# A better understanding of the housing market through Conjoint Analysis (category: conceptual paper)

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## Abstract

During the past years a lot of research has been done on measuring and analyzing the stated and revealed preferences of house buyers, in order to develop so called new product market combinations for the housing market. It has become clear from these studies that the choice of a house buyer for a certain type of dwelling is based on both quantitative and qualitative criteria, derived from the quantitative and qualitative attributes he observes and perceives when confronted with the choice for a dwelling. A dwelling as such, can be regarded as a complex 'product', consisting of a varied amount of quantitative and qualitative attributes. A dwelling not only offers a place to eat, sleep and live, but also a place of comfort and safety. For a growing group of house buyers their dwelling seems to become more and more even like '*a statement of life style',* in the same way a dwelling was regarded as 'a statement of richness' in the earlier days.
The focus of researchers is gradually moving towards the qualitative criteria that determine the choice behaviour of house buyers. Or, more specifically, towards the relationships between the preferences, perceptions, emotions and beliefs of the house buyer and the quantitative and qualitative criteria he has in mind. And, secondly, they want to understand how these aspects are related to the actual choice for a dwelling.
An intriguing question is how these preferences, perceptions, emotions and beliefs (i.e. psychological factors) can be measured and analyzed in such a way that they can be described and communicated unambiguously to different parties that are involved in the housing market.
The aim of this conceptual paper is to make a start with the exploration of the expected added value of Conjoint Analysis and Rule Developing Experiment as tools for measuring and analyzing the combination of quantitative and qualitative criteria that direct the choice behaviour of house buyers.
Conjoint Analysis, which has originally been developed for marketing applications, analyzes the joint subjective and psychological factors that influence the choice behavior of consumers. Applying Conjoint Analysis as a method of research, will not only add to the measurement and analysis of stated and revealed preferences of house buyers. It may be also of help to develop knowledge on *unstated* and even *innovative preferences*, which will eventually lead to innovative, yet unknown dwelling concepts and dwelling market combinations. These unknown combinations might be found by adding the method of Rule Developing Experiment.

*This paper is part of a proposed dissertation.*

## 1. Introduction

Conjoint Analysis (in Dutch *'vignettenmethode'*) which has originally been developed for marketing applications, analyzes the joint subjective and psychological factors that influence the choice behavior of customers. House buyers can be regarded as customers who are intending to buy a rather complex 'product': a dwelling. This product is complex because it not only must offer a place to eat, drink, sleep and live (in this article referred to as 'dwelling') but also a place of comfort, pleasure and safety (in this article referred to as 'home'). For a growing group of house buyers their dwelling seems to become more and more even like '*a statement of life style'.* Conjoint Analysis and Rule Developing Experimentation, seem to offer new ways for understanding and analyzing this product. This (conceptual) paper provides the reader with background information in Section 2 and the concept Product Market Combinations in Section 2. Section 4 refers to three recent Dutch studies on the housing market . Conjoint Analysis and Rule Developing Experimentation are introduced more in detail in Section 5, whereas Section 6 gives an example of Conjoint Analysis in operation, based on the stated preferences of car buyers. Section 7 explores the expected added value of Conjoint Analysis and Rule Developing Experimentation, when applied to the housing market. Finally some questions for discussion are addressed.

## 2. Back ground information

From about the 1970s, a lot of research has been done on the housing market, both in the Netherlands and abroad. These studies were performed on base of various interests (governmental bodies, project developers, property advisers) and from various perspectives (economic, demographic, sociological, psychological, marketing). Until about ten years back, the main target of these investigations was to obtain *quantitative* data from the housing market, or, in other words, the dominant question for researchers then was: *For which quantity of what type of dwellings, there is a need in the market?*
In recent years, three aspects have led to an increasing need for understanding the qualitative aspects of housing choices, i.e. quality as experienced by the user, criticism of the quality of the supply of dwellings and the prospect of a stabilizing or even decreasing demand for dwellings in larger parts of the Netherlands and Europe. As a consequence, researchers and marketers have developed a growing interest in methods to understand and measure the perception of users of residential property.

## 3. Product Market Combinations

In his note *Onderzoeksagenda VastgoedBeter* (Van Genne, 2009), Van Genne writes the following:
*'The concept product market combination (PMC) is a common term outside the field of real estate, meaning that companies look at the products they (can) make in a systematic way; they also search for clues that make these products attractive for different segments of potential customers. Most of the time, a product or service is attractive to different segments of the market. A company approaching the market from the perspective of reducing costs, will try to create one single product that complies with the demands of all segments as much as possible. However, when applying a PMC approach, the company will define more precisely the different segments of the market; the original, basic product will be adapted to the demands of these different segments, on base of the marketing mix. This approach requires a very precise and detailed description of different target groups on the one hand, and, consequently, a very precise and detailed description of relevant product features.'*
This last remark can be considered as a linking pin, for Conjoint Analysis, supported by special computer programmes that are used for a step wise approach, makes it possible to produce precise descriptions of both market and products.

A translation of the concept PMC, as formulated in the quote above, into the more complex product 'dwelling', leads to the following assumptions:

- the product dwelling can be considered in a systematic and analytical way
- the product dwelling can be useful and interesting for different users, for different reasons
- the perspective 'reducing costs' is important, in a way, but should not be weighed against the functional qualities of the product; it should be weighed against the willingness of specific groups of consumers to pay more or less
- the housing market in the Netherlands shows quite a large number of market segments, just like other consumer markets.

The basic concept dwelling has various properties (called 'product features' or 'attributes') that can be assembled into different products, each of these product complying with the needs and requirements of different users. Van Genne also notes: *'As a matter of fact this means that a product* (i.e. the basic concept as well as its attributes) *must be defined from the perception of the buyer; it is important to check on a regular base whether or not the definition as formulated still stands'*. (Van Genne, 2009). For that reason, the clear and unambiguous definition of the qualitative and complex concept and its attributes deserves careful attention of researchers.

## 4. Recent Dutch studies on the housing market

From the study *De Prijs van de Plek* (Visser & Van Dam, 2006) and other, related studies it becomes clear that the preference of house buyers for the physical attributes of a dwelling (number of square meters, volume, number of rooms, maintenance etc.) determines less than half of its transaction price. These physical attributes account for about 15 % of the transaction price of apartments, up till about 25% for access to ground level dwellings. A major price determinant is the quality of the habitat (residential environment), and especially the social and functional features of that environment.

The authors base their findings on a statistical analysis of a database of 557,891 housing transactions from the period 1998 - 2003 in the Netherlands. In their study they make a distinction between access to ground level dwellings and apartments on the one hand, and between rural and urban environments. The authors distinguish four dimensions of attributes: physical dwelling features, physical habitat features, socio-cultural and socio-economic features, and functional habitat features.Their study is based on the *revealed preferences* of house buyers. This fact leads the authors to an important theoretical conclusion that their results point to other value-determining features of the habitat compared to studies on housing wishes and housing needs based on *stated preferences.* Those studies have revealed the seemingly important influence of physical dwelling features on choice behavior of potential house buyers. It can be argued that the results of their study are based on *perceptible*, *objective* and *measurable quantitative criteria.*
In his thesis *The meaning of dwelling features* (Coolen, 2008), Coolen gives four reasons for studying dwelling features: first, because of the heterogeneity within several categories of dwellings. Secondly, the fact that consumers value a dwelling not only as a whole but also from the perspective of its distinctive features, which leads to a third reason, that consumers, who intend to buy a dwelling, consider the same object at least from two perspectives. Finally, he states that a dwelling offers a variety of potential uses and this variety can be supported by a variety of features.

The word *meaning* is a central topic in environmental sciences, he argues, because *meaning* poses a link between the built environment and man. More specifically focused on the relationship between housing and people, *meaning* itself, forms a major part of the rationale for the ways in which dwell-

ings are used and shaped. At the conceptual level, Coolen makes a distinction between the terms *preference* (i.e. the relative attractiveness of an object), *intention* (relative strength of behavioral tendencies and *choice* (actual behavior of buying a dwelling). He motivates this distinction with three statements as follow:

1) Preference may guide intention and choice as it is an expression of evaluation about an object
2) Preference, intention and choice all involve expression of evaluation
3) By focusing on preference, one gets a clearer picture of the quality profile that people expect from their dwelling

Up till now according to the author, little is known about the relationships between *cognitive* factors such as values, goals and functions and housing preferences. He approaches his object of study from the perspective of the *means-end* theory, a theory originating in marketing and consumer research. The means-end theory explains the relationships between goods and consumers: *means* can be defined as goods that people consume and activities they carry out, whereas *ends* are positively evaluated (end) situations, such as freedom, privacy, friendship and self-esteem. The means-end theory argues that *underlying* and *unrevealed* personal values and goals are an important motivating factor in buying behavior. A consumer wants to buy a good, because she/he expects that the purchase of that good will be of benefit for her/him to reach personal desired ends, i.e. personal values. From this perspective, a good is defined as '*a collection of features that deliver consequences (benefits) when using that good*.' The importance of these consequences is based on their relative contribution to the fulfillment of personal values and goals of an individual. This can be represented as follows by a so-called means-end-chain, as shown in Figure 1 below.

| | | | | |
|---|---|---|---|---|
| Features | <++++++++++> | Consequence | <++++++++++> | Underlying Value |
| = | | = | | = |
| Garden | <++++++++++> | Outdoor activities | <++++++++++> | Relaxation |

***Figure 1. Example of a means-end chain***

The means-end model thus explains the (indirect or underlying) relationships between goods and their consumers, where the consequences fulfill are an intermediary role. Coolen rightly points out that*: "What features, consequences and values appear to be relevant, is primarily determined by the individual and not by the researcher "* , which complies with the statements of Van Genne as earlier mentioned in this paper (Van Genne, 2009). In the margin of his conclusions, Coolen makes an interesting comment stating that the manual method for constructing a hierarchical value map did not appear to work at the level of a dwelling because a dwelling '*proves to be a too complex product'*.
Whereas the two studies mentioned above deal with research on the revealed preferences of house buyers, i.e. the output of their choice behavior, Heijs 's article *A model based reflection on demand analysis methods* (Heijs, 2008) deals with the process of choice behavior *itself*. In recent years, the Dutch housing market has clearly evolved from supply-driven to demand-driven. Heijs argues that research methods actually used for analyzing a demand-driven housing market, find their origins in research methods used for analyzing a supply -driven market. In spite of the adjustments made, these methods seem not adequate for investigating the current housing market and its trends. For that reason, Heijs advocates a fundamentally different approach to research and analyze the demand-driven housing market. In his article he describes a model that can be of support to execute an analysis of such a demand driven market.

Heijs' model is based on the Theory of Planned Behavior, a theory originally developed and described by Ajzen in the 1990s and 2001, but he adds a number of elements, namely the effects that habits and environmental variables have on the choice behavior and the selection process of house buyers. It can

be argued that his extended model focuses on revealing *underlying, invisible, subjective and difficult to measure qualitative criteria*, related to the selection process itself. Heijs' model, in fact, describes the internal mental process, that leads to a certain behavior, i.e. the actual choice for a dwelling.

According to his model, this actual choice is based on:

- genuine intentions or plans
- habits (if it concerns less conscious or automatic habitual behavior)
- the degree of control a house buyer really has over the opportunities and constraints to implement his intended behaviour.

In regard to the purpose of this paper, two interesting remarks regarding the influence of life-styles on choice behavior should be quoted, as Heijs argues that '*Due to the absence of a theoretical basis and a proper definition, it is unclear which variables constitute life-styles, which are to be regarded as predictors and which are consequences'* and that *'Research has shown that milieus are chosen for many reasons, apart from life-styles, and that they are usually inhabited by different life-styles.'*

Looking back on the three studies referred to, a first, provisional conclusion can be drawn, namely that the selection process for buying a dwelling involves on the one hand *objectively easily measurable and determinable, quantifiable criteria* and *subjectively difficult measurable and determinable, qualitative' criteria*'. The second time, the word 'criteria' has been deliberately placed between quotation marks, because these qualitative criteria are associated with emotion, experience and psychology, or, in short, with the subjective perception of the buyer. This calls for the intriguing question regarding the interaction between these two more or less known categories of criteria and how this interaction evolves in the mind of the house buyer.

## 5. A concise introduction to Conjoint Analysis and Rule Developing Experimentation

To put it quite simply: Conjoint Analysis is aimed at the analysis of the conjoint features of a product (or a service). A product can be regarded as an object consisting of a number of features, and each feature as such contributes to the mere being of this specific product. These features can be divided in *functional features* (how does the product work or how should it be used ) and *emotional features* (how does the product affect its user). From the perspective of researchers, marketers and product innovators, it is interesting to learn and understand how these *combinations of features* (conjoint features) of a product influence purchase decisions. Conjoint Analysis techniques both allow for the analysis of how *actual* purchase decisions are made and how *future* decisions might be made. This means that data collected and analyzed on base of Conjoint Analysis methods, not only give insight in *revealed preferences*, but also can support marketers and product innovators to understand *stated preferences* and *even non stated preferences*. Conjoint Analysis, in that way, then becomes a useful tool for the *innovation* of products and for *revealing* products, *yet unknown.*

It is exactly at this point that the principle of Rule Developing Experimentation (RDE) comes into play. Moskowitz and Gofman give a clear definition of this experiment based method (Moskowitz & Gofman, 2007): '*RDE is a systematized solution-oriented business process of experimentation that designs, tests, and modifies alternative ideas, packages, products, or services in a disciplined way so that the developer and marketer discover what appeals to the customer, even if the customer can't articulate the need, much less the solution'*. The idea behind RDE is that by experimenting with (a series of) prototypes of a product, marketers and product innovators will discover rules that direct the choice behavior of consumers. These experiments can be carried out in various ways: for example by consumers who choose from (colored) cards on which the various prototypes of a product with different features are displayed, or by consumers who actually test and evaluate various prototypes. The experiments must be carried out in a systematic manner, allowing marketers and product innovators to develop the correct rules which can be applied to product improvement or product innovation.

## 6. An example of Conjoint Analysis and Rule Developing Experimentation in operation

Conjoint Analysis is based on the assumption that purchase decisions are not influenced by just a single dominant feature, but by a number of features, *considered conjointly* by the consumer, related to the price he or she has to pay for the product. As a consequence of this, the assumption seems to be justified that the more complex the product, the more complex this decision process is, or, in other words: purchasing a bar of chocolate seems a less complex procedure than buying a car or a dwelling.

Although Conjoint Analysis is considered by some as a rather new technique, it has been used by market researchers since the early 1970s. Remarkably, it has its roots in decision making and information processing in the field of psychometrics. Over the years various forms of Conjoint Analysis methods (e.g. card sorts, trade-off matrices, preference based conjoint, hybrid conjoint and pair wise comparisons) have gained a lot of attention, both from practical and academic researchers.

In order to understand the principles of Conjoint Analysis, it is important to become familiar with some of the key words of the method. According to Conjoint Analysis methods, a product can be broken down into a number of features, which are called ***attributes.*** For instance, a car has attributes such as brand, engine capacity, number-of-seats, color, model and price. Each attribute can be broken down into a number of levels. These levels, in fact, represent the amount of ***utility*** or ***value*** that a customer places on each level, expressed in a number. The idea behind Conjoint Analysis is that when a customer has to make a choice out of competitive products, he or she will weigh off these products, by measuring ***the importance*** of the attributes, on base of their ***levels*** of utility as perceived by him or her, in relation to the price that has to be paid. It should be kept in mind that the levels of utility (in the examples below qualitatively expressed) represent the relative strength of preference of consumers for each level.
When researching and analyzing a product's attributes, it is important to realize also that the term 'attribute' can refer to attributes that are defined qualitatively / non- metrically (brand or color), or quantitatively / metrically *(*engine capacity, number of seats). All products (and services) have one attribute in common: the customer has to pay a price for a product or service, in the most cases expressed in money.

Suppose a researcher is working on a Conjoint Analysis of a data base containing revealed preferences of car buyers; suppose that all the initial work to conduct a Conjoint Analysis has been done already, meaning that he has

- determined the four attributes that are most important to the market on base of desk research, resulting in brand, model, color and price
- determined the appropriate conjoint methodology, resulting in this case in a so called *revealed preferences based conjoint*
- collected , analyzed and processed the data needed, in this case resulting in two customer groups or *clusters*, cluster A (feminine customers) and cluster B (masculine customers).
- determined the values of utilities for group A and B on base of the collection and analysis of utility scores, i.e. low, medium, high, excellent

Now he is at the point of putting the results together, producing two figures showing the three dominating *revealed preferences* of the feminine cluster A and the three dominating *revealed preferences* of the masculine customer cluster B for buying a car. (See figure 2 and figure 3 below).

| **Attributes**<br><br>**Levels** | Brand<br>*Importance (4rth)* | Model<br>*Importance (2nd)* | Color<br>*Importance (1st)* | Price<br>*Importance (3rth)* |
|---|---|---|---|---|
| Level One | Yonika<br>Japanese<br>*Utility medium* | Sedan YSX<br>lot of gadgets<br>*Utility medium* | Racing Red<br>*Utility high* | € 23.000<br>*Utility medium* |
| Level Two | Solvar<br>Swedish<br>*Utility medium* | Sedan SST<br>sustainable<br>*Utility excellent* | Bronze Green<br>*Utility excellent* | € 25.000<br>*Utility medium* |
| Level Three | Unisono<br>Italian<br>*Utility excellent* | Sedan USQ<br>cool design<br>*Utility medium* | Golden Yellow<br>*Utility excellent* | € 29.000<br>*Utility low* |

***Figure 2. Revealed preferences by Cluster Group A (Feminine customers)***

| **Attributes**<br><br>**Levels** | Brand<br>*Importance (1st)* | Model<br>*Importance (2nd)* | Color<br>*Importance (4rth)* | Price<br>*Importance (3rth)* |
|---|---|---|---|---|
| Level One | Yonika<br>Japanese<br>*Utility medium* | Sedan YSX<br>lot of gadgets<br>*Utility excellent* | Racing Red<br>*Utility low* | € 23.000<br>*Utility high* |
| Level Two | Solvar<br>Swedish<br>*Utility high* | Sedan SST<br>sustainable<br>*Utility medium* | Bronze Green<br>*Utility medium* | € 25.000<br>*Utility medium* |
| Level Three | KFW<br>German<br>*Utility excellent* | Sedan KSQ<br>state of the art<br>*Utility medium* | Silver Blue<br>*Utility excellent* | € 28.000<br>*Utility medium* |

***Figure 3. Revealed preferences by Cluster Group B (Masculine customers)***

When you take a closer look at these results by comparing the attributes, in the first place, it becomes clear that both clusters agree on the importance of the attributes *model* (2) and *price* (3), but that the feminine cluster has a higher appreciation for the attribute *color* (1) and a lower appreciation for the attribute *brand* (4), whereas the masculine cluster has a lower appreciation for the attribute *color* (4) and a higher appreciation for the attribute *brand* (1).

When comparing the three levels, secondly, it becomes clear that both clusters include the brands Yonika and Solvar, but that the the third level shows a difference: the feminine cluster preferring the Unisono, the masculine cluster the KFW.
And, thirdly, when you compare the scores of the utility levels, running from low to excellent, level two (Solvar) of the feminine cluster has the highest utility score (medium, medium, excellent, excellent) and level one (Yonika) shows the lowest utility score (medium, medium, medium, high); the masculine cluster shows the highest utility score (medium, medium excellent, excellent) for level three (KFW), and the lowest score (medium, medium, medium, high) for level two (Solvar).
Finally, the overall utility scores of the attributes suggest a car ranking for the feminine cluster that puts the Solvar on the first place, the Unisono second and Yonika third, whereas the masculine cluster seems to prefer KFW, followed by Yonika and Solvar.

At this stage the method of Rule Developing Experimentation comes into play. As stated before, Rule Developing Experimentation is a systematic way of experimenting with prototypes of (new) products. The two figures above show, *four different* types of cars, of which the four main attributes have been evaluated, with their different levels of utility. The first, second and third level of the two figures, each represent a car type. Based on the levels of utility different prototypes can be derived from both figures – supposing the price to be paid does not change - that might gain a higher appreciation from one or both clusters, e.g. Prototype I could be an Unisono Sedan SST (sustainable), Bronze Green and Prototype II could be an Yonika Sedan SST (sustainable), Golden Yellow, Prototype III could be a Solvar Sedan YSV (lot of gadgets) Silver Blue, or a KWF Sedan YSV (lot of gadgets) Bronze Green. These four prototypes - in fact this is a form of market simulation - can be presented to the original study population in order to measure their preferences, this time by applying a *stated preferences based* conjoint.

This is a fictitious and simplified example, meant to give an idea of how Conjoint Analysis in combination with Rule Developing Experimentation works: Conjoint Analysis is a method to make visible and measurable the *relative* importance of attributes and their *relative* utility value levels, as revealed or stated by consumers, whereas Rule Developing Experimentation is aimed at developing new product concepts, as in these case cars. It is simplified, because in this example the distinction in a feminine cluster and a masculine cluster is only on the gender level: nothing is known about the background of the buyers, their age, their income, their education, their personal situation or their appreciation for a certain life style. A question that remains unanswered in this example, for instance, is whether the attribute color has to do with an underlying need to express life style, or that the level KWF, in fact stands for the unrevealed, underlying values security and reliability, because it is a German brand, whereas the level Solvar might be perceived as boring because it is Swedish. In other words, this example does not go into possible *unrevealed and underlying* values or goals that might determine preferences for brand, model, color or price. Conjoint Analysis and Rule Developing Experimentation thus make it possible to measure the relative values and estimation of concepts and their attributes, as perceived by the different target groups and to distinguish those target groups themselves.

## 7. Expected added value for the housing market

As previously stated, Conjoint Analysis is based on the assumption that purchase decisions are not influenced by just one single dominant factor, but by a number of attributes, *considered conjointly* by the consumer, related to the price he or she has to pay for the product. It has been argued in this paper that a dwelling can be regarded, as a complex product, consisting of a large and varied amount of quantitative and qualitative attributes.

A dwelling can be used (consumed) by different users according to the composition of their house hold, for different reasons. For a growing group of house buyers their dwelling seems to become more and more like '*a statement of life style'.* The buying of a dwelling involves, amongst other things, the influence of personal preferences, perceptions, emotions and beliefs.

Several researchers, whose research is referred to in this article have put forward statements that are interesting in the context of Conjoint Analysis. Visser & Van Dam (2006) make a distinction in four dimensions of attributes: physical dwelling attributes, physical habitat attributes, socio-cultural and socio-economic attributes, and functional habitat features. Coolen (2008) when describing aspects of a means-end chain, clearly states that what features, consequences and values appear to be relevant, should be determined primarily by the individual consumer and not by the researcher. Heijs (2007) makes two interesting remarks on the aspect of life-styles. According to him both a theoretical basis and a proper definition of life-style are still absent and he states that milieus are usually inhabited by different-life styles. And finally, Van Genne (2009) argues that in order to produce a successful product market combination, a precise and detailed description of different target groups and of relevant product features is required.

When analyzing these statements, at first sight, it might be argued that *a series of different Conjoint Analyses needs* to be conducted, e.g. focused on the four dimensions of attributes, the different target groups, relevant product features, the individual means-end chains, and life-styles. After the collection of data and statistical analyses, the results of such a Conjoint Study could be combined to result in a near perfect and detailed description of house buyers and relevant dwelling features, resulting in near perfect and detailed new housing concepts. Obviously, this would become a time consuming process.

A potentially interesting approach of research might be to combine Conjoint Analysis of life-styles of target groups, with a repetitive application of Rule Developing Experimentation aimed at discovering new concepts of dwellings that appeal to certain target groups.In today's society, consumers find it important to articulate their lifestyle. They want to show who or what they are or want to be and how they want to live. This need is reflected in their preferences for certain music, for a particular circle of friends, but also in their consumer behavior, e.g. when buying a car or a dwelling. It can be argued that from this perspective, the lifestyle of consumers is the driving force behind much of their behavior and hence of their buying behavior. It can be argued also that the life-style of a group of various individuals, can be considered as a *varied web of means-end chains*, probably focused at one or two major ends, for instance to become a free and independent person. Applying Conjoint Analysis then, can be the first step to describe and analyze these chains of different (groups of) individuals. In this way new target groups might be discovered. The second step could be done by applying the principles of Rule Developing Experimentation, to find out what kinds of yet unknown concepts of dwellings will be appreciated by different (groups) of individuals.

Applying Conjoint Analysis in combination with Rule Developing Experimentation seem to offer an appealing prospect, though many questions remain unanswered yet e.g. :

- the complexity of the product 'dwelling' as it is used from different perspectives, by different users
- the designing of a reliable conjoint study aimed at the analysis of life-styles
- a clear and unambiguous definition of the qualitative criteria that will be used for the design;
- the translation of the results of the conjoint-analysis into reliable and useful (innovative) concepts, to find the right rules

In this paper the first steps have been set to explore the expected added value of Conjoint Analysis and Rule Developing Experimentation as tools for measuring and analyzing the revealed and unrevealed

criteria that direct the choice behavior of house buyers. This journey has only started: in the near future more research will be done by the author on this interesting and challenging subject, on this interesting and challenging subject.

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**Note:**

For section 6 of this paper, several stand alone URLs electronic sources have been accessed and applied. For reasons of precision and clarity, these sources are mentioned separately.

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