

PURCHASING A GENERAL TICKET – A MEANS END APPROACH

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ABSTRACT

Consumer behavior or decision making by consumer can be viewed from different perspectives. In the case of the underlying study judgment and decision theory and systematic versus heuristic decision making build bases for the research discussion.

The buying behavior of season tickets underlies a complex decision process. The railway customer can deal with complexity in two ways. Either he decides on the based on heuristics of his rather emotional beliefs or systematic based on a rational calculation. The goal of the study is the explanation of the two consumer typologies when buying seasonal tickets along the continuum from rather heuristically to systematically made decisions. Drivers for a rather heuristically based vs. a systematically based decision process under consideration of endogenous and exogenous factors and the willingness to pay are evaluated.

Literature review is used to find relevant heuristic and systematic decision factors. Further expert interviews verify those factors. Primary research with railway customers in Switzerland is conducted using implicit and explicit research methods to find the relevance of factors influencing a buying decision.

Results show the decision process of rail season ticket customers. It is shown that convenience factors have a greater impact on season ticket sales than systematic factors. Furthermore, it is shown that customers who base their buying decisions on heuristic convenience factors rather than systematic price calculations are less price sensitive.

Elements of customer benefits have come out of the research. From those benefits factors which make rail travels more valuable will be derived. The knowledge of the impact of heuristic and systematic factors on the buying decision of seasonal railway tickets allows an explanation of willingness to pay for those tickets.

Keywords: Transport, Railway, buying behaviour, Means-End Analysis

INTRODUCTION

Switzerland is well known for its public transportation system and its dense network of railways.

The Swiss General Ticket (GT) gives access to most of the public transport facilities and thus provides an integrated public transport service free at the point of use at a price of CHF 5'800 for first class and CHF 3'550 for second class per adult in the year 2013. The costs are in the same range as those of using a middle class car (Simma & Axhausen, 2001). Simma and Axhausen (2001) revealed that, although one would think that the ownership of a GT reduces car-usage due to the high costs of a GT, this is not the case. As the decision for a GT is not a substitutive one, it seems that price is not the only reason for a GT ownership. Therefore the question arises which factors drive the decision to purchase a GT.

This paper addresses the managerial issue of understanding customers' motivations to purchase a GT in order to define an appropriate marketing strategy. We used an exploratory, semi-standardized approach in using the laddering technique which helped to identify relevant factors involved in the buying decision process. We detected functional attributes which were put into context of higher level personal values using the means-end approach.

The study proceeds as follows: First we give a short overview over relevant buying behavior literature which leads to an outline of the research methodology based on the laddering technique and means-end theory. Consequently, we describe the results and finish with managerial implications.

THEORETICAL BACKGROUND: CONSUMER DECISION-MAKING

How people behave when facing the challenge to make decisions is a widely discussed question in common literature. The theory of judgment and decision making can be found in the disciplines psychology, sociology, business management, economics, political sciences, medical sciences, engineering, and other (Arkes, Hammond 1988). In the study at hand the theory of judgment is used in the field of business management to explain the behavior of consumers, specifically how consumers judge offerings and make buying decisions.

Judgment is "*the mental or intellectual process of forming an opinion or evaluation by discerning and comparing*" (Webster's Third New International Dictionary) the power or ability to decide on the basis of evidence (Arkes, Hammond 1988). The definition of decision is given by Webster's Third New International Dictionary as "*the act of settling or terminating... by giving judgment*". A decision is an action taken with the intention to achieve favorable outcomes, hence, a decision is said to be successful if it leads to as satisfying outcomes as it could have been reached with other actions (Yates 1990). These definitions suggest that there is no big difference between judgment and decision making in an ordinary discourse.

Although there are studies about judgment and decision making all the way back to 1918 (Thorndike 1918, Edwards 1954, Hammond 1955), the systematic empirical study of judgment and decision making began in the 1960ies. This was especially the case in the field of cognitive psychology concentrating on motivational research (Arkes, Hammond 1988).

Decision analysis focuses on a priori decomposition, meaning separating the decision process into several components before the decision is made. Because the value any service product is judged differently by different people, the term utility rather than value is used (Arkes, Hammond 1988). There are three types of decisions: evaluations, constructions and choices (Yates 1990). Evaluation situations focus on a single alternative at a time. Constructions imply that the decision maker has a set of limited resources at his disposal to construct his most satisfactory alternative.

Consumers have to fulfill a multifaceted task when making buying decisions as they are often faced with several alternatives and a large amount of attributes that a product or service possesses which have to be evaluated (Solomon, 2013). Consumers are confronted with difficult value trade-offs such as price versus convenience (James R. Bettman, Johnson, & Payne, 1991). In this case, consumers either apply a heuristic or a systematic decision process (Gigerenzer & Gaissmaier, 2011; Doyle, 1998). While a systematic or rational decision making process focuses on the selection between alternatives, which show the preferences individuals or groups of individuals have when making a common decision (Luce & Raiffa, 1957; Raiffa, 1968; Kahneman et al., 1982; Doyle, 1998), a heuristic decision maker ignores part of the available information and uses less resources for coming to a decision (Gigerenzer & Gaissmaier, 2011). The heuristic perspective is based on divergences from systematic decision behavior and is regarded as a cognitive approach, which includes irrational and implicit factors and roles (Kahneman & Frederick, 2002; Shah & Oppenheimer, 2008). Bettman (1979) argues that the rational choice theory is insufficient for a deep understanding of how consumers behave when making a decision. The individual is not capable to process all the available information and thus applies specific decision rules and choice heuristics to evaluate product alternatives.

RESEARCH PROCEDURE: LADDERING AND MEANS-END-ANALYSIS

One way to analyze the structure how consumers select between alternatives in a choice situation is the means-end approach. Mainly developed by Gutman (1982), laddering techniques and the foundational means-end theory give insight into a customer's motivation to purchase a good. When applying the laddering interview techniques customers are forced to reflect on their motivations to buy a certain product or service. The qualitative analysis of the obtained results reveals consumption related cognitive structures (Klaus G. Grunert & Grunert, 1995). Commonly, the results of laddering interviews are displayed in a hierarchical network of meanings which is called the hierarchical value map (HVM). HVMs illustrate concrete objects that are assigned to cognitive categories on different levels of abstraction and are interlinked in chains and networks. In other words, a HVM shows relationships between product attributes (means), the consequences of consuming these products or services and the subsequent emerging personal values (ends) (Reynolds & Gutman, 1988). Attributes refer to tangible and intangible characteristics of a product or service. Consequences describe the importance of the attribute to the customer. According to Gutman (1982), consequences represent the psychological, physiological, or process results that a customer believes to achieve when using this product or service. Values describe a customer's universal life goals which are the most personal and general consequences an individual reaches for (Rokeach, 1973).

Usually, laddering is a tailored interview technique where researchers engage in in-depth and one-on-one interviews (soft laddering). The respondent is forced to produce ladders by answering in a way that each answer produces a level of abstraction (Grunert, Grunert, & Sørensen, 1995). The process starts with questions about lower level attributes and ends with questions to reveal higher-level values (Phillips & Reynolds, 2009). With the typical laddering interview's question "Why is that important to you?" the researcher pursues the goal to determine sets of linkages between the elements. The interviewer questions why an attribute or consequence is important, so that each answer serves as starting point for the further question. Thus, the researcher uncovers reasons why an attribute or consequence is important and marketers are able to understand how consumers process and perceive information about a product (Reynolds & Gutman, 1988). However, in our study a so called hard laddering approach is used. In comparison to soft laddering, hard laddering is a data collection technique which does not involve personal interviews but either self-administered questionnaires or computerized data collection (Phillips & Reynolds, 2009). Hard laddering is regarded as less time consuming, less expensive and reduces interviewer-bias (Botschen & Hemetsberger, 1998). However, the challenge of hard laddering is that the respondents reach the highest level of abstraction on their own, without the control of a trained interviewer (Whitlark & Allred, 2003). In that case, respondents might provide redundant answers that do not go beyond the consequence level. Herrmann, Huber and Gustavson (1997) employed in their study on the automotive industry both, hard laddering and soft laddering and found that respondents provided very similar answers. Moreover, in case of a large amount of respondents hard laddering could be employed efficiently (Russell et al., 2004).

The interpretation of laddering studies depends largely on the illustrated linkages between attributes, consequences and values in the HVM. Thus it is suggested that HVM are constructed by applying rigorous, justifiable and transparent methods (Leppard, Russell, & Cox, 2004). The analysis of laddering data starts with a content analysis where key elements are identified (Kassarjian, 1977). The key elements are summarized across all respondents, coded and classified according to the attributes-consequences-values model. Subsequently, a matrix is constructed where the number of connections between the elements is indicated. The most dominant direct and indirect connections are then illustrated graphically in a tree-like map, the HVM (Grunert et al., 1995).

ANALYSIS AND FINDINGS

This study aimed at exploring and analyzing different levels of elements which drive the decision to purchase a GT for the Swiss public transportation system. We used hard laddering technique for operationalization and analysis purposes

Respondents were randomly chosen from a panel by a Swiss market research institute. They were asked to participate in the online survey on the purchase decision process of a GT and received the link to the online questionnaire. Respondents were first asked to write down at least two of the most important advantages of a GT as proposed by Henneberg et al. (2009). They were urged to answer as precise as possible. For this purpose they were presented with three text boxes to indicate the perceived most important advantages. The subsequent laddering questions referred to these answers by asking "*As first advantage you mentioned....Could you please describe why this advantage in relation to the use of public transport is of great importance to you?*". This question was followed by the request to explain why the last statement is of particular relevance for them and lastly the respondents

were asked which personal value they gain by the mentioned relevant factor. The laddering process as it was presented to the respondents is illustrated in figure 1.

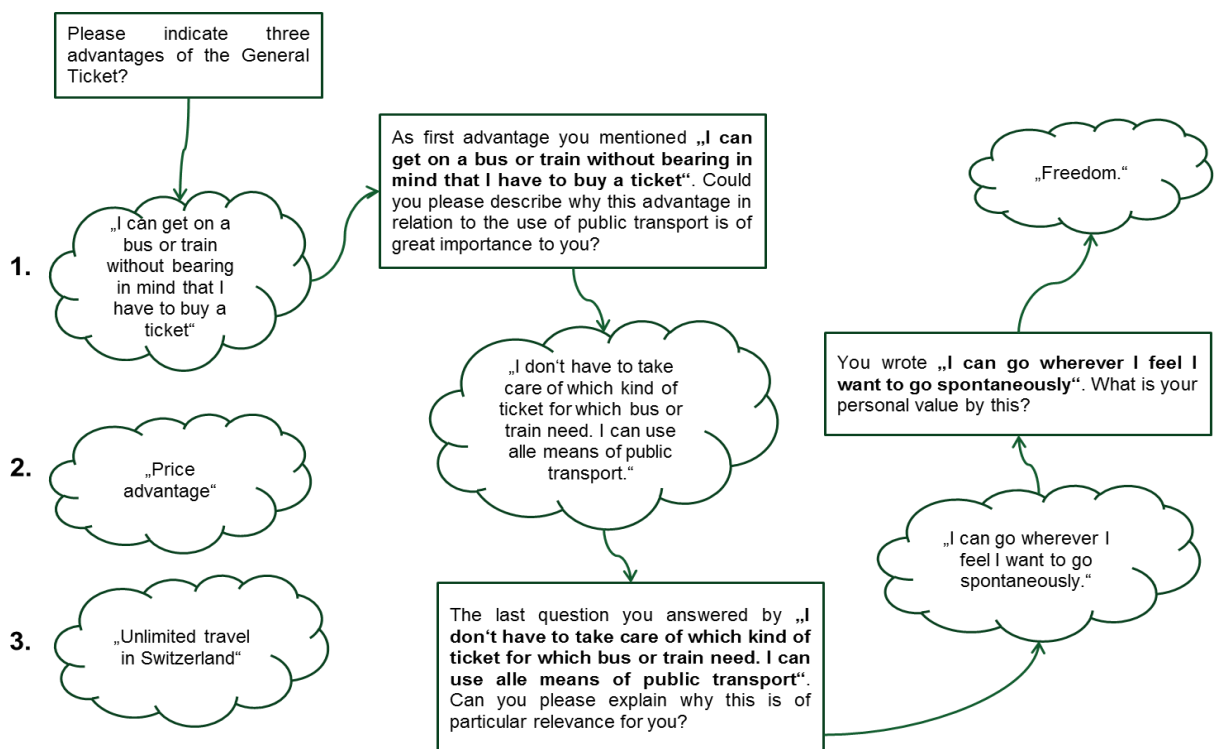


Figure 1: Laddering process in the questionnaire

The analysis of the data was done in three steps as proposed by Reynolds and Gutman (1988). Firstly, sequences of attributes, consequences and values were coded with the support of the software program LadderUX. LadderUX helps researchers to categorize each answer from the questionnaire as either attribute, consequence or value (Vanden Abeele, Hauters, & Zaman, 2012). The first step comprises the development of categories so that phrases could be compared and grouped together. The identification of categories was done by defining key words. In order to enhance the reliability of the results a second coder was assigned to that task (Grunert, Beckmann, & Sorensen, 2001). In the second phase the number of associations between the elements on the different levels was counted and listed in the implication matrix. The implication matrix generally displays direct and indirect connections in the ladder. Direct connections relate to cases where the elements directly refer to one another. Indirect connections show intervening constructs, meaning that two elements are separated by at least one intervening element. The matrix then serves as a bridge between the qualitative and the quantitative aspects of the laddering technique as it shows the frequency of the connections (Deeter-Schmelz, Kennedy, & Goebel, 2002). Finally, the HVM was created consisting of nodes which represent the most important linkages between attributes, consequences and values.

Sample Description

The online study resulted in a convenience sample of 138 usable questionnaires. The sample includes slightly more female (50.7 %) than male (49.3 %) participants. On average the

respondents are 50 years old, live in two person's household, are employed (63 %) and earn between 9'000 and 12'000 Swiss francs before taxes per month (28 %). 55.8 % of the respondents own a General Ticket (GT) for the Swiss public transportation system, 71.4 % of them travel in first class and 28.6 % in second class.

Laddering Results

In the analysis of the data we distinguished between GT owner and non-GT owner. The HVM of GT (Figure 2) owner shows the linkages between the coded elements. The coding process resulted in 40 elements being assigned to 8 attributes, 23 consequences and 9 values. An inspection of the implication matrix and various HVMs led to the determination of the cut-off level of two over all elements. The line between the elements is only included if the connection was mentioned at least two times. The strength of the line illustrates the number of respondents who mentioned a direct or indirect connection from one element to another. Hence, the thickness of the line represents the importance of the relationship. The lowest level of abstraction is presented by five attributes: price advantage, one ticket for all, refrain from car usage, mobile working and additional discounts. The HVM clearly shows that the most important connections are from *price advantage* (attribute) via *cost savings* to *more money left for other things* (consequences) and from *no need to buy a ticket* (attribute) via *no waiting time at ticket counter, time saving, flexibility, practicable* (consequences) to *freedom* (values).

The HVM of non-GT (Figure 3) owner show the linkages between the elements when the number of links exceeded the cut-off level of 2. 34 elements have been coded being assigned to 8 attributes, 20 consequences and 6 consequences. On the attribute level the four elements *price advantage, single payment, no need to buy a ticket, additional discounts* and *one ticket for all* are displayed. The most important connection of this map starts with *no need to buy a ticket* (attribute) and goes via *no waiting time at ticket counter* and *time saving* (consequences) to *recreation* (value) to the highest level.

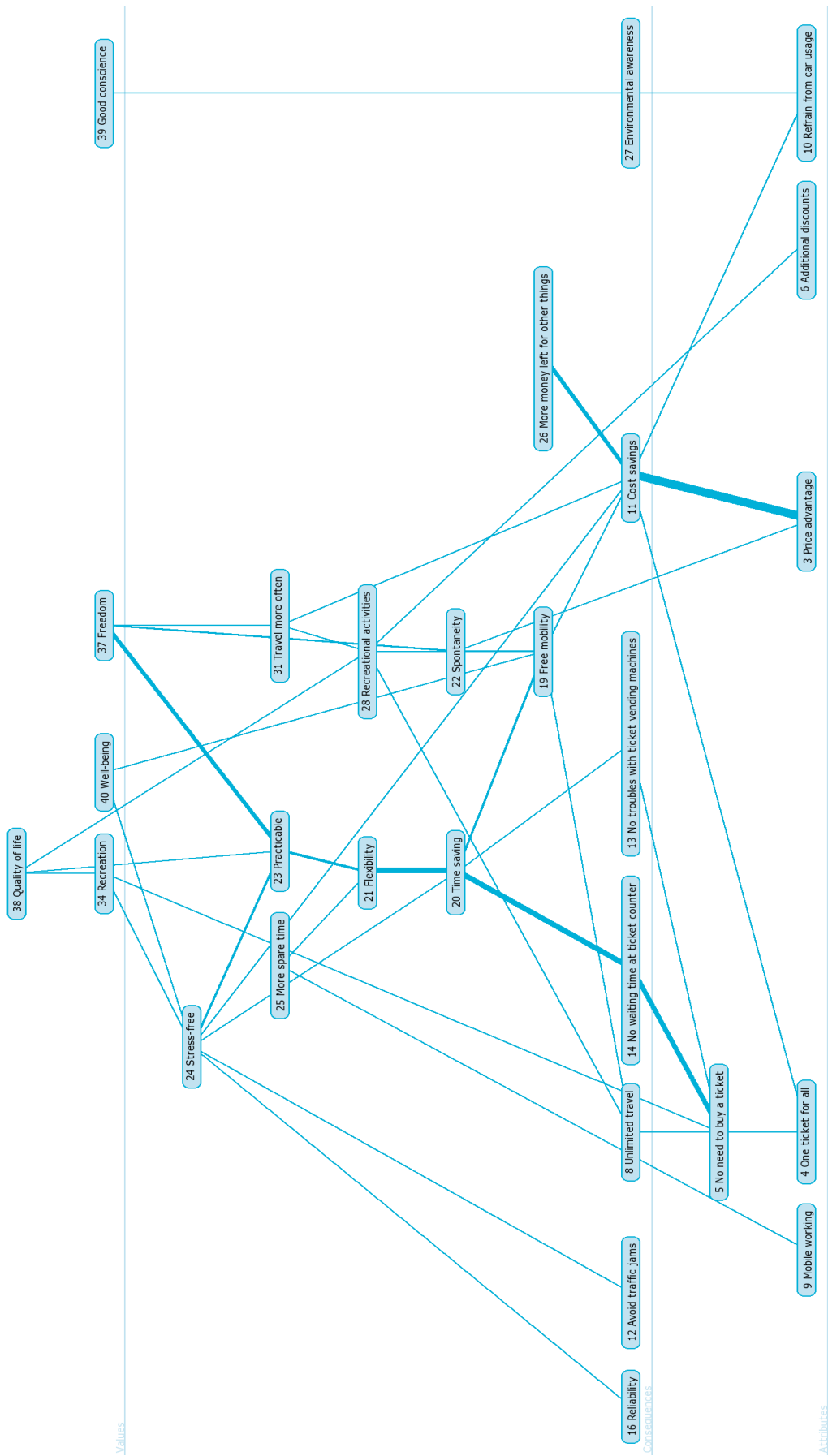


Figure 2: Hierarchical Value Map for GT owner
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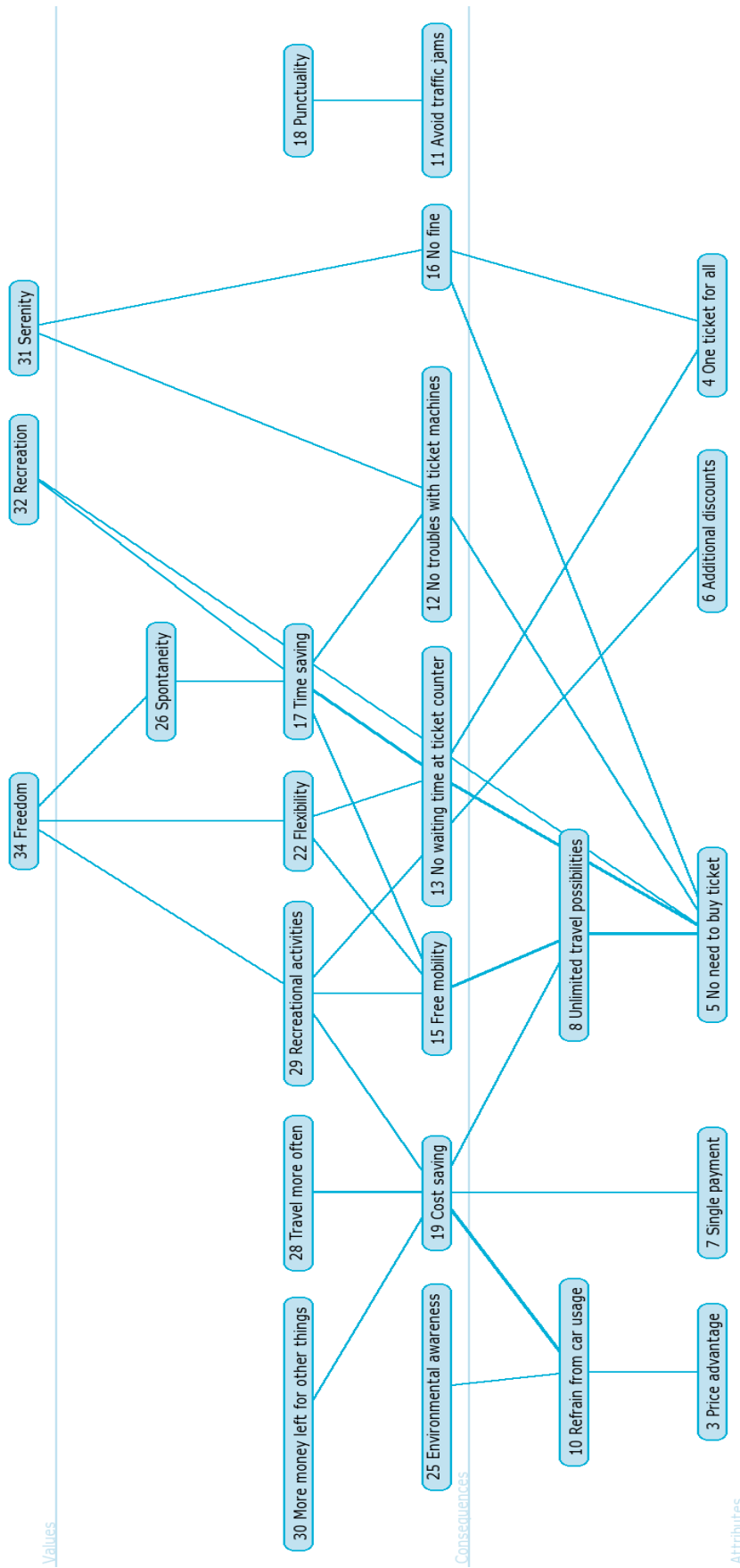


Figure 3: Hierarchical Value Map for Non-GT owner

CONCLUSION

Although price advantage dominates, the factor that customers do not need to buy a ticket every time they use public transport is almost as important as the price factor. While price evaluation in the purchase decision process is a typical rational consideration (Bettman, Luce, & Payne, 1998) the fact that no ticket has to be bought which is comfortable and customers do not waste time prior to their journey. Looking at the two HVMS it becomes clear that price advantage only dominates for those respondents who own a GT. The others would rather consider the advantage of having a GT by reduced travel time issues and other convenience factors such as for example the possibility to travel through Switzerland without worrying about a ticket.

Overall, GT owners are rather rational buying decision makers with a price focus. They decide often by comparing prices of individual ticket prices over the year vs. the price of a GT. Non-GT owners rather focus on convenience factors when making a buying decision for a GT. For them additional values such as time savings, relaxation, freedom of travel, etc. are more important.

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