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The demand for concerts of classical music

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**48th ESOMAR
MARKETING RESEARCH CONGRESS**

Making the Decision

THE HAGUE
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17th-20th September 1995

ESOMAR

THE DEMAND FOR CONCERTS OF
CLASSICAL MUSIC -
DECISION SUPPORT FOR THE SCENARIO-
PLANNING OF ORCHESTRAS BY MEAN OF
ROA-ANALYSIS

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SUMMARY

Three Dutch orchestras approached Intomart and SEO for a demand analysis regarding concerts of classical orchestral music in the Amsterdam area. The main object was to determine the attributes that constitute concerts of classical music, as well as the relative weights of these concert attributes. The problem has been approached by a hybrid mix of conjoint measurement and a strongly generalized own brand of logit analysis (ROA). Some 1100 respondents have been offered varying subsets of 32 vignettes of concert offers, most of them fictitious but not unrealistic. From the analysis it is possible to determine the change in demand for classical concerts as a consequence of a change in an attribute value, as well as the price compensation necessary in order keep the level of demand unchanged. According to our knowledge this is the first study on the demand for classical concerts making use of vignettes. Furthermore, it is one of the first applications where the collection of data by supplying vignettes is blended with fairly sophisticated econometric techniques for discrete choice analysis.

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"How do you want to enter the new century with a symphony orchestra? You have to formulate a strategy. You cannot be content with a preserving function nor survive on a museum value. Premieres should form the cornerstone of your policy as a means to make clear that your orchestra is in the very heart of the world. That could be risky and hazardous. Catastrophes are the other side of the medal. But the one who wants to survive has to take the lead."

Jan Zekveld, artistic director of the KCO, presenting the 1995/1996 program.

1. INTRODUCTION

The problem

Historically Amsterdam is one of the major musical centers of Europe. It is the home of three orchestras and provides a very lively concert range over the whole year.

These three Amsterdam orchestras approached Intomart and the Foundation for Economic Research of the University of Amsterdam (SEO) for an analysis of the market of classical orchestral music in the Amsterdam area.

At first sight the orchestras seem to have a luxury problem: the subscription concerts are always oversubscribed and one can hardly get tickets for single performances, especially when it concerns the "iron" repertory, the classics of the 19th century.

This is not a reason for directors and management to lean back. On the contrary: they want to follow and to react promptly on developments in demand and offer within the musical scene, gladly prepared to fight against any symptoms of rigidity and fixation. They know that "more of the same" without a real renewing esprit could turn the music lovers, the sponsors and the record companies almost silently against the orchestra.

Beside of that one can easily imagine the disasters when musicians and conductors are no longer challenged by the pretensions, demands and claims of a top orchestra.

Moreover the orchestra has to do with the public. The difficulty to obtain subscriptions and tickets, in addition to the price level of concerts, may lead to a rather old and well to do client group, with not necessarily the same characteristics, values and attitudes as other prospect-groups of music lovers.

It is felt by directors and conductors of the orchestras that a decision on future programming of concerts should be based on the public's choices and preferences, in good balance with the mission felt by each individual orchestra.

The purpose of the research program

In order to find decision support for the future programming of the three orchestras, a research program has been set up with the following aims;

- to give a description of the concert public in terms of socio-demographic and socio-economic variables
- to describe this public in terms of knowledge, experiences, attitudes and behaviour as well as explaining variables for their musical preferences
- to indicate the efficacy and effects of marketing tools able to bring classical music to the envisaged public
- to indicate - out of a wide range of options - the musical preferences of the different prospect groups by rank-ordering these options and by measuring the willingness to buy them (ROA)

This paper, written for the 48th ESOMAR congress, pays special attention to the latter aspect; the more descriptive objectives are used as independent and intervening variables to explain the ultimate preferences of the respondents.

The research program

In order to meet the research objectives we decided upon a research program consisting of two parts, i.e., the qualitative research and the quantitative research.

1. Qualitative research

There have been four focus group discussions with music amateurs, frequently or rarely visiting concerts of classical music. The results of this qualitative part are used as input for the construction and operationalisation of the research model used for the quantitative approach.

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The qualitative research made clear the complexity of a concert as a product offered to the public. This complicated product may be characterized by many attributes:

- the nature of the program, ranging from baroque to avant-garde, from Vivaldi, via Haydn, Mahler, Schostakowitz to Ligeti
- the reputation and quality of the orchestra, the conductor and/or the soloists
- the time and day of the week when the performance takes place
- the location
- the price

All these attributes form the *vignette* of a classical concert, as a possible offer by the orchestra to the public.

Another result of the qualitative research was that phenomena as frequency of musical consumption and ultimate musical preferences are determined not only by a scale of socio-demographic and socio-economic variables but by psychographics as well: attitudes towards contemporary music (affability and aversion), self-projection, concert-going as a way of life, classical music as part of a decent education, concert-going as a snob-activity, etcetera.

2. Quantitative research

By means of a mail questionnaire some 1100 individuals have been questioned, the sample being drawn from the files of four different musical institutions. Nearly all the respondents are enthusiastic amateurs of classical music and most of them can be described as frequent concertgoers.

The quantitative research gives a clear insight into the nature and strength of the relationships between the dependent variables, i.e., the preference in style and category of music on the one hand and demographic and psychographic variables on the other. But above all the survey gives us the input for the rank-ordering and acceptance analysis (ROA).

The ROA technique is intended to describe the preferences of people being offered a bundle of close substitutable products, e.g., musical concerts or cars. Why does a consumer buy a specific car and not the one standing beside it? That is the critical question for car traders.

An approach which is close to the actual behaviour of the buyer would be as follows. A car is an offer with many facets, the so-called **attributes**: speed, durability, design, colour and price. A given car can be seen as a combination of certain values for every one of those attributes.

Some attributes are decisive in making a choice, others are not. There are two ways to find out what the relative weights of the attributes are. One is to observe the actual buying behaviour of the consumer; the other way consists in presenting informed consumers with several alternative choices and asking them which choice they would make if they actually wanted to make a purchase. In the first case one observes *doing-behaviour*, in the second *saying-behaviour*. Compared to the observation of *doing-behaviour*, *simulating a choice* has the following advantages: one can present much more alternatives to the respondent; the variations in those alternatives can be greater than what actually exists; the experiment is cheaper. The method has however one disadvantage: there is no hard evidence that *saying-behaviour* constitutes a perfect prediction of actual behaviour.

Everything we just said about buying a car can obviously be said of many situations involving the purchase of a good or service. There is no reason to suppose that the consumer chooses a concert in a much different way than a car, or even a washing powder.

In this report we assess the relative weights of concert attributes, and the way they may offset one another, by observing choices made in fictitious situations. The price of a concert being one of the attributes, this study makes it possible to compensate a qualitative change in a given attribute by an adequate increase or decrease in price.

2 THE RESPONDENTS AND THE VIGNETTES

Some 1100 respondents have been approached, more or less representative for amateurs of classical music. Indeed, a very high-brow group, very well to do, highly educated and - compared with the whole outgoing public - rather old: three quarters of our respondents are older than 45. No less than 54% ranks in the highest social class, against 11% of the whole Dutch population.

This privileged group does have an surprisingly high music consumption, not only in terms of a very frequent visit to a concert-hall or operahouse - nearly 16 times a year! - but also in terms of nearly daily listening to classical music at home, much reading and talking about music. In fact, classical music is a part of their lives.

We could measure a strong preference for the Romantics (Brahms, Schubert, Mendelsohn) and, via Beethoven, for the classical school (Mozart and Haydn). The Baroque (Vivaldi, Händel, Bach) and the late Romantics (Strauss, Mahler, Bruckner) occupy positions in the middle. Composers like Strawinski, Debussy, Schönberg and Ravel are already less popular and via composers out of the middle of this century (Schostakowitz, Hindemith, Bartok), the popularity falls down to a very low level for contemporary masters like Boulez, Stockhausen, Ligeti and our Dutch modern composer Peter Schat.

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Every respondent was sent two series of 16 vignettes, and was requested to give his opinion about their relative appeal and the chance that he would actually buy them. The respondents did not receive the same series. There were in total 128 different vignettes.

The list of the attributes and their values were made in consultation with the commissioners of the study. The following attributes were chosen:

- a. the location
- b. the quality of the orchestra
- c. the size of the cast
- d. the reputation of the conductor
- e. the reputation of the soloist
- f. vocal or instrumental soloist
- g. weekdays or week-end
- h. if Saturday: afternoon or evening
- i. if Sunday: morning, afternoon or evening
- j. parking facilities included
- k. the month when the performance takes place
- l. the average 'age' and the heterogeneity of the program
- m. the price.

Table 1 shows the values of these attributes.

Table 1: Attributes and attribute values of the vignettes

<i>Attributes</i>	<i>Attribute values</i>
Location	Beurs van Berlage Concertgebouw
Quality of the orchestra	Quality A orchestras Quality B orchestras
Size of the cast	Orchestra with normal cast Orchestra with small cast
Reputation of the conductor	Big orchestra with or without choir Conductor unknown / known in the Netherlands Conductor known internationally / superstar
Reputation of the soloist	Soloist unknown / known in the Netherlands Soloist known internationally / superstar
Vocal or instrumental soloist	No soloist Vocal soloist Instrumental soloist
Day of performance	Weekday Weekend
Part of day of performance	Morning Afternoon Evening
Parking facilities	Provided (included in the price) No parking facilities
Month of performance	January February
Age and heterogeneity	December Average age of the program Standard deviation
Price	Price

Conductors and soloists are classified by making use of expert opinions. Obviously those classifications contain a certain amount of subjectivity. The 'age' classification of music is based on a division in seven periods, which gives values varying from 1 to 7. The division is given in Table 2.

Table 2: Classification of music periods

Music period	Classification number
<u>Baroque</u> Vivaldi/Händel/Bach	1
<u>Classic</u> Mozart/Haydn/early Beethoven	2
<u>Romantic</u> Brahms/Schubert/Chopin/Mendelssohn/late Beethoven	3
<u>Late-Romantic</u> R. Strauss/Mahler/Brückner/Wagner	4
<u>Beginning this century</u> Strawinsky/Debussy/Schönberg/Ravel	5
<u>Middle this century</u> Sjostakowitsj/Hindemith/Bartok	6
<u>Contemporary</u> Boulez/Stockhausen/Ligeti/Schat	7

The choice process is affected by the choice possibilities given by the vignettes, but it also depends on the individual himself. Obviously no individual is exactly the same as another one, so it is in principle impossible to fully characterize an individual completely by a finite set of variables. However we do characterize an individual by his age and income.

3 THE METHOD

This report is not suited for a precise description of the method we used. Therefore we will confine ourselves to what follows. The first question reads:

Suppose that you could choose 16 concerts (from the offered 32), taking the price into account, which 16 would you select as giving the most value for money?

The second question reads:

Which of the concerts of the previous question would you really want to buy for the next season, if they were the only ones in offer? You can choose them all, or a few of them, or none.

Then the first question has been posed again, with the prices being doubled, then halved; finally a kind of quantity discount is introduced and the question asked again.

Obviously the answers vary with respondents. Some concerts have a very small chance of being chosen, whereas others are immensely popular. It all depends on the attractiveness of the concert, in other words (the economist's words) on its "utility", which we represent by U . The chance that a given concert is worth buying depends on the value of U . On their turn those U -values depend on how a given concert vignette scores on the attributes upon which it is designed. From the answers to the questions above, we can estimate the relative U -values. A simple example will clarify the process.

Suppose (for the sake of simplicity) that the appreciation of a concert depends only on three variables, viz., the price (x_1) in guilders, the location (x_2) whereby 1 stands for the Beurs and 0 for the Concertgebouw, and the variable "with or without soloist" (value 1 and 0, respectively). Suppose that the utility depends on those variables in the following manner, where $\ln(\cdot)$ denotes the natural logarithm transformation:

$$U = -0.10 \ln(x_1) - 0.02 x_2 + 0.01 x_3$$

A higher price reduces the attractiveness (minus sign) and so does the transition from the Concertgebouw to the Beurs. On the other hand, the presence of a soloist increases the attractiveness of the concert.

Firstly, it is possible to connect an increase in U to an increase in the buying chance. Given the specified model (which is always an approximation of reality) the buying chance increases or decreases with a percentage roughly equal to a change in U .¹ For instance: suppose if the price of f20 in the example increases by f1, then the buying chance will decrease by 0.5%. That means that the number of buyers drops with roughly 0.5%. We speak in this case of a "price elasticity" of $0.5\% / (1/20) = 10$. If the original price was f10 the elasticity would be about 100, if it was f100 the elasticity would be 0.10. Knowledge of such price reactions is relevant for pricing policies, whereby the effect for the commissioner of the study obviously depends on whether the initial situation is one of fully booked halls, or not. In the first case, an increase in prices would only boost profits. In the second case it would increase profits only if a small part of the potential attendance gives up. This happens if the price elasticity is less than one.

¹ Given $U(0)$ at time 0 and a change in utility to $U(1)$ at time 1, the percentage change in buying chance equals $\exp(U(1)-U(0))-1$, which roughly equals $U(1)-U(0)$ for small changes in utility.

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Secondly, such a formula enables us to estimate the substitution ratio between improvement in one factor and deterioration in another one. In that way the loss of attractiveness caused by changing the location from Concertgebouw to Beurs could be offset by a price decrease of 22%, while the simultaneous addition of a soloist makes it possible to limit the price reduction to 11%.²

Of course, in the actual practice of econometric analysis, the values of the coefficients, specified in this example as -0.10, -0.02 and +0.01, are in general unknowns. They must be estimated from the choice behaviour as it can be deduced from the answers of the survey. Technically the estimation required is based on a hybrid mix of conjoint measurement (Tull and Hawkins 1990) and an *ad hoc* generalization of the logit model, a popular method in econometrics when it comes to analyzing discrete choice behaviour (Maddala 1983, Beggs, Cardell and Hausman 1981, Hausman and Ruud 1987). A detailed exposition is beyond the scope of this report.

In the Section 4 we will present the estimated coefficients and corresponding percentage changes in buying chances. In Section 5 the price effects to compensate for changes in attribute values will be dealt with.

4 THE ESTIMATES

The estimated model, i.e. the values of the estimated coefficients, and the corresponding percentage changes in buying chances are given in Table 3. We interpret these tables in what follows. We always suppose that one of the attributes is modified, while all the others remain unchanged.

Location

Moving a concert to the Beurs leads to a loss in attendance of approximately 13%.

Quality of the orchestra

Compared to a quality A orchestra, a quality B orchestra attracts approximately 23% less attendance.

² Given $U(0)$ at time 0 and a change in utility to $U(1)$ at time 1, the percentage compensating price modification in order to keep the same amount of demand for concerts of classical music equals $\exp((U(1)-U(0))/-0.10)-1$.

Table 3: Estimated coefficients and corresponding demand effects

Attribute values	Estimates	% Change
Location Beurs van Berlage Reference: Location Concertgebouw	-0.1376	-13%
Quality B orchestra Reference: Quality A orchestra	-0.2621	-23%
Orchestra with normal cast Orchestra with small cast Reference: Big orchestra with or without choir	-0.2580 -0.3542	-23% -30%
Conductor known internationally / superstar Reference: Conductor unknown / known in the Netherlands	0.2498	28%
Soloist unknown / known in the Netherlands Soloist known internationally / superstar Reference: No soloist	-0.0603 0.2138	-6% 24%
Instrumental soloist Reference: Vocal soloist	0.3788	46%
Weekend performance Reference: Week-days performance	0.1644	18%
Performance in the evening Performance in the afternoon Reference: Performance in the morning	0.0891 -0.1189	9% -11%
Parking facilities Reference: No parking facilities	-0.0983	-9%
Performance in January	0.2242	25%
Performance in February	0.1993	22%
Performance in March	0.3019	35%
Performance in April	-0.0108	-1%
Performance in May	-0.0518	-5%
Performance in June	0.3541	42%
Performance in July	0.4107	51%
Performance in August	0.2904	34%
Performance in September	0.3215	38%
Performance in October	0.3423	41%
Performance in November Reference: Performance in December	0.1157	12%

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Size of the cast

Compared with a big orchestra (with or without choir) an orchestra with a normal cast (for instance to play Brahms) attracts approximately 23% less attendance. Orchestras with a chamber music cast (baroque or not) attract approximately 30% less attendance.

Conductor

The effect of the conductor on the attractiveness of the concert is big, bigger even than that of the quality of the orchestra or of the soloist.

We found that a conductor that is a superstar or 'just' internationally known attracts about 28% more attendance than a completely unknown conductor or one only known locally (in the Netherlands).

Soloist

Compared to a concert without soloist, a completely unknown vocal soloist or one that is only known locally (in the Netherlands) appears to reduce the attractiveness of a concert by 6%. An internationally known vocal soloist or a superstar increases the attendance by approximately 24%.

Type soloist

An instrumental soloist appears more attractive than a vocal one, by approximately 46%. Accordingly, as compared to a concert without any soloist, an instrumental superstar raises the potential attendance, *ceteris paribus*, with a factor of approximately 1.24 (superstar) * 1.46 (instrumental soloist) = 1.81, i.e. 81% more.

Weekend or weekdays; morning, afternoon or evening

It appears that a Saturday or Sunday evening performance is more attractive than a weekdays evening concert. The difference in attendance is approximately 18%. Switching from Sunday morning to Sunday evening leads to a 9% increase in attendance. Sunday afternoon is least popular; attendance decreases by 11% as compared to a Sunday morning performance. The same holds true for Saturday evening and Saturday afternoon.

Parking facilities

Including parking facilities in the ticket price has an unexpected negative effect.

This result is unexpected. It persists when we distinguish between the respondents who intend to use their cars and those who do not. An interpretation could be as follows: drivers have always been able to find free parking, be it with difficulty, so they see the inclusion of parking facilities in the ticket as an unnecessary price increase. Those who use public transport or a taxi obviously think the same. All in all, providing parking facilities is seen as a disguised price increase of approximately 9%. Moreover, in what regards the concerts given in the Beurs, the Bijenkorf parking garage is a serious competitor.

What this means for future policy remains an open question. It may be possible to 'educate' visitors, so that they eventually would appreciate the presence of a free (i.e. included in the price) parking garage. However, this is far from certain.

Seasonal pattern

The effects of the month in which the concert takes place are particularly surprising. There appears to be an important Summer Top from June to October (included). The months November, December, April and May score definitely low.

This preferential year pattern could obviously be translated in Spring and Autumn season tickets. The pattern is not reflected in existing subscription possibilities, which stretch from Autumn to Spring. The fact that November and December are not very popular is not taken into account. On the other hand, there seems to be some room in the 'long summer days', judging by the success of the Robeco summer concerts in Amsterdam. The Festivals (like Salzburg, Bregenz, Aix en Provence and the Holland Festival) also indicate that Spring, Summer and Autumn are in principle just as good or better than as the traditional Winter months.

Program choice

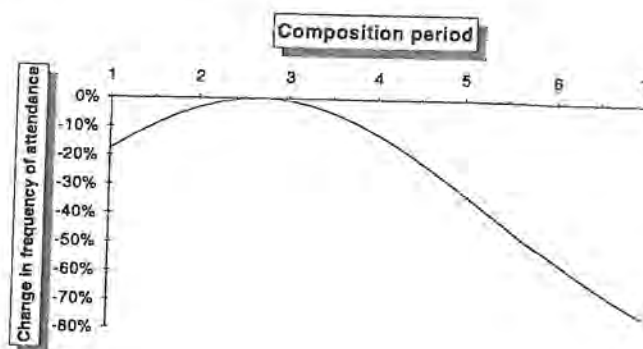
As we said above, every composition was given a 'period figure' (see Table 2). It appears that in general the appreciation varies according to the period. More specifically, it increases as the program moves away from the baroque, to reach an optimum somewhere around Beethoven (i.e. at 2.66). Then the appreciation starts declining. The more modern the program, the less it is appreciated.

The curvature is represented in Figure 1. The average period value of a program, which varies from early-baroque (1) to contemporary (7), is set on the horizontal axis. On the vertical axis, we find the percentage of the audience that is lost by moving away from the optimal program.

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However, the picture is not yet complete because a program is characterized not only by its average but also by its variety. The more heterogeneous a program, the higher its attractiveness. There is a complex relation between the two characteristics because it is practically impossible to increase the heterogeneity of a program without changing its average.

Figure 1: Attendance and composition period



The effect of price

In addition to the questions posed, the respondents are asked at what level they consider a concert to be **expensive**, respectively **too expensive**, and at what level they consider it to be **cheap**, respectively **too cheap**. It appears from the answers to these questions that such appreciations are highly subjective. When the income of the individual rises, the same ticket price seems lower. This is not really new, except that here this effect can be quantitatively evaluated. More surprising is the fact that when the age of the individual rises, the ticket price seems also to matter less. It is therefore possible to derive a psychological price from the actual price, the latter being 'corrected' by the income and age of the respondent. It is this corrected price that has been applied as one of the vignette attributes.

The price elasticity is approximately 1.01. This means that a price increase of 10% for this public leads to a reduction of approximately 10.1% of the potential audience. The profit of a price increase will be slightly more than offset by the number of unsold tickets, unless the concert hall is visited at full capacity.

Effects of income and age

When income increases, the tendency to go to concerts also increases. The effect is however extremely modest. A doubling of the income of a visitor increases the frequency of his attendances by only about 22%.

When age increases, the tendency to go to concerts also increases, but once again the effect is not much pronounced. A doubling of the age of a visitor increases the frequency of his attendances by only about 17%.

5 COMPENSATING PRICE CHANGES

As we said before, it is possible to work out how a modification of one characteristic can be compensated by the modification of another characteristic, the price for instance, in such a way that the total attractiveness U remains unchanged.

These compensating price modifications are given in Table 4. Table 4 shows that moving from the Concertgebouw away to the Beurs van Berlage could justify a price increase of approximately 13%. Compared with a no-soloist program, an instrumental super-soloist could justify a price increase of about 80%. If the superstar is a singer, the bonus would be 56% less, i.e. about 24%. The other figures of Table 4 can be interpreted in the same way.

Table 4: Compensating price modifications for changes in attributes

Attribute values	Compensating price changes
Location Beurs van Berlage Reference: Location Concertgebouw	-12.71%
Quality B orchestra Reference: Quality A orchestra	-26.21%
Orchestra with normal cast Orchestra with small cast Reference: Big orchestra with or without choir	-22.50% -29.53%
Conductor known internationally / superstar Reference: Conductor unknown / known in the Netherlands	27.99%
Vocal soloist, unknown / known in the Netherlands	-5.78%
Vocal soloist, known internationally / superstar	23.52%
Instrumental soloist, unknown / known in the Netherlands	36.98%
Instrumental soloist, known internationally / superstar Reference: No soloist	79.59%

Table 4 (cont.): Compensating price modifications for changes in attributes

Attribute values	Compensating price changes
Parking facilities Reference: No parking facilities	-9.26%
Performance on	
- Saturday afternoon	-4.22%
- Saturday evening	17.64%
- Sunday morning	7.72%
- Sunday afternoon	-4.22%
- Sunday evening	17.64%
Reference: Week-days evening	
Performance in January	24.80%
Performance in February	21.76%
Performance in March	34.76%
Performance in April	-1.06%
Performance in May	-4.99%
Performance in June	41.89%
Performance in July	50.05%
Performance in August	33.23%
Performance in September	37.39%
Performance in October	40.24%
Performance in November	12.11%
Reference: Performance in December	

6 POLICY CONCLUSIONS AND CONTINUATION

In what precedes, we have developed a marketing - instrument with which it is possible to value the offer of concerts on a quantitative scale, in terms of audience attractiveness. Important aspects as program, performers and price have been included. Moreover, the preferences of the public are also charted.

These data are obviously important for future policy when it comes to prices, programming, the choice of performers and of dates.

Firstly, it is now possible to value every concert on the U-scale and to relate it to a relevant price.

Secondly, it is possible to estimate the revenues of a concert at different prices and to let the price depend on other factors than the traditional percentage of the cost.

More concretely, it seems reasonable to evaluate the whole future programming in terms of utility value and utility value per guilder, as can be done with the vignettes, so that one can get a picture of the 'public value' of the production.

The attractiveness of *series* of concerts has not yet been discussed. This constitutes obviously a very significant aspect for the future programming. Although one may well value above everything a concert made of the most popular classics, the question remains as to whether one would also appreciate a series of 10 programs of the same kind.

If this instrument, and its results like the substitution ratios between attributes, are to be maintained for future use, it seems necessary to conduct an annual survey in order to update preference patterns, and to signal any modification on time.

Such a survey should also devote more attention to the programs of the preceding period and how they were received.

There are therefore solid arguments for continuing this research as a periodic monitor, since it has established that it is possible to evaluate the quality of such an ethereal service as a concert in day-to-day, hard and quantitative terms.

On the basis of this first data-gathering, it seems possible to achieve a more continuous monitoring by spreading the survey over the whole year, or to complete it with evaluation forms, which could be distributed to concert audiences.

Much attention has been given to optimal pricing policies in this descriptive analysis. Higher prices inevitably lead to a point where the hall begins to run empty. As long as the demand exceeds the offer, there is a case for raising prices; if it does not, price elasticities play a crucial role. It was found that a price increase of 10% leads to a demand reduction of 10.1%, thus offsetting the potential gain from the price increase.

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