasons rather than for representativity.⁹ For the purpose at hand, it was prudent to select households that were actively engaged in reflooring of their homes and/or had refloored in the recent past. A convenient method was to interview customers at outlets for different types of floorcovering, in order to include as many materials as possible.

In the UK, interviews were conducted in five different shops in the Greater Manchester area and North Wales. The number of interviews was 67. All interviews were tape recorded. Seven different floorcovering materials (outcomes) are represented in the sample: textile flooring, laminated flooring, ceramic tiles, vinyl, linoleum, parquet, and board flooring. In the Netherlands, customers were interviewed at seven outlets for different types of floorcovering in eight different cities or locations. The number of interviews was 70. Interview transcripts were translated to English. The same floorcovering materials as in the UK study are represented.

To obtain an idea of the mechanisms affecting household material preferences, open-ended questions concerning the choice of floorcovering material (planned re-floorings or floorings undertaken the past 5 years) were used: type of rooms considered, type of materials, and reasons for choosing the materials in question (“What made you choose this particular type of flooring material?”/“What makes you choose this types of flooring materials?”). No specimens were presented, because this could have unduly influenced respondents. Furthermore, explanation of floorcovering material preferences in general was the scope of the studies; presenting specimens would bias the investigation in favour of visual impressions and attitudes. However, the interviews included a probing question to clarify what type of wooden flooring was intended to be used or had been used whenever a respondent indicated their preference for “wood.” The alternatives were softwood parquet, hardwood parquet, solid softwood floorboards, solid hardwood floorboards, and laminated flooring (hardwood or softwood printed wood overlay). Laminated flooring is of course not real wooden flooring, but is often mistaken for one. In addition, to get further input, questions concerning the general attitude toward different floorcovering materials (e.g., “How would you describe the following types of floorcovering materials?”) were used. The materials were vinyl, linoleum, ceramic tiles, textile flooring, laminated flooring, softwood parquet, hardwood parquet, solid softwood floorboards, and solid hardwood floorboards.

Finally, information regarding some household characteristics was collected from fixed reply alternatives: whether the householders in question were homeowners or tenants, whether the floorcovering was laid by someone belonging to the household, self-reported household income (five income bands), and whether there were any children in the household.

The interviews resulted in three types of variables potentially explaining floorcovering material preferences: reasons for preferring a particular floorcovering material (from

open-ended questions), type of room considered for reflooring (from open-ended questions), and household characteristics (from fixed reply alternatives). The variables of the first two types were retrieved directly from respondents (so-called *in vivo* categories), that is, respondents expressed them. Related words and expressions then formed instances of the same category or variable (e.g., “durable” is an instance of “hardwearing”, as “sitting room” is an instance of “living room”). Variables of the last type were predetermined: house owner, DIYer, income, and children. All the variables were binary (i.e., 1 for presence, 0 for absence of the variables in question). Household income, where a five-point Likert scale was used, was dichotomised such that the income was coded as high if the yearly household income exceeded £31000/year (the UK sample) or 43000euro/year (the Dutch sample).

Multivariate projection methods

Multivariate projection methods like principal component analysis (PCA) and PLS-DA are able to handle binary variables. This is a necessity when analyzing answers from open-ended questions. Further, these analytic tools cope with many variables and few observations as well as collinear variables.¹⁰ The idea of projection methods is to represent the table of observations as a swarm of points in K -dimensional space (K = number of variables), and projecting the point swarm down onto a low dimensional plane or hyperplane, i.e., a low-dimensional subspace. The co-ordinates of the points on this hyperplane constitute a compressed representation of the observations, the so-called score plot, and the direction vectors of the hyperplane a corresponding representation of the variables, the so-called loading plot.

A fundamental assumption in PCA is that directions in multivariate space with maximum variation are more or less coupled to so-called latent variables, or principal components. The first principal component captures the largest variation structure in the data. The second component, fitted orthogonally to the first, describes as much of the remaining variation as possible, and so forth. Although PCA finds the directions in multivariate space with maximum variation, it is not necessarily so that these maximum variation directions coincide with maximum separation directions among classes. In these instances a PLS (projection to latent structures by means of partial least square analysis) based technique, PLS-DA, is more apt.¹¹ PLS-DA already takes the problem formulation explicitly into account for the class membership of observations, an attractive feature in the present context as the classes, i.e., the preferred floorcovering materials, are initially known. The objective of PLS-DA is to find a model that separates classes of observations on the basis of their X -variables (predictors). This is accomplished by a rotation of the projection to latent variables that focus on class separation and discrimination. To encode a class identity, a Y (response)-data matrix of dummy variables, with G columns (for G classes) with ones and zeros, is used. Provided that each class occupies a suffi-

ciently small and separate volume in X-space, a discriminant plane, in which the projected observations are well separated according to class, can be found.

When deciding the appropriate number of components in a PLS model, it is desirable to find a model with an optimal balance between fit, R^2 (= explained variation), and prediction ability, Q^2 (= predicted variation). R^2 is inflationary and approaches unity as model complexity (number of terms, number of components, etc.) increases, whereas Q^2 is not, because at a certain degree of complexity Q^2 will not improve any more. When using soft independent modeling of class analogy (SIMCA) with cross validation, the tested dimension is considered significant if Q^2 for the whole data set (Rule 1) or for at least one Y-variable (Q^2_V) is larger than a significance limit (Rule 2). In evaluating the overall performance of a PLS model it should be noted that without a high R^2 , it is impossible to get a high Q^2 . Generally, an accumulated (over all PLS dimensions) predicted variation share, Q^2_{cum} , larger than 0.5 indicates a rather strong model.

In interpreting the influence on Y (the matrix of responses) of every term (x_k) in the model, the interpretation tool known as "variable influence on projection" (VIP) is of good use. VIP is the weighted sum of squares of the PLS weights over all model dimensions. The attractive feature of VIP is the parsimony, as one VIP vector summarizes all components and Y-variables. Terms with a VIP value larger than 1 are the most relevant for explaining Y. For discriminating between important and unimportant predictors, a cutoff around 0.7 to 0.8 works well in most cases.¹¹

To evaluate which conditions or variables are decisive for each outcome (chosen material); studying PLS regression coefficients is useful. These regression coefficients are directly related to the weights, W^* , describing the correlation between X and Y. An advantage of PLS regression coefficients are that they provide one vector of concise model information per response, not several vectors of weights.

Results

Methodological implications

The importance of the context and situation in substitute competition is apparent in both the UK and Dutch studies. The usage context seems to be the most important contextual factor. Thus, a given household often chooses different materials depending on the type of room. Ownership and the style of the dwelling are other aspects of usage context sometimes referred to, as the following remarks on wooden flooring indicate: "Very beautiful, but expensive, more applicable for house owners," "Our house is too modern for that," "It depends on the age of the house and the style." This confirms Ajzen and Fishbein's¹² proposition: it is more fruitful to consider attitudes toward the act of using a product, rather than attitudes toward the product itself, and is in line with Graonic and Shocker's¹³ conclusion, i.e., a change

of context results in a change of judgement of benefit importances. Another contextual factor, the life situation, e.g., children living at home, asthma in the household, or the presence of pets, affects material preferences through perspectives produced, as proposed by phenomenological consumer research:¹⁴ "Because of kids, easy maintenance, and no dust," "Because of our large dog and because parquet has thin grooves, laminate is better." In substitute competition, then, benefit importance weights do not, as Howard¹⁵ suggests in the case of brand competition, appear to be the main source of individual differences in choice behaviour. Rather, these differences can be explained by differences in the criteria applied, i.e., materials are chosen or rejected on the grounds of desired attributes perceived as being present or not. This state of affairs makes the use of questions with fixed reply alternatives, and thus the problem of scaling inherent in cross-cultural research,^{16,17} i.e., cultural differences in answering multiple-choice questions, irrelevant. Instead, the use of open-ended questions, resulting in dichotomous variables, is both sufficient and appropriate.

The apparently contextual, situational character of substitute competition, and the resulting causal complexity,⁸ i.e., a multitude of potentially highly collinear explanatory variables, severely limits the usefulness and adequacy of classical statistical methods of analysis, e.g., multiple linear regression and analysis of variance. Multivariate projection methods have potential for examining causally complex data, as they cope with many variables and few observations as well as collinear variables.¹⁰ In addition, multivariate projection methods, like PLS-DA, are able to handle binary variables, a necessity when analyzing answers from open-ended questions. Thus, PLS-DA was conducted in order to extract the most decisive causal conditions for material preferences, and to make comparisons between the British and Dutch samples.

Analysis

In the analysis of material preferences, no distinction was made between planned refloorings and those already undertaken. This was motivated by the concern to attain as many instances of the phenomenon as possible. Furthermore, there is nothing in the results that seems to indicate any systematic difference between the two categories.

The UK sample

The UK interviews resulted in 20 variables regarding reasons for preferring a particular floorcovering material. The type of room considered for reflooring was represented by 9 variables. Household characteristics constituted 4 variables. All in all, the interviews produced 33 variables, potentially explaining floorcovering material preference.

Initially, a PLS-DA with five classes was conducted: textile flooring (henceforth carpet), laminated flooring (henceforth laminate), ceramic tiles (henceforth tiles), vinyl and linoleum, and wood (parquet and board flooring). Few ob-

Table 1. VIP values for the UK study

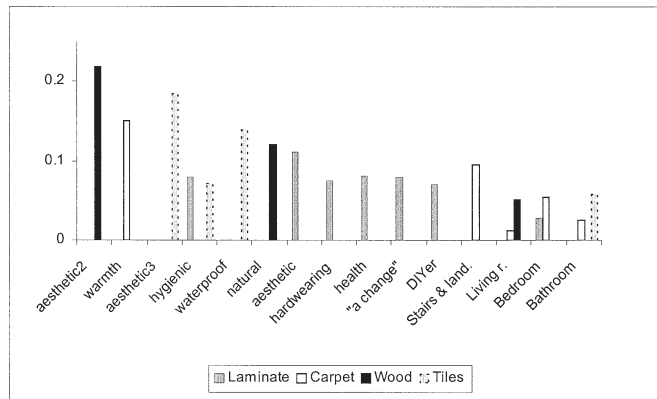
Variable	VIP	Variable	VIP
Aesthetic2	2.24	Kitchen	0.67
Warmth	2.04	Good price	0.62
Aesthetic3	1.89	DIY	0.59
Hygienic	1.63	Dining room	0.59
Waterproof	1.43	Aesthetic1	0.57
Stairs and landing	1.28	Acoustics	0.57
Natural	1.24	Softness	0.57
Aesthetic	1.22	Warm compared to tiles	0.51
Bedroom	1.01	Hall	0.47
Hardwearing	0.91	Foothold	0.46
Health	0.88	Tradition	0.46
A change	0.88	High income	0.43
DIYer	0.84	House owner	0.40
Living room	0.76	Study	0.39
Bathroom	0.76	Baby room	0.22
Wood feeling	0.70	Children	0.18
Fashion	0.70		

VIP, variable influence of each term (x_k) on Y (the matrix of responses); DIY, do it yourself

servations and the fact that there is no discernible difference in consumer assessment between the different types of wooden flooring (henceforth wood) motivate treating these responses as one class. In this connection it should be noted that knowledge of wooden flooring was poor amongst the British respondents. Respondents were not (with one exception) able to specify the kind of wood in instances of real wood preference, nor were they able to specify the kind of printed wood overlay in instances of laminated flooring preference (in all instances where laminate was the preferred floorcovering, it was of the printed wood overlay type). Hence, laminate constitutes one class only. Vinyl and linoleum is likewise treated as one class, due to few observations and the fact that the British respondents make no distinction between these materials. A model with four significant components, according to the more stringent Rule 1 used in this study to avoid modeling noise, resulted. The R^2_Y of 0.70 and Q^2_{cum} of 0.59 indicate a rather good overall model. However, class four, vinyl and linoleum preference, is poorly accounted for: $R^2_{V(cum)} = 0.27$ and $Q^2_{V(cum)} = 0.11$, probably because vinyl/linoleum preference is present in four observations only. Excluding these observations, i.e., conducting a PLS-DA with the four remaining classes, resulted in a model with three significant components, $R^2_Y = 0.81$ and $Q^2_{cum} = 0.76$.

VIP values are displayed in Table 1. According to the PLS-DA, aesthetic considerations apparently play a dominant role, as do more objective criteria related to the nature and function of the different floorcovering materials (e.g., warmth, hygienic, waterproof). Type of room apparently is of importance for the choice of floorcovering material. Only one of the household characteristics seems to be of significance for material preference: DIYer, i.e., whether or not the floorcovering material was laid by someone in the household.

Figure 1 displays the PLS regression coefficients for the four responses (classes), using predictors with a VIP value ≥ 0.75 (= the cutoff value adopted in this study). For ease

**Fig. 1.** Regression coefficients for the UK study. *DIY*, do it yourself

of interpretation, only positive values are displayed. The coefficient profile, together with an analysis of the interview answers as to perspectives/motives, suggests that:

- Carpet is chosen if: tactile warmth (warmth) is at hand as an important criterion. Carpet is mainly used on stairs and landings, in bedrooms, and in bathrooms. The prominence of tactile warmth probably reflects the nature of the climate in the UK.
- Laminate, apart from aesthetic considerations (aesthetic, i.e., instances where the aesthetic properties of laminate are cited as a reason for choosing this material), is the preferred floorcovering when: hygiene (hygienic), health (health), durability (hardwearing), and the desire for change (a change) are present as important criteria, and someone belonging to the household installed it (DIYer). Laminate has a comparative strength in bedrooms. The respondents relate the alleged hygiene of laminate to the alleged unhygienic carpet. In combination with health concerns (likewise often related to the alleged unhealthy carpet) it can be seen as a means to achieve the desired value: a good life. When health concerns are not expressed, hygiene is an object in itself: tidiness/orderliness. The aesthetic property of laminate (aesthetic) appreciated by consumers favouring this material is the “wood effect” (in all instances where laminate was the preferred floorcovering, it was of the printed wood overlay type), as is apparent from this representative quotation: “Because I like the look of wooden floors.”
- Those who find wood aesthetically appealing (aesthetic2, i.e., instances where the aesthetic properties of wood are cited as a reason for choosing this material) and who appreciate it being a natural material (natural) favour wood. It is mainly used in living rooms, and the use often seems to be conditioned by the style of dwelling: “Our house is too modern for that.” The decisive reasons for choosing wood are apparently nonfunctional, a circumstance further highlighted by the fact that respondents expressing a general liking of wood, without any intention to use it, invoke practical reasons for not doing so, e.g.: “We used to have that in the other house, but we found that when you drop things, it dents. We prefer the natural look, but we didn’t have the baby then.”

“Wouldn’t have been practical with the children, they tend to slip.” “Looks nice, but I can’t have it in my house because of the draft.”

- Tiles are chosen for bathrooms on hygienic grounds, because they are regarded as being waterproof and have aesthetic value (aesthetic3, i.e., instances where the aesthetic properties of tiles are cited as a reason for choosing this material). The main drawback of tiles appears to be the alleged coolness: “Tiles are lovely – and in the Mediterranean, yes, certainly – but not here in Manchester.”

The Dutch sample

The Dutch interviews resulted in 18 variables regarding reasons for preferring a particular floorcovering material. The type of room considered for reflooring was represented by 11 variables. The household characteristics constituted 4 variables. All in all, the interviews produced 33 variables, potentially explaining floorcovering material preference.

The fact that there is no discernible difference in consumer assessment between the different types of wooden flooring motivates treating these responses as one class. Respondents were not able to specify the kind of printed wood overlay in instances of laminated flooring preference (in all instances where laminate was the preferred floorcovering, it was of the printed wood overlay type), hence laminate constitutes one class only. Thus, initially a PLS-DA with six classes was conducted: carpet, laminate, tiles, vinyl, linoleum, and wood. A model with four significant components, according to the more stringent Rule 1 used in this study to avoid modeling noise, resulted. However, classes four and five, vinyl and linoleum preference, respectively, are poorly accounted for: $R_{VY(cum)}^2$ values of 0.32 and 0.03, and $Q_{V(cum)}^2$ values of 0.27 and 0.03, respectively. Excluding these observations, i.e., conducting a PLS-DA with the four remaining classes, resulted in a model with three significant components, $R_Y^2 = 0.76$ and $Q_{cum}^2 = 0.70$.

VIP values are displayed in Table 2. According to the PLS-DA, aesthetic considerations apparently play an important role, as do more objective criteria related to the

Table 2. VIP values for the Dutch study

Variable	VIP	Variable	VIP
Aesthetic2	2.09	DIYer	0.80
Warmth	1.61	Acoustics	0.78
Aesthetic	1.59	Wood feeling	0.77
Hygienic	1.54	Dining room	0.68
Natural	1.46	Health	0.66
Aesthetic3	1.42	Waterproof	0.55
Softness	1.36	Lumber room	0.52
Good price	1.35	High income	0.51
Bedroom	1.18	Foothold	0.43
Bedroom	1.16	Hall	0.40
DIY	1.11	Environment	0.38
Living room	1.09	Stairs and landing	0.35
Underfloor heating	0.90	Loft	0.33
Aesthetic1	0.88	Study	0.33
Hardwearing	0.82	Baby room	0.32
Kitchen	0.81	Children	0.30
House owner	0.81		

nature and function of the different floorcovering materials (e.g., warmth, hygienic, natural, softness). Type of room apparently is of importance for the choice of floorcovering material. Two household characteristics seem to be of significance for material preference: house owner and DIYer (whether someone belonging to the household installed the floorcovering).

Figure 2 displays the PLS regression coefficients for the four responses (classes), using predictors with a VIP value ≥ 0.75 . For ease of interpretation, only positive values are displayed. The coefficient profile together with the interview answer suggest that:

- Carpet is chosen: when tactile warmth is at hand as an important criterion, softness is appreciated, because of sound-absorbing qualities (acoustics), and for aesthetic reasons (aesthetic1, i.e., instances where the aesthetic properties of carpet is cited as a reason for choosing this material). Carpet is mainly used in bedrooms. The main drawbacks are apparently the hygiene issue: “Always problems with cleaning, never again,” “gets dirty very easily, and difficult to clean,” “lots of dust, not hygienic, and difficult to clean,” and the image, as carpet is often considered old-fashioned: “a bit old-fashioned,” “for oldies.”
- Laminate, apart from aesthetic consideration (aesthetic, i.e., instances where the aesthetic properties of laminate are cited as a reason for choosing this material), i.e., the wood appearance (“easy, clean, and still the beauty of wood”), is the preferred floorcovering when hygiene (hygienic) is an important criterion, because it is easy to install (DIY), and cheap (good price). Laminate is used in all types of rooms, but has a comparative strength in bedrooms and kitchens. Laminate appears to be the choice of the DIYer, due to ease of instalment: “Laminate is fake wood, but easier to lay and cheaper.”
- Those who find wood aesthetically appealing (aesthetic2, i.e., instances where the aesthetic properties of wood are cited as a reason for choosing this material), appreciate it being a natural material (natural), and like the “wood feeling,” favour wood. Wood is chiefly used in living rooms. Users of wood are predominantly house owners:

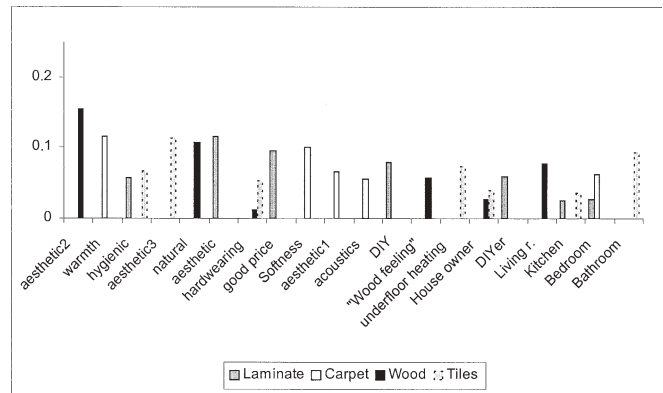


Fig. 2. Regression coefficients for the Dutch study

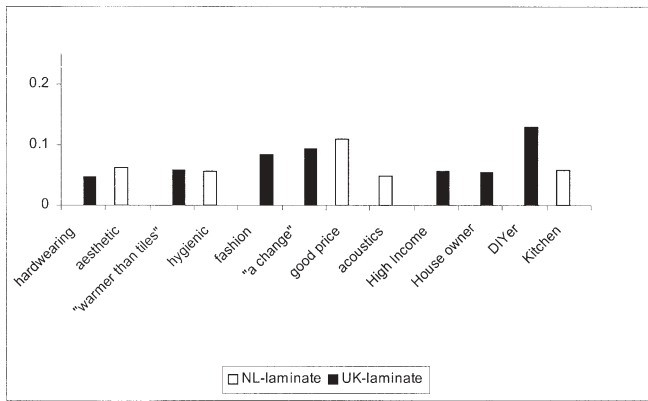


Fig. 3. Regression coefficients for cross-cultural comparisons

“Very beautiful, but expensive and more applicable for house owners.” The use of wood also seems to be conditioned by the style of the dwelling, as exemplified by the following quotation: “Very nice, but only in specific large houses.”

- Tiles are chosen because this floorcovering material is regarded as hardwearing, hygienic, aesthetically appealing (aesthetic₃, i.e., instances where the aesthetic properties of tiles are cited as a reason for choosing this material), and convenient for underfloor heating. Tiles are mostly used in bathrooms and kitchens. Users of tiles are generally house owners.

Cross-cultural comparisons

A PLS-DA using all observations in separating the UK and Dutch samples resulted in a with one significant component, $R^2_Y = 0.46$ and $Q^2_{cum} = 0.36$. This suggests that the model is not very strong, which could imply that culturally conditioned differences are modest in this instance, i.e., the within-sample variation is higher than the between-sample variation. However, proceeding material by material revealed a more significant difference between the UK and Dutch samples for laminate users, $R^2_Y = 0.58$ and $Q^2_{cum} = 0.48$.

Figure 3, which displays the PLS regression coefficients for the British and Dutch laminate users, using predictors with a VIP value ≥ 0.75 , suggests that:

- Dutch laminate users, to a higher degree than the British, emphasized the aesthetic, hygienic, and acoustic qualities, as well as the favorable price. Furthermore, the Dutch use laminate in kitchens to a greater extent. The British respondents, on the other hand, chose laminate because of (alleged) durability, fashion consciousness, the desire for change, and because it is perceived as being warmer than tiles. Laminate was the choice of the DIYer in the British sample.
- The image of laminate appeared to be more favorable amongst the British respondents. The proportions of house owners and high-income earners were higher for the British laminate users. Coupled with the fact that the

Dutch laminate users stressed the low price of laminate, and the circumstance that the Dutch laminate users, in contrast to the British, obviously did not consider laminate to be more durable than wood, the impression of laminate as a cheap “budget” alternative to wood in the Dutch case was conveyed, corroborated by such quotations as the following: “Laminate is fake wood, but easier to lay and cheaper” – “A budget solution, not very high durability, but can look nice” “Easy, cheap and doesn’t have to be durable in the bedroom.”

Discussion

Methodology

The results suggest that by using PLS-DA it is possible to simplify complexity, by extracting the most important causal conditions for each outcome (preferred material). The conducted PLS-DA depicts as decisive the same criteria emerging with salience in the interviews, and captures most of the contextual influence apparent in the interviews. PLS-DA makes it possible to detect both between-cultural and within-cultural differences as to the choice of application material from the answers to open-ended questions, thus allowing parsimony in the analysis as there is no need for a follow-up quantitative study. In addition, the problem of scaling in cross-cultural research can be avoided. However, although pertinent particularly in the UK interviews, the presence of children in the household was not depicted as decisive for material preferences by the PLS-DA conducted. This is due to the fact that the same life situation can result in different considerations, due to differing perspectives. Consequently, some parents of small children preferred carpets on the grounds of it offering tactile warmth and a good foothold, whereas other parents preferred laminate on account of hygiene and health concerns (allergens). This latter circumstance emphasizes the need to complement the PLS-DA with an interpretative analysis to obtain in-depth understanding of underlying perspectives, which presupposes qualitative data gathering.

Marketing implications

The usage context (type of room, whether the dwelling is owned or not, style of dwelling) apparently plays a major role for the end-consumer’s evaluation and ultimate choice of floorcovering material. Furthermore, consumers apprehend phenomena and concepts differently depending on the general life situation: individual experience and socio-cultural context. Differences as to criteria applied can thus explain individual differences in the type of material preferred. To consider the types of criteria (subjective or objective, concrete or abstract, etc.) cited in relation to the different application materials, and the perspectives that produce them, is thus apparently of crucial importance for marketing decisions in substitute competition. Usage context and data connected with the life situation provide in-

struments for market segmentation and targeting. For example, according to the Dutch study, users of wood are predominantly house owners. Consequently, activities promoting wood, like direct mail advertising, should target house owners.

The interviews indicated that laminate and wood are often close substitutes. Aesthetic considerations voiced, that is, the variables aesthetic and aesthetic2 respectively, refer to the "wood appearance" in both instances. What separates laminate and wood are usage context, and the circumstance that functional grounds are cited for choosing the former floorcovering material (e.g., hygiene, ease of instalment). However, in contrast to the British respondents, the Dutch respondents apparently did not consider laminate to be more durable than real wood. Instead, Dutch respondents stressed the favorable price of laminate as compared with wood. One of the apparently decisive reasons for choosing wood (the British and Dutch study alike), natural, is part of the intrinsic nature and character of the material. Broman,⁴ in studying peoples' visual impressions and attitudes toward Scots pine wood surfaces, likewise noted the importance of this attribute. This quality of wood could provide an edge over laminate.

The knowledge of wooden flooring, especially amongst the British respondents, was rather poor. It should prove fruitful then to increase the awareness and knowledge of different types of wooden flooring, to stress the more definite qualities, advantages and disadvantages.

Conclusions

The results indicate that by combining qualitative data gathering and multivariate analysis, it is possible to determine decisive predictors of material preferences, make cross-cultural comparisons, and apprehend the underlying motives or perspectives.

Unlike the other floorcovering materials studied, the determinant reasons for choosing wood appear to be exclusively nonfunctional. However, one of these, the natural material property, presents a powerful competitive means in relation to the closest substitute, laminated flooring.

Both the theoretical and methodological findings of this article should be validated by studies in other cultural settings. This will also make possible further cultural comparisons as to determinants of application material preferences.

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