Svanhild Aabø

THE VALUE OF PUBLIC LIBRARIES

A Methodological Discussion and Empirical Study Applying the Contingent Valuation Method

Thesis submitted for the degree of Dr. Polit.
Department of Media and Communication, University of Oslo
May 2004

Contents

List of tables, figures and boxes 7

Acknowledgement 11

INTRODUCTION 15

Svanhild Aabø 15

1. The political context 17

2. The LIS research context 19

2.1 The dichothomy inherent in the justification of public libraries 19

2.2 Increasing pressure towards documenting value 22

3. A strategy for valuation of public libraries – the research design 34

3.1 Welfare economic foundations of library valuation 37

3.2 Economic approaches to valuing public libraries 40

3.2.1 Revealed preference methods 41

3.2.2 Stated preference methods 43

3.3 Studies estimating the economic value of public libraries 46

3.4 The CV method 53

4. Overview of the papers 61

4.1 Public libraries and their value (Paper 1) 61

4.2 Rational choice and valuation of public libraries: Can economic models for valuing non-market goods be applied to public libraries? (Paper 2) 64

4.3 Public library valuation, non-use values, and altruistic motivations (Paper 3) 66

4.4 Valuing the benefits of public libraries (Paper 4) 74

5. Conclusions 86

PAPER 1: 91

VALUATION OF PUBLIC LIBRARIES 91

Svanhild Aabø 91

1. Introduction 92

2. Funding of public libraries 94

2.1 Fees 97

3. The goals and main tasks of the public library 99

4. Valuation of public libraries – previous research 100

4.1 General surveys 100

4.2 Methodology to valuate non-market goods 104

4.2.1 The conjoint analysis ... 105
4.2.2 The contingent valuation method ... 108
5. Concluding remarks ... 113
PAPER 2: ... 119
RATIONAL CHOICE AND VALUATION OF PUBLIC LIBRARIES: CAN ECONOMIC MODELS FOR VALUATING NON-MARKET GOODS BE APPLIED ON PUBLIC LIBRARIES? ... 119
Svanhild Aabø and Ragnar Audunson ... 119
Abstract ... 119
1. Introduction ... 120
1.1 The general problem: An increased pressure towards documenting value ... 120
1.2 Economic valuation methods and their use in library science ... 120
2. The model of economic rationality and behaviour not motivated by self-interest ... 123
2.1 The necessity of widening the model of rationality ... 123
2.2 The general model of rationality ... 124
2.3 Economic rationality ... 125
2.4 Commitment and sympathy as elements in rational behaviour ... 127
2.5 The special case of altruism ... 132
2.6 Summary ... 136
3.The contingent valuation method and public library valuation ... 137
4. Conclusion ... 142
PAPER 3: ... 144
PUBLIC LIBRARY VALUATION, NONUSE VALUES, AND ALTRUISTIC MOTIVATIONS* ... 144
Svanhild Aabø and Jon Strand ... 144
Abstract ... 144
1.Introduction ... 145
2.Problem statement ... 145
3.Public libraries and nonuse values ... 146
4.Previous CV studies of cultural goods ... 148
5.The CV study – procedures ... 151
6.Findings ... 155
7.Discussion ... 157
8.Altruistic motivations behind public library valuation ... 161
9.Conclusions ... 165
PAPER 4: ... 168
VALUING THE BENEFITS OF PUBLIC LIBRARIES ... 168
Svanhild Aabø ... 168
Abstract ... 168
1. Introduction ... 169
2. The survey ... 171
2.1 The good to be valued ... 171
2.2 The questionnaire ... 172

2.3 WTP versus WTA *173*
2.4 The scenario design..... *176*
2.5 Elicitation formats..... *178*
3. WTP RESULTS..... 181
3.1 WTP estimates of the first valuation question, Q4, in the MBDC format..... *181*
3.2 WTP estimates of Q4 in the DM format..... *185*
3.3 WTP estimates to Q5..... *188*
4. WTA RESULTS..... 191
5. PROTEST BIDS..... 197
6. DISCUSSION AND CONCLUSIONS..... 201
REFERENCES..... 208
APPENDICES..... 232
APPENDIX 1..... 233
The contingent valuation (CV) method..... *233*
APPENDIX 2..... 236
Theoretical considerations concerning WTA in the form of local public goods..... *236*
APPENDIX 3..... 238
Questionnaire 1.1: Valuation of public libraries - Willingness-to-pay (WTP) format. January 2000..... *238*
APPENDIX 4..... 262
Questionnaire 1.2: Valuation of public libraries - Willingness-to-accept (WTA) format. January 2000.. *262*

List of tables, figures and boxes

Tables

Introduction

Table 1: Main grouping of methods for valuation of non-market goods……..……..41

Paper 1

Table 1: Users of public libraries in percent of the population, costs per inhabitant, and costs per million in GNP, adjusted for purchasing power parity……...96

Paper 2

Table 1: Reasons given for refusing to close libraries, from Holt, Elliot and Moore (1999, p. 106)……..….138

Paper 3

Table 1: CV studies of cultural goods listed by the type of good that is valued, author(s) of the study, country, elicited nonuse values, and probable altruism…….....150
Table 2: Characteristics of respondents in the whole sample and three subsamples……...153
Table 3: Motivations for valuing public libraries. Respondents' distribution of their 100 points to six motivations……155
Table 4: Percentages of total monetary value of public libraries distributed to six motivations…….159
Table 5: Regression analysis of characteristics of respondents who gave high weight to nonuse values……...160

Paper 4

Table 1: The first valuation question, Q4, in elicitation format DM-WTP with distribution of answers to the six response options……...181
Table 2: Responses to the first valuation question, Q4, in the MBDC elicitation format. Four WTP estimates of mean and median in NOK, including a 95% confidence interval for mean…….184
Table 3: Regression analyses of log-transformed WTP to Q4, EP, with zero bids excluded (column 2) and included (column 3)……..186
Table 4: Summary of alternate dependent variables from the first valuation question in the DM-WTP format, see table 1……..……188
Table 5: Percentage "Yes" responses by bid value and model defined by dependent variable in the DM-WTP format……..189
Table 6: Logit coefficients for the four WTP DM models……...190
Table 7: Mean and median values to Q5, the second valuation question, for the two WTP subsamples, with differing treatment of protest bids. ……..…….192

Table 8: Explanatory factors' impact on WTP to Q5 for respondents with positive bids and for respondents with positive and zero bids. NOK per respondent (in linear relationships)……193
Table 9: Responses to the first valuation question in the MBDC elicitation format. Four WTA estimates of mean and median in NOK are presented, including a 95% confidence interval for mean……..……..195
Table 10: Regression analyses with log-transformed WTA to Q4, EP, with responses with no compensation demands excluded (column 2) and included (column 3)……196
Table 11: The first valuation question, Q4, in the elicitation format DM-WTA with the distribution of the answers to the three response options A-C……197
Table 12: Logit coefficients for the WTA DM-models……198
Table 13: Means and medians to Q4 for the two WTA subsamples. In elicitation format MBDC, estimates using two different estimation techniques……...199
Table 14: Mean and median in NOK of Q5 with differing treatment of protest bids for the two WTA subsamples……..199
Table 15: Percentagewise distribution of all four subsamples to the response categories missing values, possible protest bids, real protest bids, real zero bids and positive bids to Q4, both raw data and data after treatment, and to Q5……..……..201
Table 16: Logit coefficients for bid type models defined by positive, zero and protest bids to Q5, for WTP and WTA respectively……..…203
Table 17: Mean and median in NOK, respectively, to Q4 and Q5 for all subsamples. Protest bids are excluded……...205

Figures

Figure 1: Estimated logit distributions for the WTP elicitation formats DM1– DM4……..191

Boxes

Box 1: Follow-up valuation question in the elicitation format DM-WTP posed to possible protest bidders, i.e., respondents who answered the 03-alternative in Q4, see table 1……182
Box 2: The four subsamples……183

Acknowledgement

I wish to extend my warm thanks to a number of people and institutions for invaluable help with the work on this doctoral dissertation. My project is cross-disciplinary and I have had the support of two supervisors, whose professional guidance has been of vital importance for the completion of my work. I am grateful to Jon Strand, professor of economics at the University of Oslo, for having taken me under his wings, being patient with a newcomer in economics, giving friendly guidance and constructive criticism, and providing me with new insights and new perspectives of evaluating public libraries. I am in debt to Ragnar Audunson, professor of library and information science at Oslo University College, for his encouragement, enthusiasm, and inspiring and reflected way of tutoring. Ragnar is nestor in Norwegian public library research and was an initiator to and the research co-ordinator of the Research Council of Norway's library research programme. I will thank the board of the Programme for funding my project and the Programme's secretary, Ruth Jenssen, for effective and flexible administration.

I am grateful to the Department of Media and Communication at the University of Oslo for an inspiring and challenging study environment and particularly Helge Rønning for his support. I will thank Oslo University College and the Faculty of Journalism, Library and Information Science for providing an environment making it possible to perform my project. The deans Egil Fossum and Øivind Frisvold and heads of Library and Information Studies, Inger Cathrine Spangen and Liv Gjestrum, deserve thanks for their support and flexibility. Colleagues, fellow doctoral candidates, and those who have recently become doctors have provided a stimulating environment, both professionally and socially, for which I am very grateful.

The master study of library and information science at Oslo University College is my basis. The initiator and first leader of this study, retired docent Per Ongstad, introduced me to information economics and kindled my interest for studying libraries' significance and role in society and their value to the population. He was supervisor of my master thesis and I am greatly indebted to him.

During the work with my dissertation many persons have given me valuable help. I will especially like to thank Ståle Navrud for his comments, which were essential in designing the questionnaire used in the empirical study. I will thank Svein Alve for continuous support in SPSS and statistical analysis, the library at the Faculty for good service and prompt delivering of requested material, and Kamran Bagheri and Kjetil Iseli for IT support.

My family and close friends deserve warm thanks for support, patience, and encouragement. I will especially thank my daughter, Ellen, who, although living one year in Japan and another in Brazil, has managed to be my very best support. In my struggle with the English language, I am indebted to my dear cousin, Brit Aabø, for good help and for translating Paper 1 from Norwegian to English. [1]

Oslo, May 12, 2004

Svanhild Aabø

[1] In the thesis, both UK English (the introduction chapter and papers 1-2) and American English (papers 3-4) are used due to publishing in different journals.

Introduction

Svanhild Aabø

International research in library and information science (LIS) is distributed over a wide area of topics, e.g., the professional field, library history and methodology, information storage and retrieval, information seeking, scientific and professional communication, library and information service activities, and other aspects of LIS including the library insitution's role in society (Järvelin and Vakkari, 1990; Vakkari, Aarek, Järvelin, Kajberg and Klasson, 1993). The two last topics are of interest for this thesis. There exists a large and varied literature on *library use*, among them studies of user behaviour aimed at exploring how and why different user groups use the library facilities and the broad range of services. A related area is *library management,* and as late as in the 1990s a new, separate research field within this LIS area – *performance measurement* – was being institutionalized by the establishment of an international biennial conference and journal**.** This new field covers the issues of metrics and quantitative approaches to measurement of indicators of internal library organisational efficiency. The aim is to assess the value of services from a qualitative perspective. To this end development of new performance indicators is essential, with emphasis on impact measures, focusing on qualitative outcomes and the needs of the users (Lakos, 1999).

A very different area of research, however, is limited to public libraries and aims to assess the value of the public library presence in society, to evaluate the role that public libraries play in developing viable and sustainable local communities, and to estimate how the population, both library users and non-users, value them. This research area is comprehensive and includes studies varying with regard both to theoretical perspective and methodology. Several studies assess the value and impact of different aspects of public library services or of the various roles they play in their local communities. Other studies seek to elicit the overall importance and impact of the local public library. They aim to develop ways to explore the value of the public library service as a whole, to the individual citizen and, in total, to society (D'Elia, 1993; Aslib, 1995; Holt, Elliott and Moore, 1999; Morris, Hawkins and Sumsion, 2001). Such studies are still few, and it is within this specific part of the research area my dissertation seeks to make a contribution, focusing on economic value.

1. The political context

Internationally, public libraries are facing fundamental changes, due to the IT development and digitizing of society and to increasing pressure in many countries to reduce the size of public sector, of which libraries today are an integrated part. In Norway, severe budget restrictions are causing concern for local politicians and citizens, and especially for the municipalities cutbacks in funding of public services are common. This situation creates a need for assessing the different public services, and their long-term impact on society and the economy. For public libraries, competing with other essential public services (e.g., schools, health care) for their share of scarce funding resources, there is an increasing demand to be able to document their value to individual inhabitants, local communities and society at large.

In this critical situation for the public libraries, political authorities such as the EU Commision, national ministries of culture, as well as the library profession itself have initiated studies and surveys resulting in important library reports (D'Elia, 1993; Aslib, 1995; Mercer, 1995; Benton Foundation, 1996; Department of Education and Culture, 1997; Department of National Heritage, 1997; Library and Information Commission, 1997; Thorhauge, 1997; UBIS, 1997; Kulturdepartementet, 1999). Important outcomes so far of this debate and reassessment of public library's role in society, are revisions of national library acts and major organisational changes of the national library sector in the Nordic countries and the UK. In Finland, the revised Library Act came into force in 1999, prescribing the library and information services to be provided by municipal public libraries. The aim of the library activities is extended to promoting the development also of virtual and interactive network services and their educational and cultural content, as part of the civic information society. Emphasis is on availability and quality, and focus is on the library and information services needed by the people, not on the library as an institution. The public libraries' objective is to ensure the population equal opportunity to access material recorded in all ways, from the traditional to the post modern, for their "personal cultivation, for literary and cultural pursuits, for continuous development of knowledge, personal skills and civic skills, for internationalisation, and for lifelong learning" (Library Act, 1998, §2; Kekki, 2000).

In Sweden, the first Library Act ever was passed by the Parliament in 1997, which applied not only to public libraries but to all general libraries, i.e., academic and research libraries, county libraries, and other government-financed libraries. With the objective of promoting interest in

reading and literature, information, enlightenment, education, and other cultural activities all citizens are granted access to a public library in their municipality. All general libraries are obliged to open their collections to the public and school libraries in their striving to offer the inhabitants equal access to all library media, including electronic information (Kulturdepartementet [Sverige], 1996). In Denmark, the revised *Act regarding library services* passed the Parliament in 2000. It aims to create an adequate framework for the library in the information society, e.g., by including electronic information resources, Internet and multimedia as part of the library media to which everyone shall have free and equal access. The Danish Act reflects the idea of regarding the general library services in the country as one resource, open for everyone, and as a co-operative national library system where research and special libraries support the public libraries, which are mandatory for the municipalities, in their activities (Danish Ministry of Culture, 2001; Harbo, 2001).

In the UK and Norway, the public responsibilities for the libraries have recently been reorganized and co-ordinated with the public responsibilities for the archives and museums into new national agencies. In the UK, *Resource: The Council for Museums, Archives and Libraries* was established in 2000, aimed at changing the context in which these institutions operate and making a difference by providing strategic direction, advocacy, and advice across the sector. Its vision is to provide the widest possible access to museums, archives and libraries for all citizens, contributing to their enjoyment and inspiration, cultural values, learning potential, economic prosperity and social equity (Resource, 2001a). In Norway, the new administrative body called the Archive, Library and Museum Authority was established in 2003. The Ministry of Culture and Church Affairs has overall responsibility. A main objective is to ”work towards the improved development, preservation, and use of our cultural and knowledge based assets” (ABM-utvikling, 2003a, p. [5]). An objective is to optimize the use value of archives, libraries and museums for the general population and society at large, as well as for different professional and institutional user groups, by facing the new challenges and possibilities rising from the development of the information and knowledge society (Kultur- og kirkedepartementet, 2002). In this new society, the public libraries in all these countries are presupposed to play an important role in the democratization of access to and dissemination of information.

2. The LIS research context

2.1 The dichothomy inherent in the justification of public libraries

The new challenges for the public libraries in the age of information and knowledge with an increasing economic pressure on the public sector are studied from various perspectives in recent international research in LIS. My project aims to explore the economic value of public libraries and therefore discuss whether methodologies developed in economics can be fruitfully applied in LIS. An empirical study is carried out, applying the contingent valuation method, which is part of the economics research tradition. Before presenting the research strategy developed for this dissertation it is necessary to look into contemporary LIS studies of the public library's role, impact, and value in a wide sense.

Skot-Hansen's (2001) starting point is the 'state of crisis' of the modern welfare states, particularly in Scandinavia, examined within the discourse of cultural political research. Referring to the political consensus that this crisis cannot be solved through more intervention by either state or market but rather by development of the civil society as a third authority, she discusses how the Danish public libraries as a cultural institution can be positioned in the field of force between the state, market, and civil society. Skot-Hansen analyses the concept of the civil society from three theoretical approaches, moral philosophy (Wolfe, 1989), sociology (Giddens, 1998), and political science (Habermas, 1992). She relates to Vestheim (1997) when discussing the dilemma of public library justification between an instrumental and value-based foundation.

Vestheim's (1997) study is a comprehensive historic-sociological analysis of Norwegian public library policy from 1930's until the end of the century, viewed in the light of general cultural policy. Central concepts are 'public sphere' and 'social field' based on theories developed by Jürgen Habermas and Pierre Bourdieu. Vestheim shows how fundamental changes in the Norwegian society have influenced the policy of public libraries, from the tradition of enlightenment in the 1930's, through the educational revolution in the 1960-70's, and to the two last decades of the century with strong influence of system interests. The ideological dilemma of the public library in the 1980-90's has been to determine whether it shall primarily be a value-based institution – a critical public institution contributing to the

discourse of the civil society and promoting civic skills, or whether it shall primarily be a tool for governmental cultural and educational policies and serve instrumental purposes. Under pressure of a very restricted local public economy and by influence of market liberalism, politicians responsible for public libraries are looking for instrumental and utilitarian arguments to defend existing library budgets. In this political climate, arguments for enlightenment and knowledge as values in their own right do not seem to be given much weight, Vestheim observes.

Birdsall (1994, 2001) and Audunson (2001) study the rationale of public libraries in the digitized society at a time of social change. In addition to LIS research, the analysis of Birdsall (1994) is based in the humanities and social sciences. He challenges the myth of the ’electronic’ or digital library, criticizing its purely technological foundation and arguing for broadening of the concept by considering its political, cultural, and social implications. He concludes that public libraries must remain committed to promoting the widest possible access to knowledge by opposing censorship, fees for services, and the monopolization of information by any public or private group or organisation, serving as a bridge between the community and the individual citizens. The discussion of Birdsall (2001) relates to the debate of Vestheim (1997) concerning the justification of public libraries. Birdsall argues that the information paradigm for public libraries is instrumental and that the debate over universal access to information is too narrow. The established concept of ’freedom of information’ is challenged by the new concept of ’the right to communicate’, because the latter in addition to access includes interaction and participation. The citizen’s right to communicate as part of the rationale for public libraries better expresses their value-based foundation and purpose in the digitized information society, he claims.

Audunson (2001) discusses the role of Norwegian public libraries as viewed from the perspectives of librarians, local politicians, and the general public, respectively. His discussion is based on institutional theory (Berger and Luckman, 1967; Selznick, 1983). The empirical data from surveys of representative samples of the three groups show that all the groups emphasize the public library’s roles as educational support, support of personal and civic cultivation, and of dissemination of culture and knowledge. When asked to prioritize one justification for using public money to fund public libraries approximately 40% of the population, 60% of the local politicians, and 75% of the librarians answered the public library’s role as disseminator of literature and knowledge or promoter of democracy and

equity. These justifications are value-based and not instrumental. Jochumsen and Rasmussen (2000) apply Pierre Bourdieu's life style theory to study whether, when, and how Danish public libraries make a difference in people's daily life. They find that the overall legitimisation of public libraries differs according to four life styles defined by an individual's economic and cultural capital, varying from idealistic and social justifications to utilitarian motives.

These studies all relate to the discussion of public library justification and legitimisation in the digitized information society, pointedly described by Vestheim (1997) as an ideological dilemma. This discussion reflects a fundamental dichotomy inherent in the (Norwegian) public library policy. On one side there is the *value-based* justification as the basis that legimitizes public libraries, upholding fundamental citizens rights, e.g., the right to know and to have free and equal access to the literary heritage and a variety of information sources supporting the right to communicate. This justification emphasizes the democracy perspective, viewing public libraries as a social institution contributing to free and independent cultural and political discourses and encouraging manifold and entirety. The public libraries fulfil their role by establishing one of the social institutions being a presupposition for constructive and critical public awareness necessary for a well functioning democracy. On the other side there is the *instrumental* justification, focusing on public libraries as tools for governmental policy in the cultural field, serving also educational, social, economic, and information purposes, concentrating on utilitarian arguments and individual services. This justification emphasizes the direct use value of the separate public library services.

This dichotomy gives rise to different, concrete library policies. From the value-based position, the resources of all public libraries are seen as a whole and as one comprehensive library system, representing a complex set of values available for the community as a collective. All inhabitants have the same priority and all services are free of charge. From the instrumental position, each library is seen as a separate organisation, which aim is to serve first and foremost their own users, segmenting user groups according to priority. Market ideology and terminology are adapted and fees and charges for individual services are introduced. Public library services consist of both public goods and publicly-provided private goods (Aabø 1998; Kingma 2001). The instrumental justification of public libraries focuses

on the private good characteristics, while the value-based justification focuses on their public good characteristics.

In the library profession, there exists a persistent conflict between the most devoted adherents of the opposite sides of this dichotomy. The public library field strives to find a balance between these two positions, between the value-based and the instrumental justification. The strength of each side is strongly influenced by dominating political tendencies in society at large, and the balance point is moving accordingly. Over the last two decades the public library policy seems to have moved towards an instrumental view of knowledge and towards a closer identification with system interests. Continuous economic pressure has advanced a utilitarian point of view with strong emphasis on the instrumental justification of public libraries. In this political climate, colouring off on both library authorities and local politicians, arguments for enlightenment, culture and knowledge as values in their own right, do seem to have lost weight. This view is in line with Vestheim's observations. However, the tendency towards instrumentalism is not unambiguously. Results from the study of Audunson (2001) show that a majority of the local politicians prioritize a justification of public libraries based on culture, knowledge, democracy, and equity and so did about 40% of the general public. We will discuss this point further in subsection 5.2, based on an analysis of our own attempt to elicit the population's motivation for valuing public libraries in paper 3. Our empirical results concur with Audunson's – social motives appear to be central for the citizens' valuation of public libraries, including views that literature and knowledge are values in their own right, thus implying a movement towards a value-based justification of public libraries.

2.2 Increasing pressure towards documenting value

The current political and economic situation entails an increasing pressure to document public library value, which is reflected in LIS research. The Comedia group, a British research consultancy specializing in cultural and urban policy issues, has published several studies analysing the future of public libraries in the UK (Greenhalgh, Landry and Worpole, 1993; Greenhalgh, Worpole and Landry, 1995; Burton, Greenhalgh and Worpole, 1996). Its starting point is a sense of urgency about the prospects of public libraries, a feeling that they are

seriously threatened in this era of de-regulation, local government re-structuring, commercialization of information, and growth of home-based leisure. The Comedia reports explore what it is that makes public libraries special, what constitutes the quality of 'libraryness', and identify several main areas of public life where the libraries make impact.

Comprehensive literature reviews of the social impact of public libraries are presented by Kerslake and Kinnel (1997) and Debono (2002). Debono understands assessment of the social impact of public libraries as a movement from measuring outputs (services provided and attributes of the services) towards investigation of the outcomes (consequences of service use) of public library services. "It is the relationship between the use of a service and the outcome of that use that defines the impact of the service. Outcomes based research brings to the fore the impacts, the human experience of library use, and gives value to these experiences," (Debono, 2002, p. 80). She uses the terms output, outcome, and impact in accordance with the definitions that Griffiths and King (1994, pp. 81-82) use in their framework for assessing libraries.

Enriching the concept of impact, Brophy (2002, p. 2. [Original emphasis]) states: "Impact can be defined in different ways, but in the context of library services it may be thought of as any *effect* of a service (or other 'event') on an *individual* or *group*." Impact may be positive or negative, intended or something different, change attitudes or behaviours, be short or long-term, critical or trivial. A library service may result in different 'levels' of impact on the user, from negative impact as hostility or dismissiveness, to none impact at all, or to positive impact of increasing significance: raised awareness, being better informed, having improved knowledge, a changed perception, a changed world view, and changed action.

Kerslake and Kinnel (1997, p. 2) point out that the term 'social impact' only recently has been used to describe and conceptualize the role of public libraries and state that the "emphasis on social impact is a move away from the crude instrumentalism (Burton et al. 1996, p 15) of assessments of public library services based only on quantitative data. Despite fundamental and wide-ranging areas of engagement ranging from economic to community issues, however, social impact is often undervalued or overlooked in assessments of the public library".

Kerslake and Kinnel (1997) divide the social impact of public libraries into three sections, recognizing the emphasis placed on these aspects by central library authorities in the UK, i.e.,

Department of National Heritage: i) the impact on the community in which the library operates; ii) the impact on skills; and iii) the economic impact. For each of these areas they summarize the social impact of public libraries.

i) Impact on the community is found to be:
”- sustaining local identities and communities;
- supporting people whose main activities are out of the labour market;
- fostering cultural enrichment and diversity;
- promoting a sense of social cohesion during wide-spread demographic changes;
- proving information in times of crisis; and,
- facilitating the use of new information resources” (Kerslake and Kinnel 1997, p. 8).

ii) Public libraries impact on skills is demonstrated by their work to support literacy and numeracy, computer literacy, lifelong and open learning, and to establish a reading culture for long-term benefits. ”The immediate effects of these activities benefit the individuals concerned by increased employment opportunities and associated financial gains, and in the form of improved quality of life. The wider effects include benefits to the society’s:
- economic well-being, both in that the individuals are more likely to be employed and contribute to taxation systems, and hence be less likely to claim benefits;
- political well-being, in that literate, educated individuals and groups are more likely to be able and to want to take part in democratic activities, such as running in local elections, or participating in local groups;
- social well-being, by offering individuals chances to work together, sharing resources and developing a sense of local community” (Kerslake and Kinnel 1997, p. 12).

iii) The economic impact of public libraries, the authors observe, is not well documented in the literature and needs further investigation, but they indicate three main areas in which public libraries have economic impact by: (1) increasing and sustaining local prosperity through the regeneration of town centres, (2) confronting poverty both on an individual and geographic level, and (3) building a bridge over the divide between education and leisure (Kerslake and Kinnel, 1997, pp. 14-15).

Concluding their study, Kerslake and Kinnel (1997) point to two distinct levels of the social impact of public libraries. The first is the ”more immediate impact on the economy, the level

of skills in the labour market and society, and their role in community development and sustenance. The second level is the extension of social inclusiveness and citizenship, which are cumulative results of these areas of activity" (Kerslake and Kinnel, 1997, p. 17).

Kerslake and Kinnel (1997) understand, as we have seen, 'social impact' in a very wide sense of the term, although it is "understood more discretely than meaning 'having an impact on society' and instead is used to indicate the meaning of the public library to the communities in which they work," as the authors write in a subsequent article based on the same literary review (Kerslake and Kinnel, 1998, p. 161). They include short term or immediate impacts of public libraries' broad range of activities on both individuals and the community, as well as their long-term or wider impacts. We note that the wide range of social impact the authors have identified originate from services and activities arising from the public library's main roles, namely their cultural, educational, and informational roles. Economic impact is here seen as a subgroup of the social impact of public libraries. In subsection 3.3 below, economic impact studies are viewed from a different angle and discussed as an established methodology in economics.

Debono (2002) reviews research assessments of social impact of public libraries over the past decade, including studies from Britain, Canada, USA, and Australia. She reveals two approaches to defining the term 'social impact': i) any 'effects', 'experience' or 'difference', and ii) positive impacts only. The first takes into account "the reality that the public library can have many meanings for individuals in a community. It can represent a range of things, from another drain on the community purse to that of a central support in the daily life of individuals and communities" (2002, p. 82). Debono points out that the lack of a clear understanding of the term 'social impact' to carry across multiple assessments, represents a problem and should be attended to in future research. However, major social impacts were identified in the majority of studies she reviewed, encompassing public libraries' impact as providing public space, health and general information, education, decreasing social isolation, and contributing to community building. In more than 25% of the studies additional social impacts were identified, i.e., impact on recreation, vocation and/or economy, personal development, equity due to free access, quality of life, and culture and the arts. If we compare these specified impacts with those Kerslake and Kinnel (1997) listed under three headings above, we note a high degree of coalescence but not identity between them.

The general finding from the studies reviewed by Denono (2002) is that public libraries provide positive social impact. Due to the fact that only half of the projects deliberately included non-users in their studies, she expresses a reservation: ”Immediately some hesitation arises regarding the validity of studies into the social impact of the public library where those who are not library users are excluded. … Given that public libraries are almost totally dependent upon public funding and therefore public goodwill, the views of non-users would be significant. Interestingly, though, those who did consult non-users produced findings as positive as those who did not” (Debono, 2002, p. 87).

The positive social impact revealed in all of the studies Debono (2002) reviewed was consistent and ”obtained from various projects, in various nations, across different research populations, using a range of methodologies. However with only a handful of variously designed studies completed and the focus on benefits only in some of the research projects reviewed, more impartially designed studies may be needed before concluding that such glowing reports are irrefutable” (Debono, 2002, p. 92). As one area for future research she recommends categorizing of the social impact listed above into more specific and precise areas. Several of the findings of social impact reported were interpreted as benefits derived from public library services that previously were hidden or not made explicit. Systematic research to capture the social contribution flowing from public libraries into these areas could provide well founded evidence of the social significance of public libraries and be of interest in the policy making arena, she concludes.

A similar need for systematic research was recognized by the central library authorities and the public library movement in the UK, and a Value and Impact Research Programme[0] was launched. Through this and subsequent programmes, research and development projects exploring and assessing the value and impact of a wide range of public library services and activities have been supported, ranging from the value and impact of the public library on educational disadvantage (Proctor and Bartle, 2002), social exclusion (Muddiman, Durrani, Dutch, Linley, Pateman and Vincent, 2000), virtual outreach services, and book reading

[0] The Value and Impact Research Programme started out as part of the British Library’s Research and Innovation Centre and moved to the Library and Information Commission (LIC) when the research function was transferred. In 2000, LIC and the Museums & Galleries Commission were substituted by *Resource: the Council for Museums, Archives and Libraries,* a non-departmental public body sponsored by the Departement for Culture, Media and Sport. Resource continues the task of impact evaluation of museums, archives and libraries with the aim to demonstrate the long term impact of these institutions on society and the economy (Resource, [2001b]).

(Toyne and Usherwood, 2001) to IT access and end-user services in libraries (Brohy, Fisher and Clarke, 2000; Eve and Brophy, 2001), and public libraries' role in digital citizenship (Department for Culture, Media and Sport, 2003).

Some of these studies will be briefly reviewed below, focusing of the types of impact of public libraries they demonstrate. Keeping this focus we will first, however, refer to two previous studies. Matarasso (1998), a researcher in the Comedia group, assesses the extent to which library community initiatives produce social benefits. 18 library projects in the UK is the backbone of the study, which is based on interviews and discussions with people involved in each project, supported by extensive documentary research. The study concludes that special library initiatives and outreach work have a real and valuable role to play in community development. Such projects were shown to have a wide range of impact on individuals and communities. Drawing on experiences and techniques developed for another Comedia study of the social impact of the arts (Matarasso, 1997), he identified six broad areas related to public libraries (Matarasso, 1998, p. 4):

- personal development
- social cohesion
- community empowerment
- local culture and identity
- imagination and creativity
- health and well-being.

Linley and Usherwood (1998) showed impact largely in line with these broad areas. They used a social process audit to evaluate the social impact of the public libraries in an English city and a county, as case studies locations. Their research sought to "analyse the goals (aims), inputs (resources), outputs (the programme or service) and outcomes (actual experience) of the public library and information service" (Linley and Usherwood, 1998, p. 6). Data were collected from a variety of sources including qualitative interviews, focus groups, and documents. The authors found that the recognized and established functions of the public library in terms of culture, education, reading and literacy, leisure, and information remain important. In addition, they identified social and caring roles, showing that public libraries can help individuals overcome social isolation and loneliness and 'get started' and 'keep going' by a wide range of activities. Public libraries were shown to strengthen community identity and promote social cohesion and community confidence by fostering connections between groups

and communities. In a recent reference to this same study, Usherwood (2002, p. 118) summarizes: "… we accumulated a large amount of rich evidence, about the role of the public library, and its impact on communities. Evidence that can, and has been, used to demonstrate the value of the public libraries in terms of:

- the social role of the library;
- community ownership;
- the educational role of the library;
- the economic impact of the library;
- reading and literacy;
- developing confidence in individuals and communities;
- equity in service delivery".

Again, as when comparing the specified types of impact identified by Kerslake and Kinnel (1997) and Debono (2002) above, we find a high degree of coalescence but not identity between the broad areas of impact of public libraries explored by Matarasso (1998) and by Linley and Usherwood (1998).

Continuing now to brief reviews of some of the studies under the British Value and Impact Research Programme, we start with Toyne and Usherwood (2001). They evaluate "the value and impact of public library book reading by examining the outcomes of this activity" (Toyne and Usherwood, 2001, p. 4), as perceived by four key groups of stakeholders: elected members, library staff, arts and cultural workers, and groups of library users and non-users. By combining qualitative methodological approaches developed in mass media research (use and gratifications techniques) and literature and reading studies (reader-response) with social audit work developed in LIS by Linley and Usherwood (1998), they provide new evidence on the impact of imaginative literature on individuals and groups in society and on the impact of the public library in providing a reading experience. The public library's work in reader development and fiction promotion was shown to be crucial. When the four stakeholder groups were asked how they would explain the value of the public library and book reading to their local councillor, Toyne and Userwood (2001, pp. 130-131) point out that their answers reflect the same broad themes that Matarasso (1998) identified in his work on the social impact of public libraries, with the addition of economic impact.

This is a very interesting observation. Intuitively one would assume that impact from reading of fiction was essentially different from impact of reading as part of formal study or work, the first being experienced as relaxation or recreation and the latter as an instrument to mastering a work task or achieving a study aim. Some of the specific types of impact do have different appearances. When addressing the question of what motivates adults to invest time in reading of imaginative literature, the researchers sum up the motives as escapism (a need to escape the day-to-day life experience and pressures of living in the twenty-first century), relaxation (release from daily pressures), and the opportunity to abandon the here and now (distraction from boredom and monotony, escape from loneliness). In addition to these motives, most readers reflected on how fiction contributed to their learning and knowledge. Reading of imaginative literature ”was shown to be instrumental in bringing instruction in two ways. The first was in relation to development of practical knowledge; and the second was in relation to self-development and personal identity” (Toyne and Usherwood, 2001, p. 36). Practical skills attributed to reading of fiction included literacy skills, learning about other cultures and customs, and providing ”a greater understanding of situations, events, or emotions than can be understood by facts alone” (Toyne and Usherwood, p. 40). In relation to self-development, heightened personal insight and insight into the ’other’ were found as benefits from reading imaginative literature. These benefits accruing from reading of fiction can be categorized under some of the broad themes identified by Matarasso (1998) referred to above, e.g., personal development, imagination and creativity, and health and well-being.

Benefits accruing from the role of the public library in the reading experience were shown to include equity of access by presenting everybody with an opportunity to participate without costs; the range of the library collection allowing the readers to browse, experiment and take risks with their reading; and the library as a place the readers feel has a sense of home or belonging and as an institution bringing social cohesion to the local community. ”[F]ree access to reading material is the greatest impact of the public library. This was seen as being crucial in initiating and maintaining an individual’s reading experience. Also, the concept of borrowing was seen to offer a broad spectrum of advantages to the reader and to society in general” (Toyne and Usherwood, 2001, p. 81). These benefits can be categorized into other of the broad themes identified by Matarasso (1998), e.g., social cohesion, community empowerment, local culture and identity, and economic impact.

Thus, when categorized from their specific impact into broader themes, the value and impact of reading imaginative literature are shown to be of the same types of impact as from other library activities – whether they are specifically targeted, such as various library community initiatives, or general, aimed at meeting needs for learning, information, culture, or leisure time reading.

Eve and Brophy's (2001) final report of the VITAL (Value and Impact of IT Access in Libraries) research project, investigated the end-user IT services including access to the Internet, World Wide Web, email, word processing, etc. The project's core aim was to develop "a methodology which could be used by public libraries in the UK to gain insights into the value which users place on in-library IT access and the impact on them of that access" (Eve and Brophy, 2001, p. iii). By combining both qualitative and quantitative methods and testing their methodology in three case studies, the researchers were able to gather direct indicative evidence of impact of IT use in public libraries. The conclusion was that, overall, the provision of end-user IT-based services in public libraries has positive impact on the communities and the individuals by supporting a range of activities "from formal study to job seeking to building and maintaining social networks using the Internet" (Eve and Brophy, p. 39). These benefits fit in under the heading of social impact discussed above.

Muddiman et al. (2000) study public libraries and their capacity to tackle social exclusion and suggest how they may contribute towards developing a more inclusive society in the UK. The comprehensive study applies a diverse and multidimensional approach to research design and applies triangulation. Social exclusion can be conceptualized as the result for an individual of not being able to engage in economic, social or political life. The widening digital divide between the information have and have-nots illustrates how "new forms of exclusion are emerging and becoming sharpened within the context of the 'information' society" (Muddiman et al. 2000, p. 6). There is a significant overlap between social exclusion and poverty, and social exclusion has implications for both the economy and for social stability. Public libraries have been identified as a means of helping to narrow the digital divide, but to update their technological base will not be enough, the researchers underscore. To fulfil their potential and make a real impact on social inclusion, public libraries must be proactive and interventionist and target their services on excluded and marginalized social groups and communities. Diminishing of social exclusion has impact on all of the broad themes identified by Matarasso (1998).

The purpose of the study of Proctor and Bartle (2001, p. 7) was to ”provide evidence for policy makers and practitioners to demonstrate the actual and potential value and impact of public libraries on those adult learners leaving school without recognised qualifications (’low achievers’)”. Low achievers are more likely to be unemployed and to suffer from multiple deprivation, and educational disadvantage is costly both to the individual and society. The researchers combined quantitative data from questionnaire surveys and qualitative data from interviews. Results from the study suggest that public libraries are reaching low achievers in disadvantaged communities, but many of them use the public library services predominantly for leisure and not as a learning environment. ”Many low achievers associated learning with negative feelings and did not connect the pleasure of visiting a public library with learning” (Proctor and Bartle, p. 8). However, browsing the library shelves was shown to often have sparked an interest in a subject and this, in turn, could lead to more purposive study, thus encouraging users back into learning. The study focuses on the impact of the public library as an educational resource supporting both formal and independent learners and groups whose participation in learning is low. It is shown that the public library clearly influences people to return to learning. Public libraries’ activities to encourage as many as possible to become lifelong learners have economic impact both on the individual and society. Becoming a ’learner’ can help improve quality of life, improve self-confidence, communication skills, etc. These benefits can be categorized under some of the broad areas identified by Matarasso (1998), e.g., personal development, social cohesion, and health and well-being.

We have now briefly presented examples of studies showing impact of public libraries, from assessing the social impact of public libraries as a whole, of their wide range of activities (Linley and Usherwood, 1998), to assessing impact of different aspects of the public library’s activities – community projects (Matarasso, 1998), IT access (Eve and Brophy, 2001), and reading (Toyne and Usherwood, 2001), and to assessing the impact of the public library on special groups – social excluded (Muddiman et al., 2000) and low achievers (Proctor and Bartle, 2001). A rich picture of specific and differentiated benefits of public libraries’ various services and activities that make impact is shown in this literature. There is, however, a striking similarity when these benefits are categorized into broader themes, whether the focus of the individual study is social impact, impact of reading of imaginative literature, in-library IT-use, social exclusion, or learning. It seems that the various types of impact from the wide

range of activities all originate from the cultural, educational, and informational roles of public libraries. The diverse types of impact can all be categorized within the broad areas encompassing their social impact, when defined as widely as by Matarasso (1998) and Toyne and Usherwood (2001) above. The social impact of public libraries, in this sense, is the results of the wide range of public library services and activities that reflects the generally accepted purpose of the public library, namely to further democracy, equality and social justice, increase access to information, disseminate culture and knowledge, contribute to a meaningful and informative leisure time, and being a communal institution and a social meeting place.[0]

We will now look into the theoretical and methodological approaches used in the studies reviewed in this chapter. Skot-Hansen (2001) focuses on the civil society in the theoretical context of Gidden's (1998) third way, when analysing the public library's position between the forces of the state, market, and civil society. Vestheim's (1997) discussion of the dilemma between a value-based and instrumental justification of public libraries has Habermas' analysis of democracy and 'undistorted dialogue' as its theoretical context. Birdsall (1994, 2001) takes up this subject of discourse also. Audunson's (2001) study is based on institutional theory and his survey results suggest a support of the value-based justification of public libraries. The value-based justification is given weight by all of these authors and their analyses imply that this is the most important justification for the public library.

The Scandinavian studies in subsection 2.1 are mainly theoretical contributions explicitly discussing their theoretical basis. The studies reviewed in subsection 2.2 are mainly empirical contributions exploring the diverse impact of public libraries based on a broad methodological basis. Their theoretical approaches are implicitly found, most of them appearing to be based on holistic approaches that study human behaviour from a total situation perspective including the (un)employment, family, and social context. Social inclusion and empowerment by developing confidence and skills in individuals and communities seem to be central concepts. The empirical studies display a wide range of public library impact – some of immediate value for the individual, others of long-term value for the community; some of instrumentally usefulness, others of intrinsic democratic or cultural value. While demonstrating broad areas of impact, including impact of important instrumental value, this empirical research appears to support the view that the value-based justification of the public library is essential.

[0] See paper 1 for a further discussion.

For studies aiming to identify different types of impact and to capture the value-based qualities of public libraries, approaches based on qualitative methods seem well suited. Most of the studies reviewed apply one or more qualitative methods, often combined with use of quantitative techniques, and several studies apply triangulation. This research elicits fundamental qualities of the community role of public libraries and their value and impact, thus contributing to a qualified discussion of the challenges for the public libraries and their role in the new, digitized society.

My project aims to supplement the LIS research that elicits the overall role and impact of the public library. In addition to the qualitative approaches used in previous studies, there is a need for measurement of the value and impact of public libraries. This project attempts to quantify the value of the Norwegian public libraries. The starting point is economic value and the need to express public libraries' value in monetary terms due to the continuing economic pressure on public budgets.

The research tradition and methodologies of economics is based on methodological individualism, which sees social institutions, e.g., public libraries, and social change as the result of the action and interaction of rational individuals (Elster, 1989). As approaches of philosophy of science there is a methodological contradiction between holistic approaches and methodological individualism. There is, based on the contradiction of positivism and non-positivism, a sharp conflict of philosophy of science between the instrumental and value-based justification of public libraries. However, in LIS viewed as a practice-oriented field of research, both these approaches of philosophy of science may be necessary. Empirical studies have demonstrated that the public library service is a source of instrumental as well as intrinsic democratic and cultural value. The whole truth of the complex public library value does not seem to be captured by just one approach. Analogous to how qualitative and quantitative methods can complement each other in one concrete project, methodological individualism and holism may complement each other as theoretical approaches contributing to the LIS field of research, thus possibly attaining a richer understanding of public library value. My contribution is attempting to estimate the value of public libraries in monetary terms, by applying a quantitative method developed in economics.

3. A strategy for valuation of public libraries – the research design

The variety of the public library impact shown in the LIS research reviewed above demonstrates a fundamental characteristic of public libraries, namely their complexity. In contrast to other public institutions such as schools or hospitals that produce educational and health care services respectively, public libraries, although they are mainly small institutions, provide a wide range of services directed towards very different spheres of life – *towards* children and adults, local businesses, services to disabled or elderly people, the educational sector from kindergartens to universities, etc.; *for* leisure time activities, personal cultivation, development of personal and civic skills; *by being* a cultural and social meeting place, a public room, a place for studying and contemplation, etc. It follows that the results or outcomes of public library services are not easily defined and characterized. Services provided by schools can to a certain degree reasonably be measured by the number of pupils graduated, the proportion of high and low marks, etc., and hospital services by the number of illnesses cured, surgical operations successfully performed, etc. One typical library service is booklending, but the number of books lent does not give a satisfactory account of the value of these services. It neither tells us whether the purpose of the borrowed book is to solve an information problem, give a valuable reader experience, provide background information for a school essay, give insight in a difficult life situation, etc., nor whether or not the borrowed book was a help.

The public library is engaged in most of the municipality's activities, as a complementary resource (Audunson, 2000). The public library supplements formal and informal education at all levels, while the school system possesses the primary educational competence; the public library contributes to social integration of foreign language speakers by offering literature in their mother tongue and especially adapted information about the local community and new society, while the immigration authorities possess the primary competence; etc. In this way public libraries make an impact in several main areas of public life, such as the educational, social, cultural, information, and economic sectors. The local public library is a community institution which provides access to its collections and facilities, including study space and internet connection, reference services, community information, high quality literature, leisure time reading, and cultural arrangements. Public library tasks are to promote literature, culture, and education, facilitate information seeking, and establish a public room and a meeting place

for social and value-based debate in the local community. Such a complex institution needs to be studied from several perspectives, and in determining the value of public libraries their cultural, educational, social, political, and economic dimensions are of great importance.

This dissertation focuses on economic value – on the value of public libraries in monetary terms, i.e., on the value of public libraries' benefits and social impact in the wide sense discussed in the previous section. The term 'economic value' will be discussed and defined below. The purpose of the dissertation is to provide a better understanding of public libraries' total value, both their use and non-use values, as viewed by the population. In contrast to assessing the value of different *aspects* of public library services, the aim is to try to reach an estimate of the value of the public library *as a whole* and as an entity comprising all its competence, facilities and services,[0] as this value is assessed by the citizens. A change in the level of library services or activities, for better or worse, is not the main concern in my project. In this context, it is neither of primarily interest to estimate of the value of individual services or single public library units or branches. The main goal is to elicit how the population values their local public library at its present activity level. The local library is in here defined as the public library in the municipality where the citizen lives, and it typically includes a main library and one or more branches.[0]

This research goal can be reached by surveying a representative sample of the citizens, including both library users and non-users, and aggregate the individual preferences to a social preference.[0] This aggregated estimate is here defined as the *social value of public libraries*,

[0] *Competence* is represented by professional media collections, internet portals, literature mediating, search assistance, etc. *Facilities* include reading space, PCs, working areas, copy machine access, cafeteria, etc. *Services* include the the whole range of offers from the library and its staff, from giving guidance at the reference desk or other services inside the library premises to make special arrangements for children (fairy tales reading) or adults (author visits) to providing outreach services towards elderly and disabled persons and towards kindergartens, youth associations, etc.

[0] The Norwegian public library system comprises local public libraries which are a municipal responsibility, county libraries which are a county responsibility, and the central library and advisory services which are a national government responsibility. It is the first part of the public library system that is the focus of this dissertation.

[0] In welfare economics, social welfare functions are derived from aggregating individual utility functions. The social welfare functions differ by the principles chosen for the aggregation (Varian, 1999). For an outline of different schools of welfare economics and a discussion of how the interpretation of the welfare economic foundation has consequences for applied cost-benefit analyses, see Halvorsen (1997, pp. 15-36).

expressed in monetary terms in accordance with use of the term in welfare economics. This social value includes the social impact of public libraries, as it is widely defined in the previous section and as the individual citizen assesses it. Note that this definition implies a litimation, since value is based upon citizens' valuation only. There are areas of public library value and impact that the general public may not easily see, for instance a long-term impact of the local library on community identity. Another evaluating area is how the local library fulfils its obligations according to the Public Library Act and programme statements from the authorities. To value such components of the public library service, experts[0] and politicians may be better judges than the general population.

The studies reviewed above assess public libraries' social impact but do not give estimates of the values in monetary terms. The term 'assessment' is thus used in different ways in the LIS literature. Debono (2002) and Kerslake and Kinnell (1997) seem to understand 'assessment' as synonymous with 'evaluation' or 'estimating or judging the value or character of' public libraries, without any reference to monetary terms (Webster, 1996). In economics, the term assessment is usually understood as estimating or determining the monetary value of a good, here the public library. This latter understanding is also being applied in the LIS literature, although there are definitely fewer studies exploring public libraries' monetary value (Van House, 1983; Griffiths and King, 1994; Sawyer, 1996; Holt et al., 1999; Morris et al., 2001; Fraser et al., 2002). It is in the latter sense the term assessment is used in this dissertation. Correspondingly, the term valuation is here defined as the act of setting a monetary value on public libraries.

The economic situation in the public sector continues to be restrained and the controversy of how to prioritize public funds hardens. In this situation it seems necessary to be able to determine the value of public libraries in monetary terms. My dissertation is motivated by the need to demonstrate public libraries' economic importance in a time where the economic pressure is increasing. In order to be able to estimate the value of public libraries in monetary terms, it was relevant to turn to methodologies developed in economics.

[0] The term 'expert' is in this thesis used in a wide sense, indicating a person with more than general knowledge of the actual subject, whether this knowledge is professional or acquired elsewhere.

3.1 Welfare economic foundations of library valuation

Economic value, ”which is not synonymous with financial or commercial value, although it is ultimately expressible in terms of either a numeraire good or (preferably) money – comprises any direct use value of the cultural good or service in question, plus whatever non-market values it may give rise to,” states David Throsby (2003, p. 279), nestor of the cultural economics research area. It is the economic value of public libraries in this sense that my dissertation seeks to explore.

This economic concept of value has its foundation in the theory of modern welfare economics. Welfare economics is based on the premise that the purpose of economic activity is to increase the well-being of the individuals who make up the society and that each individual is the best judge of how well off she is in a given situation (Freeman, 1993, p. 6).

Consumer sovereignty is founded on methodological individualism and can be defined as the ”principle that the individuals are the best judges of what is in their own interest, and that their preferences should be respected” (Stiglitz, 1993, p. 191). Consumer sovereignty ”is not a goal that competes with other primary goals of economic policy, but rather is a core value that underlies the most important economic policy goals in liberal or social democracies” (Penz, 1986, p. 12). Critics of the principle of consumer sovereignty point to the danger of individuals being manipulated by producers’ and sellers’ marketing and advertising campaigns into developing preferences for goods and services they do not need, and also of individuals’ lack of sufficient information or knowledge of long-term impacts or consequences of other consumer choices.

The concept of economic value is related to choice.

> ”To economists, the term ’value’ has a very specific meaning. The most important but often overlooked feature of economic value is that it is a theoretical construct and that monetary measures of economic value are inferred (constructed) by analysts from the choices that individuals make. Economic value cannot exist independent of a choice. … A choice implies that an individual is confronted with a selection of alternatives and the consideration of the alternatives by the individual defines a tradeoff (Kopp and Pease, 1997, p. 8).

Each individual's welfare depends on that individual's preferred consumption of private, public and other non-market goods and services, including public library services. Consumption is here understood in a wide sense. An individual may have preferences over 'states of the world' (Schwarz and Kopp, 1997, p. 3) widely defined to include public goods, government programmes, political policies, and intangibles, in addition to private goods and services.[0] Some individuals may consider important for their welfare all of these world states, others only a few. Individuals are different and so is their conception of what it is that contributes to their utility or welfare. In his Nobel lecture, Gary Becker assumed "that individuals maximize welfare *as they conceive it*, whether they be selfish, altruistic, loyal, spiteful, or masochistic" (Becker, 1993, p. 386. [Original emphasis]).

Recent research in LIS has shown that individuals find public libraries valuable for a variety of reasons, including both personal benefits and benefits accruing to others and the community, and because of their immediate as well as long-term impact (Holt et al., 1999; Höglund, 1999; Audunson, 2001).[0] Individuals' general considerations of 'states of the world' and specific considerations of public library value will differ according to how important they find the different aspects to be for their welfare. They make choices and trade-offs in conformity with their preferences. However, some of these considerations, and then ultimately the valuation, may differ also due to how well informed the individuals are of the full range of the public library's activities and of their short and long-term impact. If individuals' choices are based on inferior information, biases may occur. The issue of sufficient information about the good to be valued and the choice to be made must be considered carefully when designing an empirical study to elicit respondents' preferences for public libraries, and is further discussed in section 6 below.

Standard economic theory thus assumes that people have well-defined preferences among alternative bundles of goods, comprising both market and non-market goods. It also assumes that people know their preferences, and that these preferences have the property of substitutability among the market and non-market goods making up the bundles.

> "By substitutability economists mean that if the quantity of one element in an individual's bundle is reduced, it is possible to increase the quantity of some other

[0] See paper 2 for a further discussion.

[0] See paper 3 for a further elaboration.

> element so as to leave the individual no worse off because of the change. In other words, the increase in the quantity of the second element substitutes for the decrease in the first element. The property of substitutability is at the core of the economist's concepts of value because substitutability establishes trade-off ratios between pairs of goods that matter to people.
>
> The trade-offs that people make as they choose less of one good and substitute more of another good reveal something about the values people place on these goods. …
>
> The value measures based on substitutability can be expressed either in terms of willingness to pay (WTP) or willingness to accept compensation" (WTA), (Freeman, 1993, p. 7).

WTP and WTA are the fundamental monetary measures of value in economics, and our estimate of the social value of public libraries is based upon these measures (see paper 4).

Benefit-cost analysis

An overall aim of this dissertation has been to explore whether it is possible to determine the economic value of public libraries, i.e., the value of the local library seen as a whole by the individual citizen and expressed in monetary terms. One objective is to determine if public libraries have positive and social value, if the gains or benefits from libraries outweigh their costs. We must here bear in mind that the empirical study included in the thesis is based on citizens' valuation. Expert views of the value and impact of public libraries and political aims and visions for their activities formulated by the authorities are here not considered.

Policy choices about cultural and educational institutions, such as public libraries, are made in a political context. Decision-makers generally have objectives besides economic efficiency and net economic value, e.g., considerations for cultural and civic development, distributional effects and equity considerations, and intergenerational effects. However, benefit and cost estimates provide important information for decision-makers to be considered in their process of deciding on public library activity level. The restricted economic situation in the municipalities causes local authorities to propose cuts in the funding of public services, including public library services. To ascertain the net effect of such a proposed policy change on social well-being, a way of measuring the gains and losses of this change must be found. A central principle of benefit-cost analysis is that "the effects of a policy change on society are

no more or no less that the aggregate of the effects on the individuals who comprise society" (Portney, 1993, p. 3). This suggests that society should make changes in library allocations only if the results are worth more in terms of individuals' welfare than what is given up by diverting resources and inputs from other uses (Freeman, 1993, p. 7).

My project seeks to find ways to estimate the value of public libraries from the population's perspective and compare the value of their benefits to the citizens with the costs of providing them, and thus see if they have a net value. This will establish whether or not the population finds the public libraries worth their price.

3.2 Economic approaches to valuing public libraries

Economic analysis in most cases relies on market prices as a first approximation to relative values. Since library services are not exchanged in markets as private goods and have no market prices, that approach is inoperable here (Goddard, 1971). Information on demand and benefits must instead be obtained through methods for valuing non-market goods, developed in economics for application to the environmental, health, education, and cultural sectors. Approaches for valuing non-market goods make it possible to achieve estimates of how the citizens value such goods. By being able to monetize the non-market benefits of public libraries, these benefits can be balanced against the costs.

Methods for valuation of non-market goods can be grouped in different ways. In table 1, the methods are grouped according to two dimensions: i) direct versus indirect, and ii) explicit versus implicit. By *direct* methods value is elicited or found directly, through questioning of samples or representatives of individuals. Direct methods are called stated preferences (SP) approaches. By contrast *indirect* methods rely on observations of behaviour in markets, from which value can be inferred via economic models explaining the relationship between the respective behaviour and the value of the non-market goods, here public libraries. Indirect methods are called revealed preferences (RP) approaches. By *explicit* methods is here meant that the values are elicited from the individuals (or from representative samples of such individuals) who are affected by the good to be valued. By *implicit* methods these values are

not elicited directly from the affected individuals, but from others with a role to represent them, e.g., government officials, experts, or political bodies (legislative and administrative).

Table 1: Main grouping of methods for valuation of non-market goods

	Stated preference approaches	**Revealed preference approaches**
	Direct methods	**Indirect methods**
Explicit methods	*Contingent valuation* Referenda *Choice methods*, simulated markets	*Household production methods* (travel costs, time allocation, averting behaviour, etc.) *Hedonic price methods* (property prices, hedonic wages)
Implicit methods	*Expert decision panel methods* Expert opinion Opinion of political representatives	Implicit valuation from political processes

Below we will present two RP approaches that are indirect but explicit, namely the household production methods and hedonic price methods. Of the SP approaches we will present expert panel methods (EDP) which are implicit but direct and choice methods (CM) and contingent valuation (CV) which both are direct and explicit. These methods are italicized in table 1. Both RP and SP methods stem from common roots in applied welfare economics, and a basic premise for both is that individuals make welfare-optimizing consumption decisions.

3.2.1 Revealed preference methods

Two indirect and explicit methods based on revealed preferences (RP) are of particular interest for valuation of public library services. The first is based on *household production function methods* and involves investigating changes in the consumption of market commodities that are substitutes or complements for the non-market good to be valued (Braden and Kolstad, 1991, p. 9). One such approach is the *travel cost method*. Individuals' costs of travelling to the public library, the cost of the time they use in the library, and the frequencies of library visits can be used to derive a measure of their willingness to pay for the

library. Some researchers have used *time allocation theory* where the cost of library use is equated by the opportunity cost of the user's time, i.e., the other uses to which that time could be put, usually measured by the wage rate (Meier, 1961; Getz, 1980; Van House, 1983; Griffiths and King, 1994). Van House (1983, p. 368) developed "a time allocation model of library use that relates use to the cost of the time that it requires. It shows how the cost of filling an information need depends on the user's wage rate; his or her ability to use the library; the purposes for which the information is sought; and the library's own policies and procedures." She classified user library-related time into three types: queue, use, and delay time, where use time was found to be of particular interest. The relationship between the cost of library use and individual characteristics was found to be complex, but some general observations were made. The cost of library use is a direct function of the time required, implying that libraries can increase use by making it easier and more convenient. Evaluating cost and effectiveness of various library services should include the cost of the library user as well as the library itself, the first by time needed, recognizing that time and money is a trade-off for the user.

Pros et cons of the household production function approaches are briefly summarized by Braden and Kolstad (1991, p. 10. [Emphasis added]):

> "The household production function method is important and valuable because it brings preferences for non-market goods and services into the arena of observable market relationships. In this method actual behavior serves as the basis of valuation, thus familiar types of data and analysis can be employed. However, these virtues are not unencumbered. *The household production function method is limited to use values*. Values that do not entail direct consumption cannot be estimated by looking at complements or substitutes."

Hedonic price analysis is the second indirect and explicit method based on revealed preferences of possible interest for valuing public libraries. The method involves estimating an implicit price for an attribute of a market commodity, most often real property. For example, a good neighbourhood with close proximity to high-quality schools, libraries, and other cultural amenities are purchased along with the house or flat. Part of the variation in property prices is due to differences in such amenities. This method is used in environmental economics, where noise and pollution from heavy traffic or factories, closeness to parks and nature, etc. are easily seen to have an impact on property prices. The hedonic method have the

same main advantage as the household production function method – that is, the use of observed market behaviour. This avoids confusion between what consumers intend and what they really do, because only actual transactions are investigated (Braden and Kolstad, 1991). A limitation of the method is that it cannot measure non-use values. Moreover, it is assumed that a change in the attribute is to be fully absorbed in the price or quantity of the weak complement, and this is a very strong assumption.

To my knowledge, hedonic approaches have so far not been used for valuation of public libraries. This may be due to several factors. Although the benefit of having a short distance to the local public library may be recognized by house buyers, this factor is not likely to be a major issue when people are considering buying a new house or flat. In addition, the method measures use values only, which is a serious drawback regarding public libraries.

3.2.2 Stated preference methods

Approaches based on stated preferences (SP) include hypothetical methods for direct valuation, some being explicit but others are implicit. Quantity and price dimensions and compensated demands can be investigated directly, and there is no need to rely on consumption of complements or substitutes or indirect pricing. Moreover, SP methods have the ability to capture both use and non-use values.

Expert decision panels

Expert decision panels (EDPs) is a procedure based on multi-attribute utility theory (Halvorsen, Strand, Sælensminde and Wenstøp, 1997). It is a direct but implicit method. EDPs consist of groups of persons who are selected and asked to act as decision-makers on behalf of the population, in a real or constructed decision problem. For valuing public libraries EDPs could be composed of persons from local community authorities, local schools and kindergartens, cultural institutions, civic organisations, library authorities, and federal and national authorities. The panel members' task would be to judge what society should be willing to pay for public libraries. An expert panel may play three alternative roles, the role of a politician, a citizen, or a stakeholder. In the role of a politician, the expert panel is asked to interpret and represent the wishes of the population as a whole. In the role of a citizen, the expert panel represents the members of panel themselves, who express their own personal preferences and values, but are guided by insights obtained through their professional work. In

the role of stakeholder, the panel represents an organisation with particular viewpoints on the decisions issue, for instance a reading circle, parents' group, or kindergarten or another professional organisation with demands for public library services.

The decision problem is presented for the panel members and the good to be valued is introduced by its different attributes. The EDPs are asked to weigh the attributes in pairwise comparisons, to tentatively rank different policies. The members of each EDP continue the discussion until they arrive at a single and consistent set of ranking and a 'corrected' set of weights attributed to different criteria. This is achieved through several feedback processes.

This method has so far been most used in the arena of management. It does not have a strong position within economics. The underlying philosophy is that the opinions of *leaders* (in businesses or governmental institutions) are most important. The objective is to elicit all possible aspects of a decision question before the leader takes the decision.

We will now look into two SP approaches that are both direct and explicit, namely choice methods (CM) and the contingent valuation (CV) method. These approaches rely on questionnaires or experiments to elicit preferences. SP methods of valuation involve finding an individual's WTP or WTA for a non-market good by posing a set of questions regarding preferences directly to the individual. They have the advantage of being direct elicitation methods, thus circumventing the need for an indirect diversion of the value of a non-market good. However, they confront severe difficulties in implementation, due to their reliance on expressed intent and hypothetical and not real behaviour (Braden and Kolstad, 1991). The fundamental question may be stated, as proposed by Azevedo, Herriges, and Kling (2003, p. 525): "[C]an carefully designed survey methods provide informative data on consumers' willingness to pay for public goods, or does the hypothetical nature of these instruments render them irrelevant, regardless of how much attention is given to truth-revealing mechanisms in their construction?"

When implementing SP methods, a main objective is to bring respondents' intentions as closely as possible in line with their probable actions. Careful considerations are necessary in designing these hypothetical markets and are examined in the literature. The discussion

focuses on three problems which are common to the design of all constructed markets (Carson, 1991):

1) Structuring the rules of the market in which the good is to be valued.
2) Describing the good to be valued.
3) Eliciting values or indicators of value in that market.

Choice methods

Choice methods (CM) are based on a SP research technique used to measure choice trade-offs when individuals are confronted with several alternative choices (Halvorsen et al., 1997). In a real market, individuals make choices based not on a single attribute but on a range of features or attributes of the good. The CM technique assumes that a good can be represented by or 'broken down' into some of its component attributes. These attributes are then presented for the respondent in a hypothetical market. For application of CM to value public libraries, the library service can be described through a set of attributes, for instance through different library services, outcomes, or impact as discussed in subsection 2.2. A representative sample of individuals can be drawn from the population and asked to rank or rate combinations of, typically, two attributes. Different sequences of such pairwise choices, called games, can be made for each respondent. This procedure makes is possible to construct the preferences over all attributes of the good for each respondent. Provided that one of the attributes has a monetary value attached to it, one can obtain an estimate of the individual valuation for each of the attributes that describe the good.

A strength of this method is that the respondents are given concrete choices. It is therefore easy to identify the different elements of the valuation. Another strength is the method's thoroughness. The respondents make choices in different sequences and this helps making the preferences consistent. A weakness of the method is that the paying vehicle is indirect, so that the value is derived by the researchers and not stated directly by the respondent.

Most CM studies have so far been applied to market research and transportation issues. The method has also been applied to predict preferences for environmental goods and financial services. For valuing public libraries, conjoint analysis which is a choice method, was applied as one of several methods when the Association for Information Management in the UK reviewed the public library service in England and Wales (Aslib, 1995), referred to in paper 1.

The contingent valuation method

The contingent valuation (CV) method is a direct and explicit method using surveys to value public goods. Thorough introductions to the method are given by Mitchell and Carson (1989), Braden and Kolstad (1991), Freeman (1993), and Kopp, Pommerehne, and Schwarz (1997). The technique draws upon both economic theory and methods of survey research to elicit directly from consumers the values they place upon public goods. Its theoretical foundation is microeconomics. The method is based on the individual's own assessment of the good to be valued and is consistent with the foundation of welfare economics – the principle of consumer sovereignty. The technique is aimed at eliciting people's willingness to pay in money amount for a change in the provision of a non-market good. The CV method is by far the most used of the SP approaches and will be discussed in subsection 3.4 below.

3.3 Studies estimating the economic value of public libraries

The economic value of public libraries can be studied from different angles and a few studies in LIS investigate the value of public library in monetary terms. Morris et al. (2001) aim to provide a better understanding of the value of public library and information services in economic terms. Their study focuses on the economic value to the user and on the use of economic concepts in library management. They find that a unique feature of the library is its ability to acquire and make available those intellectual resources that are best held collectively rather than by individuals. The public library thus possesses a duality, being both a business and a public service, and the benefit to the user is both as a customer of a rental business and as a recipient of services which would not be viable commercially but yield public good and merit benefits. The central objective of the study is to find a way or ways of assessing the economic impact of the public library service; its value to the user and society. They apply analysis from economics, but in contrast to this dissertation, they do not consider approaches to valuation of non-market goods. They develop an economic model assessing levels of benefit in the lending operation, comparing the economics of reading books borrowed from the library with books owned privately. In addition, the study gives a tentative estimate of the total value of the UK public library service in monetary terms, by adding up value assessments of book lending, inter-library loans, audio-visual material, information, and other services. The authors note that the total estimate is very sensitive to the average values of the different

service elements, and conclude as follows: ”Speculative estimates of the total value of the UK public library service (neither the methodology nor the data are as yet developed to the stage where these can be used with conviction) suggest that in terms of value to individuals, public libraries produce over 12.7% more value than they cost. This is before the external benefits to society are taken into account” (Morris et al., 2001, p. viii, pp. 323-328).

Griffiths and King (1994) develop a framework for assessing libraries’ value and worth in monetary terms. They address four basic perspectives: i) library services, ii) users, iii) the users’ community (i.e., the municipality for public libraries), and iv) the nation or all of society. They use the measures input, output, usage, outcomes, and domain but stress the importance of relationships among the measures. Impact is one of the useful relationships, defined as ”the relationship of service usage and outcomes (e.g. cost to use service versus savings achieved, or service cost per use versus any of the outcomes)” (Griffiths and King, 1994, p. 82). The value is understood as the ’price’ users pay by for library services by the time required to go to and to use the library. By utilizing statistics from 31 public libraries in the US, e.g., time per use (0.9 hours per use), average number of use (4.5 visits per capita per year), and average cost per use ($4.20) they estimate the value of public library services. In addition they attempt ”to provide evidence of their worth – or the value derived – in terms of outcomes or consequences of their use” (Griffiths and King, p. 82). They show that impact of public library use help achieve community goals by improving quality of life, supporting lifelong learning needs, and supporting the community’s economy. We note that these benefits fit in under the broad themes of social impact, defined by Matarasso (1998) and Linley and Usherwood (1998).

Griffiths and King (1994) support their findings with figures from US library statistics, showing the frequency per year at a national scale of public library use for different purposes. To demonstrate that public libraries are helpful in improving the citizens’ quality of life, they display the numbers of times per capita the libraries are visited for different purposes, e.g., for general recreational reading, day-to-day problem solving, addressing a crisis or personal/family need, hobbies or self-help activities. In addition they point to the public libraries’ special equipment and facilities for persons who are hearing, visually, or physically impaired and to the libraries’ outreach programmes. Public libraries' support to lifelong learning needs is shown by the average number of times per user that involve pre-school children and meet educational and training needs. Public libraries' support to the community’s

economy is demonstrated by the average number of times per general users and professionals to meet work-related information needs, and by heavy use of small businesses. The costs of not having public libraries are also estimated, and the national cost of obtaining public library-provided information from alternative sources is found to be enormous: $22 billion and 880 million hours of user time. Broken down to the individual public library user, that is 1.4 hours of user's time per use compared with 0.9 hours with the public library system of today, and $35 cost to get information per use compared with $4.20 today. Moreover and alarmingly, the researchers found that 50.3% of the library users would not get the information provided by the library by alternative sources. "Libraries appear to be the undiscovered national resource that results in enormous saving of the most important resource: people's time," the authors conclude (Griffiths and King, 1994, p. 87).

Another angle is to view the economic activity of the public library sector as an economic subsector of the national economy, which is substantial from its unity of input of products and competence and from its unity of output of services and benefits. This is a *national accounting approach* based on the framework of national income and expenditure. By this method one can measure the total income due to public library activity arising from the flow of money through the rest of the economy, so that its full worth (or productive contribution) may be demonstrated (Myerscough, 1988, p. 96). This approach has been applied to the information sector, with the aim to measure: "*What share of our national wealth originates with the production, processing and distribution of information goods and services?* Or, what is the extent of the information activity, (as opposed to agriculture, services or industry), as a portion of the total U.S. economic activity?" (Porat, 1977, pp. 1-2. [Original emphasis]).[0] The approach is also used to assess the sector of culture and the arts.[0]

This method may make is possible to determine how much the library sector contributes to the GPD.[0] The input to or cost of the sector is relatively easy to overview, in the form of working force and expenditure in buildings, equipment, books and other documents, or infrastructure

[0] Porats seminal research report of the information sector in the US were followed by similar studies, see OECD (1986). Bruusgaard and Fløttum (1989) analysed the Norwegian information sector based on the national accounting approach, demonstrating its shares of total production and employment.

[0] The economic importance of the arts in Britain and West Germany, respectably, was investigated by Myerscough (1988) and Hummel and Berger (1988). For an overview of economomic impact studies on the arts, see Bille Hansen (1994).

[0] Gross domestic product (GDP).

and networks. The problem would be to determine the public library sector's long-term effects, both on individuals and on other sectors, e.g., the education, culture, information, social, and economic sectors. The method however has serious weaknesses. The accounting period in this approach is only one year, and the approach neither captures social costs nor benefits which can be both short and long-term (Guldberg, 1996). The method is also costly when applied to economic activities for which outcomes and impact are not easily defined, such as public library activities. Moreover, the public library sector constitutes only a very small part of the total economy, compared with the information and cultural sectors.

Yet another angle, closely related to the national accounting approach, is to study the economic impacts of public libraries. *Economic impact studies* are an established methodology in economics. By applying this methodology libraries' impact on the rest of the economy can be calculated, e.g., their contribution towards employment, income, consumption expenditures, and state or local government (e.g., municipalities) revenue in the form of taxes. In a situation where public libraries are facing economic restraint and funding cutbacks, Sawyer (1996) recognized a need to document their economic and job creation benefits. By summarizing research done by the Ontario Ministry of Citizenship, Culture and Recreation on socio-economic benefits of public libraries in Ontario, Canada, he showed that services and information to local businesses, lifelong learners and job seekers have economic impact, as well as library services that promote literacy, support formal and informal education, and provide enhanced public access to the information highway. By utilizing statistics, national gross domestic product (GDP) analysis, government formula, and job multipliers developed by Statistics Canada the direct and indirect impact of public libraries in Ontario was given in number of jobs they create and their contribution to the GDP. Ontario public libraries were shown to create work, including short term construction work by library building capital projects and longer term information infrastructure work. Based on these Ontario experiences, Sawyer (1996, pp. 23-25) suggested a framework that public libraries generally can follow to show their economic impact on their communities. This framework focuses on: (1) extraction of national statistical data on jobs generated and direct and indirect library impact on the GDP; (2) promotion of public electronic access to information; (3) generation of economic-oriented user anecdotes supported by economic impact surveys; and (4) development of entrepreneurial and value-added services. By this framework that combines both quantitative and qualitative methods, Sawyer sought to widen the research approach to capture more than the short term economic impacts of public libraries.

In another study McClure, Fraser, Nelson, and Robbins (2001) sought to identify and describe the economic impact and benefits received from public libraries in Florida. For public libraries being funded by taxpayers and exposed to budget cuts in these times of economic pressure on the public sector, the researchers' starting point was that the identification and communication of the economic value of the public libraries are critical to their funding, support and, ultimately, their existence. Data were collected using a multi-method approach consisting of focus groups, a financial analysis, a survey of public library patrons, a survey of library directors and branch managers, librarian service logs, and group interviews. The findings showed that the public libraries of Florida provide substantial, far-ranging, and varied economic benefits to the individual library user, to local businesses, and to the community. "Libraries provided access to financial information, job and career resources, computer technology and services, businesses resources, educational support for the community, and for public services. … The library assists with civic involvement by supporting the democratic and political process and helping with community development" (McClure et al., 2001, p. viii). This comprehensive study developed a rich understanding of both direct and indirect benefits of public libraries. Fraser et al. (2002, p. 228), analysing the same study, define direct benefits as being "the value of the services realized by the users of public libraries. Indirect benefits are those generated from the existence of the library for nonusers or the community at large." A systematic attempt at *measuring* these two types of benefits will be a complex but necessary next task, the authors concluded. They presented a framework for a proposed follow-up study, including application of the CV method, in order to estimate both the tangible and intangible benefits derived from public library use, whether they are direct or indirect.

Bille Hansen (1994) reviewed the state of art of economic impact studies with regard to their ability to determine the economic dimension of culture and the arts. Economic impact studies link cultural activity and economic growth in the short term, by identifying the linkages between the cultural sector and the wider economy and estimating the magnitude of the relationship involved, but long-term effects are not taken into account (Bille Hansen, 1994, pp. 1-2).

Of special interest in our context is a further problem with economic impact analyses. Such studies demonstrate how culture and the arts have economic impact on the rest of the

economy, but they *do not consider the purpose of the activities* (Bille Hansen, 1994, pp. 15-16). This is a principal criticism of economic impact analyses of great importance and relevance for assessments of the value of public libraries. Public libraries do have economic impacts – by creating jobs (Sawyer 1996), being a buying power in publishing markets and a stabilising factor in town centre developments (Greenhalgh et al., 1993; 1995; Burton et al., 1996), supporting businesses supplying services to the library (Fitch and Warner, 1998), generating benefits to neighbouring shopping centres (Bundy, 1996), etc. In their literary review, Kerslake and Kinnel (1997, p. 12) make this summary: ”The economic impact of public libraries … is evident in four major ways: information provision to business; alleviating poverty through information provision; stimulating town centre economic activity; and library expenditure”. While information provision is a central library service, the two latter areas of economics impact are spin-offs or side effects of public library activities – since the purpose of public libraries is not to contribute to an increase of local commerce, create jobs, increase sales of books and library equipment, etc. Although it is generally recognized that several of the core public library tasks (e.g., their general educational, cultural, and informational activities and their specific focus on promoting literacy) have long-term economic effects (by fostering a more qualified work force, etc.), such economic effects are not the main aim of public libraries. Public libraries worldwide share a sense of common purpose. This purpose, though formulated in different ways in public library acts and programmatic statements of visions and aims, as seen in section 1 above, is “to promote equal opportunities among citizens for personal cultivation, for literary and cultural pursuits, for continuous development of knowledge, personal skills and civic skills, for internationalisation, and for lifelong learning” (Library Act, 1998, §2).

Therefore, a problem with economic impact studies is, concluded Bille Hansen (1994, p. 20. [Emphasis added]) that:

> ”…there is a risk of evaluating the arts on an incorrect basis, because the economic impact studies do not take into account the purpose of the activities. Economic impact studies do not take into account the long-term effects and the public good characteristics of the arts. The purpose of the arts is not to attract tourists and companies and create jobs. These economic impacts are ’extra gains’, not the main goal. *The main impact of the arts is to be found in its cultural and social influence.* In WCCD[0] terms (and also in general) it means that economic impact studies cannot be

[0] The World Commission on Culture and Development (WCCD), UNESCO.

> used as guidelines for cultural policy. For this purpose other methodologies are needed, for instance willingness-to-pay studies."

In accordance with – and inspired by – this view, the angle chosen for this study is to investigate public libraries as a non-market good with public good characteristics.[0] In the above citation, the author states that the main impact of the good, here the arts, is to be found in "its cultural and social influence". As discussed in subsection 2.2, the main types of impact of public libraries are found to originate from their cultural, educational, and informational roles. My project aims to explore how citizens value their local library, in the sense that they value the outcomes and impact of its presence on themselves and their family as well as its social and overall impact as they perceive it. The purpose is to provide a better understanding of public libraries' total value to the population, comprising both use and non-use value.

The presence of the local library is understood as all of the public library's activities, directed towards the general public, special user groups (e.g., children, elderly), or targeted to achieve specific objectives (e.g., enhance literacy, keep youngsters interested in literature). Individuals differ with regard to which public library activities they are aware of and find important, and to which extent they take into consideration both immediate and long-term impact of these activities. This difference may represent a problem. If the individual is not fully aware of all of the public library activities and their impacts, they can make a wrong assessment of the total value of the library. We must be aware of these limitations when analysing the results of the study, see section 6 below.

In addition, the municipalities in Norway differ considerably. There are 434 municipalities, more than half of which (56%) have fewer than 5000 inhabitants. The range of library services and activities differs widely in both quality and quantity, depending on a variety of factors, e.g., the municipality's size and demands, the funding, and which roles the different public libraries undertake. An intention of my study was to capture the value of public libraries that the citizens assess they have today, at the present service level and at the present informational level of its services and their outcomes and impact. It is probable that citizens in a municipality with a high-quality library with a high PR profile are aware of more library services and types of impact from them than citizens living in a poor municipality with a

[0] See Aabø (1998) for a discussion of private and public good characteristics of public library benefits.

library with few resources and without a professional librarian. This situation reflects the public library reality of Norway today.

3.4 The CV method

The CV method is by far the most used of the SP approaches and has been applied for valuing various cultural goods. The method implies that a representative sample of individuals, who's welfare is dependent of the quantity or quality of a public good (here: the library), is presented for a scenario. The scenario in a CV study consists of these main components (Mitchell and Carson, 1989, p. 3; Freeman, 1993, p. 170):

i) The choice setting in which the respondents are to imagine themselves, with questions eliciting their WTP or WTA for the good(s) to be valued.
ii) Information of the paying vehicle and the decision rules for whether or not the proposed change will be carried out.
iii) Questions about the respondents, e.g., socio-economic characteristics, use or non-use behaviour and attitudes concerning the good to be valued.

The CV method circumvents the absence of markets for public goods by presenting the respondents with a hypothetical market, in which they have the opportunity to 'buy' or 'bid for' the good in question. The hypothetical market may be modelled after either a private goods market or a political market with voting mechanisms, a referendum. These are the two main methods by which social choices can be made. They "are methods of amalgamating the tastes of many individuals in the making of social choices" (Arrow, 1963, p. 2).

An important characteristic of many hypothetical markets is that they are unfamiliar to participants. People are mainly used to much simpler survey questions, for instance: "Which political party would you give your vote if the national election was today?" or "Will you buy a new car this year?" To be asked to assign particular dollar values to goods that are not normally traded in markets is new and unknown for most people. By differing from attempts to infer values based on actual market behaviour, this methodology has given rise to debate within the economics literature (Arrow et al., 1993; Hausman, 1993; Milgrom, 1993; Diamond and Hausman, 1994; Hanemann, 1994; Portney, 1994; Bateman and Willis, 1999).

> "The use of CV to estimate WTP, and hence the utility of specific goods, is firmly rooted in economic theory. However, concern is expressed by some philosophers and environmentalists about the ability of the method to value environmental goods, since individuals have no experience in purchasing them, nor of modifying their choices in light of what they experience from their purchases, nor of learning about their preferences for and characteristics of environmental goods" (Bateman and Willis, 1999, p. 6).

For using the method to value other non-market goods, e.g., public libraries, such methodological issues must be considered. There may be problems of:

(1) *Cognition.* Difficulties of observing and understanding the good or resource to be valued, and of weighing up the attributes of the good.
(2) *Incongruity.* Individuals being unable to accept that price can capture all the relevant information about a good and its value.
(3) *Composition.* Inability of individuals to accept that a non-market good or service can be 'commodified' in order to be priced separately from its intrinsic contribution to the whole.
(4) *Aggregation.* Problems concerning the aggregation of the individual values, including the question of whether the choice of numéraire matters (Brekke, 1997).
(5) *Altruism.* Values motivated with altruism and the problem of double counting (Margolis, 1984; Ray, 1987; Milgrom, 1993).

Point 5 is discussed separately in papers 2 and 3 but point 4 will not be addressed in this dissertation. The problems 1-3 can, if not properly solved, result in responses that are inconsistent with the assumptions of rational choice, crucial in economics, and this issue is discussed in paper 2.

We will here address point 1 and discuss whether respondents find it difficult to observe and understand the value of their local public library, and of weighing up its attributes. Public libraries have characteristics of being both a complex and a simple good, as defined by Hutchinson, Chilton and Davis (1995, p. 98). They are *complex* in the sense discussed in subsection 2.2, where it was shown that public libraries provide a broad range of services, fulfil multiple community roles, and have wide social impact. This complexity may be

difficult to grasp and research has shown that the public is unaware of many of the services that a library offers. In a recent Norwegian national survey of public library user satisfaction, 16% of the library users expressed dissatisfaction with the information about the library services (Sjåholm, 2003). On the other hand, public libraries are a *simple* good in the sense that they are familiar to Norwegian citizens. Only 6% of the population aged 9-79 years have never visited a public library (Vaage, 1998). 52% of the population in Norway visit a public library during a year and – except for cinemas – this is the highest percentage of annual use of any cultural institution. In a Danish study of public library use, it is shown that use of the public library is not constant but varies throughout different life phases of the individual (Jochumsen and Hvenegaard Rasmussen, 2000, p. 138). All of the library non-users in their study had been users of the public library at other times in their lives, several frequent users as well. Public libraries thus demonstrate characteristics of being both a complex and simple good. An interpretation of this ambivalence is that the institution and its main community roles and core services are familiar and well-known to the citizens, but that the whole range of its activities and the services' long-term outcomes and impact are less known.

Credibility of CV findings

The credibility of CV findings has been a controversial issue from the time the method was introduced. The starting arena was environmental and resource policy. There has been a controversy of whether or not non-use values should be accepted as legitimate and whether or not the application of the CV method was proper for assessing these values. In 1979 the US Water Resource Council explicitly permitted use of CV in project evaluation to measure non-use values and developed guidelines to ensure that the method was properly applied. The US Department of Interior (DOI) then issued rules for valuing damages to natural resources that were substantially influenced by these and subsequent guidelines. However, the industry opposed the use of CV and, having received their critical comments, DOI in 1986 "promulgated rules placing contingent valuation at the bottom of a hierarchy of valuation methods and allowed for the measurement of passive-use values only in instances where there were no measurable use values" (Carson, Flores and Mitchell, 1999, p. 111). In 1989 the US Federal Appeals Court decision in *Ohio v. US Department of Interior* rejected DOI's limitations on the use of CV and ruled that non-use values must be included in any assessments of environmental damage, since "option and existence values may represent 'passive use' but they nonetheless reflect utility derived by humans from a resource and thus *prima facie* ought to be included in a damage assessment" (Ohio v. US Department of

Interior, 1989, cited by Hutchinson et al., 1995, p. 98). The next stage of the controversy followed when Cambridge Economics, Inc. assembled a team of researchers to provide litigation support for the Exxon Corporation after the oil spill of Alaska. Hausman (1993) published the main findings of this research.

Considerable academic interest was now raised. Following the Ohio ruling it was recognized that CV and other SP methods offer the only realistic way of measuring all non-use values. Still, there were serious concerns about how well CV surveys and direct questioning methods could capture accurate valuations from respondents. In order to resolve the most important of these unsolved questions, the National Oceanic and Atmospheric Administration (NOAA), under the US Department of Commerce, appointed a panel of experts, mainly consisting of economists. They should examine the issue of whether passive-use values could be reliably measured by applying CV. The Nobel Prize economics laureates Kenneth Arrow and Robert Solow chaired the Panel. The Panel's final report concluded that "contingent valuation studies can produce estimates reliable enough to be the starting point for a judicial or administrative determination of natural resource damages – including lost passive-use value" (Arrow et al., 1993, p. 4610).

CV is a method used for policy-making purposes and the official acceptance of CV has advanced this use (Carson, Flores and Mitchell, 1999). The method is increasingly used in several sectors of society, including the health, social and transportation sectors. In the field of *cultural economics* there is a rising interest in the CV method. "It is clear that CVM[0] has begun to make considerable inroads into the cultural sphere," Schuster (2003, p. 156) asserts in his introduction to a special double issue of the *Journal of Cultural Economics*, dedicated to further consideration of the method and its prospects. Looking forward from the perspective of public decision making, Epstein (2003, p. 259) argues that the awareness of "nonmarket values helps overcome any categorical opposition to the use of the contingent valuation method (CVM) to value cultural and environmental resources". But accurate CV measures, he claims, should be used only to aggregate non-market preferences, both positive and negative, and "not to skew the political debate to cultural or environmental objectives" (Epstein, p. 259).

[0] The abbreviations CVM and CV are used interchangeably in the economics literature.

Few studies have so far been conducted applying the CV method to library valuation. It has been used as one of several methods in cost-benefit analyses of urban public libraries in USA (Holt et al., 1999; 2000). They argue that the method provides value estimates that both taxpayers and political and funding authorities need. This view has found support by political authorities, and the research that started out in one public library, St. Louis, now include five large public library systems (Holt and Elliott, 2003). McClure et al. (2001, p. viii) found that "the economic impacts and benefits received from Florida's public libraries are numerous, varied, and complex." This study was a first step towards accomplishing the objectives of identifying and measuring economic impacts from public libraries. The next step, the authors propose, is a follow-up study to *measure* these impacts. This follow-up study ought to estimate both the tangible and intangible benefits derived from public libraries, whether they are direct or indirect, and thus including "a CV survey method focused on tax-based valuations of the library as a whole" (McClure et al., chapter 7, p. 7). These examples indicate that CV will be further used in public library valuation.

For valuation of public libraries it is necessary to use a method that is capable of measuring both use and non-use values. The *use value of public libraries* can be defined as the values that are experienced by those who make active use of them. *The non-use* or *passive-use value of public libraries* can be defined as the utility individuals obtain from libraries from various reasons other than their active use of them (for instance because they are part of our cultural heritage, are important for the national literature, contribute to the general breeding and development of creativity, social criticism, esthetic and ethical abilities, or altruism). *The total value of libraries* can be defined as the sum of the use values and the non-use values. The value people attach to public libraries has a variety of origins, including both use and non-use values, recent research has shown. In paper 3 non-use values of public libraries are elicited, analysed, and found to be important.

Since approaches based on RP are unable to measure non-use values they did not appear to be useful for valuating public libraries, provided that passive-use values are a significant component of that value, implying that SP methods had to be used. Pros and cons of the most used SP techniques were analysed before we decided which of these methods to choose for the empirical study. A systematic comparison between the CV, CM and EDPs approaches is provided by Halvorsen et al. (1997). They tied this comparison to an empirical application where all the three methods were used for valuing one specific environmental good, namely

reduced air pollution in Norwegian cities. A number of principal issues that are relevant for comparing and explaining the relative suitability of the three valuation approaches were discussed, e.g., strategic bias, ordering effects, embedding effects, problems with scope, scenario misspecification, implied value cues, lack of familiarity, simplicity, econometric and statistical problems, representativeness, and flexibility of application. The *main strengths* were claimed to be, for the CV method, its directness and simplicity of questions and the econometric handling of the data; for CM, few problems related to embedding, ordering and strategic answers; and for EDPs, the knowledgeable and experienced respondents and a very thorough and elaborate elicitation procedure. The *main weaknesses* of the CV method were assessed to be the potential for ordering, embedding, value cue, and strategic bias; for CM, the indirectness of questioning and that economic inference is more difficult; and for EDPs, the lack of representative population samples making statistical tests of the results useless. Based on a comparison of these three SP methods, Halvorsen et al. (1997, pp. 38-39) conclude:

> ”We argue that all three approaches have their potential strengths and weaknesses, and that they cannot be ranked unambiguously in terms of reliability or appropriateness for valuation. Rather, they complement each other, and can all be applied to the same valuation issue, thereby potentially raising the overall reliability of the valuation estimates.”

In principle, these three valuation methods could all be used for assessing the value of public libraries. For instance, a study of public libraries could include:

a) A main survey based on the CV method, assessing the willingness to pay for the public library by a representative sample of the citizens.

b) A study based on CM using a subset of the main survey’s questions, but describing them through a set of attributes to be ranked.

c) EDPs selected from local communities’ educational, cultural, funding, and library authorities, from professions that utilize the library (kindergartens, schools, social and health institutions, etc.) and from local cultural activity groups with the task of assessing the value of their public library.

A research design applying all three approaches would probably be more reliable than one based on only one of them. However, such a design was not feasible within our available resources. For future research, such a complementary research design for valuation of public libraries is however advisable.

When faced with the choice of only one of the three SP methods, the CV method was chosen for my study. It was found important to apply an established and well-known method. Of the SP methods CV is the most direct. It seeks to elicit the value of the non-market good directly, without detours, which is necessary in CM, by asking the individual to express her valuation in a hypothetical market. In contrast to EDPs, a CV study can be applied on a representative population sample. There exists a comprehensive literature of CV studies, including also cultural goods as seen in paper 3, which can be reference points for my study.

The choice of the CV method for the empirical study is the result of a reasoning that can be summarized as follows:

> The lack of evidence of the value in monetary terms of public libraries is a serious drawback when the economic pressure increases in the public sector generally and in the municipalities specifically. To strengthen the argument for sufficient funding of public libraries, the library authorities need to be able to demonstrate the benefits and value of the library activities to the citizens and the community. Therefore, studies to estimate the total value in monetary terms of public libraries are needed.
>
> Of economic methodologies, the national accounting approach and economic impact studies were considered problematic for our purpose, because public library services have long-term effects that are difficult to capture with these methods and because public libraries' main impact is not economic but cultural, educational, and informational. To be able to capture the public good characteristics of public libraries approaches to valuing non-market goods seemed promising. Approaches based on RP were rejected because they can measure use values only, and public libraries are shown to have essential non-use values. Of the SP approaches, the CV method was found to be most appropriate – and chosen.

The quality of the CV studies is critical. The NOAA Panel's report contains a systematic presentation of possible sources of error and guidelines for performing high quality CV

studies (Arrow et al., 1993). When these guidelines are followed to minimize key error sources, respondents' answers to the valuation questions should represent valid responses of their WTP for public libraries, and data gained from hypothetical direct expression of value questions are the simplest to interpret. However, applying CV for estimating the value of public libraries is not without problems, and methodological problems are discussed throughout papers 2-4. Several CV studies of cultural goods, other than public libraries, are reported in the literature (of museums (Martin, 1994), theatres (Bille Hansen, 1997; Roche Rivera, 1998), arts and paintings (Throsby and Withers, 1983; Frey and Pommerehne, 1989), cultural and national heritage (Willis, 1993; Benhamou, 1996; Pollicino and Maddison, 2001; Navrud and Strand, 2002), and national television programs (Papandrea, 1999). CV studies of libraries are so far only two (Harless and Allen, 1999; Holt et al., 1999).

The dissertation's first paper presents the public libraries in a situation of fundamental change with a need for valuation of their benefits (paper 1), while the next two papers focus on philosophical and methodological issues (papers 2-3). Papers 2-3 discuss methodological critique of the CV method, with main emphasis on particularities of public libraries which are characterized by non-use (or passive use) value in addition to use value. Treatment of valuation based on altruism or other motives that are not based on narrow self-interest is analysed. The main issues are i) establishing whether or not economic models for valuation of non-market goods can successfully be applied to public libraries and thus supplement the arsenal of LIS methods, ii) determining if non-use values are important for citizens' valuation of public libraries, iii) attempting to elicit respondents' motivations for non-use values, and iv) exploring options for handling of valuation based on different forms of altruism. The question of whether economic models based on the assumption of rational agents conflict fundamentally with the very nature of public libraries, which justification is rooted also in values other than those based on narrow self-interest, is discussed in paper 2. Paper 3 focuses on methodological problems related to valuing the total value of public libraries. The importance of non-use values and altruistic motivations are considered. This leads up to the main empirical part of the thesis, in paper 4, where the empirical CV study of library valuation in Norway is presented. This appears to be the first CV study internationally for valuation of public libraries at a national level.

The four papers making up this dissertation may be read separately, but also constitute an entity and form a whole. We now turn to each of the four papers. A brief description of paper

1 is given in subsection 4.1, discussing the need for public library valuation in the current library policy context. In subsections 4.2-4.3, we discuss philosophical and methodological problems associated with measuring individuals' valuation of public libraries by using the CV method and with attempting to elicit their motivations, providing brief descriptions of papers 2 and 3. In subsection 4.4, we present the empirical study of how Norwegian households value their public libraries, giving a short outline of paper 4. Finally, some conclusions are made.

4. Overview of the papers

4.1 Public libraries and their value (Paper 1)

The social change due to the development from the industrial age to the age of information and knowledge is the background for major challenges of libraries and their role in society. This paper reflects on the situation for public libraries by the start of a new millennium, where two characteristics of the social development have major impact on them: i) the digitizing of the society, and ii) the continuous economic pressure on the public sector. These characteristics represent challenges for major changes of public libraries, their community role, and have implications for their justification. The current critical situation is discussed by both political authorities, library professionals, and researchers. Several reports and studies discuss and analyse a redefined role for public libraries in the information and network society.

The paper examines how the restricted public economy has affected the funding of public libraries. The economic pressure on and reductions in the public sector have incited the

question of whether use of limited local public resources to fund libraries is justified from the society's and the population's point of view. However, contrary to the situation for many other public services, a stability of governmental funding for public libraries is found by investigating the development of financing of public libraries in Europe from 1980 onwards. This has been a period of growing market liberalism, with introduction of user fees for many local governmental services, and privatization of others, all aimed at reducing overall public sector expenditure. In opposition to the general development, the figures from library economic statistics reflect very small changes during these two decades. Indeed, the overall main characteristic of public library financing is the stability and dominance of governmental funding.

The rationale for the governmental funding is based on the purpose of the public library as a community institution open to all citizens. Its purpose is founded on a cultural, educational, and informational basis and is generally accepted both internationally and in the Norwegian society. Among the public library's objectives are providing services that further democracy, equality, and social justice by ensuring the inhabitants access to a wide variety of information sources, learning possibilities, national and international literature, and a public meeting place.

Due to the growing pressure on public budgets libraries, as other tax-supported public-sector institutions, are today increasingly subject to financial scrutiny and must document their value. This situation is reflected in LIS research, where recent studies attempt to determine the value of public libraries in monetary terms by applying a variety of methods, but very few have used approaches for valuation of non-market goods developed in economics. Some studies are reviewed, focusing on results from parts of these studies that are of particular interest regarding valuation of public libraries in monetary terms. General surveys of how national population samples value public libraries show that the respondents' WTP for public libraries were higher than current library funding. In addition, a noticeable larger part of the population stated that they found public libraries important, than the part that actually used the libraries themselves, thus implying that public libraries have non-use values (D'Elia, 1993; Reppen, 1998; Höglund, 1999).

Of methods for valuation of non-market goods, those based on stated preferences (SP) are capable of capturing non-use values in addition to use values. Conjoint analysis, which is a choice method within the SP approach, has been applied in a few studies in LIS, but then to

valuate a specific library service, e.g., the reference desk service. An exception is a study of the public library service in England and Wales, where conjoint analysis was used as one of several methods (Aslib, 1995, pp. 157-168). The concept of the public library's value to the community was subdivided into four main sets of options, based on responses from library users and non-users, library staff and focus groups. There were postulated changes of the benefits local libraries could offer, their services, location, and cost to the community. The trade-off analysis simulated decisions based on how the respondents (a general population sample) ranked cards that showed statistically representative variables representing the four option sets.

The SP approach contingent valuation (CV) has been used increasingly the last decade to valuate cultural goods, although the number of studies are still relatively small. The paper lists ten examples and refers to two Scandinavian studies, one of visitors' willingness to pay (WTP) for preserving and restoring the Nidaros Cathedral in Norway and the other of Danish taxpayers' WTP for the Royal Theatre in Copenhagen. For library valuation, to my knowledge only two CV studies are reported in the literature. The first explored the value of a specific library service, the reference desk service, at a university library and the second estimated the value of an urban public library, the St. Louis Public Library, applying the CV method as one of three benefit-cost analysis techniques. The public library CV study posed two valuation questions, one using the WTP format and the other WTA. The observed disparity between the two measures was high, the ratio being 1: 9. Another problem with this study is that only 12% of the respondents accepted the WTA scenario, which is conspicuously low. Anticipating a high refusal of the WTA scenario depicting a closure of the urban library, the project team sought to elicit the motivations for respondents' protest bids by posing a follow-up question. The stated reasons for refusing to close the library include both loss of benefits to oneself and close family, to others persons and the community.

In both of the two public library studies applying SP approaches, these methods were used as one of three different valuation methods. Results from these studies show that the respondents stated a value of public libraries that was higher than what they currently paid in local taxes. While the CM study used a national sample of respondents, thus including both library users and non-users, the CV study used a sample of library card holders only to value the urban public library. These two SP studies can be viewed as a beginning of research to reach plausible monetary estimates of public library value, uncovering a need for more and thorough

studies. There is a need for studies aimed at assessing the monetary value of public library activities as a whole, and thus include both library users' and non-users' valuation, and taking into account all relevant value elements, i.e., use and non-use values.

4.2 Rational choice and valuation of public libraries: Can economic models for valuing non-market goods be applied to public libraries? (Paper 2)

This paper discusses possible use of non-market approaches for valuation of public libraries. Before deciding on a particular valuation method, principal criticism raised against the foundations of the methodology needs to be considered. Opponents to the CV approach claim that such studies are inconsistent with the assumptions of rational choice, which is crucial in economics.[0] The discussion of how the concept of rationality is to be understood goes to the heart of this matter and is decisive for the outcome of the controversy. If the allegation were valid, it would make proper public library valuation difficult – because the very nature of public libraries is such that they have both use and non-use (passive use) values, and they are valued extensively by individuals motivated not only by self-interest.

It is necessary to define the concept of rationality and to discuss the theory of rational choice with regard to its implications for individuals' assessment of public libraries. Two main problem areas need to be clarified: i) whether or not it is possible to define rational behaviour as a wider concept, including behaviour not motivated by the pursuit of narrow self-interest; and ii) whether this wider definition fits with the assumption of 'behavioural' economic models. Implicitly, a clarification of the concept of man that underlies the assumptions of individuals as economic agents seeking to maximize their utility is necessary. Sen's (1979) seminal critique of the concept of man as motivated by self-interest only, examines the problems arising from this conception of human beings. In a public library valuation setting, we discuss his concepts of *sympathy* and *commitment* as complementary reasons for man's behaviour, making our point that an individual's economic behaviour can be based on a compromise between self-interest, claims of morality, social norms, and the pursuit of various other objectives. We use Sen's concept of sympathy and differentiate his commitment concept

[0] See Diamond and Hausmand (1994) for an austere critic of the method.

into two variants – commitment reducing or increasing personal welfare – and, in addition, develop a fourth concept, *long-term perception of self-interest.* By applying these four concepts it seems possible, in principle, to decompose those dimensions of utility not linked to personal use and narrow self-interest, into variables which may capture the complexity of public libraries in a valid way and which can be integrated into a utility function based on rationality.

The special case of *altruism* is then introduced, referring to the discussion in the literature of welfare economics of whether choices thus motivated can be considered as rational and, more specifically and within the framework of cost-benefit analysis, whether or not willingness-to-pay (WTP) for public projects motivated by altruism should be included as benefits (Sen, 1979; Margolis, 1982; Ray, 1987; Johansson, 1992; Milgrom, 1993; Flores, 2002). Considering the types of benefits arising from public library activities, it seems reasonable to believe that altruism is among the motives for citizens' WTP for them. Valuation studies of other cultural goods have shown that non-use values are important and constitute a considerable part of their total value. A review of these valuation studies, with regard to the respondents' motivations for non-use values, shows that altruism is one of these (Aabø and Strand, 2004). Differentiating the concept of altruism is a step towards solving this problem by making it possible to treat distinctive variants of altruism differently, and the issue is discussed in depth in paper 3.

It seems possible, in principle, to satisfy the condition that in order to add methods developed in economics for determining the value of non-market goods to the methodological arsenal of LIS, they must include non-use values and values not related to the immediate pursuit of narrow self-interest. Specifically, our discussion concludes that the model of rationality can be extended in a consistent way to include values motivated by sympathy, commitment increasing personal welfare, long-term perception of self-interest, and paternalistic altruism. Values motivated by the second variant of commitment, i.e., commitment that reduces personal welfare, should however be excluded as part of the overall social value of public libraries (and other public goods). Having established this foundation, possible validity problems with the *practical* method, with using the stated preference method CV to valuate public libraries, need to be examined.

Recent valuation studies of cultural goods have shown that CV is i) suitable for assessing intangible cultural benefits and ii) more appropriate for valuation of non-market goods, the more familiar such goods are to the citizens, which should favour the valuation of public libraries. Among economists, there is controversy about the method (Hendon and Shanahan, 1983; Mitchell and Carson, 1989; Arrow et al., 1993; Milgrom, 1993; Hanemann, 1994; Diamond and Hausman, 1994; Portney, 1994; Hutter and Rizzo, 1997; Schwarz, Pommerehne and Kopp, 1997; Towse, 1997; Bateman and Willis, 1999). Concern is expressed about the ability of the CV method to value non-market goods, since individuals do not have experience in purchasing them, or of modifying their choices in light of what they experience from their purchases, or of learning about their preferences for the good. Other critics claim that CV surveys do not measure the respondents' true preferences, but rather their attitudes towards the good being valued. These issues are addressed in the paper, concluding that they partly are methodological problems to be given attention when designing the study, in particular by constructing the questionnaire so as to avoid responses that are inconsistent with the assumptions of rational choice, and that they partly are a basis for formulating research questions to be tested out empirically within the context of public libraries.

In order to conclude whether CV has the ability to capture the value people attach to the public libraries, whether it has to be adjusted or further developed, or has to be rejected the method will have to be tested out empirically in a public library setting.

4.3 Public library valuation, non-use values, and altruistic motivations (Paper 3)

Paper 3 discusses non-use values and altruistic motivations in relation to the valuation of public libraries. The paper connects the theoretical discussion in paper 2 with the empirical results from paper 4. The starting point of paper 3 is that public library services give rise to both direct and indirect benefits. In the LIS literature several terms have been used to capture the concept of benefits accruing from public libraries that are not direct use benefits (Holt et al., 1999; Fraser et al., 2002; Aslib, 1995). In the economics literature (see e.g., Kolstad, 2000, p. 296), the three main non-use value motivation groups identified are existence or preservation value, bequest value, and altruistically motivated value. To capture all benefits

accruing from public libraries, we distinguish between *use values* (direct use value and option value), *non-use values* and *total value* of public libraries, where the latter is the sum of the former two.

The paper has two main aims. The first is to determine whether non-use values are important for the population's valuation of public libraries, and the second is to attempt eliciting respondents' motivations for the non-use values, with a special focus on altruism. These issues are of practical importance. If non-use values are substantial, a failure to account for them may seriously underestimate public libraries' overall value to society. If the altruistically motivated values are non-marginal, a further examination is necessary to determine whether they should be included or excluded as benefits in a cost-benefit analysis of public libraries.

Paper 3 is accepted for publication and cannot be extended. There are however some issues connected with this paper that I want to expand on in this introduction. The first concerns elicitation of respondents' motivations. The economics literature is concerned with motivations that give rise to non-use values. It is shown how obtaining unbiased and theoretically correct estimates of non-use values depends on examining underlying motivations (McConnell, 1997; Johansson-Stenman, 1998; Kotchen and Reiling, 2000). ”The problem for empirical researchers is that measuring such motivations and analyzing their influence on economic values is vulnerable to the 'fallacy of motivational precision', ” observe Kotchen and Reiling (2000, p. 94) with reference to Mitchell and Carson (1989). ”[T]he error of assuming that respondents are aware, to the degree of precision desired by the researcher, of what motivates their value judgments may be called the 'fallacy of motivational precision',” stated Mitchell and Carson (1989, p. 288) and were skeptical of attempts to ask respondents to separately value the several benefit dimensions of a public good. ”[A]lthough the utility that people receive from an amenity may stem from some or all of these benefit dimensions, the WTP judgment is based on a holistic assessment rather than on a conscious summing of the several components to reach a total value” (Mitchell and Carson, 1989, p. 288).

To be able to obtaining meaningful estimates of the various types of benefits that the respondent receives from the good she is valuing, they relate four measurement strategies. One of these is a decomposition strategy, which ”involves asking respondents to separate a *previously obtained* total WTP amount into values for one or more benefit component”

(Mitchell and Carson, 1989, p. 289. [Emphasis added]). This is the strategy we use and, although the problems of motivational precision exist, there are experiences to be drawn from previous empirical studies.

Kotchen and Reiling (2000) explored relationships among environmental attitudes, non-use values for endangered species, and underlying motivations for CV responses. To determine reasons for respondents' answers to WTP question for environmental projects to protect endangered species, they posed follow-up questions. Their objective was to measure only non-use values, and correspondingly only non-users were included in their analysis. Respondents stating a positive value "were asked to rate the importance of several possible reasons, including option, bequest, altruistic, existence, and ethical motivations" (Kotchen and Reiling, 2000, p. 98). Among the five motivations considered, option value appeared to be least important, while the ethical or rights-based motive was shown to be most important. The relative importance of motivations associated with altruistic, bequest, and existence values appeared to be fairly similar. A main finding of the study was that significant relationships were found between environmental attitudes and non-use motivations. Pro-environmental attitudes were shown to result in higher estimates of mean WTP and these attitudes were associated with stronger reliance on ethical motives for species protection. The results showed "how environmental attitudes are significantly related to the importance placed on different underlying motivations for nonuse value" (Kotchen and Reiling, 2000, p. 105). The researchers did not report of difficulties for respondents to answer this type of questions or of problems with interpretation of these answers.

In a Norwegian empirical study eliciting values of statistical lives (VSL), Strand (2003) posed follow-up questions to investigate possible reasons for respondents' stated positive WTP for a public health project. Respondents were asked to distribute their total valuation amounts by four motivations: (1) own risk (pure self-interest), (2) nearest family's risk (interest of one's close family), (3) others' risk (interest of other persons), or (4) other reasons (interest of other causes). Of aggregated total value approximately 30% were stated due to (1), 50% to (2), and 20% to (3)-(4) taken together. The author claims that attempting such split is of interest for several reasons. The paper discusses whether or not reasons (2)-(4) should be included in a definition of total (public-good) VSL and concludes that determining the type of altruism (non-paternalistic or paternalistic) exhibited will be decisive. Although the study did not include a debriefing question directed at how respondents perceived and understood the

follow-up question to elicit motivations, the issue was ”communicated in detail by the test sample and focus group, and through discussions with interviewers after the survey. In the view of interviewers, the splitting-up-into-motives question generally appeared to be one of the easiest for subjects to answer. One should still of course be careful in interpreting such answers, in the same way as for other CV administered survey questions” (Strand, 2003, foot note 23).

In our CV study of public libraries in Norway, we also attempted to elicit respondents' motivations by splitting up their total stated value using the decomposition strategy.
Our study, in contrast to the study by Kotchen and Reiling (2000), included both users and non-users. One objective was trying to determine the proportion of use and non-use values, another to elicit the types of non-use motivations. After having answered the valuation questions, respondents were asked to distribute their stated total amount of the local public library to different motivations or reasons. This sequence ”helps respondents to grasp the idea that the component values are a subset of the overall value” (Mitchell and Carson, 1989, p. 289). The respondents were asked how they would distribute their total valuation between the following motives:

1. I or others in my family use the public library.
2. I or others in my family may need the public library later in life.
3. Others in the community use the public library.
4. The public library disseminates culture and knowledge and takes care of our literary heritage.
5. The public library promotes democracy and equality.
6. Other reasons, please specify.

The paper analyses and discusses how respondents split their total value up according to these motivations. Motivation 1 represents direct use value, constituting about 40% of total value. Motivation 2 expresses option value (the value of having the option to use the public library should the need occur) and a potential use value, constituting about 20%. Motivations 1-2 benefit oneself and own family. Motivation 3 represents non-use value and is clearly altruistic (valuing that others in the community, not oneself or own family, use the local library) constituting about 16%. Motivations 4-5 constitute in total about 22%. Motivation 6, the open response option, is excluded from further analyses due to its diversity and small number (about 1%).

Motivations 4-5 are more difficult to categorize since we cannot establish to which extent respondents value *their own* or the corresponding *community* benefits. These motivations can thus be justified either by self-interest, altruism, or political or moral values other than altruism. 4-5 may represent a combination of use and non-use values, but plausibly they are related to the three main types of non-use values: altruism (concern for other individuals today), existence (concern for maintaining or preserving the public library) and bequests (concern for future generations). We therefore adopt as our working hypothesis that motivations 4-5 have an exclusively non-use character. One interpretation is that the three non-use motivations, 3-5, are justified by social interests, in contrast to motivations 1-2 that are justified by self-interest. Following this interpretation 60% of the value of public libraries in Norway is motivated by self-interest, while 38% is non-use values motivated by social interests. Included in the social interests is altruism, representing at least 16% (motivation 3) but probably parts of motivations 4-5, too.

This decomposition procedure is vulnerable to the 'fallacy of motivational precision', as Mitchell and Carson (1989, p. 293) pointed out. One way to check for consistency in respondents' answers to our decomposition question, is to relate the stated shares of values given to the different motivations and the size of stated WTP. One hypothesis is that respondents who value the library highly overall value it exclusively for its use value, while those with lower valuations value it for its non-use value. By weighting the shares of values that each respondent allocated to the six motivations with the total value amount she stated, the overall shares of values allocated to the different motivations are obtained. Thus, the relation between the size of respondent's valuation amount and her distribution of it to motivations for the valuation is explored. The result of this consistency check showed that the relative distributions are quite similar and that the unweighted and weighted approaches yield approximately the same results, thus refuting the hypothesis.

The first main aim of paper 3 is reached: Results from analysing the empirical data make it possible to conclude that a main and consistent finding is that non-use values constitute a very important component of the population's valuation of public libraries in Norway, making up 35-40% their total value. To include non-use values in cost-benefit analyses of public libraries is necessary to avoid a serious underestimation of their overall worth to society. Consequently,

when eliciting population preferences for goods of this type, the elicitation methods used must be capable of capturing non-use values.

We now turn to the second main aim of this paper – eliciting respondents' motivations, focusing on altruism. Altruism is in economics usually understood as individuals concern for the well-being of other individuals, in the sense that the person is willing to pay to improve the other's situation. Altruistically motivated preferences for public goods can be manifested in several ways. A main objective here is to uncover which 'types' of altruism are being present, since this has important implications for the economic valuation of public goods.

Altruistic motivations related to public goods can, roughly, be classified along two different dimensions. The first is to whom altruism is directed, distinguishing between *local* and *global altruism*, and the second is whether the altruism is *non-paternalistic (or pure)* or *paternalistic.* The latter dimension is the most important distinction here. Pure altruism does not enhance the true WTP of the altruistic individual for a public good (here: the local library), because a purely altruistic person attaches value to the general utility level of others, and thus in the same way to all goods consumed by others. Paternalistic altruism directed towards the public library, on the other hand, generally raises an individual's overall valuation of it, because the paternalistic altruistic person attaches value to the specific and not the general consumption of others. In this case the paternalistic altruistic individual enjoys an increase in utility because others also enjoy increased public library services even in cases when others' general utility levels are held constant, something that does not occur under pure altruism. For public libraries a significant fraction of non-use values is likely to be just the effect of increased access to and use of libraries by others, and thus a heightening of the cultural level and intellectual skills in society as a whole. Paternalistic altruism is, therefore, likely to be an important motivation for public library valuation.

The second main distinction is between local and global altruism, i.e., between altruism towards family members or towards other members of society. Most altruism in society is, arguably, directed towards other members of one's household. It is shown that when household members have their separate budgets and consume only private goods, paternalistic (but not pure) altruism increases overall household WTP (Jones-Lee, 1992; Quiggins, 1998). When they instead consume both private and common household goods, and bargain efficiently over the intrahousehold allocation, the situation is different. It can then be shown

that altruism, whether pure or paternalistic, tends to make one individual's valuation on behalf of the household more equal to the sum of individuals, in cases where the household members have different marginal valuation of the public good (Strand, 2002). Paternalistic altruism also here increases overall valuation, but on average equally much for one person on behalf of the household, as when considering the sum of household members' valuations.

A problem in practice is that most CV studies provide little information about the nature of possible altruistic motivations, along the two dimensions discussed above and in particular about the important distinction between pure and paternalistic altruism. In our CV study of public libraries in Norway, we try to operationalize the distinction between locally and globally motivated altruism. The six motivations in our follow-up question (see above) were designed to differentiate between two 'types' of altruism, one benefiting the respondent's close family (local altruism) and the other benefiting mainly others in the community and society as a whole (global altruism). A weakness of our attempt to elicit respondents' motivations is that the term 'my family' is not precisely defined and may include family members both within and outside the household.[0] Formally, valuation motivated by use of family members who are not sharing the respondent's household budget should be treated as motivation 3, i.e., as global altruism. This lack of precision in terminology may imply that the shares of total value due to motivations 1-2 in our study are somewhat larger and to motivation 3 somewhat smaller than the 'true' values. Another weakness is that motivations 4-5 do not unambiguously differentiate between use and non-use values, and self-interest and social interest, as discussed above.

We find that the motivations behind the non-use values of public libraries are varied but that altruism undisputedly is one of them. Altruistically motivated valuation is substantial – our empirical data indicates that at least 16% and probably up towards 30% of total value is motivated by altruism directed towards others than the respondents' own close families, i.e., global altruism. The altruistic motivations are thus shown to comprise a significant share of total value, and it is necessary to discriminate between values deriving from non-use that should properly be included in a public good analysis (global and paternalistic altruism) and values that ought to be excluded (local and pure altruism). We conclude that global altruism is present in public library valuation. Values arising from this motivation are values to be legitimately included as benefits in a cost-benefit analysis of public libraries.

[0] A household consists of persons sharing a common household budget.

More studies are needed, focusing on other aspects of possible altruistic motivations and particularly whether they are pure or paternalistic. We argue that in the case of public libraries it is reasonable to believe that some of the altruistic motivations are paternalistic, implying that it is legitimate to include them in an overall social valuation of provision of public library services. The fact that high education is one explanatory factor for giving non-use values high weight is an indication in this direction, but the question must be examined more closely before one can conclude. Empirical experience from attempts to operationalize the difference between pure and paternalistic altruistic motivations are needed, and further research in this direction may benefit from combining behavioural research from social-psychology and LIS in addition to economics.

Findings in this paper throw some light upon the discussion in subsection 2.2 of the dichotomy inherent in public library policy, between a value-based and an instrumental justification of the libraries. In the search for a balance point between the two opposites in concrete public library policy, the eliciting of motivations for the respondents' valuation of public libraries are of importance. Our empirical results indicate that approximately 35-40% of the total value consists of non-use values, which are motivated by appreciating other persons' library use, the role of public libraries in disseminating culture and knowledge, taking care of our literary heritage, and promoting democracy and equality. A substantial part of the stated total value of public libraries is thus motivated by their social and cultural benefits. Most respondents valued both use and non-use values of public libraries and were motivated by self-interest as well as by benefits accruing to others and the community.

The theoretical foundation of the method used in this empirical study is methodological individualism, by which social institutions and social change are explained as the result of the action and interaction of individuals (Elster, 1989). Yet, this study shows that both individual and collective concerns are important for the population's valuation of public libraries. CV is capable of measuring both use and non-use values and thus of catching individual preferences based on a variety of motives, including selfish as well as non-selfish motivations. The study asserts that citizens' motivations for valuing public libraries encompass both own and close family's direct self-interest, i.e., supporting an instrumental justification, and motives originating from a wider, social concern (cultural, democratic, political), i.e., supporting a value-based justification. This blend of social motivations and self-interest shown by the

majority of respondents is an important finding and may be interpreted to reflect the standing of the public library as a community institution. Based on these empirical data, therefore, arguments for enlightenment, culture, knowledge, and other collective virtues should have considerable weight as values in their own right.

4.4 Valuing the benefits of public libraries (Paper 4)

This paper, which may be considered as the core of the thesis, presents a CV study of public libraries in Norway, i.e., the local public libraries that are a municipal responsibility. The Public Library Act, § 4, states that all municipalities shall have a public library.[0] Norway, although it has only 4.5 million inhabitants, is subdivided into 436 municipalities, only 100 of them having more than 10000 inhabitants. Local democracy is based on the municipalities, and the citizens are well aware of the public services at that level.

The economic rationale for libraries to be publicly funded can be questioned from a welfare economic point of view, and the issue has been raised politically in Norway[0], making this CV

[0] This article in the Public Library Act is subject to current political discussions. In 2002, the Ministry of Cultural and Church Affairs suggested an amendment of this article, which was interpreted by many in the library profession and local authorities as a loosening of the municipality's obligation to have a public library. Due to substantial opposition in the hearings, the original amendment proposal was withdrawn. However, further amendments will be considered in an announced report to the Ministry, with the objective of formulating a strategy document outlining the overall library policy (Kultur- og kyrkjedepartementet, 2003, pp. 171-172).

§4 now reads in full:

"In accordance with the aims stated in Chapter I, all municipalities shall have a public library.

A public library may be run by the municipality on its own or wholly or partly in co-operation with other municipalities, the county authorities, *or state insitutions. For experimental activities the Ministry can make exceptions from the first section.*

The municipalities shall lay down regulations for the public library on the basis of recommended guidelines issued by the Ministry."

(The emphasized parts, translated by the author, are amendments that passed the Parliament June 16th 2003.)

[0] After the local elections in 1995 negotiations for a conservative city government in Oslo were completed between the Conservative Party and the Progress Party. For public libraries they agreed that: "The city government will evaluate Deichmanske Bibliotek (i.e., the public library system in Oslo) and its association to the municipality. … The city government will work for a change of the Public Library Act, to permit user fees for book loan …. For all library services in addition to book loan the city government will attempt to demand user

study eliciting how the citizens themselves value their public libraries of special political interest.

The survey was administered by a professional opinion company as part of their bimonthly omnibus survey (January 2000) that collects data from a national random sample of private households. 999 persons over the age of 15 years were interviewed in their homes as representatives of their households. The library valuation questionnaire was followed by sections of questions about library use or non-use, attitudes towards libraries, reasons for library behaviour, and sections of debriefing questions to the respondent and interviewer in addition to socio-economic and demographic information.

The respondents' valuation of their local public library was elicited by applying two separate elicitation approaches to correct for elicitation method effects. The two formats called multiple bounded discrete choice (MBDC) and dissonance minimizing format (DM) were recently developed in environmental economics, which is at the fore in CV technique development. These elicitation formats were specifically designed to correct for overestimating of the value of the good in question, being a main concern of the NOAA Panel. We chose to use these two formats on a split sample, eliciting willingness to pay (WTP) as well as willingness to accept (WTA), since the population's property rights to the public library is an issue of relevance. The respondents were randomly distributed to one of four subsamples, see box 2 in paper 4. This research design yields four independent valuation estimates and permits tests both between and within samples, testing elicitation effects between the two WTP and WTA subsamples, respectively, and comparing WTP and WTA within the same elicitation format. All respondents were faced with two valuation questions. The first was asked in one of the two elicitation formats (MBDC or DM), while the second was open-ended. This design implies that we are able to test the estimates to the first and second valuation question both within each subsample, and on the whole sample.

The WTP scenario describes an economic situation which forces local politicians to suggest a choice between closing down the public library or increasing the local taxes, referring directly to:

a) The Public Library Act and assuming it amended.

fees that cover their full costs. " (Høyre 1996; translated by the author). This political coalition failed for other reasons, so their political program was not implemented.

b) The local aspect of the situation, to avoid an understanding that the national public library system as a whole could be closed down.
c) The substitutes and non-substitutes, showing that some library services can be substituted in private markets (buying books instead of borrowing) but others have no market substitutes (outreach programmes to disabled persons, kindergartens, etc.).

The WTA scenario has the same framing, but here the choice is between either (1) closing down the local library in order to use the saved budget funds on other municipality tasks benefiting the household (e.g., education, health), or (2) maintaining the library and also other municipality tasks on today's level of activity.

The scenario description starts by referring to the Norwegian Public Library Act and its purpose statement in §1, saying that "the task of the public libraries is to promote enlightenment, education and other cultural activity by making books and other material available free of charge to all those who live in Norway". In this compact way the long-term impact of public libraries is referred to as enlightenment, education, and cultural activity. Some of the public library services are referred to, when the choice situation is described:

> "It is well known that the economic situation in most of the municipalities is deteriorating. This can imply that some public services have to be reduced or closed down, unless the municipality's revenues are increased.
>
> Assume the Public Library Act amended, so that the municipalities themselves could decide whether or not they wanted a public library. Imagine that the council administration was considering closing down the library. An option would then be to use the public library in a neighbouring municipality or to buy all books, reference manuals, information services, etc. needed by yourself and your household. Library services to schools and adult training courses and to various groups in the local community, such as the "Reach out"-service to elderly in institutions, kindergartens, etc. will cease to exist.
>
> Another alternative is maintaining the library services, if the municipality's revenues are sufficiently increased through additional local taxes."[0]

[0] This scenario description was used in the two WTP subsamples.

The scenario does not intend to describe all attributes or value components of public libraries. It points to some well-known public library services (book lending, provision of reference literature, and information services) and some activities that are less known (services targeted at specific groups in the local community and outreach programmes). The scenario describes a situation where the respondent is presented not with a choice between status quo and a marginal change in the provision of the public library service, but with a choice between having the service at a specified cost or not at all. Our aim is to elicit the population's valuation of the public libraries' *total value*, and the scenario is designed accordingly. "Scenarios can be constructed to elicit total value holistically, or total value and component values in a valid piecewise sequence," Randall explains (1991, p. 312) and continues: For eliciting holistic total value the scenario should require the respondent to compare two situations: one in which the local public library exists and the library services and activities are available at the current quality levels, and the other in which the public library does not exist and hence provides no services and activities.

By constructing our scenario so as to elicit the total value of the local public library holistically, the intention was that the respondents themselves should valuate their local public library as a whole, as they perceive it and as they value it. This way of eliciting the respondents' preferences has both advantages and disadvantages. Advantages are that the individuals value their overall impression of the local library and include all value components they attach importance to, whether they comprise one or several library services, use or non-use values, and regardless of what their motives are for the valuation. Disadvantages are that the respondents do not valuate the same specified range of public library services and that some respondents possibly have inferior information of the full range of public library activities and their long-term impact. Our study is based on a national population sample with respondents from a variety of municipalities. Public libraries are by law found in all of the municipalities but they differ regarding the range and quality and quantity of the public library service due to the size of their population, allocated resources, etc. By the scenario description we have chosen, each respondent values the public library in the municipality where she lives. She values the public library services and activities she is aware of and puts weight to – thus reflecting the present level of both the library's activities and its information of them to the citizens.

An alternative to our scenario description for valuing the local public library would be to elicit the total value by specifying its component values. To determine which components of the complex public library service that should be presented for the respondents is problematic, but the identification of the widely defined broad areas of impact, discussed in subsection 2.2, can be a point of departure. These components should include public library activities making both short and long-term impact. An important advantage of this alternative way of constructing the scenario description is that is relates information of a specific range of public library services, ensuring that all respondents consider these same types of impact. Disadvantages are the problem of determining the range of components to be presented and that pointing to an array of good outcomes and impact of the public library service may influence the respondents to express a 'warm glow'.[0]

In contrast to eliciting public libraries' total value, CV scenarios can be designed to elicit a marginal change in the provision of public library services. The authorities of the municipality decide the level of the local public library funding, and if the CV study were to be performed at the municipal level, then eliciting marginal change would perhaps be most appropriate. The policy choices confronting the local government can be characterized in terms of the relationship between the current level of provision and a proposed change in that level (Mitchell and Carson, 1989, p. 27). The public library is not an indivisible good and its activity level can easily be varied. Marginal changes could for instance be an enhancing or reducing of the opening hours of the local library, by for instance 5 hours per week, or allocating 10% more or less of the funds to buying books to children's literature. If the local decision-makers' aim was to investigate how to make the supply more efficient or explore how different aspects of the library service were valued by the citizens, marginal valuation is well suited. At the municipal level, in contrast to the national, it would be possible, in principle, to construct a demand curve for various 'sizes' of 'qualities' of the local public library service.

The choice situation – WTP and WTA

CV implies that respondents are asked to state their valuation of a change in the provision of a non-market good, in the form of WTP for an improvement, or WTA to accept a change to the worse. The textbook description of the two measures is:

[0] A 'warm glow' effect means that the respondents overstate their WTP because it feels right or popular to pay to 'good', 'superior' purposes, such as charity and environment, and often, as well, to culture and education.

> ”WTP is the maximum sum of money the individual would be willing to pay rather than do without an increase in some good such as an environmental amenity. This sum is the amount of money that would make the individual indifferent between paying for and having the improvement and forgoing the improvement while keeping the money to spend on other things. WAC[0] is the minimum sum of money the individual would require to voluntarily forego an improvement that otherwise would be experienced; it is the amount that would make a person indifferent between having the improvement and foregoing the improvement while getting extra money. Both value measures are based on the assumption of substitutability in preferences, but they adopt different reference points for levels of well-being. WTP takes as its reference point the absence of the improvement, while WAC takes the presence of the improvement as the base level of welfare or utility. In principle WTP and WAC need not be exactly equal. WTP is constrained by the individual’s income. But there is no upper limit on what that person could require as compensation for forgoing the improvement” (Freeman, 1993, p. 8).

For the choice situation in our study, depicting the public library to be closed down if the local taxes are not raised, WTA is arguably the theoretically correct welfare measure. In this situation the individual suffers the loss of not being able to use the local library to which she has hold initial property rights. ”Because of the theoretical relevance of WTA under certain property-rights structures, it seems inconsistent simultaneously to advocate the use of CV and exclude applications to WTA, ” Boyle and Bergstrom (1999, p. 192) claim in a comment to the NOAA Panel’s recommendation of always using WTP in CV studies. The justification of this conservative recommendation of the NOAA Panel is the often wide observed disparity between WTA and WTP, where WTA estimates often are considerably higher than WTP for the same good (Arrow, 1993). The discussion is continuing, despite the NOAA Panel recommendation, and arguments for rational explanations of the WTP-WTA disparity include endowment (Thaler, 1980; Kahneman, Knetsch and Thaler, 1990; MacDonald and Bowker, 1994) and substitution effects (Hanemann, 1991). In our study, a solid majority of the respondents, 94%, acknowledged their property rights to the local public library. Due to this fact we found strong arguments to elicit WTA, in addition to applying the WTP format as recommended by the NOAA Panel.

[0] WAC is willingness to accept compensation. WTA is a more commonly used abbreviation.

Our respondents were all asked two valuation questions. The responses to these questions can be divided into three main types: i) positive responses – expressing that the library has a positive value to respondents and this value is stated in the form of a specific amount, ii) zero bids – expressing that the library has no value to respondents, and iii) protest bids – responses which are generally taken to imply that respondents do no accept the question or the scenario description. Dealing with protest bids is important in many CV studies, and particularly critical for the WTA part of our study. To differentiate between possible and actual protest bids we applied a procedure designed especially for this purpose. Protest bids to the two valuation questions make up between 5 and 12% in the two WTP subsamples, which must be considered low fractions. In the two WTA subsamples, the shares of protest bids are considerably higher, between 20 and 50%. There is a large difference between these two subsamples, and the response distribution in DM-WTA is conspicuous and may be a source of uncertainty. A high share of protest bids makes it more difficult to reach plausible estimates. WTA protest bids are particularly problematic, because there is no way to define a plausible *upper* bound to the compensating demands of WTA protest voters, which complicates interpretation of the answers. For the WTP protest bids there is by contrast a well-defined *lower* bound on valuation, namely zero.

The WTA protest voters were examined to investigate whether or not they had common characteristics. Through a binary logistic regression analysis we found four statistically significant explanatory factors – library use, education, cultural activity level, and a debrief variable, recording whether the respondent agreed or disagreed with the following statement: *"We must retain the local library regardless of the sum of budget funds saved by closing it down."* The overall results of the analysis showed that a WTA protest voter is characterized by agreeing to this statement and being a library user with high education (from university or college), but using few other cultural activities in the municipality. These explanatory factors suggest that among these protest voters there are, expectantly, respondents with a high valuation of public libraries.

Significant explanatory factors for positive and zero WTP bids were also examined. They were found to be the same factors, but with opposite signs. A respondent giving a positive bid is likely to be a *library user* with short *distance* to the local library who finds the *payment vehicle*, additional annual local taxes, fair. A respondent giving a zero bid, however, has the

opposite characteristics and is likely to be a non-user living far from the library and viewing the payment vehicle as unfair.

Multivariate regression analyses of the respondents with positive WTP show that *cultural activity* is statistically significant in all of four different analyses, increasing WTP by approximately 10% for each step up on the 10-points scale of cultural activity. The *household income* elasticity is positive and significant at the 5% level in three of the analyses, and *distance* is negative and significant in both log-linear analyses.

We now turn to the estimates based on the respondents' valuation of public libraries' total value. The research design is developed to yield four independent value estimates and provide the possibility to compare answers between the two elicitation formats, the two valuation questions, and WTP and WTA. We stress the detecting of response uncertainty and error and have developed an elaborate procedure for dealing with protest bids. Our calculations, tests, considerations, and reservation are sought reported in a detailed and transparent way in paper 4, being the basis for concluding on an overall value estimate.

In an overview of estimates based on the two valuation questions, the protest bids are excluded to ensure conservative estimates. The overview for the whole sample shows that elicitation effects are present in our study. Respondents belonging to the DM subsamples have stated clearly lower values to both questions than those belonging to the MBDC subsamples, and this tendency is the same for both WTP and WTA. Comparing the estimates of the first valuation question (in either MBDC or DM format) and the estimates of the second valuation question (OE), we observe a systematic tendency for amounts stated to the first to be considerably higher than to the second for both elicitation methods, estimation techniques, and WTA or WTP formats. The WTP-WTA disparity, on the other hand, is small compared to that found in other studies applying these two approaches, despite the fact that our respondents expressed exceptionally strong property rights to public libraries. Our approach yields estimates of WTA among non-protesters that are higher than those of WTP, but only by a factor of about 4. We derive several different measures of average valuation of public libraries, all of which are higher than average costs.

An objective of our study is to measure the total benefits to the population of public libraries at today's service levels, and thus determine whether they are worth their price as seen from

the citizens' perspective. From our different valuation estimates we are able to establish lower and upper bounds for the Norwegian citizens' average public library valuation. Based on the WTP estimates, we can ascertain a probable minimum estimate, a lower bound for this valuation. The lower bound is approximately 400 NOK, which is close to the average annual library cost per household in Norway.[0] To establish an upper bound is more difficult due to the high share of WTA protest bids, but appears to lie considerably higher than the lower valuation limit. A conservative estimate is 2000 NOK, based on WTA estimates where the protest bids are excluded. It is reasonable to assume that the population's "true" value is higher than the lower bound, because there is no à priori justification to reject WTA in our case, where an extraordinary high proportion of the respondents, 94%, feel they have property rights to public libraries. An important and robust finding and a solid conclusion from our study is that an overwhelming majority of the Norwegian population perceive they have property rights to their local library. The property rights question is an essential argument to attach importance to WTA estimates.

Our CV study explores the social value of public libraries by eliciting this value among a random sample of the citizens in Norway. It is the respondents' stated valuation amounts of the overall value of the public library in their municipality that are measured. Some effects of the public library service are probably not captured by the general public, e.g., long-term effects such as the library's impact on community development, cumulative results concerning social inclusiveness and citizenship, and effects of literacy on employment opportunities. Such effects are difficult both to identify and measure accurately. There are for instance many and long steps between the public library's positive influence in developing a child's pleasure of reading to the youth's ability with regard to education and the grown-up's integration into the labour market. Although there is a recognized relationship between individuals' levels of literacy and their opportunities in the labour market, this is far from a one-to-one relationship implying that there is an automatic positive effect of high literacy and success in the labour force. To isolate and assess possible positive effects due to the public library from effects due to other factors, e.g., formal education and socio-economic background, is a very complex process. We have shown (in paper 3) that many of the respondents in our CV study value social and cultural aspects of the public library service, and these are aspects with wide and long-term effects. 35-40% of their stated total value is thus motivated, underscoring that the general public considers long-term effects as well as short term and immediate effects. It is

[0] Average annual library cost per household were 420 NOK at the time of the survey.

however improbable that the respondents are fully aware of all types of long-term and wide impact of the public library service. Our estimate of the social value of the Norwegian public libraries based on assessments by the general public may therefore be an underestimation, since the libraries have long-term effects that are not captured by the ordinary citizen.

The CV methodology is based on surveys of representative samples of the general population or that part of the population who are affected by a proposed change in the provision of a non-market good. The issue of whether the general public has the necessary knowledge of all central effects of public libraries is critical for evaluation of the validity of our CV study. Our scenario description designed to elicit total value holistically, directs attention to a few well-known and less known public library services and activities and refers to long-term impact from their promoting of enlightenment, education, and cultural activity. The reasoning behind this description of the good is based on the realization that the public library is both a simple and a complex good, as discussed in subsection 3.4, and that the range of services differs significantly between the many municipalities. Since the local public library is a familiar good, we wanted the respondents to valuate their overall impression of the public library in their municipality without being prompted. Our intention by this scenario design is to elicit how the population values the diverse public libraries in Norway at their present activity level and at the present level of information to the public of their services, and this is the basis of our estimate.

We have qualified that the respondents in our CV study have valued both short and long-term effects of the public library service, but there is all the same reason to believe that there are long-term effects that are not captured in our survey. A central issue is whether this problem can be solved within the CV method, e.g., by constructing another scenario, or whether it is irresolvable by a method that is based on samples of the general public.

By an alternative scenario description, as discussed above, the respondents could be given an overview of all central value components of the public library service, including further information about the content and quality of these services and activities. The quality of this overview is critical and will indicate if it is possible to describe all important public library effects in a way that makes a member of the general public capable of capturing them. There are difficulties in making an overview of the value components of public libraries because of

their complexity and wide range of services[0] and types of impact, as discussed in subsection 2.2, and because relationship between library use and future behaviour is difficult to isolate. The great differences between the public libraries in the diverse Norwegian municipalities represent another problem. If the same overview should be presented for all respondents, it would have to be general and not specific. Taylor-made overviews for each municipality's library are possible but will be expensive, and then the respondents will not be valuing the same effects, which is a limitation also by the scenario design we have chosen. If the respondents are provided with a representative overview of value components of the public library service, it is probable that more of the long-term effects are captured than by the scenario design we have used, but there will certainly exist effects that are still not captured. A possibility to learn more of respondents' considerations and motivations for valuing public libraries is to explicitly check for such information bias, by posing this information to one half of the sample and using follow-up questions to elicit which components the respondents without this information valued. This alternative scenario description seems promising and ought to be tried out in future research. There is a need for more CV studies of libraries to establish a basis for comparison and evaluation of the validity and reliability of the estimates.

For assessing types of long-term impact of public library services and activities that are difficult to capture, experts and politicians possess an information basis that the general public does not hold. In attempting to arrive at an estimate of the full value of public libraries in Norway, the results of our CV study need to be supplemented. An option is to supplement the population's valuation with valuation from another sample, preferably experts and politicians. EDPs selected from local communities' educational, cultural, funding, and library authorities, from professions that utilize the library (kindergartens, schools, social and health institutions, etc.), and from local cultural activity groups could be established and given the task of assessing the value of their public library. The final estimate of the value of the public libraries would then be based on results from two stated preference techniques, both CV and EDPs, and this would possibly strengthen its validity and reliability. Other options are to utilize results from qualitative research exploring relationships between public library activities and their long-term effects on communities and citizens. Knowledge from such

[0] Holt et al. (1999) constructed a service/user matrix to make explicit the relationships between public library services and users. The matrix contained 19 different services for the general library user, omitting "[b]y intent, some worthwhile but hard-to-measure collective values (e.g., the library as a safe place for children, as a neighborhood center, or as a family recreational center)" (Holt et al. 1999, p. 104).

research could be used as a basis for constructing models for assessing the monetary value of these relationships.

Our CV study is national, based on a population sample drawn following a stratified three-step design, generally used for omnibus surveys in Norway: (1) municipalities were randomly drawn from clusters based on economic and industrial structure, demographic structure and geography, (2) starting addresses in the municipalities were randomly pulled from the national telephone directory database, and (3) the individual to be interviewed as representative of the household was the person above 15 years of age with the most recent birthday. The sample was then made largely representative with respect to age, sex, occupation, economy, geography, and degree of urbanity (a measure on the urban/rural spectrum). Thus, our sample is representative for the population implying that we can draw conclusions at the national level. Obviously, however, the sample represents only a small fraction of all Norwegian municipalities.

The overall conclusion from our empirical study is that, *on the average,* Norwegian households value the benefits from public libraries clearly higher that the costs of providing the library services. The valuation varies among public libraries in different municipalities. As expected, valuation is higher in larger municipalities with many cultural activities and short distance to a high quality public library headed by a professional chief librarian, than in smaller municipalities with few cultural activities and a low quality library several kilometers away. From our national study conclusions cannot be drawn for each one of the different municipalities' public libraries, thus establishing that all public libraries in Norway have a net value. Our study does not answer distributional or efficiency questions from a marginal view.

The CV study of public libraries in Norway is the main empirical part of this dissertation. It elicits population preferences and justifies that Norwegian public libraries are, overall, worth their price as viewed from the general public's perspective. At a national level, the value of library benefits is shown to be clearly higher than the costs.

Implications for future research

Decisions of local public libraries are in Norway taken at both a national (the Public Library Act) and municipal level (the funding). There is a need for more knowledge of the benefit-cost relation of public libraries at the municipal level, which is not explored in this thesis. A

possible way forward could be attempting to find a relationship or dependence between public library activities and different characteristics of the municipalities. If such a connection were established, it would be possible to suggest a demand and supply function for public library services and activities in the municipalities and to make analyses of the different factors affecting the demand and supply. Among relevant characteristics are the municipality's size (number of citizens; geographical extension), cost and revenue (in total and for the public library specifically), economic and industrial structure, demographic structure, degree of urbanity, and characteristics of its population, e.g., educational level, occupation, household income, and number of children in the household. In addition, characteristics of the public library of the municipality are relevant, e.g., budget allocations, collection size, and a chief librarian professionally qualified or not. An interesting avenue for future research would be to analyse the local public library's value per inhabitant as a function of characteristics of the municipality. Results from such an analysis should form a better basis for comparison of the value and cost of the public library service across municipalities, thus making it possible to group the municipalities according to whether or not their public library has a net value. A probable relationship may then be size dependency: Large municipalities typically have larger revenues and higher funding of the public library, whereas small municipalities typically have smaller revenues and lower library funding. By such studies it will perhaps be possible to indicate some limits for whether or not the public library service can provide net value, e.g., a minimum number of inhabitants in the municipality and a minimum amount of library funding per inhabitant.

5. Conclusions

The need to document public library value is apparent due to continuing economic pressure on public budgets. In economics, approaches for valuation of non-market goods are developed for application to the environmental, health, educational, and cultural sectors. For public library valuation to be successful by using such approaches, we conclude that they must satisfy certain preconditions due to main characteristics of the public library service. The methods used must: i) be able to measure non-use values as well as use values, ii) be capable of integrating valuation motives going beyond the pursuit of individual self-interest, i.e.,

valuations based on sympathy and some variants of altruism, and iii) not violate the assumption of rationality. Methods based on stated preferences (SP) appear to fulfil these preconditions and are found suited for estimation of the value of public libraries. In this way approaches for valuation of non-market goods are found to contribute to the theoretical and methodological arsenal of library and information science.

In our empirical study, non-use values are found to be a very important component of public libraries' total value, making it imperative to include them in a cost-benefit analysis. Excluding non-use values may cause a serious underestimation of public libraries' overall value to society.

Altruism is shown to be a non-marginal motivation for non-use values of public libraries. The way in which altruism is manifested is shown to matter significantly for whether or not the altruistic values should properly be included in a benefit-cost analysis. Values motivated by global and paternalistic altruism are legitimate, while values motivated by local and non-paternalistic altruism should be excluded.

Our attempts to elicitate motivations for the respondents' valuation of public libraries indicate that approximately 40% of the total valuation was justified by own and close family's direct use of the public library, 20% by their future library use (option value) and 35-40% by non-use values. The non-use values were motivated by appreciating other persons' library use, the role of public libraries in disseminating culture and knowledge, taking care of our literary heritage, and promoting democracy and equality. A substantial part of the stated total value of public libraries is thus motivated by their social and cultural benefits. Most of the respondents valued both use and non-use values and were motivated by self-interest as well as by benefits accruing to others and the community. This blend of social motivations and self-interest shown by the majority of respondents is an important finding and may be interpreted to reflect the standing of the public library as a community institution.

A robust conclusion from the empirical study is that an overwhelming majority of the Norwegian population perceives they have property rights to the public library in their municipality.

Our CV study appears to be the first CV study for valuation of public libraries at a national level, in Norway and internationally. It elicits population preferences, and at a national level the library valuation appears to be clearly higher than the costs. Based on these empirical data we conclude that Norwegian public libraries are, overall, worth their price as viewed from the general public's perspective.

Paper 1:

Valuation of public libraries*

Svanhild Aabø

Norway uses approximately 1 billion NOK on public libraries every year. Is this justified from the population's point of view? How do the citizens value the public libraries?

* This paper is published in Audunson, R.A. and Lund, N.W. (Eds.). *Det siviliserte informasjonssamfunn: Folkebibliotekenes rolle ved inngangen til en digital tid.* Bergen: Fagbokforlaget, 2001. Translation from Norwegian to English by Brit Aabø.

1. Introduction

By this millennium change there are two domineering characteristics in the development of society of particular interest to libraries and they form the basis for the majority of recent international library and information research. These two characteristics are, firstly, the IT development and the digitising of society, and, secondly, the continuous pressure on and reductions in the public sector of the economy, of which libraries are an integrated part. Public libraries are facing fundamental changes. Are institutions of this kind needed in the age of Internet? Is it necessary to redefine the role of such an institution for it to remain relevant? And is it possible to defend the fact that society uses limited resources on libraries, taking into account the pressure on public budgets? Do libraries have a value that justifies this resource allocation?

Several important studies throw light on and discuss the role and the challenges of public libraries. They take as their starting point the digitising of society and the transition from the industrial age to the age of information and knowledge (Audunson, 1999; Höglund, 1997; 1995; Benton Foundation, 1996; Bundy, 1996; Greenhalgh, Worpole and Landry, 1995; Greenhalgh, Landry and Worpole, 1993; Andersson and Skot-Hansen, 1994; Birdsall, 1994). Different trends and development characteristics, as well as attitudes adopted by the library profession itself are highlighted. Some of the studies focus on the hazards – questioning the very need for libraries in the coming decades; taking into consideration that a variety of information sources of information are available at the touch of a keyboard, and that PCs are found in many homes, schools, and work places.[0] Others take the stand that public libraries are more important than ever, and argue their view by pointing out the libraries' role in i) the consolidation of the new society of knowledge, a society that, among other things, requires of employees that they change work several times in the course of a working

life (expressions like "continuous competence development" and "lifelong learning" are frequently used catch phrases), ii) diminishing new forms of class distinctions –

[0] 70% of the Norwegian population aged 9-79 years use a PC an average week, 56% at home, 38% at work, and 14% at school (Statistics Norway, 2002).

between those who have computer knowledge and are able to make use of the steadily increasing flood of information and those who cannot (the "info-rich" and "info-poor"), and iii) contributing to the integration of foreign language speakers in the new multicultural society. There are also those who draw parallels to the preceding turn of the century, when the public libraries established themselves and strengthened their position through the strategic role they played during the consolidation of the industrial revolution. They argue that to consolidate the information and knowledge society one must ensure that population groups do not remain excluded and that the public library is well qualified to lessen this new form of class distinction.

Concerning the pressure on the public sector generally and the public libraries especially, Holt, Elliott and Moore (1999, p. 98) describes the situation as it is seen throughout the Western world, from metropolitan areas in the USA to small Norwegian municipalities:[0]

> *Like other public-sector institutions facing today's current conservative fiscal climate, tax-supported urban public libraries are increasingly subject to fiscal scrutiny. As urban schools, hospitals, police, and other essential public services are subjected to skepticism and to formal assessment procedures, many libraries get caught in similar demands for measures of their success. While claiming to be essential to the social fabric of urban communities and, therefore, worthy of precious public resources, libraries also must now respond to the cries of fiscal gadflies who say, "Prove it!".*

[0] During the last two municipal and county elections in Norway (1999 and 1995), the funding of public libraries was a topic of discussion in several municipalities. After the 1995 elections the Labour Party lost its majority in the city council in Oslo, and negotiations for a conservative city government in Oslo were completed between the Conservative Party and the Progressive Party. For public libraries they agreed that: "The city government will evaluate Deichmanske Bibliotek (the public library system in Oslo) and its association to the municipality. … The city government will work for a change of the Public Library Act, to permit user fees for book loan …. For all library services in addition to book loan the city government will attempt to demand user fees that cover their full costs. " (My translation, see Høyre (1996)). This political coalition failed for other reasons, so their political programme was not implemented.

In the light of this critical situation for the public libraries, political authorities like the EU Commission, as well as national ministries of culture, have initiated studies and surveys that have resulted in a series of important library reports dealing with the role of public libraries in the information and network society (Kulturdepartementet, 1999; UBIS, 1997; Thorhauge et al. 1997; Library and Information Commission, 1997; Department of National Heritage, 1997; Nova Scotia, 1997; Aslib, 1995; Mercer, 1995; D'Elia, 1993). Audunson (1999) raises the point that such reports signal how politicians and authorities are in the process of developing a heightened awareness as to the political and social roles libraries may play in the knowledge society, but he underlines that such a conclusion can only be drawn provided the goals of the reports are followed through by practical action. The challenge of the library profession is to show clearly its relevance as regards the important demands within the areas of culture and education in the network society. Public libraries must strive at becoming more visible to the funding authorities, for example by finding methods that can be used to show the *results* library activities bring to society in general, to local communities especially and also to different groups of the population. There is a need for clear figures and typical examples, as well as for research that highlight the value of public libraries.

2. Funding of public libraries

From 1980 onwards the EU Commission has collected information about library economics in Europe. During the first years data was gathered from the 18 EU and EFTA countries, but in 1999 a total of 29 countries were involved (LibEcon2000). Regarding data on the financing of public libraries in the EU and EFTA countries there are aggregated figures available from the two five-year periods 1981-85 and 1986-90 (Ramsdale, 1995). Government funding of the libraries constituted 92.9% of the total expenses in the first five year period and 92.6% in the second, in other words, a reduction of only 0.3%. Fees and charges increased from 3.1% to 3.4%, whereas the category "other sources of income" was a constant 4 %. These figures reflect very small changes during this decade. Throughout the 1980s *governmental funding* of the public libraries' sector was by far the dominating factor. This was a period during

which market liberalism and "thatcherism" were on the offensive in Europe, apparently playing a substantial part in the privatisation intended to reduce the public sector of the economy.

For the 1990s there is available data on library economics up until 1998. To get an idea of main tendencies in the development and to be able to remove inconsistencies that might arise if one compares on a year by year basis, one may divide the period 1991-1998 into two four-year blocks (Fuigi, Sumsion and Ramsdale, 2000). From the four-year period 1991-94 to the four-year period 1995-98 governmental funding of the public libraries in the EU and EFTA countries was reduced by 3.5%, from 93.8%[0] to 90.4%. During the same period the income from fees and charges increased from 3% to 4.5% and the rest category "other sources of income" increased from 3.2% to 5.0%. If we compare the data from the 1980s and the 1990s we see that the rate of reductions in government funding is clearly increasing. If we only look at the most recent data, this trend is confirmed. In the year 1998 the revenue from fees and charges constitutes 4.8%, the rest category "other sources of income" 5.4%, whereas the public financing has reached under 90% and constitutes 89.8% (LibEcon2000).

It may, however, be just as interesting to turn the observations upside down. The figures from the 1990s confirm the fact that regarding public libraries governmental funding is the dominant form. During the last two decades enormous socio-economical changes and upheavals have taken place, particularly within the public sector. Strong state monopolies have fallen and fees and charges for large segments of public services have been introduced. And yet, during this period, one main characteristic is the stability of governmental funding of the public libraries' sector. This is not only happening in the Scandinavian welfare states, it is a European trend, as well.

The trend is the same in the USA. American public libraries are largely financed through governmental funding (93%), whereas only 3% comes from fees and charges, including overdue fines, and the remaining 4% from other sources. Kinnucan,

[0] The percentage for public funding is higher in the period 1991-94 than in the ten-year period 1981-90. This may be due to differences in the countries from which data has been collected during the periods of registration.

Ferguson and Estabrook (1998, p. 187) states: "Although fees have constituted an increasingly important source of revenue for some local government services, such has not been the case for libraries."

What can be the reason for this? Possible explanations may be that i) public libraries, in economical terms, are a mixed good in which the property rights to the majority of library services are either partly privately and partly collectively held or fully collectively held (Aabø, 1998), ii) there is political consensus about the public libraries' role as intermediators of knowledge and culture, and iii) public libraries represent the one cultural good, besides that of the cinema, that is used by the largest part of the population.

Table 1: Users of public libraries in percent of the population, costs per inhabitant, and costs per million in GNP, adjusted for purchasing power parity.

	Users[1] of public libraries as a percentage of the population	**Costs[2] used on public libraries per inhabitant in ECU[3]**	**Costs[2] used on public libraries per million GNP adjusted for PPP[4]**
Denmark	62 %	68	2539
Finland	60[5] %	50	2184
Sweden	58[6] %	38	1717
UK	54[7] %	20	862
Norway	52[8] %	23	829[9]

[1] Users are here defined as those who have used the public library in the course of the last 12 months.
[2] The costs encompass the total public expenses.
[3] Figures from 1997 (Fuegi, Sumsion and Ramsdale, 2000).
[4] PPP = purchasing power parity. Figures from 1997 (Fuegi, Sumsion and Ramsdale, 2000).
[5] Cultural statistics 1999, Helsinki Tilastokeskus (Statistics Finland).
[6] Figures from 1995-1998 (Höglund, 1999).
[7] Figures from England and Wales only (Aslib, 1995).
[8] Statistisk årbok 1998 (Statistics Norway).
[9] These are municipal grants. In addition, approximately 60 million per year in governmental funds should be added. These funds are earmarked the purchase system for literature that is used by the Norwegian Council for Cultural Affairs and help to ease the strain on the book budget.

Table 1 gives an overview of the percentage of the population in Norway and neighbouring countries that are active users of the public library. It also shows the costs used on public libraries per inhabitant and per million in gross national product, adjusted for the purchasing power parity. Adjusting for the purchasing power parity gives a more stable trend for the library investments, but it is not sufficient in

countries where the relative purchasing power in national currency has fluctuated in relation to the dominant international currencies, as has been the case in Sweden. One should therefore be careful when interpreting trends. Even so, the table shows that increased investment in public libraries leads to increased usage. Denmark is at the top with the highest investment and the highest usage, whereas Norway is at the bottom with noticeably lower investments and lower usage.

2.1 Fees

The fact that public libraries mainly are governmentally funded and are used by a large segment of the population has not prevented a debate on other income sources and possible user payment. During the last couple of decades the discussion of whether or not to demand fees or put charges on library services has been a controversial topic in international library literature.[0] The temperature of this debate is high, for whilst some view fees and charges as a practical solution to help a strained financial situation, others feel that user payment for public library services will imply a fundamental breach with the democratic principle that every citizen shall have free access to information and knowledge. Adherents of the latter view insist that this is particularly important in a time when the gap between the "info-poor" and the "info-rich", i.e., those who can benefit from the new information technology and those who cannot, could cement new class distinctions.

In a survey conducted amongst a representative sample of the population in England and Wales[0], respondents were asked which source of financing they would prefer in case the local library should need extra resources in order to keep up services (Aslib 1995). The alternatives they were given to choose from, and they could only choose one, were: i) raising council tax, so that more can be spent on public libraries, ii) raising income tax or VAT to allow for increased central government grants to public libraries, iii) user fees for all library services, including the borrowing of books, iv) local referendum to establish a new fund earmarked the local library, paid into by all

[0] For a revision of user fees in public libraries in the Nordic countries, England, Wales and the Netherlands, see Egholm and Jochumsen (1998).

[0] A representative sample of the population over 16 years, N=1483.

the local households, v) cut-back of services, fewer books and shorter opening hours, vi) relying on volunteers and sponsors for the extra resources, vii) closing down the local library, viii) do not know/decline to say.
Close to two fifths of the respondents gave user payment (iii) as their preferred alternative. If one, however, looks upon the response alternatives for sources for public financing collectively (i, ii, iv,) these alternatives get, as a group, an even higher score.

A similar question was asked as part of a greater survey[0] on public libraries in a Canadian province (Nova Scotia, 1997). In this survey, however, was included an additional alternative to the ones mentioned above regarding methods of funding if libraries needed more money to maintain their services. The addition offered the alternative of a redirection of existing government resources to the public libraries, and this option got the highest score (32%). The alternative implying getting extra funds through community fund raising was chosen by 23% of the respondents, the sponsor alternative by 21%, whilst the introduction of user fees was chosen by 20%. In this survey only 1% of the respondents answered that increased taxes would be a preferred alternative, and only 1% chose cutting of existing services as an alternative.

In an American survey from 1991[0] the respondents were asked to choose between the options raising taxes, instituting user fees, or a reduction in services, if their local public library was facing a fiscal crisis (Kinnucan, Ferguson and Estabrook, 1998). Of the ones responding as many as 47% chose the alternative of increased taxation. This shows a marked contrast to the 1% who favoured increased taxation in the Nova Scotia study. In this American survey 44% preferred user fees, whilst 9% wanted to reduce the services offered.

The surveys referred to above target different aspects and their results are not directly comparable. They do, however, indicate that governmental funding of public libraries

[0] A representative sample of the population over 18 years, N=1200.

[0] In 1991 Library Research Center at the University of Illinois telephone interviewed a national sample of 1181 citizens over 18 years in the USA. Data from this survey was reanalysed by Kinnucan, Ferguson and Estabrook (1998).

has a strong standing in the population, even when the economic pressure towards the public sector is underlined.

3. The goals and main tasks of the public library

Internationally there is strong agreement as to which main tasks the public library has in the community (Audunson, 2001; American Library Association, 2000; Briggs, Guldberg and Sivaciyan, 1996; Greenhalgh, Worpole and Landry, 1995; Greenhalgh, Landry and Worpole, 1993; Unesco, 1995; Public Library Act, 1985). The purpose of the public library is to:

- **further democracy** – by giving the inhabitants access to a broad selection of information, views and education as a foundation for active participation in public debates and elections.
- **further equality and social justice –** by being free of charge and open for all and by contributing to the diminishing of social inequalities, e.g., by offering everybody access to Internet and new information technology.
- **increase access to information** – by being an alternative to other sources and by being a public centre of resources that is easily accessible and in which individuals, organisations and institutions can find information that is useful to them.
- **disseminate culture and knowledge** – by extending knowledge of the national heritage and of national and international literature, both to present and future generations, and by advancing literature about history and social life.
- **contribute to a meaningful and informative leisure time –** by lending out good books, good music and good films.
- **be a communal institution and a social meeting place –** by being a place where people of all categories meet and a public space that helps binding the community together.

It is obvious that these goals have an impact on the society and equally clear that they are the reason for governmental funding of public libraries. One way of expressing the library's value is to say that the above goals demonstrate which value libraries have or ought to have. An estimate of the value of libraries to society must take these goals – and the degree to which they are actually acted upon – into consideration. This is a way of understanding the value of public libraries that clearly goes beyond the narrower valuation of direct economic value, sometimes used in studies (Mercer, 1995; Briggs, Guldberg and Sivaciyan, 1996, p. 27):

> "…'economic' value [of public libraries]… being clearly associated with the productive activities of education, exploring commercial information, preparing for job interviews and the like."

As opposed to such a narrow understanding of economic value one could claim that the library's main goals and social tasks also have an economic value for the society. Use of public libraries further people's education, level of knowledge, sense of critical assessment, creativity, etc., – and such qualities have a communal, as well as a socio-economic, value.

4. Valuation of public libraries – previous research

Several studies have been published that, by various methods, try to find answers to questions regarding the significance of public libraries to the population and how the population values the public libraries (Holt, Elliott and Moore, 1999; Höglund, 1999; Reppen, 1998; Nova Scotia, 1997; Briggs, Guldberg and Sivaciyan, 1996; Aslib, 1995; Mercer, 1995; D'Elia, 1993). Below, results from those parts of previous research of particular interest regarding the *valuation* of public libraries are discussed.

4.1 General surveys

An American study set forth to explore what the public in general, as well as the community opinion leaders[0], felt about which roles the public libraries should play and how much of public funding should be used to finance the library (D'Elia, 1993). The empirical data for this survey was collected through telephone interviews of two nationally representative samples, one of members of the population in the USA older than 18 years of age, i.e., both users and non-users of the library (N=1001), the other of local politicians and others of particular standing in the community (N=300).

All respondents were asked to evaluate and range ten different library roles. The result indicated that the role of public libraries as a support for learning and development for all age groups, from pre-school children and pupils to students and adults, was considered the most important, both by the population generally and by the community opinion leaders.[0]

In an attempt to reveal the respondents' opinion about the amount of financial support that the society should provide to the library, as well as to give the interviewees a realistic basis for assessment, the research group decided to pass out information on the range of actual community per capita support. The per capita support to the public libraries at the time when the survey was carried out varied considerably, from $4 up to $100 per year.

In order to find the best possible way of formulating the valuation question, a pilot study was carried out. Its purpose was to test two different versions of question, one with an open valuation question, the other with a payment card of intervals of $20 ($1-$20, $21-$40, etc., up to $100). The pilot study did not yield results of a statistically significant difference, but the percentage of respondents who did not wish to answer was considerable in both versions. A new pilot study indicated that information about the amount of average national funding to public libraries per inhabitant, significantly reduced the number of respondents who did not wish to answer. Consequently it was decided to give this additional information to the respondents, to ensure that the interviewees would get as much information as

[0] Community opinion leaders were chosen from the four groups i) media representatives, ii) political leaders, iii) leaders from industry and business and iv) leaders within education (D'Elia 1993, p.8).

[0] Results from a recent Norwegian study are in accordance with this (Audunson, 2001).

possible on which to form their assessment. At the time of the survey the sum per inhabitant to public libraries was, on a national average, $16.

The results from the main survey showed that 35.8% of the respondents answered that between $1 and $20 per inhabitant per year should be used to finance public libraries using public means. This interval contained the national average of $16. As many as 52.4% answered that the sum should be higher than $20, whereas 12.5% did not wish to answer this question. The answers from the respondents showed that on an average $34 per inhabitant per year ought to be used on public libraries through public means – in other words double the amount that was actually used at the time of the survey.

A later American survey, based on D'Elia's (1993) work, wanted, amongst other things, to map the degree to which the population supports – or does not support – the libraries at the present time, being faced with the digital world. One of the questions asked (Benton Foundation, 1996, Appendix, question 3):

> "Now, imagine that you have a personal computer at home. Which would you prefer:
>
> - Spending $20 a year to buy disks or information to install on your computer.
> - Spending $20 a year in taxes that enables your public library to have an information service that you could access from your home computer."

33% of the respondents answered that they would buy software to install on their home computer for $20 per year, whereas as many as 52% answered that they would pay $20 per year in increased taxes to ensure the local library means to develop and maintain an information service that they could access from their home computers. (2% answered both alternatives, 6% none of the alternatives and 7% do not know.) Broken down into age groups it was apparent that the majority amongst the youngest (18-24 years) preferred to buy their own software instead of contributing means for the libraries to buy and offer digital information. 73% of the young adults (24-34 years), however, answered that it was important that the libraries, in a strained economical situation, put priority on giving access to computer services to those who did not have a home computer. This percentage was markedly higher than for the

other age groups. Respondents belonging to minority groups also felt that the library should put a high priority on offering computer services to the "information have-nots" and to those who do not themselves have a PC. A clear majority of these respondents answered that they would pay more tax in order for libraries to be able to offer digital library services to be accessed from home computers. The report interprets the answers as an indication that Americans look upon digital information as a public good and not as a private good.

In a new Swedish study of a representative sample of the population, people's willingness to pay for public libraries was approached by asking the respondents if they would be willing to pay higher taxes if the money was earmarked the library in their own municipality (Höglund, 1999). The response alternatives were ranged on a scale from 0-10, from *no* to *extremely large* willingness to pay higher taxes. The answers were sorted into four main groups according to willingness to pay, and showed that of all the respondents (N=1821) 30% had *no* willingness to pay **(**scale value 0), whereas 33% answered that they had *some* (scale values 1-4), 27% *rather large* (scale values 5-7) and 8% *large* (8-10) willingness to pay higher taxes.

A sorting of the answers according to the level of education of the respondents showed, not surprisingly, that the willingness to pay increased with the length of education. Only 18% of those with a higher education had *no* willingness to pay higher taxes to the library, against 36% of those with a lower education, whereas as many as 14% of those with higher education had a *large* willingness to pay against 6% of those with lower education.

In other words, almost 70% stated that they were willing to pay higher taxes if the money would benefit the local library, and this is a noticeable finding. Höglund points out that the term "higher taxes" was deliberately chosen to invite reservations, but even so one should interpret this type of question with caution and balance the results against the fact that a demand for increased taxes normally is rare. His conclusion is that these responses mainly express a marked willingness to pay at least some taxes, also to the local library.

To ensure that statistical information of the above kind is convincing, the survey must be formulated in a manner that makes it possible to control sources of systematic error, among them *strategic answers* where the respondent may benefit from understating or overstating her demand for the good (the free rider problem), *interviewer bias* where the respondent wants to please the interviewer, and *part-whole bias* where the respondent values a larger or smaller entity than the researcher's intended good.

One may approach the question of the value of public libraries in several ways. In the above survey (Höglund, 1999) respondents were asked how important they considered libraries to be in order for the community to function. Approximately 80% answered that they found public libraries important, but the percentage who had used the library in the course of the previous year was 58%. Figures from a Norwegian survey (Reppen, 1998) show similar results – 74% of the respondents thought it was *very important* or *rather important* that there should be a good public library in the municipality, whereas 47% had themselves used the public library during the last 12 months. The results from both surveys show that many more than those who themselves use the library consider it important. This seems to indicate that people's general attitude to libraries is not only decided by personal use and thereby by direct personal benefit, but includes both use and non-use values and is looked at in a larger perspective. By using a methodology that makes it possible to i) include *both* use and non-use values in the valuation and ii) control for methodological weaknesses as mentioned above, one should be able to get an estimate of the public libraries' value in society by investigating how a representative sample of the population value the library.

4.2 Methodology to valuate non-market goods

Society's need to valuate non-market goods has led to the development of two main groups of valuation approaches. One group is based on observed behaviour (revealed preferences, RP) and the other is based on respondents stating their preferences (stated preferences, SP). To be able to include all the value elements in a valuation study, use and non-use values alike, it is necessary to employ a method from the latter group.

The contingent valuation (CV) method is by far the SP method most frequently used, especially in environmental economics, whereas the SP method *conjoint analysis* is frequently used within transportation and health economics.

4.2.1 The conjoint analysis

By using the conjoint analysis the good that is being valued (here: the library) is described through a set of attributes, e.g., by means of different library services and products, library roles and their effects or results of the library's activities. In short, the method involves a random selection of respondents who are presented with a set of hypothetical situations, delineated in a series of different dimensions. Every situation is described, e.g., through a card with a specific value for each attribute describing the good to be valued. The respondents are asked to rank or rate combinations of two or more attributes and, possibly, choose one alternative (Fridstrøm, 1992). Experience shows that the interviewees can handle up to 16 different cards, which makes it possible to reach a result from at least 15 independent, situations of pairwise choice. It will, therefore, be sufficient with a few hundred observations in order to make mathematical-statistical analyses with considerable degrees of precision.

One advantage of using this method is that the respondents are presented with real situations of choice where it is easy to identify the different elements that are part of the valuation. Another strength is that the respondents go several rounds with choices, so that the expressed preferences are consistent. A disadvantage of using the method is that the manner of payment is indirect and researchers must deduce the respondents' willingness to pay.

Conjoint analysis has been used in a few instances within the field of library and information science (Aslib, 1995; Landrum, 1995; Crawford, 1994; Halperin, 1981; Halperin and Strazdon, 1980). With one exception, the method has been used to valuate a specific service, amongst others the reference service, and which aspects of it (definitiveness of answers, number of items given to patron, in line wait times, hours of service, cost of service, etc.) were most important to the users. In the study

referred to below, however, conjoint analysis was used to evaluate the activities of public libraries seen as a whole.

In 1994, the Department of National Heritage gave Aslib (the Association for Information Management) the task of examining the public libraries' service in England and Wales, as well as evaluating the extent and the value of current public library services offered to the public by local authorities in England and Wales. The task was extensive: the research team should draw up guidelines and a framework for what an extensive and efficient modern library service ought to include, it should evaluate whether changes in the library laws or regulations would be advisable, it should also identify key areas that needed attention on a national level. The survey had to be carried out in a short time span – from March to December 1994, and the final report was presented the following year (Aslib, 1995). Even so, the collection of data was exceptionally extensive – data was collected both from library users and non-users, from library staff and management and from public library authorities, and both quantitative and qualitative methods were employed.

The researchers made use of conjoint analysis as one element in surveying which views the population in England and Wales had of public libraries, of the extent of the library services and of the value the population assigned to them.

In a conjoint analysis respondents are presented with pairwise choices. The choices that were simulated in this analysis called for a ranging of cards on part of the respondents, these cards showing statistical representative variables, drawn from four main types of benefit. Every card contained one choice from each of the four main benefit groups a) through d) below, and the respondents chose pairs amongst cards that contained different combinations.

The four types of benefit were the public library's

a) goal:

(1) direct use: "I want to use the library regularly"

(2) indirect use: "Every community ought to have a public library"

(3) prospective use: "The public library should exist in case I want to use it in the future"

(4) future generations: "The public library ought to be kept up for future generations"

b) opportunities:

Suppose more money is available for the public library service, how should it be spent:

(1) more money spent on books for your library

(2) longer opening hours for your library

(3) a wide range of new library services

c) accessibility:

After the proposed changes, the population of the local community will be able to reach the library in:

(1) 12 minutes; (2) 24 minutes; (3) 48 minutes

d) cost:

Additional annual cost per household:

(4) (1) £5; (2) £10; (3) £20; (4) £50

Points a) and d) are of particular interest here. For point a) the study gave information about the way different groups of the population ranged the four aspects of the public libraries' goals. Frequent users[0] of the library naturally had *direct use* of the library, but it is interesting to observe that they emphasised even more the *indirect use.* From this observation the researchers made the interpretation that the respondents regarded the library as a public good, and a public good that they themselves resorted to and found useful. Respondents who use the library once in a while[0] also emphasised the indirect use of the libraries, but they considered the library's importance for *future generations* as more important. Non-users of the public library naturally had no direct use of the library, but they put some score on the importance for future generations and most score on the indirect use of the libraries. It is worth noticing that none of these groups put priority on *prospective use*, i.e., expected, yet uncertain, use, in other words the use an individual has of the fact that the library exists in case she should need it in the future. The report concluded that there was a marked support for a view of the public library being a good of considerable value for the community. A majority

[0] *Frequent users* are defined as persons who use the public library once a month or more.

[0] Respondents who say they *use the library once in a while* are defined as persons who use the public library less than once a month, but at least once a year.

looked upon the library as a valuable resource for future generations and as a public good that should be found in any local community.[0]

From the conjoint analysis one could also estimate the respondents' views on additional annual cost per household in order to *improve* the library services. The figures, £5, £10, £20 and £50, were options for the aspect "additional annual cost per household," see point d) above. The result showed that people on an average were willing to pay between £5 and £10 per year in extra costs per household to improve the library services.[0]

4.2.2 The contingent valuation method

The contingent valuation (CV) method is a *direct* method using surveys to value non-market goods. To summarise, respondents are presented with a description of the good that is to be valued, its present quantity and quality and an estimated change in this quantity or quality, as well as the payment vehicle.[0] In interviews the respondent is asked to state her value in a constructed market. The respondent is asked to assess thoroughly the described change and then to state her maximum willingness to pay for the improvement (or her minimum claim to compensate for the worsening) that this change implies for her. There is a strong theoretical background for constructing such hypothetical markets. Research has made use of knowledge from the areas of social sciences, sociology, psychology, survey research, experimental design and marketing (Carson, 1991), as well as from economics. A typical aspect of a hypothetical market is that the market situation is initially unfamiliar to its participants. There are therefore strict requirements as to how such surveys should be carried out. The design should ensure that key sources of error of CV be minimised. The NOAA panel[0] summed

[0] This is in accordance with figures from recent Norwegian and Swedish studies, see (Reppen, 1998; Höglund, 1999).

[0] The figures are not index regulated, but are those that were given in 1994 when the study was carried out.

[0] For a thorough introduction to the method, see Mitchell and Carson (1989).

[0] In 1993, NOAA, the National Oceanic and Atmospheric Administration, under the US Department, appointed a Contingent Valuation Panel of experts within the field of economics, who should evaluate the use of CV in connection with quantification of non-use values. The Nobel Prize winners Kenneth Arrow and Robert Solow chaired the panel. The conclusion in the panel's final report is that CV is suitable for this purpose, given that the application fulfils specific criteria. The report contains a

these up as inconsistency with regard to rational behaviour, lack of a meaningful budget restriction, exact understanding of what is being valued, acceptance of the scenario, the extent of the market and the 'warm glow' effect[0] (Arrow et al., 1993).

The main strength of the CV method is its directness in eliciting public-good values, while its weaknesses are the possibility of strategic manipulation, the lack of familiarity with the choice situation, and (usually) the lack of formal commitment to the stated values, in terms of actual payment. The pros and cons of the method are the cause of discussions and the ongoing controversy about the methodology is reflected in the literature (Bateman and Willis, 1999; Portney, 1994; Diamond and Hausman, 1994; Milgrom, 1993; Arrow et al., 1993; Mitchell and Carson, 1989). There is still a reasonable consensus that the method is in most cases better than the alternatives available, and this is responsible for its popularity. CV has by now been applied in more than two thousand studies internationally and the number of studies reported in the literature is growing rapidly. The method is primarily used to value environmental goods, but has, in addition, been used to value a series of public goods within the sectors of health, social services and transportation. CV has also been used in certain cultural economical analyses[0], amongst these:

1. Throsby and Withers (1983) studied the demand for culture as a public good in Sydney, Australia.
2. Morrison and West (1986) assessed the population's willingness to pay for "performing arts" and "culture in general" in Ontario, Canada.
3. Martin (1994) used different methods to estimate the aggregated value of a museum (Musee de la Civilisation) in Quebec, Canada.
4. Pedersen, Navrud and Strand (1995) assessed the visitors' willingness to pay for restoring and preserving the Nidaros Cathedral, Norway, in an acceptable state of repair.

systematic presentation of possible sources of error, as well as guidelines on how to perform CV studies.

[0] A 'warm glow' effect means that the respondent overstates her willingness to pay because it feels right or popular to pay to "good," "superior" purposes, such as charity and environment, and often, as well, to art and culture.

[0] For an overview and a critical examination of cultural economic studies using CV, see Bille Hansen (1996, chap. 4).

5. Bille Hansen (1996) studied the Danish taxpayers' willingness to pay for the Royal Theatre in Copenhagen.
6. Roche Rivera (1996) studied the willingness to pay of the population in Buenos Aires, Argentina, for the city's traditional Teatro Colón.
7. Papandrea (1999) studied the willingness to pay of the population in Australia for nationally produced television programmes.
8. Holt, Elliott and Moore (1999) tried to determine the value of St. Louis Public Library, USA.
9. Harless and Allen (1999) used CV to measure patron benefits of reference desk service in an academic library in the USA.
10. Navrud and Ready (2001) compiled several European studies valuing cultural heritage.

Below, the two Scandinavian studies will be presented briefly as regards samples, non-use values and specific results, and we will also look at the two library studies.

The Nidaros Cathedral

The Norwegian study aimed to assess two different qualities of the Nidaros Cathedral, i) preserved the way it stands today, and ii) restored, but in a less original state than today.

Sample: The respondents were chosen randomly amongst those who visited the cathedral in the course of the summer of 1991. 237 persons were approached, 163 personal interviews were conducted.

Use and non-use value: Use value was defined as the value of visiting the cathedral. Non-use value was represented as i) bequest value, i.e., the motivation to preserve the Nidaros Cathedral for the benefit of other citizens, foreigners and future generations, and ii) a lump category including all motivations other than use and bequest value; primarily based on valuation of the civilisation-history aspect and the fact that the Nidaros Cathedral is an active church and a place of religious worship. Amongst other things the respondents were asked to state their willingness to pay for the preservation of the Nidaros Cathedral in its present state by means of reducing air pollution. They were also asked to state the part of the willingness to pay that was motivated by i) use value, ii) bequest value and iii) the lump category.

Specific results: Willingness to pay motivated by non-use values dominated the answers from the interviewees. The main motive was bequest value, and a total of 80% of the aggregated willingness to pay was motivated by the value of preserving the Nidaros Cathedral for fellow citizens, foreigners and future generations. The use value was 14%, a lower figure than in similar studies, and the lump category was 6%.

The Royal Theatre, Copenhagen

Bille Hansen (1996) used CV to disclose the Danish taxpayers' willingness to pay for the Royal Theatre in Copenhagen.

Sample: The survey covered a random sample of the Danish population above the age of 16. 1843 individuals were telephone interviewed in 1993. The data set is unique in the sense that it covers both visitors and non-visitors of the theatre. Tourists were excluded from the survey.

Use and non-use values: The use value was defined as the consumer surplus in connection with the public's visits to the theatre. The main motives for non-use values were shown to be *bequest value, vicarious consumption* (the pleasure of reading about plays or actors; the value of television transmissions, etc.), *educational value* (the arts are part of upbringing and general education, and benefit society as a whole by contributing to the development of aesthetic, creative and critical abilities and qualifications), *prestige value* (international recognition of the theatre may add to national pride and identity) and *option value* (the possibility to attend the theatre at a later time).

Specific results: The users of the theatre had a noticeably higher willingness to pay than the non-users. The users only constituted 7% of the sample, but their willingness to pay accounted for 12-18% of the total willingness to pay, depending on whether the median or the mean was used for aggregation. Bille Hansen remarks, however, that it may be equally interesting to turn the conclusion upside down: the non-users represent by far the biggest part of total willingness to pay for the Royal Theatre, namely 82-88%.

The reference service in a university library

Harless and Allen (1999) use CV to examine the value of a single library service (the reference service) at a specific university library (James Branch Cabell Library, one of

University Library Services' two campus libraries at Virginia Commonwealth University, Richmond, Virginia).

Sample: A random sample of students and faculty at the university, both library users and non-users (N=382).
Use and non-use value: This study showed that in addition to the use value the option value is considerable, i.e., the value a person who does not use or rarely uses the reference service gives to the fact that the service exists and is available on request. Willingness to pay broken down according to respondents' use frequency of the reference service (more than 10 times in the course of a term, 6-10, 2-5, 1 and 0) showed no statistically significant difference.
Specific results: The value on the current hours of reference desk service exceeded the cost by a ratio 3.5:1.

St. Louis Public Library, USA
The aim of Holt, Elliott and Moore (1999) was to develop a methodology to estimate the direct return on annual taxpayer investment in public libraries. They used three cost-benefit analysis techniques: consumer surplus, cost of time and contingent valuation. The last-mentioned method is referred to below.

Sample: 2,350 households were selected at random amongst 72,000 registered "active cardholders" in the St. Louis Public Library, i.e., those who had used their library card within the last twelve months. Sixteen percent agreed to participate in the survey, done by telephone interviews. In the selection of 235 households that completed the interviews there was, as expected, an over-representation of white Americans, high-income households and people residing in the town's "better areas". These biases were mathematically adjusted by weighting procedures.

Respondents were posed two valuation questions: i) were they willing to accept the closing down of all public libraries in the region, and, if that were the case, what would they demand as compensation (WTA^0), and ii) how much would they be willing to pay annually to maintain the St. Louis Public Library as it exists today

[0] Willingness to accept (WTA).

(WTP[0]). In the WTA format the respondents were asked to choose between ranges from "between $1 to $100"[0] to "over $2,500". In the WTP format the respondents were asked to round their estimates to the nearest $100. The aggregated WTA results were $136 million, this corresponds to a tax payer refund of $9 for every dollar invested in the public library. The problem with this result is that only 12% of the respondents, i.e., 45 households, accepted the scenario[0] and were willing to suggest a compensation for closing down the public libraries. The aggregated WTP result was $15.2 million, corresponding to a tax payer refund of $1 per dollar invested in the public libraries, i.e., costs and benefit even out. The differences in the responses in the two questionnaires WTP and WTA were, in other words, 1:9. The survey's final estimate, based on a collected evaluation of the three methods, was that "the library's users are receiving more than $4 in direct benefits for every $1 of tax revenues that the public is investing annually in the institution [St. Louis Public Library]" (Holt, Elliott and Moore, 1999, p. 99).

5. Concluding remarks

The library studies discussed in this paper have had various aims and have employed different methods. Some have asked library users questions on how they value the public library, others have been directed towards the general public, including non-users. Some studies have concentrated upon valuing the public library generally, whereas others have focused on special library services. This does not give a basis for a conclusion regarding the value of public libraries in the society.

As a summary the following points should be mentioned. As regards the financing of public libraries on an international level, governmental funding dominates completely. There has been little change from 1980 until today. Figures from Europe show that the

[0] Willingness to pay (WTP).

[0] Intervals of 100 US$ are very big intervals in relation to average costs per household for public libraries, and may, possibly, mean anchoring bias. D'Elia (1993) used intervals of $10, see the section "Valuation of public libraries – previous research," above.

[0] This is a serious methodological problem, as it is vital that the respondents find the scenario plausible.

percentage has sunk as little as from 93% to 90%. But it is worth noticing that there has been an increase in the change tempo in recent years.

The results from the general surveys on the value of public libraries may be summarised as follows. An American national study (D'Elia, 1993) showed that the population was of the opinion that one should use more than double the amount of public means than what was actually being used on public libraries. A Swedish national survey (Höglund, 1999) showed that almost 70% of the respondents declared themselves willing to pay somewhat higher taxes if the money was used on their local library. In both this and a Norwegian survey (Reppen, 1998) a noticeably larger part of the population (80% and 74% accordingly) stated that they found public libraries important, than that part of the population who actually use the libraries (58% and 47%). This implies that public libraries have non-use values.

The results from valuation studies of public libraries based on *stated preferences* may be summarised as follows. A conjoint analysis (Aslib, 1995) showed that people were willing to pay between £5 and £10 annually in additional expenses per household to improve the public library offer. A study based on *contingent valuation,* to find the value of a single library service in a university library, showed the relation between cost-benefit to be 1:3.5 (Harless and Allen, 1999). A study to value St. Louis Public Library by using several methods, including the contingent valuation method, showed the relation between cost-benefit to be 1:4 (Holt, Elliott and Moore, 1999).

Of the two SP methods described above CV is the most direct method. It aims at reaching a direct value of the good (here: the public library) without having to detour. In the conjoint analysis the respondents are presented with a series of pairwise choices, from which the researchers can deduce the respondents' willingness to pay. The conjoint analysis has advantages when the purpose of the research is to establish the relative value and importance various arguments (range of library services; availability regarding opening hours and travel distance; educational, cultural or recreational dimensions, etc.) have regarding the respondents' utility function. When the purpose is to find the aggregated willingness to pay for the good, however, CV appears to be the better choice (Ryan, 1993).

To my knowledge only two public library valuation studies where SP methods have been employed, are reported in the literature of library and information research, and they are both referred to above (Aslib, 1995; Holt, Elliott and Moore, 1999). In these studies several approaches were tested, of which the SP method was one. A common finding from studies comparing results from different approaches to the valuation of a given environmental good, is that these different valuation approaches result in systematically different willingness to pay estimates for the given good. This proved to be the case in the library studies, too. There is therefore a need to analyse more carefully the reliability of the different valuation approaches and the reasons why valuation based on different approaches differ. Halvorsen, Strand, Sælensminde and Wenstøp (1997) compared the three SP methods contingent valuation, conjoint analysis and expert decision panels, and found that these methods cannot be ranked unambiguously in terms of reliability or appropriateness for valuation. Their conclusion was that these three methods complement each other and can be applied to the same valuation issue, thus potentially raising the overall reliability of the value estimates.

Library and information science has a large and varied literature based on user surveys. There are also many cost studies in which the average costs for various library operations are calculated and shared out into relevant library services and are subdivided according to user frequency, etc. A separate field (performance measurement) within library and information science research was established in the 1990s with an international conference and a journal.[0] Studies that aim to estimate a value on the public library activities as a whole, not only on specific library services, that aim to uncover both library users' and non-users' valuation, and that make it possible to evaluate all relevant value elements, both use and non-use values, are, however, still rare.

Comparative valuation studies based upon SP methods have not yet been reported in the literature, neither for public libraries nor for other cultural goods. To achieve the best possible value estimate of the public library, a study should encompass a survey

[0] Northumbria International Conference on Performance Measurement in Libraries and Information Services is a biannual conference. The title of the journal is Performance Measurement and Metrics, ISSN 1467 8047.

based on CV as well as on another SP method. By basing the estimate on two different SP methods one may reach an approximation of the value of the public libraries with a high degree of reliability and strong validity.

Paper 2:

Rational choice and valuation of public libraries: Can economic models for valuating non-market goods be applied on public libraries?*

Svanhild Aabø and Ragnar Audunson

Abstract

While sophisticated economic models are well-established for determining the value of non-market goods, there have been some questions as to whether there may be problems connected with using these methods for determining the value of public libraries. The background to these economic models is reviewed, noting that the two major preconditions that must be fulfilled are that the method must be compatible with the presupposition of rationality, and it must be able to capture non-use values of public libraries and values no related to the immediate pursuit of individual self-interest in ways which are compatible with the presupposition of rationality. The validity of the preconditions for public libraries is discussed, noting that the question fall into three main problem areas: whether it is possible to define rational behaviour as a wider concept, including behaviour not motivated by the pursuit of self-interest, whether this wider definition fits with the assumptions of 'behavioural' economic models, or whether the models need to be revised for a wider definition, and whether or not the models currently available are valid for the purpose in hand. A brief presentation of the theory of rational choice is presented, followed by an examination of the concepts underlying the assumptions of individuals as economic agents seeking to maximize their utility. It is concluded that three conditions must be fulfilled for non-market methods to be useful with regard to public library valuation: they must be able to measure non-use values as well as use values, they must be capable of integrating valuation motives which extend beyond the pursuit of individual self-interest, and they must not violate the assumption of rationality. Among the methods for valuing non-market goods, the contingent valuation method seems to fulfil these conditions and should, therefore, be tested in a public library context.

* This paper is published in *Journal of Librarianship and Information Science* 34 (1), 2002.

1. Introduction

1.1 The general problem: An increased pressure towards documenting value

In a situation characterized by a growing pressure on public budgets, most public institutions are under increasing pressure to document their value. Public libraries are no exception in this respect and the situation is reflected in public library research. From different theoretical and methodological positions, researchers are striving to develop instruments, which will make it possible to make valid statements about the value of libraries. Some rely first and foremost on approaches that can be termed traditional sociological survey research (Audunson, 2001; Benton Foundation, 1996; Aslib, 1995; D'Elia, 1993). Others use softer methods, e.g., focus groups, either alone or in combination with quantitative surveys (Linley and Usherwood, 1998; Matarasso, 1998).

Within the social sciences, economists have developed the most sophisticated methods for determining the value of non-market goods. In this article we will discuss the fruitfulness of and some problems connected to making use of methods developed in economics for evaluating non-market goods when trying to determine the value of public libraries. Can such approaches contribute to the theoretical and methodological arsenal of library and information science?

1.2 Economic valuation methods and their use in library science

The apparent need to determine the value of non-market goods has led to the development of a variety of valuation approaches, one main grouping of which is based on stated preferences, in contrast to revealed preferences. Stated preference methods imply that individuals are asked to give an opinion or assessment of the good directly, whereas revealed preference methods start from the observation of the behaviour of individuals who utilize the public good and assess the value on this basis, usually with the help of behavioural economic models. An implication is that

revealed preference methods are only able to capture use values. Stated preference methods, however, have the property of being able, in principle, to capture the total value of a public good, i.e., both its use and non-use values. In order to be fruitful in library and information science, a method has to be able to capture non-use as well as use values. Among the stated preferences, approaches those based on *contingent valuation* dominate. Contingent valuation draws upon economic theory and the methods of survey research to elicit directly from citizens the values they place upon goods not traded in private markets.

Although they are few, we do find in library studies some efforts to utilize valuation methods from economics based on stated preferences. The majority of these focus upon one specific service, e.g., the reference service, and not the value of library services as a whole, and they use the method conjoint analysis (Landrum, 1995; Crawford, 1994; Halperin, 1981; Halperin and Strazdon, 1980). There are, however, exceptions to the general tendency. A study from 1999 uses contingent valuation to estimate the value of reference services in an academic library (Harless and Allen, 1999). A large-scale study from England and Wales used conjoint analysis to estimate the value of public library services as a whole (Aslib, 1995). In a recent study from St. Louis, contingent valuation was used to place a value on the city's public library service (Holt, Elliot and Moore, 1999). The study concludes that the benefit to tax ratio of the public library is 4:1, i.e., for each dollar invested in public libraries society gets back benefits worth $4.

Using stated preference methods, e.g., contingent valuation, to estimate the value of public libraries is, however, problematic. There are philosophical and methodological problems related to the use of the method. Some of these are related to the method as such. A serious allegation from opponents of the approach is, for example, that contingent valuation studies are inconsistent with the assumptions of rational choice, which is crucial in economics. Other problems are related to estimating the value of public libraries, or rather the character of public library services, of which two are of particular importance:

- If the objection that contingent valuation collides with the assumption of rational choice based on the self-interest and preferences of individual consumers is valid,

the very nature of public library services adds to that problem due to the fact that public libraries are not – at least not only – linked to individual self-interest, which will be discussed below.

- Another characteristic of public libraries is that they are extremely complex institutions. They produce services which are directed towards highly different spheres of life: kindergartens, local industry, services to elderly people, the educational sector from primary school to universities, leisure time activities, etc. Is it meaningful to ask respondents to place one value on such a broad range of products and services in the same sense as one in other contingent valuation studies has placed values on for example unpolluted lakes, access to parks in metropolitan cities, the value of a theatre, etc?

If economic valuation methods based on stated preferences are to be fruitful when estimating the value of public libraries, the following preconditions have to be fulfilled:

- The method, as such, must be compatible with the presupposition of rationality.
- The method must be able to capture non-use values of public libraries and values not related to the immediate pursuit of individual self-interest in ways, which are compatible with the presupposition of rationality.

The aim of this article is to discuss these questions, i.e., the concept of rationality and the theory of rational choice with regard to its implications for individuals' assessment of public libraries.

These questions can be classified into three main problem areas:

1. Is it possible to define rational behaviour as a wider concept, including behaviour not motivated by the pursuit of self-interest, e.g., commitment to political and / or moral values or altruism?
2. Will this wider definition fit with the assumptions of 'behavioural' economic models, or do the models have to be revised if a wider definition is to be integrated?

3. If we answer 'yes' to 1) and 2) above, the next question is whether or not the stated preference methods, which we have at our disposal, are valid operationalizations of the values which we want to measure.

This paper is structured as follows: In the next section we give a brief presentation of the theory of rational choice. We proceed by examining the concept of man that underlies the assumptions of individuals as economic agents seeking to maximize their utility. The possibility of widening the concept of rationality beyond the pursuit of self-interest is discussed. The concepts of 'sympathy' and 'commitment' introduced by Sen as complementary reasons for man's behaviour are discussed (Sen, 1979). The 'utility' of and 'preferences' for public libraries are illustrated. The special case of altruism as motive for favouring libraries and the possibility of integrating altruistic motivations in an economic perspective based on rational behaviour are discussed. The contingent valuation method is presented and central objections to it are discussed in relation to the assumptions of rational choice. Finally, some concluding remarks are made.

2. The model of economic rationality and behaviour not motivated by self-interest

2.1 The necessity of widening the model of rationality

A recent Norwegian study concluded that more than 40 per cent of the Norwegian population are of the opinion that the most important justifications for using limited public funds on public libraries are rooted in values other than those related to narrow self-interest (Audunson, 2001). Of a representative sample of the adult population the respondents were asked to state the most important reason for using limited public funds on public libraries. Twenty-nine per cent pointed to the library's potential as an instrument for concrete problem solving for individuals and companies as the most important reason for investing in libraries, whereas 17 per cent held the library's role in giving people a good time by providing them with leisure time reading as the most

important reason. Both of these reasons can be regarded as related to individual self-interest. Twenty-eight per cent, however, maintained that the most important reason for spending resources on libraries is that they promote literature and knowledge which everyone in Norway ought to know, and 13 per cent expressed the view that we should use money on public libraries primarily because they promote democracy and prevent new social divisions from developing. These attitudes, which are held by a substantial proportion of the population, are not – at least not necessarily – linked to the pursuit of individual self-interest. Any method of evaluation not capable of catching justifications as important as these, then, is of limited value. Our first question, therefore, relates to the possibility of legitimately widening the model of rational behaviour.

2.2 The general model of rationality

At the heart of economic theory there is an abstract model of *rational choice* (Margolis, 1982). Rational choice is one explanation of behaviour different from other possible explanations of human behaviour, e.g., biophysical, mentally caused, cultural, or psychological, including the cognitive paradigm which is so central in studies of information seeking and use.

At the most general level, a model of rational choice can be said to have the following features (Elster, 1989):

- It is a *normative* theory, telling us what we ought to do in order to achieve our aims as well as possible. It does not, however, tell us what our aims ought to be; it is not a moral theory.
- It builds upon methodological individualism. That is one of the reasons why integrating motives other than those related to the pursuit of individual preferences is problematic. Explaining behaviour by referring to, for instance, social norms with an existence outside and independent of the acting individual might easily collide with methodological individualism.
- The chosen action of a rational individual can be seen as the end result of two filtering operations.

1. The first filter consists of all the constraints the individual faces – economic as well as physical, legal, cultural and psychological. This filter determines the *opportunity set* of the individual, which consists of all actions consistent with her constraints.
2. The second filter is a mechanism that determines which action within the opportunity set that will actually be carried out, i.e., will be the chosen action. The chosen action is dependent upon the individual's wants, preferences, desires. In this perspective, then, actions are explained by opportunities and desires or preferences – by what people can do and by what they want to do.

The points above can be illustrated by an individual who has:

- certain preferences;
- a well founded opinion of the quantity and quality of the realistic options of choice and their consequences;
- deliberately chooses the one opinion which best satisfies her preferences.

This individual acts rationally. An explanation of this sort does not, however, explain why people have the desires, wishes and preferences they do have, and it does not explain why people act rationally, if they do.

2.3 Economic rationality

In economic theory, an assumption for the standard neo-classical model of the economy is that the actors behave rationally. Rationality is linked to the self-interest of the acting individual. Today, however, it must be regarded a legitimate notion among economists (although disputed and criticised by some) that a fundamental implication of the notion of 'economic rationality' is that the individual possesses preferences over 'states of the world', where these states can be defined broadly enough to include the following five points (Schwarz and Kopp, 1997, p. 3):

1. distribution of private goods and services;
2. provision of public goods;
3. government programs;

4. political policies;
5. intangibles like codes of ethical conduct.

The theory of utility relates to the theory of rationality (Sen, 1979). In the theory of consumer choice the individual's demand functions are derived considering a model of utility-maximizing behaviour coupled with a description of underlying economic constraints. We consider a consumer faced with possible consumption bundles in some set *X*, which is called her consumption set. The consumer is assumed to have preferences on the consumption bundles in *X*. The individual's preferences can be based on considerations of all or some of the points 1 – 5 above, and the preferences are supposed to order the set of bundles. Therefore, they must satisfy certain standard properties: the preference order must be complete, reflexive, transitive and continuous. The consumer's behaviour can then be represented by means of a continuous utility function. A utility function is shown to be a very convenient way to describe preferences, but it should not be given any psychological interpretation. The only relevant feature of a utility function is its ordinal character (Varian, 1999).

Economic rationality explains human behaviour as purposeful. Economic rationality does not, however, imply 'unbounded rationality' (Schwarz and Kopp, 1997). There are cognitive limits to any person's ability to make complex choices fully consistent with her preferences. Rather, rationality implies the *intent* to make choices in a manner consistent with preferences given cognitive ability and information endowments.

Although the question of including all the five elements of Schwarz and Kopp (1997) as individual preferences in a utility function without violating the presupposition of rationality is disputed among economists, it seems to have sufficient professional support not to be rejected at the outset. Neither can, therefore, an undertaking aimed at catching the complex value of public libraries with the help of a method basing itself on economic rationality be rejected. The crucial question is whether or not value dimensions not related to the pursuit of individual self-interest can be made operational in ways that are valid and fruitful. That will be discussed in the next two sections.

2.4 Commitment and sympathy as elements in rational behaviour

The idea of the utility-maximizing individual has been dominant in economics since the theory of consumer choice was launched more than a hundred years ago.[0] Sen's (1979) seminal critic of Edgeworth's statement from 1881 that 'the first principle of Economics is that every agent is actuated *only by self interest*' (Edgeworth, 1881, cited from Sen, 1979 [Emphasis added]), examines problems that have arisen from this conception of human beings. In opposition to the conception of man as a self-seeking egoist, Sen introduces the concepts of *sympathy* and *commitment* as complementary reasons for man's behaviour. Sympathy corresponds to the case in which the concern for others directly affects one's own welfare. 'If the knowledge of torture of others makes you sick, it is a case of sympathy. If it does not make you feel personally worse off, but you think it is wrong and you are ready to do something to stop it, it is a case of commitment" (Sen, 1979, p. 95). When a person's sense of wellbeing is psychologically dependent on someone else's welfare, it is a case of sympathy. Other things given, the awareness of the increase in the welfare of the other person makes this person directly better off. Sympathy is a case of externality. Commitment, on the other side, can be defined in terms of a person choosing an act that she believes will yield herself a lower level of personal welfare than an alternative that is also available to her. She chooses this act out of a sense of duty or because she thinks is ethically right.

Both in the case of sympathy and the case of commitment, person A acts in a non-selfish way, taking the interest of person B into account. In the case of sympathy, however, the utility of both A and B increases; whereas, in the case of commitment, A is prepared to reduce his own welfare in order to promote the interests of B. One example can make the difference between sympathy and commitment clearer. The socialist movement, fighting for the interests of the working class, did not only recruit workers fighting for their own interests, but also activists coming from other social

[0] The theory of consumer choice was launched independently by the three economists Leon Walras from France, Carl Menger from Austria and Stanley Jevons from England. The theory soon met with objections because of its view of man as egoistic and self-centred. The critics pointed out that man does not act only motivated by selfishness, but by a complicated set of motives including moral ones. The majority will agree with this criticism, but we do not therefore need to reject the utility theory. We must, however, define utility differently from Jevons.

classes. The motivation of the latter group for making sacrifices for the labour movement can be classified into two categories.

Some engaged out of a deeply felt concern for the underprivileged in society. The sufferings of the underprivileged hit them personally. To the extent their activism succeeded, the underprivileged gained since their welfare improved, and the activists also gained in welfare since they were relieved of their concern and worries. (They were relieved of what we could term vicarious suffering.)

Others engaged due to what they perceived as theoretical insights, for example related to the historical role of the working class as described in classical Marxism. Their intellectual understanding and conviction made them willing to make sacrifices, for example to start working as employees in labour movement organizations for a lower salary than they could otherwise have achieved. To the extent their activism and sacrifices succeeded, the underprivileged gained. Those making the sacrifices, however, did not gain. Their low salaries and other sacrifices were not balanced or outweighed by increased utility due to reduced concern and worries as the life conditions of the workers improved.[0]

Sen argues that commitment involves *counterpreferential* choice and that it drives a *wedge between personal choice and personal welfare*, thereby destroying the crucial assumption for rational behaviour that a chosen alternative must be better than (or at least as good as) the others for the person choosing it.

From an outsider's view it seems that Sen's argument in one way agrees with and in another way conflicts with the views expressed by Schwarz and Kopp (1997). They agree in their concept of man as an individual whose economic behaviour can reflect more than narrow self-interest. If one accepts that an individual possesses preferences

[0] Rigault and Beslay – two role figures from the Norwegian author Nordahl Grieg's play 'Nederlaget' ('The Defeat', Grieg, 1944), dealing with the Paris commune of 1871, can be regarded as ideal models of commitment and sympathy. Both of them are activists of the revolution. Rigault is an intellectual doctor of medicine. He is cynical, disillusioned and driven by a commitment to that which he deems necessary. Beslay, on the other hand, is driven by care and sympathy. When the working hours of the bakers are regulated to make it possible for them to take part in meetings and cultural activities, Beslay's welfare increases, whereas.Rigault's welfare does not increase.

over 'states of the world' defined so broadly that they can include Schwarz and Kopp's five points, is it then not possible that Sen's description of commitment could fit in under point 4) political policies, or under point 5) intangibles like codes of ethical conduct? If so, commitment would not need to involve *counter*preferential choice, because it is based on this broader understanding of preferences, and its accompanying broader understanding of 'personal welfare' and 'utility'.

Let us now see how this broader understanding of utility fits into a public library context. The following example illustrates our point. Ann (60 years and childless) is herself not a library user, but she will nevertheless pay for public libraries, mainly because she thinks them important for children's literacy. Her behaviour can be motivated by *sympathy*, by *commitment which reduces her personal welfare*, by *commitment which increases her personal welfare* or, finally, by a *sophisticated and long-term perception of self-interest.*

- *Sympathy.* Ann's choice makes her worse off regarding her personal welfare, if personal welfare is understood in the sense that she will have less money for her own consumption and in the sense that she uses her scarce resources to benefit others at her expense. Her welfare, however, is affected by her knowing that the children of her neighbourhood are having a good time at the local public library and are given the opportunity to enjoy culture instead of consuming soaps or hanging around street corners. In this case, we have an example of sympathy, or maybe altruism.

Ann's utility or personal welfare can, however, be understood otherwise.

- *Commitment reducing personal welfare.* Ann is in this example committed to the idea of education. She is willing to sacrifice a part of her money in order to realize that idea, which also presupposes a functioning library. Her personal welfare, however, is not affected by her knowing that the students and pupils can enjoy a high quality library service. Judged on the basis of Ann's narrow self-interest, her priorities are counterpreferential.

But there are arguments against Sen's view that behaviour based on commitment is counterpreferential. In our case, Ann's loss in her amount of personal consumption by

spending money on public libraries can be outweighed by the pleasure she feels by using this part of her money on a purpose she finds worthy - and the overall assessment and end result is an enhancement of her utility, a gain in her personal welfare. She is glad to participate and do her part to improve society, and she is pleased by the heightened educational and cultural level of society. She has preferences both for consumption of private goods, for consumption of public goods, for doing her fair share for society and for contributing to groups or individuals based on political, moral or humanitarian motivations. This reasoning results in a third possibility.

- *Commitment increasing personal welfare.* If this third interpretation is plausible, it will have consequences for the possibility of integrating behaviour based on commitment. Commitment-based behaviour can then be differentiated into two kinds, the first best illustrated in our example above from the committed Socialist who acted counterpreferentially and therefore in conflict with the rationality assumptions, and the second kind illustrated here with Ann who is committed to education, but acting according to her preferences and not in violation of the assumptions of rationality.

Ann's utility or personal welfare can also be seen from a fourth angle.

- *Long-term perception of self-interest.* Her willingness to pay for a service that she does not use might be based on a sophisticated perception of self-interest.[0] A society where children are introduced to literature and culture via the public library, instead of spending their time playing Nintendo and watching soap, will be a more cultured and better society to live in for everyone, including Ann. Therefore, supporting the public library is in harmony with her personal interest, although it takes an ability to think in the long term and complicated causal chains to realize it.

[0] It can be argued that the perception of self-interest always varies with knowledge. Person A might behave in ways which B finds counterpreferential, but which in reality are based on better and more sophisticated knowledge. Person A is willing, for instance, in contrast to B, to accept price increases on petrol today in order to avoid problems tomorrow which will affect his interests more seriously.

Her utility (U) can be imagined as a function (f) of several arguments, including her consumption of private goods (x), of public goods (z), enjoyment of others' consumption (a), her perception of a future and long term welfare gain (b) and other uses of her money (c):

$$U = f(x, z, a, b, c \ldots)$$

The different arguments can be multiplied by weights assigned to them to reflect their relative importance for Ann.

Individuals are different and so is their conception of what it is that contributes to their utility or welfare. Gary Becker underscores 'that individuals maximize welfare *as they conceive it,* whether they be selfish, altruistic, loyal, spiteful, or masochistic' (Becker, 1993, p. 386 [Original emphasis]).

The example above illustrates that an individual's economic behaviour can be based on a compromise between self-interest, claims of morality, social norms and the pursuit of various other objectives. It indicates that the individual's utility, which she tries to maximize, can be understood as the overall end result that reflects a balance among a variety of considerations. Sen's distinction between sympathy and commitment, our differentiation of the commitment concept and the specification of a sophisticated and long-term perception of self-interest, seems to bring us towards a decomposition of those dimensions of utility not linked to personal use and narrow self-interest into variables which are capable of capturing the complexity of public libraries in a valid way and which can be integrated into a utility function based on rationality.

In the example above, Ann's motivations for valuing public libraries include sympathy, commitment and a sophisticated perception of self-interest. Sympathy can be seen as an externality, and to the externality problem there are solutions accepted in welfare economics. Behaviour motivated by sympathy will, therefore, not conflict fundamentally with the understanding of rational behaviour assumed in the standard economic model. Admitting behaviour based on commitment, however, will have far-reaching consequences for the nature of many economic models (Sen, 1979). If,

however, one can assume that behaviour in correspondence with norms increases the utility of the acting person, it should be possible to also include behaviour based on this second kind of commitment in the utility function. This distinction – and its implications in cost-benefit analyses – will be further discussed in the next section.

We shall now turn to a problem which, at least on the surface, might seem to be closely related to the question discussed above – the problem of altruism.[0]

2.5 The special case of altruism

The question of whether choices motivated by altruism can be considered as rational, and the following more specific question – within the framework of cost-benefit analyses – whether willingness to pay for public projects motivated by altruism should be included or excluded as benefits, is discussed in the literature of welfare economics (Milgrom, 1993; Johansson, 1992; Ray, 1987; Margolis, 1982; Sen, 1979). This discussion is essential for the valuation of public libraries. Considering the types of benefits arising from public library activities, it is likely that values motivated by altruism are part of the population's total willingness to pay for public libraries. It is also possible that these values constitute a considerable fraction of the valuation, at least for some groups of the population.[0] What are the implications of an economic valuation where altruism is among the motives for the willingness to pay? Will including these values conflict fundamentally with the assumptions incorporated in standard economic models, or can willingness to pay accruing from altruism be accepted in economic assessment under specific conditions? If so, what are the conditions needed?

[0] The concept of altruism and its consequences for decisions on public provision of cultural goods are dealt with in greater detail in another article within the framework of our project of valuing public libraries (Aabø and Strand, see paper 3). Due to the possible importance of altruistic motivation for the willingness to pay for public libraries, it is necessary to discuss the concept also in this context. Apparent departures from the road of self-interest, might very often be expressions of sophisticated self-interest.

[0] Results from recent contingent valuation studies assessing other cultural goods show that non-use values can be important and constitute a considerable fraction of the total willingness to pay (Navrud and Ready, 2002; Papandrea, 1999; Roche, 1998; Bille Hansen, 1996; Martin, 1994; Frey, 1997; Benhamou, 1996; Frey and Pommerehne, 1989).

Milgrom (1993) discusses which values should properly be included in a public good analysis. The standard neo-classical model incorporates particular assumptions of people's values, including the assumption that the amount people are willing to pay for a public project shall be independent of the benefits others receive. Value shall be

> 'treated as a purely personal matter that is related to the personal benefits each individual receives from the project. This model can be extended and elaborated in various ways to examine what other kinds of values should be incorporated in a more complicated world. *In the extended model in which some citizens may be concerned about the happiness of others, the part of willingness-to-pay (WTP) that arises on account of altruistic feelings must be excluded from the benefit-cost calculation in order to identify correctly the projects that are potential Pareto improvements.* Intuitively, the reason is that counting one person's WTP for another's happiness in a benefit-cost calculation amounts to a double (or triple or…) counting of the beneficiary's benefits' (Milgrom, 1993, p. 420 [Original emphasis]).

According to this view, including values motivated by altruism in assessing, for instance, public libraries, will lead to false conclusions. Milgrom does not, however, *differentiate* the concept of altruism. In economics, altruism, as a broad concept, is usually understood in accordance with Milgrom's view above: an individual or a group in the population is concerned about the well-being of another and is willing to pay to improve the other's situation. As a motivation for values, this broad concept can be specified. A main division is between *paternalistic altruism* and *nonpaternalistic altruism*[0] (Ray, 1987). In a situation where person A feels altruism towards person B, these variants can be illustrated as follows:

- *Paternalistic altruism.* Person A's utility is enhanced by the consumption of person B.

[0] The distinction between alternative concepts of altruism is discussed in the literature of welfare economics. For the scope of this paper it is sufficient to differentiate between the two main concepts *paternalistic altruism* and *non-paternalistic altruism*.

- *Nonpaternalistic altruism.* Person A's utility is enhanced by person B's enjoyment of his consumption.

The term "paternalism" is used to emphasize that the person who feels altruism, A, is concerned about the *composition* of the consumption of the other, B, and not about the subjective utility B derives from the act of consumption.

Aggregated WTP with paternalistic altruism, in this two-person economy, is the sum of:

1) A's WTP for her own consumption[0];
2) B's WTP for his own consumption;
3) A's WTP for B's consumption.

Paternalistic altruism in valuing public libraries is illustrated in the following example. Public library activities stimulate reading in a part of the population, B, and another part of the population, A, value this because it contributes to the heightening of the cultural level in society. A's utility is enhanced by B's consumption of public library services and the *thereby* heightened cultural level, and a fraction of A's WTP is motivated by paternalistic altruism.

Nonpaternalistic altruism is the case when A takes account of the *utility* B gets by his consumption. Here A is concerned about B's subjective utility, but is not concerned about the composition of B's consumption. If B could enhance his utility by consuming something else at the same cost – for instance violent video films, or a new shirt, rather than public library services, that would be OK for A if what she feels is nonpaternalistic altruism.

Aggregation of WTP when nonpaternalistic altruism occurs is more complicated. If the consumers actually pay and the price is exactly the cost of the good or service under valuation, then the situation is as follows: When B pays for the service, his net utility is unaltered. If the motivation for A's WTP is nonpaternalistic altruism, she is

[0] Note that the amount of this WTP can be zero, i.e., \$0. Person A can feel paternalistic altruism for B's consumption of the good, although she herself does not have any willingness to for pay for her own use of it.

then not willing to pay for B's consumption of the service, because his utility is not heightened. In this situation only the elements 1) and 2) above should be included in the total WTP for the service under valuation.

If, on the other side, the consumers do not pay for the good or they pay less than its full cost, then A – when motivated by nonpaternalistic altruism – is willing to pay to heighten B's utility. In this situation A's motivation can be used as an argument for transferring income to B (A and B can here represent strata of the population). It is dubious, however, to include values motivated by nonpaternalistic altruism in the assessment of the specific good under valuation, because of the problem with double counting.

Nonpaternalistic altruism in valuing public libraries can be illustrated as follows: Public libraries are heightening the utility of one stratum of the population, B. Another stratum, A, is pleased because B's welfare is enhanced. When assessing the distribution of resources among different strata of the population, the *national* government can take into account the nonpaternalistic altruism A feels for B. When allocating their granted funds for public libraries the *local* government, however, is concerned about efficient use of the money for maximizing the utility only of the inhabitants of its own municipality, and it is not relevant to take into account nonpaternalistic altruism from inhabitants of other municipalities.

To summarize this discussion, Milgrom's objections to including WTP motivated by altruism because it violates the assumption that the amount people are willing to pay for a public project shall be limited to the personal benefits each individual receives, seem to be valid for nonpaternalistic altruism but not for paternalistic altruism.

One can say that if person A's valuation of public libraries is based on non-paternalistic altruism, it is not *libraries* which are valuated by A, but B's heightened utility by using them, in other words *B's enhanced pleasure*. If B's happiness instead was enhanced by going to the movies or watching football matches, A would valuate B's heightened pleasure originated from football and cinemas instead of libraries. Therefore we cannot say that it is libraries (or cinemas or football) which are valued

when we are dealing with non-paternalistic altruism and it cannot be included in cost-benefit analyses of public goods.

The above distinction can be related to Sen's terms 'sympathy' and 'commitment' so that the consequences of choices motivated by sympathy correspond to those for 'paternalistic altruism'. Non-paternalistic altruism and commitment, however, represent two different qualities. Non-paternalistic altruism can be described as a value-free enjoyment of another person's enhanced utility level, whereas commitment is based on ethical, moral or political values and norms. What they have in common is that WTP motivated by either non-altruistic behaviour or behaviour based on commitment can be included in cost-benefit analyses for public goods. As far as commitment is concerned, however, the aforementioned is valid only to the extent that we cannot plausibly assume that compliance with norms and values enhances the actor's utility, i.e., the first kind of commitment.

2.6 Summary

Taking the use of a public library collection as an example, the arguments made above can be summed up by the following conclusions as to values that can legitimately be included in cost-benefit analyses of public goods.

To be included:

- A's utility from using the library collection;
- B's utility from using the library collection;
- A's utility from seeing B using literature of quality, i.e., sympathy and paternalistic altruism;
- A's utility from acting in correspondence with norms to which she is committed, if it can be justified that her welfare increases as a result of such a behaviour (one of the two kinds of commitment).

To be excluded:

- A's pleasure in seeing B read whatever she likes, no matter the composition of the literary menu of B. Non-paternalistic altruism;
- A's sacrifice in order to realize the norms of library collection development (commitment), if we are not able to justify that A's welfare is improved as a result of her behaviour being in accordance with the norms she is committed to.

The condition formulated earlier, that in order to add models developed in economics for determining the value of non-market goods to the methodological arsenal of library and information science we have to be able to include non-use values and values not related to the immediate pursuit of narrow self-interest without violation the assumptions of rationality, seems to be satisfied. But even if it is possible, in principle, to extend the model of rationality to include non-use as well as use values and valuations based on sympathy, paternalistic altruism and one kind of commitment as well as the pursuit of individual self-interest, it might of course be validity problems with the *practical* methodologies which are at our disposal. We have stated that of the two approaches developed to measure the value of non market goods – revealed preferences and stated preferences – we have to rely on stated preferences, since that is the only approach capable of catching use values as well as non-use values. Contingent valuation (CV) is the dominating stated preference methodology. If this methodology in *practice* is an invalid operationalization and collides with the assumptions of rationality, we are not helped very much. In the last part of this article we shall discuss some objections which have been raised as to the validity of CV and some problems related to using the method when valuing public libraries.

3. The contingent valuation method and public library valuation

Stated preference methods have the property of being able, in principle, to capture the total value of a public good, i.e., both its use and non-use values. It has been shown that an important part of the value placed on public libraries is related to non-use. Holt, Elliott and Moore (1999) report in a recent valuation of St. Louis Public Library that only 12 per cent of those who completed their contingent valuation survey were

willing to accept a closure of the library at any reasonable price (Holt, Elliott and Moore, 1999). Those of their survey respondents[0] who answered 'no' to the closure of public libraries regardless of tax savings or cash payments, were asked a follow-up question to give their reasons for this refusal, summarized in Table 1.

Table 1: Reasons given for refusing to close libraries, see Holt, Elliot and Moore (1999, p. 106).

Reason	**No**	**%**
1. Important/needed/priceless/too valuable	109	39
2. Community needed them	29	10
3. Children/family needed them	25	9
4. Education/knowledge/literacy	23	8
5. Poor people/those who can't buy books needed them	18	6
6. Tax savings irrelevant	16	5
7. Library and materials access should be free	16	5

The majority of these reasons may include non-use values, i.e., Numbers 1, 2, 4, 5 and 7 in the table. If an individual values these types of aspects by the public good in question, it seems reasonable and rational that they are reflected in her assessment. As reported above, Audunson found the same tendency in Norway, when asking people about the most important reason for devoting resources on public libraries (Audunson, 2001).

Among stated preferences approaches, the contingent valuation method is the dominant approach. The method has by now been applied in more than 2000 studies internationally, and the number of studies reported in the literature is growing rapidly. In the case of *cultural* goods, however, relatively few studies applying contingent valuation are reported in the literature (Navrud and Ready, 2002; Holt, Elliott and Moore, 1999; Papandrea, 1999; Roche Rivera, 1998; Frey, 1997; Benhamou, 1996; Bille Hansen, 1996; Martin, 1994; Frey and Pommerehne, 1989; Throsby and Withers, 1983). These studies have shown that contingent valuation is 1) suitable for assessing intangible cultural benefits and 2) more appropriate for valuation of non-market goods that are familiar to the population. The methodology therefore seems

[0] Their survey respondents were users of the library.

promising for valuing public libraries, which are a cultural and educational good familiar to citizens.[0]

Contingent valuation works by constructing a market in the context of a survey interview. There is no standard approach to the design of a contingent valuation survey, but the following three well-defined elements are present in the majority of applications.[0] The survey contains:

1. A scenario or description of the hypothetical or real policy or programme the respondent is being asked to value or vote upon;
2. A mechanism for eliciting value or a choice from the respondent;
3. Information on the respondent's
   a) socio-economic characteristics,
   b) attitude and behaviour towards the good to be valued
   c) follow-up questions to evaluate if the respondent understood and believed the scenario and took the hypothetical decision-making seriously.

In contingent valuation studies, values for non-market goods are inferred from individuals' stated responses to hypothetical situations. This valuation approach has given rise to debate. There has been and continues to be controversy about the methodology of contingent valuation among economists (Bateman and Willis, 1999; Kopp, Pommerehne and Schwarz, 1997; Portney, 1994; Diamond and Hausman, 1994; Hanemann, 1994; Hausman, 1993; Arrow et al., 1993; Milgrom, 1993; Mitchell and Carson, 1989).

Concern is expressed about the ability of the contingent valuation method to value non-market goods, since individuals have no experience in purchasing them, nor of modifying their choices in light of what they experience from their purchases, nor of learning about their preferences for and the characteristics of, non-market goods (Bateman and Willis, 1999). If these problems are not properly solved, they can result

[0] 52 per cent of the Norwegian population have visited a public library during the last year, and only 6 per cent of the citizens aged between 9 and 79 years have never visited public libraries (Statistisk Sentralbyrå, 1998).

[0] For a thorough description, see Mitchell and Carson (1989).

in responses that are inconsistent with the assumptions of rational choice. Such inconsistency occurs, as illustrated by the following example concerning pollution, if respondents state their willingness to pay for the cleanup of one lake as roughly equal to the cleanup of five lakes, including the one asked about individually. In a public library setting a similar situation would occur if respondents stated their WTP for one municipality library equal to their WTP for all the public libraries in the county. The term 'embedding effect' is often used for this type of inconsistency of rational choice, namely

> 'the tendency of willingness-to-pay responses to be highly similar across different surveys, even where theory suggests (and sometimes requires) that the responses be very different. ... The embedding effect is usually thought to arise from the *nonexistence of individual preferences* for the public good in question and from the failure of survey respondents, in the hypothetical circumstances of the survey, to consider the effect of their budget constraints.' (Diamond and Hausman, 1994, p. 46 [Emphasis added]).

Due to the embedding effect, Diamond and Hausman (1994) claim that contingent valuation surveys do not measure the preferences they attempt to measure. They enumerate four hypotheses as alternatives to the hypotheses that the responses are measures of true economic preferences, and they assert that different hypotheses are likely to be appropriate for different people. According to the four alternative hypotheses respondents may:

1. Express an attitude towards a public good (or a class of public goods) expressed in a dollar scale because they are asked to express it in a dollar scale.
2. Receive a 'warm glow' from expressing support for good causes.
3. Describe what they think is good for the country, in sort of casual benefit-cost analysis.
4. Express a reaction to actions that have been taken (for example, allowing an oil spill or a closure of a public library unit) rather than evaluating the state of a resource.

Diamond and Hausman state that under these alternative hypotheses responses are not an attempt by an individual to evaluate her own preferences for a public good. This position, however, seems to stand in opposition to both a) the view of Schwarz and Kopp (1997) that the individual possesses broadly defined preferences over 'states of the world' and b) the argument above in which the conclusion was that an individual decides what her preferences are only after considering a variety of reasons for them. Attempts to measure and express personal preferences can involve consideration of all or some of the elements in hypotheses 1 – 4 in addition to direct self-interest, and the value the respondent expresses is the conclusion of her considerations where she has weighed and balanced the different aspects she thinks important. This latter view does not seem to conflict with the theory of rational choice, which tells us what we ought to do in order to achieve our aims as well as possible and that the rationality of an action is ensured by its standing in the right kind of relation to the goals and beliefs of the individual. If this latter view is correct, then other possible reasons for the embedding effect should be sought and scrutinized such as flaws in the survey design and lack of key information about context and substitutes (Mitchell and Carson, 1989; Hanemann, 1994).

The problems pointed at above are partly methodological problems which one has to be aware of when constructing the questionnaire and designing the study and partly a basis for formulating some of the research problems which it is one of the goals of our study to test out empirically within the context of public libraries. To give an example: Problem 1 above, i.e., whether the respondents express an attitude towards public libraries as a public good (or a class of public goods) expressed in a dollar scale because they are asked to express it in a dollar scale, can to some extent be dealt with in the survey design, e.g., by varying the scale randomly between different subsamples. But such a design will also give us a possibility to analyse the extent to which the respondents are expressing an attitude towards public libraries as a public good instead of placing a value upon it in their individual utility function. The possibility of producing an empirical basis for analysing such questions is, to us, an independent argument in favour of using the method.

4. Conclusion

We have, in this paper, argued that economic methods for valuing non-market goods in general and the contingent valuation method in particular, seem to be able to capture the value people attach to public libraries – both use and non-use values – in its totality and in a way not colliding with the assumptions of rational behaviour. The reason for our conclusion can be summed up in the following points:

- Motives for valuation based on sympathy can be included in cost-benefit analyses of public goods without violating the assumptions of rationality.
- The same goes for paternalistic altruism.

Our conclusions concerning 1 and 2 have sufficient support within the field of economics to be regarded as legitimate.

- We have argued that commitment can be differentiated into two variants. Valuation motivated by one of these two variants of commitment can be included as benefits in the analysis, i.e., a situation where the welfare of the acting person is positively affected by complying with the norms to which she is committed.
- Valuation based on the other variant of commitment, where the welfare of the acting person is reduced due to compliance with norms, cannot be included.
- Valuation motivated by non-paternalistic altruism must be excluded from cost-benefit analyses.

Some fundamental concepts have to be elaborated further, e.g., the concept of altruism and differentiating between variants of the concept. Forthcoming articles within the framework of this project will discuss such elaborations. We are also facing practical methodological problems with regard to constructing a scenario and a questionnaire, which can measure the value of libraries in a valid way. The contingent valuation method will have to be tested out empirically in a public library setting before it can be concluded whether our hypothesis of its usefulness holds, whether it has to be adapted and developed in order to be useful or whether it has to be rejected.

Paper 3:

Public library valuation, nonuse values, and altruistic motivations*

Svanhild Aabø and Jon Strand

Abstract

Pressure on public budgets makes it important to quantify the value of public libraries to citizens and society. Public library services cause both direct and indirect benefits, corresponding to use, option, and nonuse values. Empirical data from a study of public libraries in Norway indicate that approximately 40% of their total value is motivated by direct use value, 20% by option value, which is a potential use value, and 40% by nonuse value. Nonuse values are thus an important component, and the exclusion of such values in cost-benefit analyses of public libraries may grossly underestimate public libraries' overall worth to society. The study elicits motivations for nonuse values of libraries and finds that 15-30% of total value is motivated by "global" altruism, directed toward others than the respondents' own close families.

*This paper is accepted for publication in *Library & Information Science Research 26* (3), 2004.

1. Introduction

In many countries, there is today increasing pressure to reduce the size of the public sector, of which libraries are an integrated part. In Norway, severe budget restrictions have lead to cutbacks in funding of public services, especially at the municipal level. This situation creates the need for assessing different public services and their long-term impact on society and the economy. Public libraries compete with other public services (such as schools and health care) for their share of scarce funding resources and face increasing requirements to document their value to inhabitants and society.

Cost-benefit analysis intends to measure and compare public libraries' total costs and benefits to the population. The costs of providing library services are relatively easy to measure. Benefits are far more complex to define and measure due to the complexity and range of impacts of the services rendered and since many of the services are not marketable or at least not marketed.[0] Fraser, Nelson, and McClure (2002) provide a foundation for understanding public library benefits by reviewing a broad range of economic impacts and benefits stemming from direct use of libraries. In their view, "previous studies lacked a determination of the value of indirect benefits received by patrons, which is an extremely important area for investigation" (p. 215). Therefore, they addressed indirect benefits.

2. Problem statement

The main purpose of this article is to uncover the value to the citizens of all types of benefits, both direct and indirect, of public library use in Norway. With basis in a national empirical study, such benefits are valued, hereunder the indirect benefits or nonuse values of public library services. A main aim is to determine whether nonuse values are important for citizens' (both library users and nonusers) valuation of public libraries. This is an issue of practical importance: If nonuse values compose a large fraction of total valuation of public libraries, the implication of a failure to account for such nonuse values may grossly underestimate libraries' overall value to society.

[0] For a discussion of public good and private good characteristics of public library services, see Aabø (1998).

The authors of this article recently designed and carried out a valuation study of public libraries in Norway, combining approaches from both economics and library and information science, applying the contingent valuation (CV; see Appendix 1) method. Libraries were valued by both users and nonusers, and the measured values included both use and nonuse values. The study concluded with a range for the value of public libraries in Norway.[0]

The current article analyzes how this overall value can be classified into use and nonuse values and what are motivations for nonuse valuation of public libraries. The issue of altruism is here studied specifically. It namely turns out that if altruism is important further examination is necessary in order to determine whether to include altruistically motivated values as benefits in a cost-benefit analysis.

3. Public libraries and nonuse values

In the literature, several approaches have been taken to capture concepts of benefits from public libraries, which are not directly user related. In their valuation study of St. Louis public library services, Holt, Elliot, and Moore (1999, p. 99) use the terms "direct benefits" and "indirect (third-party or societal) benefits". They define "indirect benefits" as "the benefits that third parties or the population as a whole derive when individuals use the services of a public institution" (p. 99). "Since the opening of the first publicly supported library in 1883," they write, "public librarians, library boards of directors, local government officials, and philanthropists from Andrew Carnegie to Bill Gates have recognized that these two sets of benefits – direct and indirect – flow from public library services" (pp. 101-102). However, their study focuses on direct benefits only due to difficulties they have in measuring indirect benefits.

[0] This study is part of Aabø's research project *The value of public libraries in society,* which is financed by the Norwegian Research Council's Library Research Program. The project is headed by Jon Strand, professor of economics at the University of Oslo, and Ragnar Audunson, professor of library and information science at Oslo University College, and presented in several articles (Aabø, 1997; 1998; 2001; in press; Aabø & Audunson, 2002). In the main empirical part of the project, which will be published later this year, the CV method was applied for measuring the total benefits to the citizens of Norwegian public libraries at today's service levels. An objective of the study was to determine whether public libraries in Norway were, overall, worth their price as seen from the population's perspective.

Fraser et al. (2002, p. 228) define direct benefits as "the value of the services realized by the users of public libraries. Indirect benefits are those generated from the existence of the library for nonusers or the community at large". They propose a follow-up study to estimate both the tangible and intangible benefits derived from public library use, whether they are direct or indirect.

A study (Aslib, 1995) examining public library services in England and Wales divides library use in the context of generating benefits for individual citizens and the community into (1) direct use: "I want to use the library regularly"; (2) indirect use: "Every community ought to have a public library"; (3) prospective use: "The public library should exist in case I want to use it in the future"; and (4) use of future generations: "The public library ought to be kept up for future generations" (Aslib, 1995, pp. 155-161).

Direct use parallels the definition of "direct benefits" by Fraser et al. (2002), while the other terms represent three different aspects of "indirect benefits." Aslib (1995) showed how respondents ranged these four facets of public library benefits. Frequent users (using the library once a month or more) naturally had "direct use" of the library but emphasized "indirect use" even more. Respondents using the library once in a while (less than once a month, at least once a year) also emphasized indirect use but considered the library's importance for "future generations" as more important. Nonusers naturally had no direct use of the library, but emphasized the importance for future generations and even more indirect library use. It is worth noting that none of these groups emphasized "prospective use" (i.e., expected, yet uncertain, use), implying the option to use the library should the need occur. A majority of the respondents looked upon the library as a valuable resource for future generations and as a public good that ought to be available in any local community.

To capture all benefits accruing from public libraries, we here distinguish between "use values," "nonuse values," and "total value" of public libraries. These are terms developed in economics in relation to valuing nonmarket goods and have the quality of being measurable. "Use value of libraries" is defined as the sum of two value components: the values of those who currently make active use of libraries (direct use value), and the values of those who intend to, or may, make such use in the future (option value). Conceptually, the definition of direct use value concurs with the definition of direct benefits by Fraser et al. (2002). In addition to use value, economists have (for the last thirty years) recognized that individuals

may also derive satisfaction from a good's mere presence, independent of their (actual and future prospective) use of it (Arrow et al., 1993). Such "nonuse values of public libraries" may be due to libraries being part of the cultural heritage, are important for the national literature, benefit others in society, contribute to the general breeding, and development of creativity, social criticism, esthetic, and ethical abilities. The three main nonuse value motivation groups, identified in the economics literature (see, e.g., Kolstad, 2000, p. 296), are existence or preservation value, bequest value, and altruistically motivated value. The "total value of libraries" is the sum of their use and nonuse values.

4. Previous CV studies of cultural goods

Two main groups of methods for valuing public goods can be distinguished: those based on revealed preferences (RP) and those on stated preferences (SP). Only SP methods are able to capture both use and nonuse values. Among these, the CV method is by far the most frequently applied. This method (see Appendix 1) is based on representative questionnaire surveys about valuation of public goods. The method circumvents the absence of markets for public goods by presenting respondents with hypothetical markets in which they can express their valuation of a specific improvement or deterioration of a public good. The hypothetical market may be modeled either as a private goods market or as a political market with voting mechanisms. There are strict requirements to the design of CV surveys to minimize error sources. CV has by now been applied in more than two thousand studies internationally (for an early survey, see Carson, Wright, Carson, Alberini, & Flores, 1994), mostly to valuation of environmental goods but more recently also to a wide range of other nonmarket goods, hereunder cultural goods. More than 60 cultural economics projects applying CV have been reported to date (Noonan, 2002). In most of these studies, nonuse values represent a major part of total value. Table 1 sums up a representative set of CV studies of cultural goods, covering the topics of cultural and national heritage (Benhamou, 1996; Navrud & Strand, 2002; Pollicino & Maddison, 2001; Willis, 1993), theatres (Bille Hansen, 1997; Roche

Table 1: CV studies of cultural goods listed by the type of good that is valued, author(s) of the study, country, elicited nonuse values, and probable altruism.

TYPE OF CULTURAL GOOD	STUDY	COUNTRY	VALUES NOT INVOLVING DIRECT USE	ALTRUISTIC MOTIVES INCLUDED

Cultural and national heritage - Durham Cathedral	Willis (1993)	UK	Existence value	Existence value
- Lincoln Cathedral	Pollicino & Maddison (2001)	UK	Bequest value Educational value	Bequest value Educational value
- Nidaros Cathedral	Navrud & Strand (2002)	Norway	Bequest value Lump category	Bequest value
- Historic monuments	Benhamou (1996)	France	National pride and identity Prestige value Bequest value Option value	National pride and identity Bequest value
Theatres - The Royal Theatre	Bille Hansen (1997)	Denmark	Bequest value Educational value Vicarious consumption Prestige value	Bequest value Educational value
- Teatro Colon	Roche Riviera (1998)	Argentina / Uruguay	Existence value Educational value Vicarious value Bequest value Prestige value Option value	Existence value Educational value Bequest value
Museums	Martin (1994)	Canada	Bequest value Existence value Option value	Bequest value Existence value
Paintings	Frey & Pommerehne (1989)	Switzerland	Option value Bequest value Existence value Educational value Prestige value	Bequest value Existence value Prestige value
The arts	Throsby & Withers (1983)	Australia	National pride and identity Social evaluation	National pride and identity Social evaluation
National TV programs	Papandrea (19999)	Australia	National pride Improved understanding of their country and way of life	National pride Improved understanding of their country and way of life
Libraries - James Branch Cabell. Academic Library	Harless & Allen (1999)	USA	Option value	-
- St. Louis Public Library	Holt, Elliott & Morris (1999)	USA	The need of poor people, children, and local community for books and library services – educational value	Educational value

Rivera, 1998), museums (Martin, 1994), arts and paintings (Frey & Pommerehne, 1989; Throsby & Withers, 1983), national television programs (Papandrea, 1999), and libraries (Harless & Allen, 1999; Holt, Elliott, & Moore, 1999.[0]

[0] For a critical examination of CV studies of cultural goods, see Pearce, Mourato, Navrud, and Ready (2002) and Bille Hansen (1996, chap. 4).

For libraries, there are two previous CV studies (Harless & Allen, 1999; Holt et al., 1999). The first values an "academic library" and elicits its direct use and option value. Harless and Allen (1999) applied CV to examine the value of a single library service (the reference desk service) in a specific university library (James Branch Cabell Library at Virginia Commonwealth University, Richmond). The survey population consisted of a random sample of students and instructional faculty from the academic campus, both library users and nonusers. In addition to direct use value, they showed that option value was of fundamental importance in the respondents' valuation. No nonuse values were elicited in this study, and altruism is not likely to be important.

Holt et al. (1999) used CV as one of three cost-benefit analysis techniques to assess the value of the St. Louis "public library" services. Their respondents representing the general public were a random sample selected from the library's database of 72,000 active cardholders. They found that library users appraised "not only the value of library services to the individual household, but also value to society (that is third-party and indirect benefits)" (Holt et al., 1999, p. 106). Among reasons stated that may explain nonuse values, altruistic motivations clearly appeared to be present, for example, references to the needs of poor people, children, and local community for books and library services. Among such nonuse values, altruism is likely to be a main motivation.

Based on their comprehensive Florida study, Fraser, Nelson, and McClure (2002) suggest a follow-up study including the CV method. Individual citizens, local businesses, and communities received benefits from a wide range of public library services and programs. The diversity of library services providing such impacts is striking – from providing access to financial information, job, and career resources, to computer technology and services, to educational support for the community, and to assisting civic involvement by supporting democratic and political processes in society. The researchers achieved a richer understanding of the economic benefits from public libraries, but they proposed as the objective of the follow-up study "a systematic attempt to *measure* such benefits in a verifiable, widely applicable and statistically defensible manner" (McClure et al., 2001, p. xi). The proposed study to measure public library economic impact should use an approach where respondents ascribe a dollar amount of impact from several selected library services "combined with a CV survey method focused on tax-based valuations of the library as a whole" (pp. 7-10). The aim would be to measure all types of direct and indirect economic impacts in order to be able to

compare estimates of economic benefits expressed in dollar amounts with the costs or total taxpayer support investment in the public libraries.

Returning now to Table 1, seven types of cultural goods are listed, valued in 12 CV studies conducted in 10 countries. In each case, the types of nonuse values considered are indicated, which involve significant values (although no direct numbers are reported). "Existence value" is defined as concern for maintaining or preserving a particular good and "bequest value" as concern for future generations. "Educational value" is understood as the cultural good's contribution to heightening the formative and cultural level in community, "vicarious consumption" as indirect consumption value, for instance, benefits from reading a newspaper critic of a theater performance, and "prestige value" as contribution to national pride by, for instance, international fame for national authors (Bille Hansen, 1996). The two right-hand columns of table 4 clearly indicate that nonuse values are significant in all but one of studies surveyed and that altruism is a significant motivation for nonuse value.

5. The CV study – procedures

Objectives of the CV study of public libraries in Norway were to determine how the population, both library users and nonusers, valued them, whether nonuse values were important and, if so, try to elicit the motivations for these values. The sample was drawn following a stratified three-step design, generally used for omnibus surveys in Norway: (1) municipalities were randomly drawn from clusters based on economic and industrial structure, demographic structure and geography; (2) starting addresses in the municipalities were randomly pulled from the national telephone directory database; and (3) the individual to be interviewed as representative of the household was the person above 15 years of age with the most recent birthday. The sample was then made largely representative with respect to age, sex, occupation, economy, geography, and degree of urbanity (a measure on the urban/rural spectrum). A total of 999 persons were interviewed in their homes. Norway has a population of about 4.5 million, in about two million households.

Table 2: Characteristics of respondents in the whole sample and three subsamples.

Variables	Whole sample	Respondents with positive valuation[1]		Respondents valuing use values highest[2]	Respondents valuing non-use values highest[3]
	N = 999	n = 538		n = 279	n = 133
Percentage of women	51	51		49	51
Average age (year)	44	43		43	44
High education (%)	26	28		25	32
Average household income (in 1000 NOK)[4]	330	332		324	355
Number of children living in the household (mean)	0.8	0.8		0.9	0.9
Living in cities, towns and the countryside, respectively (%)	56 – 25 – 20	60 – 24 – 16		60 – 26 – 15	63 – 20 – 17
Library user (%)	60	66		72	55
Library user as a child (%)	63	68		70	70
Distance to local library (in kilometers)	5	4		4	3
Cultural activity (scale 0-10, where 10 is highest level)	3.2	3.6		3.7	3.7

[1] Respondents with a positive monetary value of public libraries.

[2] Respondents who gave more than 50% of their total valuation to use values.

[3] Respondents who gave more than 50% of their total valuation to nonuse values.

[4] 1000 NOK was approximately US$8500 at the time of the survey.

Table 2 presents characteristics of the sample: gender, age, educational level, household income, number of children living in the household, urbanity level, being a library user now and as a child, distance to the local library, and cultural activity level. Education is dichotomized, respondents having either high (university or college) or lower education. Household income is stated in gross annual income, for respondent and possible spouse. Due to geographical variation and the many sparsely populated municipalities in Norway, we measured both level of urbanity and distance to the local library. Urbanity is measured by a variable registering whether the respondent live in a city, a town, or in the countryside. Distance to the local library is measured in kilometers. Library user is defined as a person having visited the library at least once in the last 12 months. Cultural activity is measured by a 10-points scale, where participating in the following activities during the last 12 months gives one point for each: cinemas, sports arrangements, libraries, museums, theaters and musicals, visual arts, classical concerts, popular music, dance performances, and operas.

The first column of Table 2 shows these characteristics for the whole sample ($N = 999$). Column 2 shows the characteristics for the part of the sample that stated a positive value of their local public library. These 538 respondents gave a positive response to the valuation question in the form of a specific, monetary amount. Excluded from this subsample were both respondents for whom the local library had no value (i.e., they stated a zero bid) and those who did not accept the question or scenario description and refused to state a monetary value (i.e., stated a protest bid).

The subsample of respondents with a positive monetary value is the focus of the following analyses. The characteristics of respondents in the total sample and the subsample are relatively similar, as observed by comparing columns 1 and 2, but there is a statistical significant difference in urbanity level and library use. The subsample consists of more city dwellers [$\chi^2(1, N = 538) = 4.02, P = 0.05$], more respondents who used the library as a child [$\chi^2(1, N = 516) = 7.20, P = 0.01$], and more library users [$\chi^2(1, N = 538) = 7.98, P = 0.01$]

Table 3: Motivations for valuing public libraries. Respondents' distribution of their 100 points to six motivations.

MOTIVATIONS	DISTRIBUTION OF POINTS TO MOTIVATIONS FOR PUBLIC LIBRARY VALUE											
	100 points divided into subgroups[1]									Aggregated points		
	0 p.	1-20 p.	21-40p.	41-60p.	61-80p.	81-100p.	Missing	Total no. of respondents		% of total value. Mean[2]	Median	Skewness (SE)
1. I and others in my family use the public library	82 (15%)	102 (19%)	125 (23%)	123 (23%)	38 (7%)	65 (12%)	3 (1%)	538 (100%)		**39.89** (30.70)	40	0.589 (0.106)
2. I and others in my family may need the public library later in life	179 (33%)	140 (26%)	147 (28%)	61 (12%)	5 (1%)	5 (1%)	1 (0%)	538 (101%)		**20.33** (19.75)	20	0.963 (0.105)
3. Others in the community use the public library	181 (34%)	212 (39%)	86 (16%)	39 (7%)	3 (1%)	7 (1%)	10 (2%)	538 (100%)		**16.13** (18.54)	10	1.830 (0.106)
4. The public library disseminates culture and knowledge and takes care of our literary heritage	192 (36%)	181 (33%)	94 (17%)	45 (9%)	8 (2%)	3 (1%)	15 (3%)	538 (101%)		**16.53** (15.50)	10	1.390 (0.107)
5. The public library promotes democracy and equality	350 (65%)	141 (26%)	23 (4%)	3 (0%)	1 (0%)	0 (0%)	20 (4%)	538 (99%)		**5.45** (9.68)	0	2.281 (0.107)
6. Other reasons	489 (91%)	14 (2%)	11 (2%)	1 (0%)	0 (0%)	1 (0%)	22 (4%)	538 (99%)		**1.28** (6.79)	0	8.381 (0.1089
Total										**99.61**		

[1] Frequencies in absolute numbers, percentages in parentheses.

[2] Total value defined as mean of total no. of points stated. Standard deviations in parentheses.

compared with the total sample. While there are significantly more library users in the subsample than in the overall sample, nonusers still constitute a considerable 34%.[4]

Respondents in the subsample were asked to distribute the monetary value they had stated (i.e., their total valuation of the local public library) among six different motives or reasons (see Table 3): (1) "I and others in my family use the public library," (2) "I and others in my family may need the public library later in life," (3) "Others in the community use the public library," (4) "The public library disseminates culture and knowledge and takes care of our literary heritage," (5) "The public library promotes democracy and equality," and (6) "Other reasons, please specify." Each respondent was to distribute 100 points among the six motives, giving more points to more important motives and zero points to unimportant motives.

6. Findings

Table 3 presents responses to the question about motivations for valuing public libraries. Rows show the six motivations, while columns show points given to each. The 100 points are divided into subgroups of 20, from 1-20 points up to 81-100 points, where a greater number of points given to a particular motivation express greater importance to this motivation and where 0 points implies that this motivation has no importance. Table 3 displays the distribution of individuals, by points given to each of the six specified motivations and by the shares of aggregate points given.

[4] We have made a separate analysis (not discussed in detail in this paper) of those respondents who either appear to have a zero value of libraries, or who protest against paying for such services or accepting a compensation if they were cut. In fact about 14% of all library users express a zero value of public libraries. This is however not necessarily inconsistent; as quite a few library users may be (nearly) indifferent about visiting the library or not (as when a person uses the library only for occasionally reading a newspaper that can be bought nearby at an inconsequential cost). Their willingness to pay to maintain the library would then very small (and bounded above by the cost of the newspapers read).

Motivation 1 represents direct use value.[5] It gets clearly most weight of all motivations specified, overall about 40% of all points allocated. It gets fewest zero points (15%), most 81-100 points (12%), and 23% give it more than half of their total 100 points.

The distributions of points to motivations 2, 3, and 4 have several similarities; these are allocated about 20%, 16% and 17%, respectively, of all points allocated. About one third (33%, 34%, and 36%, respectively) give zero points to each of these and 3-4% give each more than 50 points. Motivation 2 can here be interpreted as an option value (the value of having the option to use the public library should the need occur), and as such a (potential) use value. In contrast, motivation 3 must be classified as altruistic – the respondent values that others in the community, not oneself or own family, use the public library. Motivations 4-5 are more difficult to categorize, as we here do not know to which extent respondents value their own or the corresponding community benefits from public library tasks of disseminating knowledge and culture, taking care of the literary heritage, and promoting democracy and equality. Motivation 5 gets fewer points overall, only about 5 % on average. Sixty-five percent give no points to this, and only 5% more than 30%.

The final motivation 6 represents an open response option. Only 4% of the respondents involve this motive, one respondent giving it all her points. This option composes a variety of statements such as: ”Nice to read newspapers in the library,” ”Has literature for all needs,” ”Can use it when needed,” ”Pupils need the library,” ”Access to Internet,” ”Genealogy studies,” ”Without charges,” ”The social aspect,” ”Studying space,” ”Knowledgeable staff,” and ”Games and activities for children.” Due to the diversity of these statements and the small number (27) of respondents involved, motivation 6 is excluded from the further discussions.

Most respondents gave points to several motivations: 84.2% to motivation 1; 66.5% to 2; 64.4% to 3; 61.5% to 4; and 31.2% to 5, as calculated from Table 3, columns 1 and 7. Note that these responses imply several potential sources of error and we will mention a few of these here. Interviewer bias could occur if some respondents give points to all or most of the listed reasons, as a result of this being “expected behavior.” Trying to minimize this problem, the question was carefully worded and a professional surveying firm was used. Bias due to

[5] There is a slight caveat to this interpretation, from the fact that motivation 1 also comprises each individual’s valuation of library use by “others in the family”. This can sometimes be viewed as an altruistically motivated value; see the discussion below.

”yea-saying” follows from a tendency to subordinate “true” economic preferences to more expressive motivations in CV surveys not involving direct payments (Blamey, Bennett & Morrison, 1999). Such effects may arise from social pressure or be expressions of attitudes or held values. Trying to correct for such bias an elicitation format especially designed to minimize the effect of “yea-saying” was applied in the CV study, as one of two elicitation formats used.

7. Discussion

Aggregated data of respondents’ distribution of their total value of public libraries to different motivations are presented in the three last columns of Table 3. From the percentages of total value (mean of points stated) given to each of the six motives, observe that direct use value (represented by motivation 1) as expected is the dominant single motive for valuing public libraries, representing about 40% of all points given. Option value (motivation 2) expresses a potential use value and represents about 20%. Altruistic motivations (motivation 3) express nonuse values[6] and represent about 16%. Motivations 4 and 5 may represent a combination of use and nonuse values, in total about 22% of points. Plausibly, these may be strongly related to altruism (concern for other individuals today), existence (concern for maintaining or preserving a particular good), and bequests (concern for future generations). At least they are “nonuse” values when “use” is identified with direct library use. In the following, we will thus use the working hypothesis that motivations 4-5 have an exclusively nonuse character.

When these points are weighted by the value amounts stated by each individual, the overall shares of values allocated to the different motivations are obtained and the relation between the size of respondents’ valuation amounts and their distribution of points to motivations for the valuation is explored. Now the hypothesis that respondents who valued the library highly overall valued it exclusively for its use value, while those with lower valuations valued it for its nonuse value, can be tested. Table 4 shows the six motivations’ shares of the stated valuations of public libraries, calculated in this way. The relative distributions are here shown to be quite similar to those in Table 3. The unweighted and weighted approaches yield

[6] Although the source of this value is related to someone’s use (“Others in the community use the public library”), it is independent of any use made by the person holding the altruistic value. Thus, it is defined as a nonuse value (Freeman, 1993, p. 144).

approximately the same results: 60.2% and 60.1% to use values (motivations 1-2), and 38.1% and 35.5% to nonuse values (motivations 3-5), respectively. Thus, the significance of public libraries' nonuse values is a main and consistent finding. These distributions are well in line with similar valuation studies for other cultural goods, as seen above, where nonuse values turned out to represent an essential part of total value.

Table 4: Percentages of total monetary value of public libraries distributed to six motivations.

MOTIVATIONS	% OF TOTAL MONETARY VALUE[1]
1. I and others in my family use the public library	38.7
2. I and others in my family may need the public library later in life	21.4
3. Others in the community use the public library	16.8
4. The public library disseminates culture and knowledge and takes care of our literary heritage	14.0
5. The public library promotes democracy and equality	4.7
6. Other reasons	4.5
Total	100.1

[1] Total monetary value is calculated as points given to motivations by respondents multiplied with their stated valuation amounts.

An obvious implication of this finding is that proper public library valuation requires methods capable of capturing such values. The importance of nonuse values shows that a major part of the population appreciates and values social benefits of public libraries and views them from a wider perspective than that of direct self-interest only. This finding is in line with Audunson (2001), who explored possible justifications within a national Norwegian population sample for using limited local public resources on public libraries. About 40% justified this by values other than narrow self-interest.[0] In the present study, altruistic motivations clearly appear to be

[07] Audunson (2001, pp. 216-218) presented his respondents for several reasons justifying use of public resources to public libraries. He asked them to choose the one they found most important of the following reasons (percentage of responses in parentheses). Public libraries' importance is first and foremost that they: 1) are useful by solving concrete information needs of individual citizens, local businesses, and the community (29%), 2) promote democracy and equity (13%), 4) disseminate culture and knowledge (28%), 5) contribute to a

Table 5: Regression analysis of characteristics of respondents who gave high weight to nonuse values.

INDEPENDENT VARIABLES	**Points given to Motivations 3-5, Nonuse values[1]** **B-coefficients**
Sex (1=male, 2=female)	-0.540 (2.277)
Age	0.026 (0.070)
High education (1=university or college, 0=lower)	6.573 (2.599)**
Household income (log-transformed)	-0.639 (1.746)
Number of children living in the household	-2.026 (1.043)*
Urbanity=town (1=town, 0=city and countryside)[2]	-2.117 (2.880)
Urbanity=countryside (1=countryside, 0=city and town)[2]	3.984 (3.248)
Library user (0=No, 1=Yes)	-14.418 (2.727)***
Library user as a child (0=No, 1=Yes)	-0.578 (2.535)
Distance to library (kilometers from dwelling)	0.017 (0.273)
Cultural activity (scale 0-10, where 10 is the highest level)	-0.204 (0.575)
Constant	63.297**
Adjusted R^2	0.097

Standard errors are indicated in parentheses.

*** Denotes 1% significance level, ** denotes 5% significance level, * denotes 10% significance level.

[1] Motivations 3-5: other people's library use, cultural and social motives.

[2] The two urbanity dummy variables are coded with city as the reference category.

one important, among several, such motivations. While motivations 1-2 benefit oneself and own family, motivations 3-5 benefit mainly others and the community at large. Motivation 3 here is the most clearly altruistic motive, while motivations 4-5 can be justified also by self-interest or by political or moral values other than altruism. If motivations 3-5 are interpreted as being motivated by social interests, including altruism, and motivations 1-2 by self-interest, 60% of the valuation of public libraries in Norway is found to be motivated by self-interest, while 35-38% is motivated by social interests including (global) altruism.

meaningful leisure time (17%), 6) are social meeting places in local community (3%). Considering these reasons in a context of use and nonuse values, we can classify 1 and 5 as having use value and 2 and 3 as having non-use values, while 6 may have both value types.

The discussion of altruistic and other possible value motivations is clearly somewhat speculative. This is a general problem when using stated-preference methods, such as CV, to elicit preferences for public goods. It is widely discussed in the economic valuation literature (Carson, Flores, & Mitchell, 1999; Freeman, 1993; Randall, 1991) and will be discussed further below. Arguably, a robust conclusion from the above is still that altruistic motivations are important in the context of public library valuation.

Most respondents gave points to motivations both by self-interest and by social interests. Still, it may be the case that the population, regardless of whether they value the library highly or lowly overall, "largely" can be divided into two distinct groups: one group emphasizing use values and self-interest and the other emphasizing nonuse values and social interests. This issue is addressed through a multivariate regression analysis; the results shown in Table 5. It is here investigated whether respondents giving high weights to motivations 3-5 (nonuse values) were different from those giving high weights to motivations 1-2 using explanatory variables from Table 2. The dependent variable was the positive points given to motivations 3-5. Observe that for respondents giving high weights to nonuse values, only three explanatory factors (library use, education, and number of children living in the household) are statistically significant. There is a manifest interdependence between educational level and motivations for valuing the local library, showing that respondents with high education (from college or university) give clearly more points to nonuse values than respondents with lower education. The interdependence between library use and motivations for valuing the public library is even more evident. Here a problem might be how to explain the points given by "nonusers" to library use, as these probably ought to give most of their points to nonuse values.[8] The number

[8] There is, however, nothing illogical in the finding that many nonusers put positive value on public libraries, and even that many of these attach "use value" to libraries. First, such individuals may attach value to the use of libraries by other family members (thus corresponding to values expressed in motivation category 1). Note in this context that while expressed users attach 50% of their total value to category 1, nonusers attach only 16% of their total value to this category. Current nonusers may also attach (altruistically motivated) nonuse value to the (current or future) library use of individuals outside of their household, corresponding to motivation categories 3-5. Many more individuals are also occasional library users, than those registered as users in our survey (who have used the library at least once over the last 12 months). Use of the local library usually varies during the course of life, from heavy use in some periods (e.g., as a child, parent with school children, pensioner) to little or no use in other periods of life (Jochumsen & Hvenegaard Rasmussen, 2000). Consequently, many nonusers of the library today have been library users in other life phases and may therefore attach value to library use. The intention to use the library in the relatively near future may give rise to expressed option value (motivation category 2).

of children in the household is also significant at the 10% level; thus households generally have higher relative nonuse values the fewer children they have. The other explanatory factors in the analysis are not statistically significant. Neither sex, age, household income, urbanity, distance, being a library user as a child, or cultural activity can explain why some respondents are giving the library's nonuse values most of their points while others are valuing the library's use values highest.

Respondents giving high points to use values (motivations 1-2) have the opposite characteristics. They are likely to be library users without university or college education and with several children in the household.

The regression analysis presented in Table 5 indicates that the population's motivation for valuing public libraries can be dichotomized due to their education, library use, and number of children living in the household. To examine this question further, those respondents who gave more than 50% of their points to either use values (motivations 1-2) or nonuse values (motivations 3-5) were studied more closely; see the two last columns of Table 2. These respondent groups consisted of 279 and 133 respondents, respectively. Observe that the percentage of respondents being library users, 72% and 55% respectively, differs significantly between the two groups ($F = 29.69$, $P = 0.00$). Considering educational level, the same tendency as above is found. In the group of respondents giving more than half of their points to nonuse values, the educational level is higher than in the other group – 32% in this group had education from college or university compared to 25% in the opposite group, and this difference is statistically significant ($F = 8.66$, $P = 0.00$). These figures accord with the results from the regression analysis in Table 5. Here, however, no differential effect of numbers of children in the households is found.

8. Altruistic motivations behind public library valuation

An important component of the total value of public libraries and other cultural goods is nonuse value and part of it is altruistically motivated, as shown above. Altruistically expressed motivations in CV surveys for public-good valuation present some fundamental problems of interpretation, as discussed rather extensively in the economics literature (Johansson, 1992;

Margolis, 1984; Milgrom, 1993; Ray, 1987; Sen, 1979). Some of these problems also have bearing on the very nature of value represented by such expressed valuations. In economics, altruism is, broadly speaking, usually understood as positive value (e.g., positive willingness to pay, WTP) attached to improvements in other people's consumption or welfare. This implies a possibility that WTP arising from altruistic motivations ought to be excluded from the cost-benefit calculation due to problems of double counting (Bergstrom, 1982; Johansson, 1994; Milgrom, 1993). The way in which altruism is manifested is however important for this conclusion (Jones-Lee, 1991, 1992; Quiggin, 1998; Strand, 2002). A purpose of the discussion below is to illuminate this issue in this particular context.

Note first that decomposing total value of a good, as obtained from a stated preference (e.g., CV) survey, into use value and nonuse value components is quite difficult to do in practice, as indicated in the related environmental economics literature (Carson et al., 1999; Cummings & Harrison, 1995; Freeman, 1993). CV studies of cultural goods have, though, identified different types of nonuse values, as shown in Table 1. Both use and nonuse values exist in public library valuation for most respondents and in the aggregate.

The discussion in this section will maintain a distinction between use and nonuse (hereunder altruistic) values, but here only at a purely conceptual level. On such a basis, some forms that altruistically motivated preferences for public goods can take and some implications of these forms for economic valuation will now be discussed.

Altruistic motivations related to public goods can roughly be classified along two different dimensions. The first is to whom altruism is directed. Here the main distinction is between what one may term "local and global altruism." Local altruism is directed toward members of one's own close family (or possibly a somewhat larger circle), usually those with whom one shares a common household budget. Global altruism is instead directed toward individuals that are anonymous to the respondent. These can be citizens in one's community or country or in other countries.[9] The second dimension is whether altruism is "nonpaternalistic or paternalistic." Nonpaternalistic (or "pure") altruism implies that one incorporates others' preferences in one's own: in short, one "cares for" others for their own sake. Nonpaternalistic altruism is thus not associated with any particular good or group of goods and thus not with

[9] In principle, altruism can be directed toward "things" (e.g., natural entities), animals, etc., which will not be elaborated on here.

the particular public good being valued. Paternalistic altruism by contrast implies that altruistically motivated value is attached to other individuals' consumption of a particular good or goods, and when a particular public good is valued, the individuals' consumption of just that good. In the case of library services valuation, such cases would arise if individuals surveyed about their WTP for increased library good provision attach (local or global) value to other individuals' use of libraries.

The form of altruism (local or global and pure or paternalistic) turns out to matter greatly for how one should interpret answers from CV surveys of public goods. The most important distinction here is between nonpaternalistic (pure) and paternalistic altruism. It can be shown (Bergstrom, 1982; Johansson, 1994; Jones-Lee, 1991, 1992; Milgrom, 1993) that when altruism is pure in the sense defined above, increased altruism does not change the true WTP of the altruistic individual for a change in the good in some plausible cases. This may appear surprising but can be explained by the property that a purely altruistic individual attaches value to the general utility level of others and thus in the same way to all goods. Consider a case where such an individual is asked her maximum WTP for a particular increase in the provision of a public good, on condition that all other individuals also are required to pay their maximum WTP for this increase. In such a case, by construction, others enjoy no increase in utility when more of the good is provided. Since it is the utility change enjoyed by others that is valued, and there is no utility change, no value will be attached to others' increased enjoyment of the public good. If by contrast others are required to pay less than their full WTP to obtain the good, others will enjoy an increase in utility and an altruistic value will be attached to this increase (since financing of the good must somehow be provided, this is in fact likely to occur if and only if the project in question provides overall net benefits to society).

Under paternalistic altruism directed toward the public good, increased altruism generally raises the altruistic individual's overall valuation of the public good and gives grounds for including altruistic values as part of a true social value of the good. In this case, the specific and not the general consumption of others matters for the altruistic individual. The issue whether or not others have to pay to get the good or not is then less important; in either case, the altruistic individual enjoys an increase in utility just because others also enjoy increased public good provision. This situation is arguably important for library goods, where a substantial part of nonuse values is likely to be just the impact of increased use and access of

libraries for others in terms of increased general enlightenment and intellectual skills in society as a whole.

The second main distinction is between altruism toward family members ("local" altruism) and that toward other members of society ("global" altruism). The discussion has so far taken altruism to be purely "global". Arguably, however, most altruism in society is directed toward close family members with whom one shares a common household budget. If altruism has only this form, the implication for expressed WTP for a change in provision of a public good, turns out to depend on the nature of the intrahousehold resource allocation. Jones-Lee (1992) and Quiggin (1998) have shown that when household members have their separate budgets and only enjoy private goods, a greater degree of paternalistic (but not pure) altruism increases overall household WTP. In this case, one person's WTP on behalf of the household is generally smaller than the sum of individual members' WTP, but these values are more similar the greater the degree of altruism. When they instead enjoy both private and common household goods and at the same time bargain efficiently over the intrahousehold allocation, things are different. For this case, Strand (2002) has shown that altruism tends to make one individual's valuation on behalf of the household more equal to the sum of individual valuations when the individuals have different marginal valuations of the public good. This holds regardless of whether altruism is pure or paternalistic. Paternalistic altruism also here raises overall valuation but on average equally much for one person on behalf or the household, as when considering the sum of household members' valuations.

A practical problem in CV studies is that they typically provide little information about types of altruistic motivation, in particular about the important distinction between pure and paternalistic altruism.[10] The distinction between local and global altruism is usually somewhat easier to identify. In particular, a considerable part of value is clearly motivated by global altruism in the library study discussed above. Much of possible altruistic motivation in the case of public libraries is likely to be paternalistic, implying that it is legitimate to include it in an overall social valuation of such provision.

[10] Some researchers, among them Johansson (1994), have designed tests to be included in CV studies that may help to make this distinction. One such test is to consider differences in expressed altruistic motivation depending on whether others need or do not need to pay in order for the good to be provided.

9. Conclusions

Increasing pressure on public budgets has made it gradually more important to quantify the value of public libraries, as well as other cultural goods, to the citizens, local communities, and society at large. The economics profession has developed a range of methodologies for valuing nonmarket goods, which make it possible to estimate their value to citizens. An estimate of nonmarket benefits of public libraries can then be done in monetary units, which may be balanced against provision costs. By using a stated preference method such as CV, respondents' total value of the good or service in question is elicited. This value concept includes both use and nonuse value, as defined and discussed above.

The CV study of public libraries in Norway indicates, not surprisingly, that "direct use value" is the most important single motive for valuing local public libraries, constituting 40-50% of total value. Option value appears to constitute about 20%. The perhaps most interesting conclusion however is that nonuse values are shown to constitute a very important component of total value of public libraries in Norway. Such values make up perhaps 30-40% of total valuation, altruistically motivated values representing at least about 16%. It is thus imperative to include such in cost-benefit analyses of public libraries. Consequently also, when eliciting population preferences for goods of this type, the elicitation methods used must be capable of capturing nonuse values.

In this study, most respondents valued both use and nonuse values of public libraries and were motivated by self-interest as well as by benefits accruing to others and the community. This blend of social motivations and self-interest shown by the majority of respondents is an important finding and may be interpreted to reflect the standing of the public library as a community institution. Aggregated, 60% of total value of public libraries appears to be motivated by self-interest (including any within-family, or local, altruism), while close to 40% is motivated by social interests (including out-of-family, or global, altruism).

This study appears to be the first where the issue of altruism is addressed in the specific context of WTP assessments of cultural goods. Altruistic values seem to be non-marginal – the empirical data indicates that about 15-30% of total value is motivated by global altruism. Since altruistic motivations compose a significant share of public libraries' total value, it becomes necessary to discriminate between altruistic values that should properly be included

in the public good analysis and values that ought to be excluded. To be able to effect such a discrimination, the way in which altruism is manifested (local vs. global or pure vs. paternalistic) must be analyzed. The outcome of this analysis is shown to matter for whether or not these values ought to be included as part of overall social value of public libraries. Results from recent research in economics seem to imply that values arising from global and paternalistic altruism should be included in proper public good valuation, whereas values arising from local and pure altruism typically ought to be excluded due to problems of double counting. In this empirical study the distinction between local and global altruism is attempted made operational, and the conclusion to be drawn is that global altruism is present in public library valuation.

Further aspects of possible altruistic motivations, particularly whether they are pure or paternalistic, need to be addressed in future research. High education is one explanatory factor for giving nonuse values high weight. This finding may indicate that paternalistic altruism is present in public library valuation.

Paper 4:
Valuing the benefits of public libraries

Svanhild Aabø

Abstract

Constraints on public budgets oblige libraries to document their value. This paper presents a contingent valuation study eliciting how a random sample of Norwegian citizens values public libraries, applying two recently developed elicitation approaches. Possible and actual protest bids are differentiated and a split sample used, eliciting both willingness to pay (WTP) and to accept (WTA). An overwhelming majority perceives they have property rights to a local library, justifying the application of WTA. Estimates of WTA among nonprotesters are higher than estimates of WTP but only by a factor of about 4. Several measures of average valuation are derived, all being higher than average costs.

Keywords: *Public goods; Public libraries; Contingent valuation*

1. Introduction

By law, all Norwegian municipalities shall have a public library and a professionally qualified chief librarian (Public Library Act, 1985, §§4-5). These articles in the Public Library Act are subject to current political discussions spurred by the growing pressure on public budgets. In 2002, the Ministry of Cultural and Church Affairs suggested amendments of the articles, which were interpreted by many in the library profession and local authorities as steps to loosen the municipality's obligation to have a public library and to lower its quality. Due to substantial opposition in the hearing, the original amendment proposals were withdrawn and only minor amendments were passed by the Parliament (Public Library Act 1985, [2003], §4). However, further amendments of the Public Library Act will be considered in an announced report to the Ministry, with the objective of formulating a strategy document outlining the overall library policy (Kultur- og kyrkjedepartementet, 2003, pp.171-172).[0]

The public libraries' purpose is "to promote enlightenment, education and other cultural activity by the dissemination of information and by making books and other suitable material available free of charge to all those who live in Norway" (§1). This foundation, 'the free-of-charge principle', is also challenged and cause controversy in the Norwegian society because many municipalities today face severe budget restrictions. Cutbacks in funding of public services and suggestions to raise local taxes to maintain service levels are common and cause concern for politicians and citizens. There is also discussion whether or not to enhance local autonomy at the expense of national laws regulating local public services, thereby possibly deviating from the equity principle and accepting greater differences in the level of public services across municipalities. Public libraries are a topic in this debate.

It is well known that a free market is likely to fail as a mechanism for allocating public goods, including library services (Kingma, 1996; Aabø, 1988). Public libraries can, however, be valued using methods for non-market valuation. An objective of our study is to make such an assessment of public libraries in Norway. Two main approaches to valuation of non-market goods exist in the literature, namely revealed and stated preferences (Mitchell and Carson, 1989; Freeman, 1993). Of these only stated preference methods were considered useful here,

[0] The Archive, Library and Museum Authority shall coordinate the work with this report; which is to be started before summer 2004 (Haugland, 2004, p. 7).

since only they are capable of capturing non-use (or passive-use) values in addition to use values. Recent research has shown that the value people attach to public libraries has a variety of origins, e.g., appreciation of other people's use, dissemination of knowledge and culture, upholding of the literary heritage and their contribution to reducing informational gaps (D'Elia, 1993; Aslib, 1995; Haywood, 1995; Benton Foundation, 1996; Reppen, 1998; Höglund 1999; Audunson, 2001). Contingent valuation (CV) is by far the most widely used stated preference method, with more than 2000 CV studies reported in the literature (Carson, Wright, Carson, Alberini and Flores, 1995). Most of these are from environmental economics, but many also from the health, social, sport and transportation sectors. Within cultural economics there is a growing literature of reported CV studies (Noonan, 2003), e.g., of national television programming (Papandrea, 1999), theatres and opera houses (Roche Rivera, 1998; Bille Hansen, 1996), museums (Santagata and Signorello, 2000; Scarpa, Sirchian and Bravi., 1998; Martin, 1994), cultural heritage (Pollicino and Maddison, 2001; Navrud and Ready, 2001; Whitehead, Chambers and Chambers, 1998; Morey et al., 2002; Carson et al., 1997; Benhamou, 1996; Maggi, 1994; Grosclaude and Soguel, 1994; Willis, 1993) and libraries (Harless and Allen, 1999; Holt, Elliott and Moore, 1999).

The current study appears to be the first CV study valuing public libraries at a national level, in Norway or internationally.[0] Our aim is to determine whether public libraries in Norway are, overall, worth their price as viewed from the population's perspective. Secondly, we wish to explain *why* Norwegians, both library users and non-users, value public libraries.

The study also has methodological aspects. The elicitation formats Multiple Bounded Discrete Choice (MBDC) and Dissonance Minimizing (DM) are recent developments from environmental economics (Welsh and Poe, 1998; Blamey, Bennett and Morrison, 1999) and have never before been applied to a cultural good. To our knowledge, this is the first

[0] National studies of public libraries and their value using other methods than CV have been conducted in Canada (Fitch and Warner, 1998), Britain (Morris, Hawkins and Sumsion, 2001), England and Wales (Aslib, 1995), Australia (Mercer, 1995), USA (D'Elia, 1993; McClure et al., 2001). CV has been used as one of several methods in cost-benefit analyses of several urban public libraries in USA (Holt, Elliott and Moore, 1999, 2000). McClure et al. (2001, 7, p. 10) conclude that a follow-up study to measure public library economic impact is needed, including "a CV survey method focused on tax-based valuations of the library as a whole". In the literature of library and information science (LIS), the development of instruments to make valid statements about the value of public libraries is discussed. Studies are conducted from different theoretical and methodological positions, e.g., from user studies and performance measurement studies in LIS, from sociological survey research and also a few using methods from economics, for an overview see the Intoduction chapter.

comparative test of these two elicitation methods, valuing the same good in a CV study. We stress the detecting of response uncertainty and error and develop a rather elaborate procedure for identifying and differentiating possible and actual protest bids. A further important methodological feature of our study is to apply both willingness to pay (WTP) and willingness to accept (WTA); each used on half of the sample. Traditionally researchers have been cautious about applying WTA in CV studies, due to possibilities of implausibly high stated values. In our case however the property rights issue, as discussed below, appears to make WTA imperative. This study overall gives us clues to whether CV, developed in economics, can contribute to the theoretical and methodological arsenal of library and information science.[0]

The rest of the paper is organized as follows. Section 2 presents the survey, section 3 and 4 the WTP and WTA results respectively, section 5 protest bid treatments, and section 6 summary and discussion.

2. The survey

Our survey was administered by a professional opinion company, ACNielsen Norway AS, as part of their bimonthly omnibus survey (January 2000) that collects data from a national random sample of private households. 999 persons over the age of 15 years were interviewed in their homes as representatives of their households. This particular omnibus survey covered only two themes, and library valuation was the first of these. The questionnaire in addition contained a section on socio-economic and demographic information, including political attitudes, and sections of debriefing questions to the respondent and interviewer.

2.1 The good to be valued

Our CV study aims at measuring the total benefits accruing to the Norwegian population from public libraries, at today's activity and service levels. All 433 municipalities of Norway have public libraries, comprising 1108 units in 1997, but only about 60% of these are managed by a

[0] For a theoretical discussion of whether economic models for valuing non-market goods can fruitfully be applied on public libraries, see Aabø and Audunson (2002).

professional qualified chief librarian. They owned 21.5 mill. document items[0], and 22 mill. items were borrowed during that year. Children on average borrowed 9.3 books and adults 3.2 books, and each inhabitant on average visited a public library 4.5 times during the year. Total operating costs were 803 mill. NOK, which is 183 NOK[0] per inhabitant and 420 NOK per household (Norske folkebibliotek, 1998).[0] Norwegian public libraries are a mixed good familiar to the population. They are widely used; 52 % of all citizens visit a public library during a year and, except for cinemas, this is the highest percentage of any cultural institution. Only 6 % of the population aged 9-79 have never visited a public library (Norsk kulturbarometer 1997). The citizens' satisfaction with public libraries is also very high. Out of 52 public services evaluated by a national population sample, library services were ranked as number three; the two services obtaining higher scores, were both health services (TNS Gallup, 2003).[0] The range of public library activities and services differs among the many library units in both quantity and quality, but since they are all subject to the Public Library Act and Regulations laid down by the Ministry of Cultural and Scientific Affairs (1987) and there exists a common understanding in the population of what a public library is[0], we infer that the public good here to be valued is familiar to the citizens.

2.2 The questionnaire

The first part of the questionnaire used a top-down design, starting with a description of overall municipality level services, moving down to cultural goods, and then to public libraries. The intention was to put libraries in a context of more general local public goods and indirectly remind the respondents of their budget constraint whereby other goods and services compete for scarce private and public resources. The respondents were told how the total costs

[0] Registered as document items are books, journals, newspapers, videocassettes, audio disks, CD-ROMs, PC programs, chessboards, etc.

[0] 100 NOK was approximately 8.5 US$ at the time of the survey.

[0] Statistics of Norwegian public libraries are published each year, see ABM-utvikling (2003b) for the latest printed edition.

[0] Each year since 1992 the professional opinion company TNS Gallup and the Norwegian Ministry of Labor and Administration have conducted a national study of the populations' evaluation of their municipality and the public services. Public libraries have each year been among the most popular services.

[0] Greenhalgh, Landry and Worpole (1993) explored public libraries in the UK and concluded that there exists a common understanding of what a public library is and that most people know how to enter and inhabit that space which involves a number of unspoken rules and assumption. They summarized nine general attributes which are accepted as inherent and intrinsic components of public libraries in the UK and which is the basis for a common understanding of what a public library is. This understanding is familiar also from a Norwegian perspective.

in an average Norwegian municipality are allocated among main budget posts[0] and asked if the part to *recreation, culture and religion* (4% of the total budget), which constitutes on average 4000 NOK annually per household, was appropriate, too big, or too small. The cultural activity level of the respondents was also described.

Only at this point focus turned to public libraries, and specifically to the respondent's local library.[0] A main concern is how each individual citizen value public library benefits. Goods entering an individual's utility function are usually divided into three classes, i) pure private goods, ii) pure public goods, and iii) mixed goods (Cornes and Sandler, 1986). Private and mixed goods are primarily distinguished by the difference between individual and collective property rights (Mitchell and Carson, 1989).[0] Public libraries can here be seen as a mixed good. They provide a wide spectrum of goods and benefits, some of them public goods with individually held property rights (a photocopy of a journal article), others where the property rights are collectively held (browsing facilities) and others again where property rights can be considered both individually and collectively held (book loan) (Aabø, 1998).

To illuminate the issue of perceived property rights to public library benefits we posed the following question: "Do you think you have a right to have access to a public library in the municipality where you live?" The answers were almost unanimous, 94 % saying "Yes", a much higher fraction than those who stated to be library users[0], only 60 %.

2.3 WTP versus WTA

[0] Education 25%, hospitals 22%, health care 16%, social security and welfare 12%, business purposes 6%, ordinary public services 6%, recreation, culture and religion 4%, and other purposes 9% (Statistics Norway, 1998).

[0] The Norwegian public library system comprises i)local public libraries that are a municipal responsibility, ii) county libraries which are a county responsibility and iii)the central library and advisory services which are a national government responsibility. It is the libraries under i) which the respondents were asked to value.

[0] *Collectively held property rights* occur where access (or potential access) to the good is available to all members of the community, and individual members cannot sell their access right. *Individually held property rights* occur when the collectivity grants individuals exclusive rights to use a public good because this is viewed as being in the public interest.

[0] A library user is here defined as a person who has used the public library at least once during the last 12 months.

CV implies that respondents are asked to state their values of a change in the provision of a non-market good, in the form of WTP for an improvement or minimum compensation (WTA) to accept a change to the worse. In theory, WTP and WTA should differ only by small amounts whenever the good in question is nonessential and has low budget shares. Empirical WTA estimates are however often considerably higher than WTP estimates for the same good (Knetsch, 1990; Hanemann, 1991; Dubourg et al., 1994; MacDonald and Bowker, 1994; Morrison, 1998; Horowitz and McConnell, 2002; List and Shogren, 2002). Due to this observation, and especially since the recommendation from the ”NOAA-panel” to use WTP as a conservative choice (Arrow et al., 1993), when the natural setting calls for estimating WTA, it is instead customary to estimate WTP.

We conducted two pilot studies to test the scenario plausibility. In the first, the scenario described an economic situation forcing local politicians to suggest a choice between closing down the public library or increasing local taxes. Respondents were asked to state their WTP for maintaining the library services. A full 2/3 of these found the scenario implausible, mainly because they i) found closing the library unrealistic since library services *are* a public task which the municipality is obliged to maintain[0], and ii) protested against additional taxes. The scenario description was improved in the second pilot test by three changes, referring directly to a) the *Public Library Act* and assuming it amended, b) *local* aspects to avoid an understanding that the Norwegian public library system as a whole could be closed down, and c) substitutes and *non-substitutes*.[0]

In the second pilot test we wanted to try out the *WTA* format. One hypothesis concerning the WTP/WTA discrepancy is the existence of an ”endowment effect”, that is the supposition that individuals value losses more that commensurate gains (Thaler, 1980; Kahneman, Knetsch and Thaler, 1990). MacDonald and Bowker (1994) studied the presence of the endowment effect in an economic analysis of localized air pollution. Their findings support the hypothesis that the WTP/WTA disparity can be influenced by an endowment effect. It appears that perceived property rights may well be an important factor in contributing to the divergence. If this is the case, the WTP/WTA choice becomes a crucial factor in the process of estimating

[0] This view is fully in accordance with the Public Library Act, but beforehand we did not know how well this law was known and to which level the population supported it.

[0] Substitutes were options to use public libraries in neighbor municipalities or buy books, reference manuals, information services, etc. Non-substitutes will disappear, e.g., ”Reach out”-library services to elderly and disabled persons, to kindergartens, etc.

potential welfare impacts of a policy alternative. If the citizens appear to have an inherent right to the valued good, "the common practice of substituting *WTP* measures for *WTA* will understate welfare impacts, increasing the probability of rejecting a proposal that would provide a potential Pareto improvement" (MacDonald and Bowker, 1994, p. 547). All Norwegian citizens have a legally based right to a local public library (Public Library Act, §4), and in our study 94% of the respondents acknowledged this right.

Another hypothesis is that the divergence between WTP and WTA also depends on substitution effects. Hanemann (1991) showed that the smaller the substitution effect the greater the WTP/WTA difference. Public libraries provide a wide range of services, some having high degree of substitution ability (book loans) and some having very low ("Reach out"-services to elderly and disabled persons, to kindergartens, etc.). Recent studies in library and information science show that respondents valuing public libraries appreciate their social benefits and view them from a wider perspective than that of own use and direct self-interest only (Audunson, 2001, Holt et al., 1999, Benton Foundation, 1996). Non-use values thus motivated are shown to constitute a substantial share of public libraries' total value (Aabø and Strand, 2004). Library services with high non-use value have small substitution effect and may be one of the explanations of a possible high difference between estimated WTP and WTA values.

The relationship between real and hypothetical WTA measures of value is examined in only a few studies (List and Shogren 2002, Mansfield 1998, Brookshire and Coursey 1987, Bishop et al. 1983, Bishop and Heberlien 1979). List and Shogren (2002) studied this relationship from a within-sample design. Comparing estimates of hypothetical and real compensation demands for surrending holiday gifts, they found that people *understated* their real willingness to accept in the hypothetical regimes. Given that many practitioners view WTA measures as the upper bound on value for incremental changes in a good or service, List and Shogren remark that this finding may imply that hypothetical offers could actually represent a lower limit.[0]

A recent meta study (Horowitz and McConnell, 2002) reviews 50 different studies of the ratio for WTA/WTP of a wide range of goods conducted during the last 30 years. From this extensive study, two robust conclusions are drawn (p. 442): 1) The high observed WTA/WTP

[0] After controlling for person-specific effects – age, gender, family income and number of gifts – hypothetical and real statements were, however, equivalent on the margin in this study.

ratios are not experimental artefacts. Hypothetical or non-incentive-compatible experiments do not yield statistically significantly higher ratios; high ratios are exhibited by a broad-based population; and familiarity with the experiments does not uniformly lead to lower ratios. 2) A robust response pattern exists. The farther the good is from being an ”ordinary private good”, the higher the ratio, regardless of differences in survey design.

For the choice situation in our study, depicting the public library to be closed down if the local taxes are not raised, WTA is arguably the theoretically correct welfare measure. In this situation the individual suffers the loss of not being able to use the local library to which she holds initial property rights. ”Because of the theoretical relevance of WTA under certain property-rights structures, it seems inconsistent simultaneously to advocate the use of CV and exclude applications to WTA, ” Boyle and Bergstrom (1999, p. 192) state in a comment to the NOAA Panel’s recommendation of always using WTP in CV studies, continuing the discussion of rational explanations of the WTP-WTA disparity is. In our study, a solid majority acknowledged their property rights to the local public library. Due to this fact we found strong arguments to elicit WTA, in addition to applying the WTP format as recommended by the NOAA Panel. Since the results from our second pilot study were encouraging, we decided to split the main survey, giving one half of the sample WTP questions and the other half WTA questions.

2.4 The scenario design

The scenario description starts by referring to the Norwegian Public Library Act and its purpose statement in §1. Long term impact of public libraries is here referred to as enlightenment, education, and cultural activity. Some of the public library services are referred to, when the choice situation is described:

> “It is well known that the economic situation in most of the municipalities is deteriorating. This can imply that some public services have to be reduced or closed down, unless the municipality’s revenues are increased.
>
> Assume the Public Library Act amended, so that the municipalities themselves could decide whether or not they wanted a public library. Imagine that the council administration was considering closing down the library. An option would then be to

> use the public library in a neighbouring municipality or to buy all books, reference manuals, information services, etc. needed by yourself and your household. Library services to schools and adult training courses and to various groups in the local community, such as the ”Reach out”-service to elderly in institutions, kindergartens, etc. will cease to exist.
>
> Another alternative is maintaining the library services, if the municipality’s revenues are sufficiently increased through additional local taxes.”[0]

The WTA scenarios have the same framing, but here the choice is between either (1) closing down the local library in order to use the saved budget funds on other municipality tasks benefiting the household (e.g., education, health), or (2) maintaining the library and also other municipality tasks on today’s level of activity.

The scenario descriptions are constructed to elicit the total value of the local public library holistically. They do not intend to describe all attributes or value components of public libraries but points to some well-known public library services (book lending, provision of reference literature, and information services) and some activities that are less known (services targeted at specific groups in the local community and outreach programmes). Our scenarios are designed to elicit total value holistically. In accordance with Randall (1991, p. 312), such scenarios should require the respondent to compare two situations: one in which the local public library exists and the library services and activities are available at the current quality levels, and the other in which the public library does not exist and hence provides no services and activities.

Our study is based on a national population sample with respondents from a variety of municipalities. Public libraries are by law found in all of the municipalities but they differ regarding the range and quality and quantity of the public library service due to the size of their population and allocated resources. By this scenario description each respondent values the public library in her municipality, e.g., the public library services and activities she is aware of and puts weight to, thus reflecting the present level of both the library’s activities and its information of them to the citizens.

[0] This scenario description was used in the two WTP subsamples.

2.5 Elicitation formats

Previous research has shown that the choice of elicitation method can significantly influence estimates of mean and median WTP in CV studies. We chose to use two different elicitation formats to seek to correct for elicitation method effects, namely multiple bounded discrete choice (MBDC) and dissonance minimizing format (DM). Both seek to correct for overestimation of the value of the good in question.

The DM format was developed by Blamey, Bennett and Morrison, (1999) with the objective to reduce overestimation of values due to ”yea-saying”.[0] WTP estimates in CV studies are typically higher than WTP where payment is required, hence the need to detect ”yea-saying”. Uncertainty in choices is often due to ambivalence, and ambivalence may occur when respondents simultaneously have two attitudes that are inconsistent or when there is a conflict between belief and behavior. Blamey et al. (1999) interpret such ambivalence as ”dissonance”. When answering a valuation question, respondents may have two objectives. In addition to revealing their true preferences for the good, here the local public library, by stating their willingness to pay or accept compensation, they may also want to express how favorably they view libraries or that they do not favor them (Brown et al., 1996). Blamey et al., (1999) claim that the dominant attitude needed to be expressed will often be the latter. Hence, respondents who think the program at issue should proceed, but their WTP is less than the bid amount may still respond ”yes” to a standard dichotomous choice (DC) question in order to express their attitudes towards the program. The DM format is a discrete choice technique designed to minimize such yea-saying by including additional response categories that permit respondents to express support for the good to be valued without having to commit money.

[0] ”Yea-saying” is often understood as a tendency of respondents to agree with the interviewer without considering thoroughly their own preferences. Blamey, Bennett and Morrison, 1999, p. 126) define yea-saying as ”the tendency to subordinate outcome-based or ’true’ economic preferences in favor of expressive motivations when responding to CVM questions”. These expressive motivations may be i)socially motivated, where social pressure or desirability considerations motivate respondents to yea-say, or ii)internally motivated, where respondents seek to express their attitudes or held values.

Respondents who think the proposal a "good idea" but do not prioritize it highly enough to be willing to pay for it, can differentiate themselves from those who think the proposal a bad "idea". The DM format can be tailored to express specifically main attitudes of respondents in the actual study, and thus make it possible to separate between demonstration of attitudes and stated willingness to pay.

The theoretical reasoning behind this elicitation format indicates that it can be helpful when pilot studies show that there are respondents who have objections to aspects of the scenario, which cannot be eliminated through re-wording or other means. Our pilot studies indicated that the group of protest voters included both real zero bidders and respondents with positive valuation.[0] Presented for the valuation question in the DM elicitation format, respondents in the main survey were allowed to chose between multiple statements, including an option to say "no" to the bid but still express support for libraries.

Table 1: The first valuation question, Q4, in elicitation format DM-WTP with distribution of answers to the six response options.

Do you support maintaining the local public library services and are willing to pay … NOK in additional annual local taxes to prevent closing down of the library? **Which one of these statements best expresses your answer?**		
	Frequencies	**Per cent**
1. I support maintaining the local public library services and am willing to pay ….. NOK in local tax increase	89	36
2. I support maintaining the local public library services and am willing to pay an additional local tax, but it is worth less than ….. NOK to me	25	10
3. I support maintaining the local public library services but disagree that it demands additional local taxes	98	39
4. I don't support maintaining the local public library services even if it doesn't cost me anything	7	3
5. Don't know	15	6
6. Will not answer	7	3
Missing	9	4
Total	250	101

[*] The bids varied randomly between 100 NOK, 300 NOK, 500 NOK and 1000 NOK.

[0] In a CV study of a program to reduce transportation and community noise, the DM elicitation format was used to separate a "true" zero WTP from a "protest" zero WTP (Navrud, 2000).

Table 1 shows the wording of our first valuation question, Q4. It presents six response options and option 03 aims to catch possible protest voters. Respondents choosing option 03 could also be motivated by considerations of inefficiency in public library expenditure, i.e., support spending on public libraries but believe that current output could be maintained with lower tax expenditures if the libraries were run more efficiently. All respondents answering option 03 were posed follow-up questions especially designed to prompt them to state their true preferences, see box 1.

Box 1: Follow-up valuation question in the elicitation format DM-WTP posed to possible protest bidders, i.e., respondents who answered the 03-alternative in Q4, see table 1.

Do you fully agree, partly agree, partly disagree or fully disagree with the statements below, or don't you know:

1) I would be willing to pay … NOK to maintain the local library service if I was convinced that the municipality is unable to pay the costs within their budget.
2) I would be willing to pay … NOK to maintain the local library service if I was convinced that the municipality is unable to pay the costs without having to reduce services in the health and educational sectors.
3) I cannot afford to pay anything to maintain the local library service.

Our second elicitation format is MBDC, developed by Welsh and Poe (1999). This technique contains two dimensions, first a number of dollar amounts in ascending order, and secondly, a scale of certainty levels (”definitely no”, ”probably no”, ”not sure”, ”probably yes”, ”definitely yes”). The MBDC format combines elements from both the payment card (PC) and DC approaches. Like the PC format, the respondents are presented with an ordered sequence of dollar amounts. However, rather than just to circle a single value or interval, they are given a ”polychotomous choice” response option and asked to choose a level of voting certainty for the referendum at each of the dollar thresholds.

Our two formats were both adapted to scenario descriptions for WTP and WTA respectively, thereby developing a four-cell design, see box 2. Respondents were randomly assigned to these four subsamples. The first valuation question, Q4, had a referendum form and was posed in either MBDC or DM formats. For all four subsamples this question was immediately followed by an open-ended (OE) valuation question, Q5. This design yields four independent value estimates and provides the possibility to compare answers between i) the MBDC and DM formats, ii) Q4 and Q5, and iii) WTA and WTP.

Box 2: The four subsamples.

DM – WTP (n=250)	DM – WTA (n=241)
MBDC – WTP (n=257)	MBDC – WTA (n=251)

Our valuation estimates are based on several different model variants. Q4 is, in the DM format, estimated using a *logit model*. In the MBDC format we use two different principles for estimation. The first assumes that the respondents state their ”true” preferences at one certainty level, namely ”Probably yes” given to be 95 % certain. In the second we assume that the true preferences are derived as an arithmetical average of a combination of several, weighted or unweighted, certainty levels.

3. WTP results

3.1 WTP estimates of the first valuation question, Q4, in the MBDC format

In Q4, using the MBDC elicitation format, respondents were presented a payment card with eight amounts (100, 300, 500, 700, 1000, 2000, 5000, 10000 NOK) and asked to assign a certainty level to each of the amounts, using a scale from ”Definitely yes” to ”Definitely no”. This technique permits estimation of mean and median values for each certainty level. The choice of most appropriate certainty level depends on the actual policy analysis. We wanted to arrive at a *single estimate* for each respondent, which would express as plausibly as possible her WTP response to Q4. In their original experiment, Welsh and Poe (1999) found a close

correspondence between two of the certainty levels in MBDC and estimates obtained using three other elicitation formats – between the level ”Not sure” and the DC technique and between the level ”Probably yes” and the PC and OE techniques. To generate a single estimate we used the level ”Probably yes”, which may be agreed to yield a conservative estimate, as one of two methods applied. The highest amount to which the respondent stated ”Probably yes” was interpreted as the *lower* limit of her valuation of the local library and the lowest amount on the next certainty level, ”Not sure”, as her *upper* limit.[0] The single estimate of each respondent's valuation is determined as the average mean value of the upper and lower limit, see *EP* in table 2.

Table 2: Responses to the first valuation question, Q4, in the MBDC elicitation format. Four WTP estimates of mean and median in NOK, including a 95% confidence interval for mean.

	WTP				
			95% Confidence interval for mean*		**N**
	Median	**Mean**	**Lower Bound**	**Upper Bound**	**Absolute numbers and percent**
EP, one certainty level: ”Probably sure” **Excl. protest bids**	400	980	750	1200	240; 93%
EP **Protest bids given M.V. value**	400	940	715	1170	257; 100%
EP **Incl. protest bids, i.e., 0 NOK**	400	950	720	1170	250; 97%
EW1, four certainty levels **Excl. protest bids**	500	1500	1210	1780	240; 93%
EW1 **Protest bids given M.V. value**	500	1480	1170	1795	257; 100%
EW1 **Incl. protest bids, i.e., 0 NOK**	500	1440	1160	1710	250; 97%
EW2, four certainty levels **Excl. protest bids**	540	1740	1330	2160	
EW2 **Protest bids given M.V. value**	570	1730	1320	2140	257
EW2 **Incl. protest bids, i.e., 0 NOK**	510	1670	1270	2070	250
EU, four certainty levels, **Excl. protest bids**	530	1540	1200	1820	240
EU **Protest bids given M.V. value**	530	1560	1260	1860	257
EU **Incl. protest bids, i.e., 0 NOK**	500	1480	1200	1750	250

* The confidence interval is found in a one-way analysis of variance.

[0] Welsh and Poe (1999, p. 173) used the highest amount the individual chose at a certainty level, here ”Probably yes”, as the lower end of the switching interval containing her WTP and the next *dollar threshold* as the higher end of the switching interval.

Our second way to calculate WTP was to combine, in different ways, all of the certainty levels except the ”Not sure” option. Three different estimates for each respondent were calculated, as weighted or unweighted sums of these certainty levels.[0] In *EW1* the weights 0.1 and 0.4 were assigned to the levels ”Definitely” and ”Probably” respectively, in *EW2* the weights 0.3 and 0.2, and in *EU* the four certainty levels were given equal weights. The difference between these three estimates is small, while all three are higher than the estimate using only one certainty level, *EP*, as seen in table 2.

Table 2 presents main results on the basis of the MBDC-WTP subsample. For each calculation method median and mean WTP and a 95% confidence interval for the means are presented. The difference between the two elicitation methods is relatively large, up to a ratio 1:1.8.

The size of the estimates is influenced by the treatment of protest bids. We treat the protest bids in three ways: 1) exclude them from the sample, 2) impute them using a Missing Value (M.V.) analysis and 3) include their stated values, i.e., 0 NOK in the WTP and 10000 NOK in the WTA formats.

Statistical equivalence of the estimates according to treatment of protest bids is evaluated with the following hypothesis test:

$$H_0: \bar{X}_{ik} = \bar{X}_{jk} \qquad i,j = EP, EW1, EW2, EU \qquad i \neq j$$
$$k = 1,2,3$$

[0] To reach a single estimate in the *WTP version* we first disclosed the highest amount to which the respondent stated ”Definitely yes” to pay, then the highest amounts to which she stated ”Probably yes” and ”Not sure”. Secondly, we disclosed the lowest amounts to which she stated ”Definitely no” and ”Probably no”. To reach a single estimate in the *WTP version* we first disclosed the highest amount to which the respondent stated ”Definitely yes”, then the highest amounts to which she stated ”Probably yes” and ”Not sure”. Thirdly, we disclosed the lowest amounts to which she said ”Definitely no” and ”Probably no”. For those instances where the respondent did not state an amount on one or more certainty levels we have calculated an amount. As a main rule we used the average mean between two amounts stated by the respondent. By this method we arrived at amounts on all certainty levels for each of the respondents.

where X is the estimate and k indexes protest bids treatments. Of the 12 possible pairwise WTP hypothesis tests only 3 were rejected at the 5% level[0], while the other 9 were not rejected. Generally, thus, protest bids treatments 1) and 2) give estimates that do not differ significantly.

Table 3: Regression analyses of log-transformed WTP to Q4, EP, with zero bids excluded (column 2) and included (column 3).

INDEPENDENT VARIABLES	**Log-transformed positive WTP** ***B-coefficient***	**Log-transformed WTP including zero bids** ***B-coefficient***
Library user (0=No, 1=Yes)	0.290 (0.160)*	0.759 (0.305)**
Household income (log-transformed)	0.284 (0.101)***	0.187 (0.196)
High education (1=university or college, 0=lower)	-0.035 (0.160)	-0.065 (0.308)
Urbanity=town (0=city and countryside, 1=town. City=ref.cat.)	-0.376 (0.176)**	-0.471 (0.327)
Urbanity=countryside (0=city and town, 1=countryside)	-0.793 (0.197)***	-0.571 (0.377)
Cultural activity (scale 0-10, where 10 is the highest level)	0.060 (0.034)*	0.118 (0.067)*
Distance to library (kilometers from dwelling, log-transformed)	-0.170 (0.082)**	-0.433 (0.144)***
Constant	2.759 (1,252)**	3.240 (2.428)
Adjusted R^2	0.175	0.129

Standard errors are indicated in parentheses.
*** denotes 1% significance level, ** denotes 5% significance level, * denotes 10% significance level.

The respondents' WTP varied considerably, 26 gave zero bids and 214 positive bids varying from 50 NOK to 10000 NOK. To explain first the variance of the positive bids[0] in this subsample, we included several explanatory variables in a linear multivariate regression analysis.[0] Table 3 presents the results from this regression. We used a log-transformation[0] of

[0] These 3 hypotheses were rejected using Paired-Samples T Test: $EP_2 \neq EP_3$, $EW2_2 \neq EW2_3$ and $EU_2 \neq EU_3$.

[0] Differences between the three bid types zero, positive and protest bids are discussed in section 6.

[0] Three demographic variables available in the survey – sex, age, and family size – were found to have almost no effect on predicted valuation, neither in the regression analysis of this subsample or of the other three subsamples. This was also true of an indicator variable for whether or not the respondent was informed of the average library cost of per household, thus indicating that this information did not have an anchoring effect. Half of the respondents in each subsample were in the scenario description informed of the average annual library cost per household at the time of the survey, 420 NOK, while the other half did not get this information.

[0] The estimate is skewed because its distribution differs from a normal, symmetric distribution, but a log-transformation made the distribution normal. The skewness in *EP* was thus changed from 3.6 to 0.7.

EP[0] as the dependent variable. Table 3, column 2 shows that the background variables *library user* and *cultural activity* have positive effects on WTP. *Household income* elasticity is highly significant and positive, but small, not uncommon either in CV studies or studies exploring library use. Elasticity of *distance* to the local library is negative and rural residents and town folks have lower WTP than city dwellers. *High education* is not significant. When respondents who gave zero bids are included in the analysis, see column 3, the variables *library user* and *distance* have greater effect and significance, and c*ultural activity* has stronger effect. The remaining four explanatory factors are not statistically significant.

3.2 WTP estimates of Q4 in the DM format

We now turn to the valuation procedure of Q4 in the DM format. The estimations here used the standard logistic distribution function, as follows (in the semivariate specification)

$$F(X;\beta) = \frac{1}{1+e^{-(\alpha+\beta X)}}$$

where F is the distributive function, X is the WTP, and α and β are coefficients to be estimated. The dependent variable in the logistic regression is a dichotomous variable representing the respondent's probability to answer "Yes" or "No" to the bid she was asked to pay. This variable differs according to identification and treatment of protest bids. With the purpose of documenting our choice of model, DM4, table 4 summarizes the alternate dependent variables relating to the first valuation questions, given in table 1.

The price sensitivity for the different models is shown in table 5 by the range between the lowest and highest share of the respondents who accept the rotated amount. All models are monotonically decreasing, but we note that the range expressing price sensitivity is highest in the DM4 model. The large percent of respondents accepting the highest bid (1000 NOK), varying between 31% and 54% in the four models gives us a "flat tail" problem, i.e., difficulties in predicting the right tail of the distribution.[0] For the left tail of the distribution, however, we have accurate information from the specified response options and follow-up

[0] *EP* with protest bids excluded was used.

[0] If bid values higher than 1000 NOK had been included, this problem would have been less.

questions, and are able to distinguish between real zero bids and positive bids with WTP less than the bid value. To arrive at a valid estimate, we first exclude the zero bids from the ”No” responses in the logit regression (using the DM4 model with zero bids excluded), and then add the zero bids to the equation to estimate mean and median.[0]

Table 4: Summary of alternate dependent variables from the first valuation question in the DM-WTP format, see table 1.

Dependent variable	**Description**	**N**	**Yes**	**No**
DM1	Responses 01=89r. Coded “yes”. Responses 02=25r., 03=98r. and 04=7r. Coded “no”. Responses 05, 06 and M.V.(31r.) rejected from the subsample.	219	89 (41 %)	130 (50%)
DM2	Response 01 coded “yes”. Responses 02 and 04 coded “no”. Response 03 interpreted as protest bids and rejected from the subsample.	121	89 (74 %)	32 (26%)
DM3	As for DM2, but 03-responses recoded based on follow-up questions, where positive WTP is coded “yes”=31r. and both real zero=38r. and protest bids=19r. are coded “no”.	219	120 (55 %)	99 (45%)
DM4	As for DM3, but within 03-responses protest bids=19r. are differentiated from real zero bids and rejected from the subsample. ”Don’t know”=10r. within 03-responses are rejected, too.	190*	120 (63 %)	70 (37%)
DM4 without real zero bids	As for DM4, but real zero bids=45r. (7r.=04-responses and 38r. Of the 03-responses) are differentiated from the ”no” responses and *temporarily* rejected from the sample.	145	120 (83 %)	25 (17%)

* In the subsample DM-WTP, $N = 250$. The 60 responses rejected from DM4 are distributed as follows: 32 ”Don’t know” or ”Will not answer” responses, 18 protest bids, and 10 missing values.

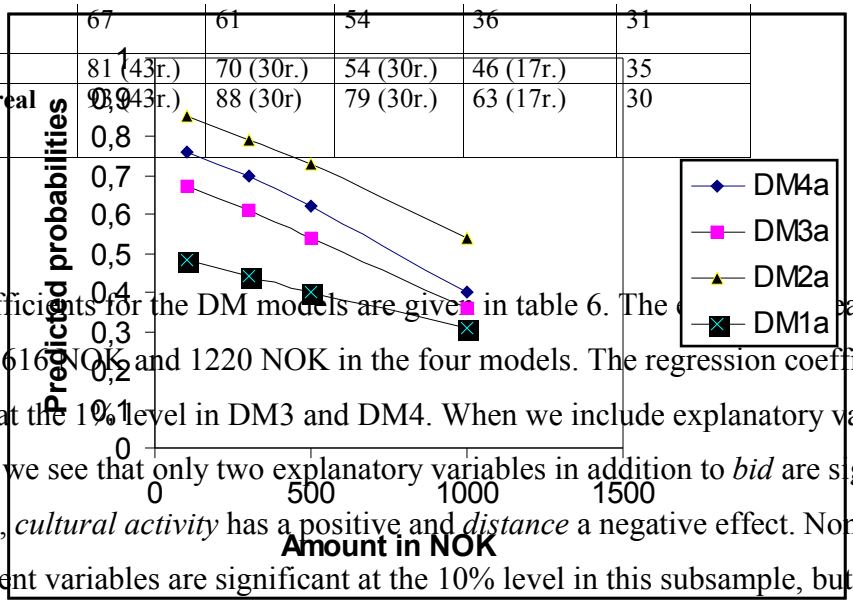
Table 5: ”Yes” responses by bid value and model defined by dependent variable in the DM-WTP format. In DM4 the number of respondents are included in parentheses.

	Bid values				
	100 NOK	**300 NOK**	**500 NOK**	**1000 NOK**	**Range**
DM1	48	44	40	31	17
DM2	84	79	73	54	30

[0] N_1=”Yes”-responses (90) and ”No”-responses cleaned for zero bids (25) =145 respondents included in the logit regression. N_2=real zero bids, and N_3=unsure responses (60) rejected.

Expected Value=$\{EV_1=(\text{logit}*N_1) + EV_2=(0*N_2)\} / N_1+N_2$.

DM3	67	61	54	36	31
DM4	81 (43r.)	70 (30r.)	54 (30r.)	46 (17r.)	35
DM4 without real zero bids	93 (43r.)	88 (30r)	79 (30r.)	63 (17r.)	30



The logit coefficients for the DM models are given in table 6. The [illegible]an and median vary between 616 NOK and 1220 NOK in the four models. The regression coefficient for *bid* is significant at the 1% level in DM3 and DM4. When we include explanatory variables in the DM4 model[0], we see that only two explanatory variables in addition to *bid* are significant at the 10% level, *cultural activity* has a positive and *distance* a negative effect. None of the other five independent variables are significant at the 10% level in this subsample, but the *B-coefficients* and their signs are mainly in accordance with expectation and the results in the MBDC subsample. An exception is *library user*, which, contrary to general expectations, is negative, but its *B-coefficient* is far from significant. *Household income* is here dichotomized[0] and the *B-coefficient* is positive but not significant.

Figure 1 shows the estimated logit distributions for the dependent variables DM1-DM4. Visual inspection shows that all four graphs are approximately linear and falling, but DM3 and DM4 fall steeper than the other two, and DM4 steepest. After assessing the four DM-models according to treatment of protest bids, price sensitivity, model significance, per cent of correct predictions, and significance of the logit coefficients (Blamey et al., 1999), we conclude that among the four models, DM4 appears to be best suited for valuation of public libraries.

Table 6: Logit coefficients for the four WTP DM models.

	DM1	**DM2**	**DM3**	**DM4 without zero bids**	**DM4 (incl. zero bids).**
Constant	-0.018 (0.234)	1.807 (0.389)***	-0.869 (0.243)***	**2.661 (0.440)*****	1.207 (0.534)**
Bid	-0.001 (0.000)	-0.002 (0.001)*	-0.001 (0.000)***	**-0.002 (0.001)*****	-0.003 (0.001)***

[0] We use the DM4 model with zero bids included in the regression analyses with several explanatory factors.

[0] Different forms of the variable *household income* were tried in the model, but when it was log-transformed or in NOK as a continuous variable, the *constant* in the equation was not significant.

Library User (0=No, 1=Yes)					-0.068 (0.439)
Household income (0<average, 1>= average)					0.428 (0.387)
High education (1=University/College, 0=lower)					-0.109 (0.440)
Urbanity=Town (0=City and Countryside)					-0.406 (0.423)
Urbanity=Countryside (0=City and Town)					-0.603 (0.479)
Cultural activity (scale 0-10. Where 10 is the highest level)					0.376 (0.110)***
Distance to library kilometers from dwelling, log-transformed)					-0.480 (0.222)**
% Correct predictions	52.8	73.6	60.6	**82.8**	74.2
Estimated median		C* 904	C* 870	**C*[1] 1016**	
Estimated mean	C** 616 C*** 684	C* 904 C** 935 C*** 980	C* 869 C** 1220 C*** 791	**C*[1] 1016** **C**[1] 741** **C***[1] 1047**	
N	216	121	216	**145 (190[1])**	178

Standard errors are indicated in parentheses.
*** denotes 1% significance level, ** 5% significance level, and *** 10% significance level.
C* = a/b - infinite < C* < infinite.
C** =1/b * ln[(1+e^{a}) / (1 + e$^{a-b(Bmax)}$)] 0 ≤ C** < B^{max}.
C***=1/b * ln (1 + e^{a}) 0 ≤ C*** < infinite.
[1]The zero bids (45 respondents) are included in these estimates based on a total of 190 respondents, calculated using the equation given in footnote 29.

Figure 1: Estimated logit distributions for the WTP elicitation formats DM1– DM4.

3.3 WTP estimates to Q5

The second valuation question, Q5, was open-ended and posed immediately after Q4. The interviewer introduced Q5 by informing the respondents that their possible WTP levels were no longer limited by the amounts on the payment card (MBDC subsample) or the amount in the dichotomous choice (DM subsample). They were rather asked to consider freely the

maximum amount they and their household were willing to pay, as an increase in annual local taxes to maintain the library services in their municipality. The interviewer was instructed to differentiate non-positive responses into protest bids (not accepting the question) and real zero bids (willing to pay nothing).

We present three Q5 estimates in table 7, varying in the treatment of protest bids. We note that the difference in *means* between the subsamples MBDC and DM is small, and smaller than in Q4.

Table 7: Mean and median values to Q5, the second valuation question, for the two WTP subsamples, with differing treatment of protest bids. Standard errors in parentheses.

	Q5 – WTP in NOK			
	Mean		**Median**	
	MBDC	**DM**	**MBDC**	**DM**
Protest bids excluded	425 (55)	350 (55)	300	100
Protest bids given M.V. value	370 (75)	370 (50)	300	200
Protest bids included = 0 NOK	375 (50)	325 (50)	200	100

Possible *anchoring effects* in Q5 are tested. In the DM subsample, the log-transformed *bid* variable is regressed against the log-transformed Q5 estimate, first as the only independent variable and secondly including other explanatory factors. Although the *B-coefficient* is positive in both – indicating that a respondent who in Q4 was asked to say ”yes” or ”no” to a high bid, has stated a higher bid in Q5 than a respondent who got the dichotomous choice for a lower bid – it is statistically significant only in the first analysis. In the MBDC subsample, where all respondents were presented the same payment card, we tested the *correlation* between the answers stated to Q5 and the four different estimates of the answers to Q4. The correlation was significant at the 1% level in all four analyses.[0] The *elicitation formats'* possible anchoring effect is tested in regression analyses presented in table 8. The explanatory factor *subsample* is significant at the 5% level in both the log-linear analyses, but is not significant even at the 10% level in the two linear analyses. The *B-coefficient* is negative in all four analyses, showing that respondents in the DM format state clearly lower WTP than those in the MBDC format.

[0] The correlation between Q5 and the Q4 estimates *EP, EW1, EW2* and *EU* varies from r=0.422 to r=0.549.

Table 8 describes linear and log-linear OLS relationships between WTP and background variables, in model 1 explaining the variance of the positive bids and in model 2 including the zero bids as well. The explanatory power of the models increased when we added two variables, the first registering whether or not the respondent had used the library as a child, and the second whether or not the municipality library had a professionally qualified chief librarian. Viewing the four analyses together, we observe that *cultural activity* is the only explanatory factor that is statistical significant in all of them, showing an approximately 10% positive effect per step up on the 10-point scale. *Household income* elasticity is positive and

Table 8: Explanatory factors' impact on WTP to Q5 for respondents with positive bids and for respondents with positive and zero bids. NOK per respondent (in linear relationships).

	Model 1	**Model 2**	**Model 1**	**Model 2**
INDEPENDENT VARIABLES	**Linear OLS, positive bids**	**Linear OLS, positive and zero bids**	**Log-linear OLS, Positive bids**	**Log-linear OLS, positive and zero bids**
Cultural activity (scale 0-10, where 10 is the highest activity level)	70.73 (29.56)**	60.24 (24.39)**	0.099 (0.026)***	0.135 (0.062)**
Household income (log-transformed)	195.10 (85.55)**	148.91 (71.07)**	0.164 (0.076)**	0.161 (0.179)
High education (1=University or college, 0=lower)	241.90 (138.71)*	192.29 (112.00)*	0.160 (0.122)	0.143 (0.282)
Urbanity (0=town and countryside, 1=city)	-1.52 (139.79)	-14.082 (109.09)	-0.001 (0.123)	-0.120 (0.275)
Distance to library (kilometers from dwelling, log-transformed)	86.96 (77.33)	41.81 (54.47)	-0.138 (0.068)**	-0.293 (0.137)**
Subsample (0=MBDC, 1=DM)	-80.14 (119.16)	-74.95 (95.28)	-0.247 (0.105)**	-0.696 (0.240)***
Debrief, WTP (0=payment vehicle unfair, 1=fair)	-6.86 (122.06)	99.75 (102.98)	0.082 (0.108)	1.437 (0.260)***
Library use, 1-3 visits (1=1-3 visits per year, dummy1. Ref.cat.=non-use)	-155.95 (155.95)	-73.92 (127.54)	-0.159 (0.148)	0.657 (0.322)**
Library use, 4-visits (1=4 or more visits per year, dummy2)	233.06 (160.88)	234.67 (127.86)*	0.050 (0.142)	0.872 (0.322)***
Library user as a child (0=No, 1=Yes)	-66.91 (137.02)	7.64 (105.14)	0.143 (0.121)	0.623 (0.265)**
Professionally qualified chief librarian (0=No, 1=Yes)	219.06 (207.33)	177.32 (148.62)	0.237 (0.183)	0.693 (0.375)*
Constant	-2261.90 (1159.40)*	-1749.97 (951.74)*	3.954 (1.023)***	2.785 (2.400)
Adjusted R^2	0.076	0.085	0.151	0.245
Model significance	0.001	0.000	0.000	0.000

Standard errors are indicated in parentheses.
*** denotes 1% significance level, ** 5% significance level, and * 10% significance level.

significant at the 5% level in three of the analyses. *Distance* elasticity is negative and significant in both log-linear analyses. The explanatory factor *library use* is split into *occasional use* (1-3 library visits per year) and *frequent use* (4 and more visits per year), the first significant in the log-linear analysis of model 2 and the latter in both. *Using the library as a child* and *a professionally qualified chief librarian* both have positive effect, significant in the second log-linear analysis. Explained variance in the four models is 8-25% (adjusted R^2 varying between 0.076 and 0.245), somewhat lower but in line with earlier findings in the library and information literature (Zweizig and Dervin, 1977; D'Elia, 1980; Audunson, 1995).[0] In most CV studies, explanatory power is 10-15%. More important than a high R^2 are significant explanatory factors with the expected signs.

4. WTA results

For the two WTA subsamples we used the same valuation procedures as for the WTP subsamples. Starting with the MBDC results, we present estimates based on the two estimation techniques in table 9. The four estimates are strikingly equal, and the MBDC-WTA results differ from the MBDC-WTP results in the following respects as well: i) the *median* differs significantly between the first protest bid treatment and the other two, ii) the *mean* estimates including the protest bids at 10000 NOK are, naturally, considerably and significantly higher than the two other protest bids treatments, and iii) the number of protest bids is much higher. This last point is further discussed in section 5. The estimate differences according to treatment of protest bids follow the same pattern in all four WTA estimates, as they did for WTP.

Respondents' individual WTA varied extensively in this subsample. 35 respondents demanded no compensation, and the 152 positive demands varied from 100 to 25000 NOK.

[0] Zweizig and Dervin analysed variance in *library use* in the population and identified 10 factors that explained 33% of the variance. D'Elia's analysis explained 29% of *library use* and 36% of *use frequencies.* Audunson applied the method *causal* or *path analysis* and found that the level of education is an important explaining factor, but also in his study the majority of the variance is unexplained. Replicating D'Elia's analysis on Norwegian data, Audunson found that the model explained only 19% of the variance.

To explain some of this variation, we regressed the log-transformed *EP* first for the positive demands and secondly including also the non-compensated demands, see table 10, in a way analogous to the MBDC-WTP subsample and with the same independent variables. We observe that in both regression analyses *library user* is significant at the 5% level, showing a clear interdependence between library use and the size of compensation demands. Among respondents with positive compensating demands, *high education* is significant, indicating that people with university or college education have 40-50% higher WTA than people with lower education. When non-demands are included, the *B-coefficient* for high education is still positive, but smaller and no longer significant. *Living in a town* compared to a city and *distance* both have negative effects and are now significant.

Table 9: Responses to the first valuation question in the MBDC elicitation format. Four WTA estimates of mean and median in NOK are presented, including a 95% confidence interval for mean.

	WTA				
			95% Confidence interval for mean		**N**
	Median	**Mean**	**Lower Bound**	**Upper Bound**	**Absolute numbers and percent**
EP, based on one certainty level: "Probably sure" Excl. protest bids	760	2090	1620	2560	186; 74%
EP, based on one certainty level: "Probably sure" Protest bids given M.V. value	1000	2420	2040	2800	251; 100%
EP based on one certainty level: "Probably sure" incl. protest bids, i.e. 0 NOK	1000	3530	2980	4080	229; 91%
EW1, based on four certainty levels Excl. protest bids	700	1950	1500	2400	180; 72%
EW1, based on four certainty levels protest bids given M.V. value	1100	2430	2060	2800	251; 100%
EW1, based on four certainty levels incl. protest bids, i.e. 0 NOK	1100	3460	2900	4000	223; 89%
EW2, based on four certainty levels excl. protest bids	800	2040	1590	2490	180
EW2, based on four certainty levels, protest bids given M.V. value	1100	2350	1980	2700	251
EW2, based on four certainty levels, incl. protest bids, i.e. 0 NOK	1200	3530	2980	4080	223
EU based on four certainty levels, **excl. protest bids**	750	2020	1570	2470	180
EU, Based on four certainty levels, **protest bids given M.V. value**	1130	2450	2080	2830	251

EU, based on four certainty levels**, incl. protest bids, i.e. 0 NOK**	1150	3510	2960	4060	223

Table 10: Regression analyses with log-transformed WTA to Q4, EP, with responses with no compensation demands excluded (column 2) and included (column 3).

INDEPENDENT VARIABLES	**Log-transformed Positive WTA.** ***B-coefficients***	**Log-transformed WTA including no compensation demands.** ***B-coefficients***
Library user (0=No, 1=Yes)	0.701 (0.264)***	0.515 (0.348)**
Household income (log-transformed)	0.167 (0.167)	0.142 (0.358)
High education (1=University or college, 0=lower)	0.442 (0.280)**	0.139 (0.570)
Urbanity=town (0=city and countryside, 1=town. City=ref.cat.)	-0.400 (0.268)	-1.295 (0.532)**
Urbanity=countryside (0=city and town, 1=countryside)	-0.078 (0.316)	-0.726 (0.621)
Cultural activity (scale 0-10. where 10 is the highest level)	-0.001 (0.063)	0.171 (0.122)
Distance to library (kilometers from dwelling, log-transformed)	-0.047 (0.129)	-0.477 (0.248)*
Constant	4.578 (2.090)**	3.720 (4.463)
Adjusted R^2	0.096	0.125

Standard errors are indicated in parentheses.
*** denotes 1% significance level, ** denotes 5% significance level, * denotes 10% significance level

In the *DM-WTA* subsample the respondents were posed a valuation question with three answer options and asked to choose the one alternative that best expressed their opinion, see table 11. In contrast to the DM-WTP subsample, the respondents choosing option B (which can include protests) were *not* posed a direct follow-up question designed especially to help differentiating these answers. The most striking result here is that only 3% of the subsample support closing down the local public library, although the money saved would be transferred to other municipality tasks benefiting their households. This result seems to reflect the fact that the overwhelming majority of respondents feel they have property rights to public library benefits.

Table 11: The first valuation question, Q4, in the elicitation format DM-WTA with the distribution of the answers to the three response options A-C.

Imagine that the municipality council considers two alternatives: **1. To close down the local library and use the saved budget funds to increase the efforts on other municipality tasks that will benefit your household.** **2. To maintain the local library and also other municipality tasks on today's level of activity.** **Which one of the statements A-C best expresses your answer?**		
	Frequencies	**Percentage**
A. I support maintaining the local public library if the alternative is to close down the library and transfer … NOK in saved budget funds to other municipality tasks that will benefit my household	94	39
B. I support maintaining the local library if the alternative is to close down the library, independent of the amount of saved budget funds that then can be transferred to other municipality tasks that will benefit my and other households	123	51
C. I support closing down the local library if it involves that … NOK is transferred to other municipality tasks that will benefit my household	8	3
Missing	16	7
Total	241	100

Response option B in table 11 was chosen by half of the subsample. Although it can contain protest voters, it will normally consist of respondents with a positive valuation of the local library, some of whom may have a very high valuation of it. It seems reasonable to assume that the B responses imply at least as high average valuation as the A responses. We present two possible interpretations of the answers to Q4 in the DM-WTA format, the ”No-protest Model” and the ”Protest Model”. In the ”No-protest Model”, none of the responses is identified as a protest bid. A and B responses are both interpreted as rejecting the compensation offer for closing down the local library. The amount they were asked to consider is interpreted as the lower limit of their positive valuation of the library. The C option implies values lower than the bids, but we have no means to establish what the true values are. These are here interpreted as real zero bids, which is extremely conservative. In the ”Protest Model”, the B answers are considered as *possible* protest bids, and by utilizing additional information, see section 5, real zero bids or bids with positive valuation are distinguished from the real protest bids.

Table 12: Logit coefficients for the WTA DM-models.

	No-protest Model 1	**Protest Model 1**	**No-protest Model 2**	**Protest Model 2**
Constant	4.077 (0.732)***	1.498 (0.345)***	3.440 (0.760)***	0.965 (0.388)**
Bid	-0.002 (0.001)	-0.001 (0.001)	-0.002 (0.001)*	-0.001 (0.001)
Library User			1.763 (0.841)**	1.181 (0.415)***
% Correct predictions	96.2	77.7	96.2	77.7
Estimated median	[C* 2040]	[C* 1500]	C* 1720	[C* 965]
Estimated mean	[C* 2040]	[C* 1498] [C** 1580] [C***1700]	C* 1720 C*** 1735	[C* 965] [C*** 1183]

Standard errors are indicated in parentheses.
*** denotes 1% significance level, ** denotes 5% significance level, * denotes 10% significance level.
$C^* = a/b$ - infinite $< C^* <$ infinite.
$C^{**} = 1/b * \ln[(1+e^a) / (1 + e^{a-b(B^{max})})]$ $0 \leq C^{**} < B^{max}$.
$C^{***} = 1/b * \ln (1 + e^a)$ $0 \leq C^{***} <$ infinite.
Brackets indicate estimated mean and median in models where the coefficient for *bid* is not significant.

In the logit regression analyses, the two models are both defined as dependent variables. The logit regression coefficients are given in table 12. In neither of the models the bid coefficient is significant at the 10% level when only *bid* is included as independent variable, and this is to be expected since so few respondents accepted the bid offered as compensation for closing down the local library. When the explanatory factor *library user* is included as well, both coefficients are significant at the 10% level for ”No-protest Model 2”, and this model is therefore used in the estimates. We see that a library user is more likely not to accept the compensating bid for closure of the library than a non-user, and when the bid is low, fewer respondents accept the compensating offer.

A summary of estimated means and medians to Q4 is given in table 13. We note that the two estimation techniques in the MBDC format yield very similar results, while the DM estimate has lower mean, but higher median.

Table 13: Means and medians to Q4 for the two WTA subsamples. In elicitation format MBDC, estimates using two different estimation techniques.

	Q4 – WTA		
	MBDC *EW1,* based on four certainty levels	**MBDC *EP,*** based on one certainty level: "Probably sure"	**DM C*[1]**
Mean	2000	2100	1720
Median	700	760	1720

[1] Interpretation 1 with two dependent variables.

The second valuation question, Q5, was open-ended and posed immediately after Q4, analogous to the WTP subsamples. The respondents should consider the *minimum* amount per household that must be transferred to other municipality activities benefiting their household, for them to support the proposition to close down the local library service. The interviewer was instructed to differentiate between protest voters (not accepting the question or any money amount) and those who were indifferent and did not demand any compensation (library value = 0 NOK). WTA estimates to *Q5* are shown in table 14, differing according to protest bids treatment. For the two estimates where protest bids are excluded or imputed using a M.V. analysis, the highest difference is the ratio 1:2.1 for *mean* and 1:1.3 for *median* values. The third estimate includes protest bids as 10000 NOK and therefore displays very high figures and differs significantly from the other two, as expected.

Table 14: Mean and median in NOK of Q5 with differing treatment of protest bids for the two WTA subsamples. Standard errors in parentheses.

	Q5 – WTA in NOK				
	Mean			**Median**	
	MBDC	**DM**		**MBDC**	**DM**
Protest bids excluded	1500 (250)	850 (220)		400	300
Protest bids given M.V. value	2000 (190)	1050 (120)		500	600
Protest bids (10000 NOK) incl.	4350 (300)	5700 (310)		1000	10000

5. Protest bids

Dealing with protest bids is important in many CV studies, and particularly critical for the WTA part of our study. In our four-cell design, see box 2, the DM-WTP format was developed to deal specifically with protest bids. The response option 03 in table 1 was formulated with the intention of catching possible protest bids. 98 respondents, nearly 40% of the subsample, voted for this option and traditionally these answers would be interpreted as protest bids and removed from the sample. In our DM-WTP format these respondents were posed follow-up questions, see box 1, which made it possible to differentiate this group of *possible protest bids* into i) real zero bids, 39%, ii) positive bids, 32%, iii) real protest bids, 19%, and iv) don't know-answers, 10%. This procedure indicated that only 20% of the possible protest bids in this subsample were *real* protest bids. For the three remaining subsamples, however, there were not specifically designed follow-up questions to make the distinction between possible and real protest bids. As a means to differentiate responses which are real zero bids or bids with positive valuation from the protest bids, we considered the answers from these respondents to the second valuation question, Q5.[0]

An overview for all four subsamples of the response distribution to the answer categories missing values, possible protest bids, real protest bids, real zero bids and positive bids is given in table 15, both for the raw data and the data after treatment of possible protest bids in Q4 and for Q5. Looking first at the Q4 data, we observe that the treatment significantly reduced the number of protest bids in all three subsamples where this procedure was used, but clearly most in DM-WTP, from nearly 40% to 8%. This can indicate that the procedure of utilizing additional information from Q5 to differentiate possible protest bids in the other two subsamples does not unduly reduce the number of protest bids. In MBDC-WTP the raw data protest bids constitute 15%, and only 5% after treatment. The share of real protest bids thus appears to be low in both WTP formats. In the WTA subsamples this treatment of protest bids was applied only to MBDC-WTA. Here the raw data's share of protest bids is nearly 40%. After treatment the share is still substantial, over 20%. The first interpretation of DM-WTA

[0] In the MBDC format, two groups were identified as possible protest bids: respondents who i)did not accept the highest amount, 10000 NOK, as compensation for closure of the local library and ii)gave inconsistent answers by saying definitely or probably "Yes" to accepting a compensation which was lower than one to which they said "No". *Vice versa* for WTP.

implied that the Q4 raw data were used directly without treatment, and no protest bids were identified.

Table 15: Percentagewise distribution of all four subsamples to the response categories missing values, possible protest bids, real protest bids, real zero bids and positive bids to Q4, both raw data and data after treatment, and to Q5.

	DM-WTP			MBDC-WTP			DM-WTA		MBDC-WTA		
	Q4 Raw data	**Q4 After treat-ment**	**Q5**	**Q4 Raw data**	**Q4 After treat-ment**	**Q5**	**Q4 Raw data (without treatment in Interpre-tation 1)**	**Q5**	**Q4 Raw data**	**Q4 After treat-ment**	**Q5**
M.V.*	12	16	2	3	3	0	7	0	4	6	2
Possible protest bids	**39**			**15**			**0**		**38**		
Protest bids		**8**	**7**		**5**	**12**		**53**		**21**	**33**
Real zero bids	23	18	26		10	16	4	18		14	19
Positive bids	36	58	66	83	83	72	90	29	58	60	47

* Missing values (M.V.) include response categories ”Don’t know” and ”Will not answer”.

The share of *positive bids* increased after treatment of the raw data, except for MBDC-WTP, which had a high share of positive bids at the outset, more than 80%. In subsample DM-WTP the positive bids make up almost 60%. The share of *real zero bids* lies between 4% and 18%, highest for DM-WTP. Considering the responses to Q4 as a whole, our two WTP elicitation formats render a share of both protest and zero bids that are lower than in many other CV studies. For WTA the share of protest bids is high in MBDC-WTA, but here the share of positive compensation demands is high as well, 60%.

Turning our attention to *Q5*, we observe that the share of protest bids is significantly higher, with the exception of DM-WTP. The share of protest bids in Q5 in the WTP formats is still low, 7% for DM-WTP and 12% for MBDC-WTP, whereas it is disturbingly high in the WTA formats, 53% and 33% respectively. The same pattern is seen in the proportion of positive amounts, where approximately 70% of the WTP respondents state positive bids. Of the WTA

repondents less than a half, 43%, state positive bids, 47% in MBDC-WTA and only 29% in DM-WTA. The proportion of real zero bids in Q5 differs little between the subsamples, 16% and 26% in the WTP formats, and 18% and 19% in the WTA formats. The large difference between Q4 and Q5 in DM-WTA, where more than half of the subsample states protest bids in the second valuation question, is striking. The high shares of protest bids in the WTA subsamples, and especially in DM-WTA, are conspicuous.

The WTA protest voters were examined further, to find out whether or not they had common characteristics. They were regressed against two explanatory variables based on debriefing information. The first debrief variable was the interviewer's evaluation of whether or not the respondent had problems with the valuation questions, and the other was the respondent's agreement or disagreement with the statement *"We must retain the local library regardless of the sum of budget funds saved by closing it down"*. The first variable was not significantly different from zero, but the second debrief variable was highly significant, as seen in the last column in table 16. The *odds ratio* was 4.3, explaining that a respondent who agrees with the above statement has 4.3 times higher odds to give a protest bid, than a respondent who disagrees with the statement. In addition, a protest WTA voter is characterized by being a *library user* with *high education* who uses few other *cultural activities* in the municipality. These explanatory factors indicate that among the protest voters there are likely to be respondents with high valuations of public libraries.

Table 16 displays the logit coefficients of the three bid types for the whole sample, both WTP and WTA. Exploring why respondents stated either *positive, zero* or *protest bids* to Q5, we used the same background variables as before, with the addition of a debrief variable and a variable indicating whether or not the respondent used the library as a child. The table presents the explanatory variables with a parameter significance at the 10% level or lower.[0] In the *WTP* subsamples, the logit coefficients for the respondents who stated positive and zero bids are almost directly opposite. Significant explanatory factors for both are *use of* and *distance to* the library and *debrief response*. The WTP debrief question is whether the

[0] We used a binary logistic regression with a backward stepwise procedure conditional on removal of independent variables with a significance limit at 0.10. The *dependent variables* – the bid types – are coded binary, i.e., "Positive bids"=1, all other bids=0; "Zero bids"=1, all other bids=0, and "Possible protest bids"=1, all other bids=0.

Table 16: Logit coefficients for bid type models defined by positive, zero and protest bids to Q5, for WTP and WTA respectively.

	Model (Defined by dependent variable)					
	WTP			**WTA**		
	Positive bids	**Zero bids**	**Protest bids**	**Positive bids/ Compensating demands**	**Zero bids/ Compensating demands**	**Protest bids**
Libry User	0.899 (0.263)***	-0.929 (0.285)***			-0.830 (0.284)***	0.465 (0.253)*
Cultural Activity				0.165 (0.052)***		-0.122 (0.056)**
High education				-0.563 (0.266)**		0.532 (0.255)**
Urbanity= Countryside				-0.469 (0.283)*		
Distance in km to library	-0.051 (0.024)**	0.044 (0.019)**		-0.041 (0.024)*	0.062 (0.022)***	
Library user as a child	0.826 (0.262)***		-1.330 (0.402)***			
Debrief WTP (Payment vehicle fair=1, unfair=0)	2.280 (0.417)***	-2.720 (0.604)***	-1.151 (0.554)**			
Debrief WTA (Disagree=0, Agree=1)				-1.428 (0.354)***		1.497 (0.436)***
Constant	-0.326 (0.276)	-0.631 (0.236)***	-1.483 (0.243)***	0.730 (0.384)*	-1.461 (0.233)***	-1.701 (0.436)***
-2LogL (initial)	354.513	309.479	195.454	471.371	318.908	486.175
-2LogL (Final)	357.621	311.773	199.583	474.391	324.614	489.914
% Correct Predictions	75.9	81.9	91.6	63.4	82.5	63.1
N	272	77	32	151	65	161

Standard errors are indicated in parentheses.

*** denotes 1% significance level, ** 5% significance level, and *** 10% significance level.

respondent thinks the payment vehicle, additional annual local taxes, fair or not. The same pattern is seen for all three variables. Library users are likely to have positive WTP, whereas non-users are even more likely to be zero voters. The distance effect is negative for positive bids, but positive for zero bids. People who find the payment vehicle fair are more likely to have positive WTP, while those who view it as unfair are more likely to be zero or protest

voters. Respondents who *used the library as a child* more often state a positive WTP than people who didn't visit the library in their childhood; the latter are more likely to be protest voters. The only other significant factor explaining WTP protest bids is the debrief response, showing that people who protest against the payment vehicle are more likely to state protest bids. These results all accord with general expectations.

The results in the *WTA* subsamples differ from the results in the WTP subsamples, with the exception of distance as an explanatory factor. Respondents with *positive* compensating demands tend to be cultural active, live in cities and close to the local library, but have education below college or university. People who disagree with the debrief statement of maintaining the local library regardless of funds saved, are still more likely to express a positive WTA amount than those who agree. *WTA protest voters* tend to have quite opposite characteristics, as noted above. Most of these results are not surprising, except perhaps for the cultural activity and education level variables. For the likelihood of *zero bid* only two explanatory variables are significant, library use (negative) and distance (positive). For the sample as a whole, *household income* is not significantly different from zero for any of the bid types. The analyses show a clear difference between the WTP and WTA subsamples. In the former, the *positive* and *zero* bidders have several opposite characteristics, while in the latter it is the *positive* and *protest* bidders that are most different. For both WTP and WTA, zero bidders have similar characteristics, while the differences between the other two bid types are marked.

6. Discussion and conclusions

An overview in the four-cell design of mean and median to both Q4 and Q5 for the whole sample is presented in table 17. Observe that elicitation effects are present, both between the formats MBDC and DM and between our two variants of MBDC. There is a systematic tendency for amounts stated to Q4 to be considerably higher than to Q5. The WTP-WTA disparity, on the other hand, is small compared to many other studies applying these two approaches, despite the fact that our respondents expressed exceptionally strong property rights to public libraries. The high share of protest bids in the DM-WTA subsample may be a source of uncertainty. Another source of possible errors in the WTA estimates is that the

compensation for closing down the local library in our scenario is in the form of (a money-equivalent value of) other local public goods, see Appendix 2.

Table 17: Mean and median in NOK, respectively, to Q4 and Q5 for all subsamples. Protest bids are excluded.

Mean			
Q4		**Q5**	
MBDC-WTP 1500 – 980 (N=238)	**DM-WTP** **675** **(N=190)**	**MBDC-WTP** 425 (N=227)	**DM-WTP** 350 (N=228)
MBDC-WTA 2000 - 2100 (N=184)	**DM-WTA** **1720** **(N=225)**	**MBDC-WTA** 1500 (N=168)	**DM-WTA** 850 (N=113)

Median			
Q4		**Q5**	
MBDC-WTP 500 – 400	**DM-WTP** **675**	**MBDC-WTP** 300	**DM-WTP** 100
MBDC-WTA 700 – 760	**DM-WTA** **1720**	**MBDC-WTA** 400	**DM-WTA** 300

An objective of this study is to measure the total benefits to the citizens of public libraries at today's service levels, and thus determine whether public libraries are "worth their price" as seen from the population's perspective. Based on the WTP estimates, we are able to ascertain a probable minimum estimate. The *lower bound* for their average public library valuation within the Norwegian population is approximately 400 NOK per household, which is close to the average library cost per household. To establish an *upper bound* is more difficult. The high share of WTA protest bids, especially in the DM-WTA subsample, is problematic. There is no way to define a plausible upper bound for the compensating demands of WTA protest voters, and this complicates interpretation of these answers. The upper bound for citizens' valuation of public libraries, however, clearly appears to lie considerably higher than the lower valuation limit – a conservative estimate is 2000 NOK, based on the WTA estimates in table 17. It is reasonable to assume that the population's "true" value is considerably higher

than the lower bound, in particular since there seems to be no à priori justification to reject WTA in our case. An essential argument to attach importance to WTA estimates is the property rights question, and a solid conclusion of our study is that an overwhelming majority of the population perceives they have such property rights.

Our CV study appears to be the first CV study for valuation of public libraries at the national level, in Norway or internationally. It explores the social value of public libraries by eliciting this value among a random sample of the citizens. Based on empirical data we conclude that Norwegian public libraries are, overall, worth their price as viewed from the population's perspective. At the national level, their benefits decidedly outweigh their costs.

CV is used for policy-making purposes and the official acceptance of the method has advanced this use. Therefore, it is important to make sure that there is close correspondence between what we want to measure and what we really have measured. In our CV study, it is the respondents' stated valuation amounts of the overall value of the public library in their municipality that are measured. Some effects of the public library service are probably not captured by the general public, for instance long-term effects such as the library's impact on community development, cumulative results concerning social inclusiveness and citizenship, and effects of literacy on employment opportunities. It is shown (Aabø and Strand, 2004) that many of the respondents in this CV study value social and cultural aspects of the public library service. These aspects have long-term effects and seem to constitute about 35-40% of the stated total value, underscoring that the general public considers long-term effects as well as short term effects. It is however improbable that the respondents are fully aware of all types of long-term effects of the public library service.

There may also be claimed to exist types of value yielded by public libraries, that are not captured by CV or other methods of economic assessment but that nevertheless may be relevant for public library policy. Throsby (2003, pp. 279-282) points to the term "cultural value". It has recently been used as a supplement to "economic value" attempting to capture the worth of a good assessed in cultural terms that cannot be expressed according to any quantitative or qualitative scale or in monetary terms. CV and other WTP studies "will tend systematically to undervalue a cultural good to the extent that there exist significant positive elements in the good's value that are incapable of expression as individual WTP" (p. 280).

In view of the last comments, our estimate of the social value of the Norwegian public libraries based on assessments by a population sample may therefore be an underestimation, since the libraries have long-term effects that the general public is not aware of and since they may yield "cultural value" not captured in stated valuation estimates. For assessing the wide range of long-term impacts of public library services, experts and politicians possess an information basis that the general public does not hold. In attempting to arrive at an estimate of the full value of public libraries in Norway, the results of our CV study may need to be supplemented. An option is to supplement the population's valuation with valuation from experts and politicians. Experts may also be able to express the "cultural value" of public libraries.

Decisions of local public libraries are in Norway taken at both the national level (in terms of legislation, represented by the Public Library Act), and at the municipal level (where funding is provided). Our sample is representative for the population implying that we can draw conclusions at the national level. As already noted, the estimate from our study of the Norwegian population's valuation of public libraries seems to lie within the range of 400-2000 NOK per household, and, we will argue, closer to the upper than to the lower bound within this range. This in case implies that, *as an average over all Norwegian households*, the benefits from public libraries are greater than the costs of producing such library services. A possible interpretation of this conclusion is that there is popular support for a higher average level of public library funding.[0]

Obviously, however, our sample represents only a small fraction of all 433 Norwegian municipalities. Considering individual municipalities, both average valuations and average library costs will vary across municipalities. Typically, and as expected, valuation seems to be higher in larger municipalities with many cultural activities and short average distances to the public library, which in addition is more likely to provide a high service level and be headed by a professional chief librarian, when compared to small municipalities, where there are typically fewer cultural activities, the range of public library is smaller, and average distances to the public library are greater. From our national study conclusions cannot be drawn for each of the different municipalities' public libraries. As a consequence, we cannot from our study establish that all public libraries in Norway have positive net value; indeed, this is unlikely.

[0] Compared with the other Scandinavian countries, the costs used on Norwegian public libraries per inhabitant are the lowest. This situation has been subject to media discussion.

This last comment points to a need for more knowledge about the benefit-cost relationships for Norwegian public libraries, at the municipal level. An interesting avenue for future research would be to attempt to find a relationship between public library services and different characteristics of the municipalities, making it possible to suggest a demand and supply function for library services at the municipal level. This would require an analysis of the local public library's benefits per inhabitant as a function of municipality characteristics, as well as an analysis of library costs, given optimal service provision at each muinicipality size level. Such an analysis may make it possible to derive some limits for whether or not the public library service can provide net value, e.g., a minimum number of inhabitants in the municipality and a minimum amount of library funding per inhabitant.

There is today an ongoing debate in Norwegian society, over whether the number of municipalities is appropriate or too large, and whether significant cost reductions could be achieved by merging smaller neighborhood municipalities. In this context an analysis of the type suggested here is of substantial interest, in indicating whether or not returns-to-scale benefits can be reaped, in the public library sector, by such merges.

References

Aabø, S. (1997). The value of public libraries in society. *Norsk Tidsskrift for Bibliotekforskning, 9*, 59-81.

Aabø, S. (1998). Citizens' assessment of public libraries. *Nordisk Kulturpolitisk Tidskrift*, 3, 60-82.

Aabø, S. (2001). Verdsetting av folkebibliotek. In R.A. Audunson and N.W. Lund (Eds.), *Det siviliserte informasjonssamfunn* (pp. 246-268). Fagbokforlaget, Bergen.

Aabø, S. (In press). Valuation of public libraries. In C.G. Johannsen and L. Kajberg (Eds.), *New Frontiers in Public Library Research.* Lanham, Md.: Scarecrow.

Aabø, S. and Audunson, R. (2002). Rational choice and valuation of public libraries: Can economic models for valuating non-market goods be applied on public libraries. *Journal of Librarianship and Information Science, 2002, 34,* 4-14.

Aabø, S. and Strand, J. (2004). Public library valuations, nonuse values, and altruistic motivations. *Library and Informations Science Research, 26* (3). *In press*.

ABM-utvikling (2003a) *Norwegian archive, library and museum authority.* Oslo: ABM-utvikling.

ABM-utvikling (2003b). *Statistikk for arkiv, bibliotek og museum 2002*. Oslo: ABM-utvikling.

American Library Association. (2000). *Key action areas*. Retrieved August 15, 2002, from http://www.ala.org./work/.

Anderson, J., Vadnjal, D. and Uhlin, H.E. (2000). Moral dimensions of the WTA-WTP disparity: An experimental examination. *Ecological Economics, 32*, 153-162.

Andersson, M. and Skot-Hansen, D. (1994). *Det lokale bibliotek: Afvikling eller udvikling.* København: Danmarks Biblioteksskole.

Arrow, K. J. (1963). *Social choice and individual values*. 2nd ed. New Haven: Yale University Press, 1963.

Arrow, K., Solow, R., Leamer, E., Portney, P., Randner, R. and Schuman, H. (1993). Report of the NOAA panel on contingent valuation. *Federal Register, 58* (January 15), 4601-4614.

Aslib. (1995). *Review of the public library service in England and Wales: Final report.* London: Department of National Heritage.

Audunson, R. (1995). Utvikling og testing av en kausalmodell for folkebibliotekbruk. *Norsk tidsskrift for bibliotekforskning, 2* (4), 59-78.

Audunson, R. (1999). Public libraries. In G. Mackenzie and P. Sturges (Eds.), *Librarianship and Information Work Worldwide 1999* (pp. 89-111). London: Bowker Saur.

Audunson, R. (2000). Fem teser om folkebibliotekpolitikk. *Ikoner, 2*, 14-16.

Audunson, R.A. (2001). Folkebibliotekenes rolle i en digital framtid. In R.A. Audunson and N.W. Lund (Eds.), *Det siviliserte informasjonssamfunn* (pp. 206-224). Bergen: Fagbokforlaget.

Azevedo, C.D., Herriges, J.A. and Kling, C.L. (2003). Combining revealed and stated preferences: Consistency tests and their interpretations. *American Journal of Agricultural Economics, 85 (*3), 525-537.

Bateman, I.J. and Willis, K.N. (Eds.) (1999). *Valuing environmental preferences: Theory and practice of the contingent valuation method in the US, EU, and developing countries.* Oxford: Oxford University Press.

Becker, G.S. (1993). Nobel lecture: The economic way of looking at behavior. *Journal of Political Economy, 101* (3), 385-409.

Benhamou, F. (1996). Is increased public spending for the preservation of historic monuments inevitable?: The French case. *Journal of Cultural Economics, 20*, 115-131.

Benton Foundation. (1996). *Buildings, books, and bytes: Libraries and communities in the digital age.* Retrieved April 2, 2004, from http://www.benton.org/publibrary/kellogg/buildings.html.

Berger, P.L. and Luckmann, T. (1967). *The social construction of reality: A treatise in the sociology of knowledge.* New York: Doubleday.

Bergstrom, T. C. (1982). When is a man's life worth more than his human capital? In M. W. Jones-Lee (Ed.), *The value of life and safety: Proceedings of a conference held by the Geneva Association.* Amsterdam: North-Holland.

Bille Hansen, T. [1994]. The economic dimension of culture with specific focus on the use of impact studies. Expert paper to UNESCO, the World Commission on Culture and Development (WCCD).

Bille Hansen, T. (1996). *Danskernes værdisætning af Det Kgl. Teater*. København: AKF Forlaget.

Bille Hansen, T. (1997). The willingness-to-pay for the Royal Theatre in Copenhagen as a public good. *Journal of Cultural Economics, 21* (1), 1-28.

Birdsall, W.F. (1994). *The myth of the electronic library: Librarianship and social change in America.* Westport, Conn.: Greenwood Press.

Birdsall, W.F. (2001). Folkebiblioteket på den politiske arena. In R.A. Audunson and N.W. Lund (Eds.), *Det siviliserte informasjonssamfunn* (pp. 25-44). Bergen: Fagbokforlaget.

Bishop, R.C. and Heberlein, T.A. (1979). Measuring values of extramarket goods: Are indirect measures biased? *American Journal of Agricultural Economics*, 61 (5), 926-30.

Bishop, R. C., Heberlein, T.A. and Kealy, M.J. (1983). Contingent valuation of environmental assets: Comparisons with a simulated market. *Natural Resources Journal*, 23 (3), 619-33.

Blake, D.H., Frederick, W.C. and Myers, M.S. (1976). *Social auditing: Evaluating impact of corporate programmes.* New York: Praeger.

Blamey, R.K., Bennett, J.W. and Morrison, M.D. (1999). Yea-saying in contingent valuation surveys. *Land Economics, 75*, 126-141.

Boyce, R.B., Brown, T.C., McClelland, G.H., Peterson, G.L. and Schulze, W.D. (1992). An experimental examination of intrinsic values as a source of the WTA-WTP disparity. *American Economic Review, 82,* 1366-1373.

Boyle, Kevin J. and Bergstrom, John C. (1999). Doubts, doubts, and doubters: The genesis of a new research agenda? In I.J. Bateman and K.N. Willis (Eds.), *Valuing environmental preferences: Theory and practice of the contingent valuation method in the US, EU, and developing countries.* Oxford: Oxford University Press.

Braden, J.B. and Kolstad, C.D. (Eds.) (1991). *Measuring the demand for environmental quality.* Amsterdam: North-Holland.

Brekke, K.A. (1997). The numéraire matters in cost-benefit analysis. *Journal of Public Economics, 64*, 117-123.

Briggs, S., Guldberg, H. and Sivaciyan, S. (1996). *Lane Cove Library: A part of life: The social role and economic benefit of a public library.* New South Wales: State Library of New South Wales.

Brookshire, D.S. and Coursey, D.L. (1987). Measuring the value of a public good: An empirical comparison of elicitation procedures. *American Economic Review, 77* (4), 554-566.

Brohpy, P. (2002). *The evaluation of public library online services: Measuring impact.* (People's network workshop series; issue papers no.1). Retrieved April 2, 2004, from http://www.peoplesnetwork.gov.uk/impact/impact-issue-paper.pdf.

Brophy, P., Fisher, S. and Clarke, Z. (Eds.) (2000). *Libraries without wall: The delivery of library services to distant users: Proceedings of a conference held on 10-14 September 1999*,

organized by the Centre for Research in Library and Information Management (CERLIM), Manchester Metropolitan University. London: Library Association Publ.

Brown, P., Champ, P.A., Bishop, R.C. and McCollum, D.W. (1996) Which response format reveals the truth about donations to a public good? *Land Economics, 72* (2), 152-166.

Bruusgaard, J. and Fløttum. E.J. (1989). *Den norske informasjonssektoren: Hvor stor del av totaløkonomien har med informasjon å gjøre?* Oslo: Statistisk sentralbyrå. (Rapporter fra Statistisk sentralbyrå ; 88/32).

Bundy, A. (Ed.) (1996). *Public libraries – what are they worth?: Proceedings of the 2nd National Public Libraries Conference Sydney 12-15 Novemer 1995*. Adelaide: Auslib Press.

Burton, C., Greenhalgh, L. and Worpole, K. (1996). *London: Library city: The public library service in London.* Stroud: Comedia.

Carson, R.T. (1991). Constructed markets. In J.B. Braden and C.D. Kolstad (Eds.), *Measuring the demand for environmental quality* (pp. 121-162). Amsterdam: North-Holland.

Carson, R.T., Flores, N.E. and Mitchell, R.C. (1999). The theory and measurement of passive-use value. In I.J. Bateman and K.G. Willis (Eds.), *Valuing Environmental Preferences* (pp. 97-130). Oxford: Oxford University Press.

Carson, R.T., Mitchell, R.C., Conaway, M.D. and Navrud, S. (1997). *Contingent valuation of the benefits of conserving the Fez Medina: Quantification of non-Moroccan's willingness to pay*. Cambridge: Harvard University.

Carson, R.T., Wright, J., Carson, N., Alberini, A., and Flores, N. (1995). *A bibliography of contingent valuation studies and papers*. La Jolla, Ca.: Natural Resources Damage Assessment Inc.

Cornes, R. and Sandler, T. (1986). *The theory of externalities, public goods, and club goods*. Cambridge: Cambridge University Press.

Crawford, G.A. (1994). A conjoint analysis of reference services in academic libraries. *College and Research Libraries, 55* (3), 257-267.

Cultural statistics (1999). Helsinki Tilastokeskus (Statistics Finland).

Cummings, R.G. and Harrison, G.W. (1995). The measurement and decomposition of nonuse values: A critical review. *Environmental and Resource Economics, 5,* 225-247.

Danish Ministry of Culture. (2001). *Act regarding library services: Act No. 340 of 17 May 2000.* Retrieved April 6, 2004, from http://www.bs.dk/publikationer/andre/lov_eng/02.htm.

Debono, B. (2002). Assessing the social impact of public libraries: What the literature is saying. *Aplis, 15* (2), 80-95.

D'Elia, G. (1980). The development and testing of a conceptual model of public library user behavior. *Library Quarterly, 50,* 410-430.

D'Elia, G. (1993). *The roles of the public library in society: The results of a national survey.* Evanston, IL.: Urban Libraries Council.

Department for Culture, Media and Sports. (2003). Framework for the future: Libraries, learning and information in the next decade. Retrieved February 4, 2004, from http://www.culture.gov.uk/global/publications/archive_2003/framework_future.htm.

Deparment of Education and Culture. (1997). *Public libraries in Nova Scotia: General population survey.* Halifax: Deparment of Education and Culture.

Department of National Heritage. (1997). *Reading the future: A review of public libraries in England*. London: Department of National Heritage.

Diamond, P.A. and Hausman, J.A. (1994). Contingent valuation: Is some number better than no number? *Journal of Economic Preferences, 8* (4), 45-64.

Dubourg, W.R., Jones-Lee, M.W. and Loomes, G. (1994). Imprecise preferences and the WTP-WTA disparity. *Journal of Risk and Uncertainty, 9,* 115-133.

Edgeworth, F.Y. (1881). *Mathematical physics: An essay on the application of mathematics to the moral sciences*. London: [s.n.].

Egholm, C. and Jochumsen, H. (1998). Brugerbetaling og folkebiblioteker: Nuancer og kulturpolitiske perspektiver. *Søndag Aften* (November). Retrieved April 6, 2004, from http://www.cultur.com/1998/981198.html.

Elster, J. (1989) *Nuts and bolts for the social sciences.* Cambridge: Cambridge University Press.

Epstein, R.A. (2003). The regrettable necessity of contingent valuation. *Journal of Cultural Economics, 27* (3-4), 259-274.

Eve, J. and Brophy, P. (2001). *The value and impact of end-user IT services in public libraries*. Manchester: Centre for Research in Library & Information Management (CERLIM).

Fitch, L. and Warner, J. (1998). Dividends: The values of public libraries in Canada. *The Bottom Line: Managing Library Finances, 11*, 158-179.

Flores, N.E. (2002). Non-paternalistic altruism and welfare economics. *Journal of Public Economics, 83*, 293-305.

Fraser, B.T., Nelson, T.W. And McClure, C.R. (2002). Describing the economic impacts and benefits of Florida public libraries: Findings and methodological applications for future work. *Library & Information Science Research, 24,* 211-233.

Freeman, A.M. (1993). *The measurement of environmental and resouce values: Theory and methods.* Washington: Resources for the Future.

Frey, B.S. (1997). Evaluating cultural property: The economic approach. *International Journal of Cultural Property, 6,* 231-246.

Frey, B.S. and Pommerehne, W.W. (1989). *Muses and markets: Explorations in the economics of the arts.* Oxford: Basil Blackwell.

Fridstrøm, L. (1992). ”Stated preference" - eller økonomi som eksperimentalvitenskap. *Sosialøkonomen,* 2, 18-23.

Fuegi, D., Sumsion, J. and Ramsdale, P. (2000). LIBECON2000: The millenium report. *Exploit Interactive*, *7*. Retrieved August 21, 2002, from http://www.exploit-lib.org/issue7/libecon/.

Getz, M. (1980). *Public libraries: An economic view*. Baltimore: John Hopkins University Press.

Giddens, A. (1998). *The third way: The renewal of social democracy*. Cambridge: Polity Press.

Goddard, H.C. (1971). An economic analysis of library benefits. *Library Quarterly, 41,* 255-245.

Greenhalgh, L., Landry, C. and Worpole, K. (1993). *Borrowed time?: The future of public libraries in the U.K.* Bournes Green: Comedia.

Greenhalgh, L., Worpole, K. and Landry, C. (1995). *Libraries in a world of cultural change*. London: UCL Press.

Grieg, N. (1944). *Defeat: A play of the Paris Commune* / translated from the Norwegian of Nordahl Grieg by Eleanor Arkwright. London: Victor Gollancz.

Griffiths, J.-M. and King, D.W. (1994). Libraries: The undiscovered national resource. In M. Feeney and M. Grieves (Eds.), *The value and impact of information* (pp. 79-116). London: Bowker-Saur.

Grosclaude, P. and Soguel, N.C. (1994). Valuing damage to historic buildings using a contingent market: A case study of road traffic externalities. *Journal of Environmental Planning and Management, 3,* 279-287.

Guldberg, H. (1996). The economic and social role of public libraries. In A. Bundy (Ed.), *Public libraries – what are they worth? Proceedings of the 2nd National Public Libraries Conference, Sydney 12-15 November 1995* (pp. 104-110). Adelaide: Audlib Press.

Habermas, J. (1992). Further reflections on the public sphere. In C. Calhoun (Ed.), *Habermas and the public sphere*. Cambridge, Mass.: MIT Press.

Halperin, M. (1981). Determining user preferences for information services. *Drexel Library Quarterly, 17*, 88-98.

Halperin, M. and Strazdon, M. (1980). Measuring students' preferences for reference service: A conjoint analysis. *Library Quarterly, 50* (2), 208-224.

Halvorsen, B. (1997). *Methodological issues in applying stated preference data to the valuation of public goods*. Oslo: Universitetet i Oslo, Sosialøkonomisk institutt.

Halvorsen, B., Strand, J., Sælensminde, K. and Wenstøp, F. (1997). Comparing contingent valuation, conjoint analyses and decision panels: An application to the valuation of reduced damage from air pollution in Norway. In B. Halvorsen, *Methodological issues in applying stated preference data to the valuation of public goods* (pp. 37-61). Oslo: Universitetet i Oslo, Sosialøkonomisk institutt.

Hanemann, W.M. (1991). Willingness to pay and willingness to accept: How much can they differ? *American Economic Review, 81,* 635-647.

Hanemann, W.M. (1994). Valuing the environment through contingent valuation. *Journal of Economic Perspectives, 8* (4), 19-43.

Harbo, O. (2001). The development of public libraries in Denmark since 1964. *Advances in Librarianship, 25*, 209-219.

Harless, D.W. and Allen, F.R. (1999). Using the contingent valuation method to measure patron benefits of reference desk service in an academic library. *College & Research Libraries, 60*, 56-69.

Haugland, V.S. (2004). Kultur- og kyrkjeminister Valgerd Svarstad Hauglands tale i forbindelse med Det 69. norske bibliotekmøte. *Bibliotekforum, 29* (4), 7-9.

Hausman, J.A. (Ed.) (1993). *Contingent valuation: A critical assessment*. Amsterdam: North-Holland.

Haywood, T. (1995). *Info-rich, info-poor: Access and exchange in the global information society*. London: Bowker-Saur.

Hendon, W.S. and Shanahan, J.L. (Eds.) (1983). *Economics of cultural decisions.* Cambridge: Abt. Books.

Holt, G.E. and Elliott, D. (2003). Measuring outcomes: Applying cost-benefit analysis to middle-sized and smaller public libraries. *Library Trends, 51* (3), 424-440.

Holt, G.E., Elliott, D., Watts, A. and Holt, L.E. (2000). *Libraries are valuable: Prove it!*. St. Louis: St. Louis Public Library.

Holt, G. E., Elliott, D. and Moore, A. (1999). Placing a value on public library services. *Public Libraries, 38* (2), 98-108.

Horowitz, J.K. and McConnell, K.E. (2002). A review of WTA / WTP studies. *Journal of Environmental Economics and Management, 44*, 426-447.

Hummel, M. and Berger, M. (1988). *Die Volkswirtschaftliche Bedeutung von Kunst und Kultur: Gutachten im Auftrag des Bundesministers des Innern*. Berlin: Duncker & Humblot.

Hutchinson, W.G., Chilton, S.M. and Davis, J. (1995). Measuring non-use value of environmental goods using the contingent valuation method: Problems of information and cognition and the application of cognitive questionnaire design methods. *Journal of Agricultural Economics, 46* (1), 97-112.

Hutter, M. and Rizzo, I. (Eds.) (1997) *Economic perspectives on cultural heritage.* Macmillan, Basingstoke.

Höglund, L. (1999). Bibliotekens värde. In S. Holmberg and L. Weibull (Eds.), *Ljusnande framtid: SOM-undersökningen 1998.* Göteborg: Göteborgs universitet.

Høyre. (1996). Politisk grunnlag for et byråd utgått fra Høyre og Fremskrittspartiet: Forhandlet frem 7. mars til 10. april 1996. Retrieved September 5, 2001, from http://www.hoyre.no/hoyre/landet/03/byraahf.html.

Jochumsen, H. and Rasmussen, C.H. (2000). *Gør biblioteket en forskel?* København: Danmarks Biblioteksforening.

Johansson, P.-O. (1992). Altruism in cost-benefit analysis. *Environmental and Resource Economics*, *2* (6), 605-613.

Johansson, P.-O. (1994). Altruism and the value of statistical life: Empirical implications. *Journal of Health Economics, 13* (1), 111-118.

Johansson-Stenman, O. (1998). The importance of ethics in environmental economics with a focus on existence values. *Environmental and Resource Economics, 11*, 429-42.

Jones-Lee, M.W. (1991). Altruism and the value of other people's safety. *Journal of Risk and Uncertainty, 4* (2), 213-219.

Jones-Lee, M.W. (1992). Paternalistic altruism and the value of statistical life. *Economic Journal, 102* (410), 80-90.

Järvelin. K. and Vakkari, P. (1990). Content analysis of research articles in library and information science. *Library & Information Science Research, 12,* 395-421.

Kahneman, D., Knetsch, J.L. and Thaler, R.H. (1990). Experimental tests of the endowment effect and the Coase theorem. *Journal of Political Economy, 98* (6), 1325-48.

Kekki, K. (2000). Facing the future in Finland. *Scandinavian Public Library Quarterly, 2*, 13-16.

Kerslake, E. and Kinnel, M. (1997). *The social impact of public libraries: A literary review.* Boston Spa: British Library Innovation Centre. (Report No. 85).

Kerslake, E. and Kinnel, M. (1998). Public libraries, public interest and the information society: Theoretical issues in the social impact of public libraries. *Journal of Librarianship and Information Science. 30* (3), 159-167.

Kingma, B.R. (1996). *The economics of information: A guide to economic and cost-benefit analysis for information professionals.* Englewood, Colo.: Libraries Unlimited.

Kinnucan, M.T., Ferguson, M.R. and Estabrook, L. (1998). Public opinion toward user fees in public libraries. *Library Quarterly, 68* (2), 183-204.

Knetsch, J.L. (1990). Environmental policy implications of disparities between willingness to pay and compensation demanded measures of values. *Journal of Environmental Economics and Management, 18*, 227-237.

Kolstad, C.D. (2000). *Environmental economics*. Oxford: Oxford University Press.

Kopp, R.J. and Pease, K.A. (1997). Contingent valuation: Economics, law and politics. In R.J. Kopp, W.W. Pommerehne and N. Schwarz (Eds.), *Determining the value of non-marketed goods: Economic, psychological, and policy relevant aspects of contingent valuation methods* (pp. 7-59). Boston: Kluwer.

Kopp, R.J., Pommerehne, W.W. and Schwarz, N. (Eds.) (1997). *Determining the value of non-marketed goods: Economic, psychological, and policy relevant aspects of contingent valuation methods.* Boston: Kluwer.

Kotchen, M.J. and Reiling, S.D. (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: A case study involving endangered species. *Ecological Economics, 32*, 93-107.

Kultur- og kirkedepartementet. (2002). *Etablering av ABM-utvikling – Statens samordnings- og utviklingsorgan for arkiv, bibliotek og museer: Prosjektbeskrivelse.* Retrieved February 11, 2002, from http://odin.dep.no/kkd/norsk/kultur/043041-990004/index-dok000-b-n-a.html.

Kultur- og kyrkjedepartementet. (2003). *Kulturpolitikk fram mot 2012.* Oslo, Departementet. (St.meld. ; nr. 48 (2002-2003)).

Kulturdepartementet. (1999). *Kjelder til kunnskap og oppleving: Om arkiv, bibliotek og museum i ei IKT-tid og om bygningsmessige rammevilkår på kulturområdet.* Oslo: Departementet. (St.meld ; nr 22 (1999-2000)).

Kulturdepartementet [Sverige]. (1996). *Bibliotekslagen.* SFS 1996:1596, omtryck 1998:1249.

Lakos, A. (1999). The missing ingredient – culture of assessment in libraries. *Performance Measurement and Metrics*, Sample Issue (August), 3-7.

Landrum, H.T. (1995). The potential of conjoint analysis for measuring value in collection development. *Collection Management, 20* (1/2), 139-147.

LibEcon2000. Institute of Public Finance Ltd. Retrieved August 16, 2002, from http://www.libecon2000.org/.

Library Act. (1998). *Act no 904: Issued in Helsinki on the 4th of December 1998.* Retrieved April 6, 2004, from http://www.fla.fi/flj/news/libact.htm.

Library and Information Commission. (1997). *New library: The people's network.* London: The Commission.

Linley, R. and Usherwood, B. (1998). *New measures for the new library: A social audit of public libraries.* London: British Library.

List, J.A. and Shogren, J.F. (2002). Calibration of willingness-to-accept. *Journal of Environmental Economics and Management, 43*, 219-233.

MacDonald, H.F. and Bowker, J.M. (1994). The endowment effect and WTA: A quasi-experimental test, Journal of Agricultural and Applied Economics, 26, 545-551.

Maggi, M. (1994). Il valore dei beni culturali: un'applicazione empirica. In: G. Brosio (Ed.), *Economia dei Beni culturali.* Torino, La Rosa editrice.

Mansfield, C. (1998). A consistent method for calibrating contingent valuation survey data. *Southern Economic Journal, 64,* 665-81.

Margolis, H. (1982). Selfishness, altruism, and rationality: A theory of social choice. Chicago: University of Chicago Press.

Martin, F. (1994). Determining the size of museum subsidies. *Journal of Cultural Economics, 18,* 255-270.

Matarasso, F. (1997). *Use or ornament? The social impact of participation in the arts.* Stroud: Comedia.

Matarasso, F. (1998). *Beyond book issues: The social potential of public library projects.* London: Comedia.

McClure, C.R., Fraser, B.T., Nelson, T.W., and Robbins, J.B. (2001). *Economic benefits and impacts from public libraries in the State of Florida.* Tallahassee, FL: Information Use Management and Policy Institute, School of Information Studies. Retrieved April 6, 2004, from http://dlis.dos.state.fl.us/bld/finalreport/.

McConnell, K.E. (1997). Does altruism undermine exisistence value? *Journal of Environmental Economics and Management, 32* (1), 22-37.

Meier, R.L. (1961). Efficiency criteria for the operation of large libraries. *Library Quarterly, 31*, 215-234.

Mercer, C. (1995). *Navigating the economy of knowledge: A national survey of users and non-users of state and public libraries.* Brisbane: Griffith University.

Milgrom, P. (1993). Is sympathy an economic value?: Philosophy, economics, and the contingent valuation method. In J.A. Hausman (Ed.), *Contingent valuation: A critical assessment* (pp. 417-441). Amsterdam: North-Holland.

Mitchell, R. C. and Carson, R. T. (1989). *Using surveys to value public goods: The contingent valuation method*. Washington: Resources For the Future.

Morey, E.R., Rossman, K.G., Chestnut, L.G. and Ragland, S. (1997). Valuing reduced acid deposition injuries to cultural resources: Marble monument in Washington D.C. In S. Navrud and R.C. Ready (Eds.), *Valuing cultural heritage: Applying environmental valuation techniques to historic buildings, monuments and artifacts* (pp. 159-183). Cheltenham: Elgar.

Morris, A., Hawkins, M. and Sumsion, J. (2001). *The economic value of public libraries.* London: Resource: The Council for Museums, Archives and Libraries.

Morrison, G.C. (1998). Understanding the disparity between WTP and WTA: Endowment effect, substitutability, or imprecise preferences. *Economic Letters, 59*, 189-194.

Morrison, W.G. and West, E.G. (1986). Subsidies for the performing arts: Evidence on voter preference. *Journal of Behavioral Economics, 15*, 57-72.

Muddiman, D., Durrani, S., Dutch, M., Linley, R., Pateman, J. and Vincent, J. (2000). *Open to all?: The public library and social exclusion.* 3 v. [London]: Resource: The Council for Museums, Archives and Libraries.

Myerscough, J. (1988). *The economic importance of the arts in Britain /* with Alec Bruce [et al.]. London: Policy Studies Institute.

Navrud, S. and Ready, R.C. (Eds.) (2002). *Valuing cultural heritage: Applying environmental valuation techniques to historic buildings, monuments and artifacts*. Cheltenham: Elgar.

Navrud, S. and Strand, J. (2002). Social costs and benefits of preserving and restoring the Nidaros Cathedral. In S. Navrud and R.C. Ready (Eds.), *Valuing cultural heritage: Applying environmental valuation techniques to historic buildings, monuments and artifacts* (pp. 31-39). Cheltenham: Elgar.

Noonan, D. (2002). *Contingent valuation studies in the arts and culture: An annotated bibliography* (working paper). Chicago: The Cultural Policy Center at the University of Chicago. Retrieved April 6, 2004, from http://culturalpolicy.uchicago.edu/workingpapers/Noonan11.pdf.

Noonan, D.S. (2003). Contingent valuation and cultural resources: A meta-analytic review of the literature. *Journal of Cultural Economics, 27* (2-3), 159-176.

Norsk kulturbarometer 1997. (1998). *Ukens statistikk, nr 22.* Oslo: Statistisk sentralbyrå.

Norske folkebibliotek 1998: med bibliotekstatistikken 1997. (1998). Oslo: Statens bibliotektilsyn.

Nova Scotia. (1997). *Public libraries in Nova Scotia: General population survey*. Halifax: Departement of Education and Culture.

OECD (1986). Trends in the information economy. Paris: OECD. (Information, computer, communications policy : 11).

Papandrea, F. (1999). Willingness to pay for domestic television programming. *Journal of Cultural Economics, 23,* 149-166.

Pearce, D., Mourato, S., Navrud, S. and Ready, R.C. (2002). Review of existing studies, their policy use and future research needs. In S. Navrud and R. C. Ready (Eds.), *Valuing cultural heritage: Applying environmental valuation techniques to historic buildings, monuments and artifacts* (pp. 257-270). Cheltenham: Elgar Publishing.

Pedersen, P.E., Navrud, S. and Strand, J. (1995). Hva er vår kulturarv verdt?: En studie av Nidarosdomen. *Landbruksøkonomisk forum*, 2, 53-65.

Penz, G.P. (1986). *Consumer sovereignty and human interests.* Cambridge: Cambridge University Press.

Pollicino, M. and Maddison, D. (2001). Valuing the benefits of cleaning Lincoln Cathedral. *Journal of Cultural Economics, 25,* 131-148.

Porat, M.U. (1977). *The information economy: Definition and measurement.* Washington: U.S. Department of Commerce, Office of Telecommunications.

Portney, P.R. 1993). Benefit-Cost Analysis. In D.R. Henderson (Ed.), *The Fortune Encyclopedia of Economics* (pp. 3-6). New York: Warner.

Portney, P.R. (1994). The contingent valuation debate: Why economists should care. *Journal of Economic Perpectives, 8* (4), 3-17.

Proctor, R. and Bartle, C. (2002). *Low achievers: Lifelong learners: An investigation into the impact of the public library on educational disadvantage.* Sheffield: Resource: The Council for Museums, Archives and Libraries.

Public Library Act 1985. ([2003]). Act no. 108 of 20th December: The public library act: Including latest amendments as of 4th July 2003. [Oslo]: Norwegian Directorate for Public Libraries. Retrieved April 2, 2004, from http://www.lovdata.no/all/hl-19851220-108.html.

Quiggin, J. (1998). Individual and household willingness to pay for public goods. *American Journal of Agricultural Economics, 80,* 58-63.

Ramsdale, P. (1995). Library economics in Europe: An update 1981/90. Luxembourg: Office for Official Publications of the European Commission.

Randall, A. (1991). Total and nonuse values. In J.B. Braden and C.D. Kolstad (Eds.), *Measuring the demand for environmental quality* (pp. 303-321). Amsterdam: North-Holland.

Ray, D. (1987). Nonpaternalistic intergenerational altruism. *Journal of Economic Theory*, *41* (1), 112-132.

Reppen, H.K. (1998). *Bruk av folkebibliotek 1998.* Oslo: Statistisk sentralbyrå.

Resource: The Council for Museums, Archives and Libraries. [2001a]. *Building on success: An action plan for public libraries: Draft for consultation.* Retrieved February 11, 2002, from http://www.resource.gov.uk/.

Resource: The Council for Museums, Archives and Libraries. [2001b]. *Impact evaluation of museums, archives and libraries: Available evidence project.* Retrieved April 6, 2004, from http://www.resource.gov.uk/information/tenders/id16brf.asp.

Roche Rivera, H. (1998). Teatro Colon: The willing-to-pay for a mixed public good. In *Tenth International Conference on Cultural Economics: Barcelona, 14-17 June: Selection of papers C*. [Barcelona]: ACEI.

Ryan, M. (1993). Valuing the benefits of health care: Conjoint analysis or contingent valuation? Paper presented to the UK Health Economists' Study Group Meeting. University of Strathclyde, 30 June-2 July.

Santagata, W. and Signorello, G. (2000). Contingent valuation and cultural policy design: The case of Napoli Musei Aperti. *Journal of Cultural Economics, 24,* 181-204.

Sawyer, R. (1996). The economic and job creation benefits of Ontario public libraries. *Bottom Line: Managing Library Finances, 9* (4), 14-26.

Scarpa, R., Sirchian, G. and Bravi, M. (1998). Kernel vs. logit modeling of single bounded CV responses: Valuing access to architectural and visual arts heritage in Italy. In R. Bishop and D. Romano (Eds.), *Environmental resource valuation: Applications of contingent valuation method in Italy*. Dordrecht: Kluwer.

Schuster, J.M. (2003). Introduction. *Journal of Cultural Economics, 27* (3-4), 155-158.

Schwarz, N. and Kopp, R.J. (1997). Editors' introduction. In R.J. Kopp, W.W. Pommerehne and N. Schwarz (Eds.)*, Determining the value of non-marketed goods: Economic, psychological, and policy relevant aspects of contingent valuation methods* (pp 1-6). Boston: Kluwer.

Selnick, P. (1983). *Leadership in administration*. Berkeley, Ca.: University of California Press.

Sen, A.K. (1979). Rational fools: A critique of the behavioural foundations of economic theory. In F. Hahn and M. Hollis (Eds.), *Philosophy and economic theory.* Oxford: Oxford University Press.

Sjåholm, I.B. (2003). *Befolkningens vurdering av folkebibliotekene.* Oslo: ABM-utvikling.

Skot-Hansen, D. (2001) Folkebiblioteket i civilsamfundet: Civilsamfundet i folkebiblioteket. In R.A. Audunson and N.W. Lund, *Det siviliserte informasjonssamfunn: Folkebibliotekenes rolle ved inngangen til en digital tid* (pp. 45-62). Bergen: Fagbokforlaget.

Statistics Norway. (1998). *Statistisk årbok, 117*. Oslo: Statistisk sentralbyrå.

Statistics Norway. (2002). *SSB: Norsk mediebarometer, 2002*. Retrieved March 3, 2004, from http://www.ssb.no.

Statistisk sentralbyrå. (1998). Norsk kulturbarometer 1997. *Ukens statistikk, 22*.

Stiglitz, J.E. (1993). *Economics.* New York: Norton.

Strand, J. (2002). *Public-good valuation and intrafamily allocation* (working paper). Oslo: University of Oslo.

Strand, J. (2003). *Public- and private-good values of statistical lives: Results from a combined choice-experiment and contingent-valuation survey* (working paper). Oslo: University of Oslo, Department of Economics.

Thaler, R.H. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization, 1*, 39-60.

Thorhauge, J., Larsen, G., Thun, H.-P. and Albrechtsen, H. (1997). *Public libraries and the information society*. Luxembourg: European Commission.

Throsby, D. (2003). Determining the value of cultural goods: How much (or how little) does contingent valuation tell us? *Journal of Cultural Economics, 27* (3-4), 275-285.

Throsby, C.D. and Withers, G.A. (1983). Measuring the demand for the arts as a public good: Theory and empirical results. In W.S. Hendon and J.L. Shanahan (Eds.), *Economics of cultural decisions*. Cambridge: Abt. Books.

TNS Gallup. (2003). Befolkningens vurdering av folkebibliotekene. Oslo: ABM-utvikling.

Toyne, J. and Usherwood, B. (2001). *Checking the books: The value and impact of public library book reading.* Sheffield: University of Sheffield, Department of Information Studies, Centre for the Public Library and Information in Society.

Towse, R. (Ed.) (1997). *Cultural economics: The arts, the heritage and the media industries.* 2 v. Cheltenham: Elgar.

UBIS. (1997). *Betænkning om bibliotekerne i informationssamfundet.* Afgivet af Udvalg om Bibliotekerne i Informationssamfundet (UBIS). København: Kulturministeriet.

Unesco. (1995). *Manifest om folkebiblioteket.* Utarbeidet i samarbeid med The International Federation of Library Associations and Institutions (IFLA). Oslo: Den norske nasjonalkommisjon for UNESCO.

Usherwood, R. (1999). New library – new measures: A social audit of public libraries. *IFLA Journal, 25* (2), 90-96.

Usherwood, R. (2002). Demonstrating impact through qualitative research. *Performance Measurement and Metrics, 3* (3), 117-122.

Vaage, O.F. (1998). Norsk kulturbarometer 1997. Oslo: Statistisk sentralbyrå.

Vakkari, P., Aarek, H.E., Järvelin, K., Kajberg, L. and Klasson, M. (1993). *Forskning inom biblioteksvetenskapen och informatik i Norden.* Helsingfors; Nordinfo.

Van House, N. (1983). A time allocation theory of public library use. *Library and Information Science Research, 5* (4), 365-384.

Varian, H.R. (1999). *Intermediate microeconomics: A modern approach.* 5th ed. New York : Norton.

Vestheim, G. (1997). *Fornuft, kultur og velferd: Ein historisk-sosiologisk studie av norsk folkebibliotekpolitikk.* Oslo: Samlaget.

Webster (1996), i.e., Webster's encyclopedic unabridged dictionary of the English language. New York: Gramercy Books.

Welsh, M.P. and Poe, G.L. (1998). Elicitation effects in contingent valuation: Comparisons to a multiple bounded discrete choice approach. *Journal of Environmental Economics and Management, 36,* 170-185.

Whitehead, J., Chambers, C.M., and Chambers, P.E. (1998). Contingent valuation of quasi-public goods: Validity, reliability and application to valuing a historic site. *Public Finance Review, 26*, 137-154.

Willis, Ken (1993). *Paying for heritage* (working paper). [Newcastle]: Economic and Social Research Council, Countryside Change Initiative.

Wolfe, Alan (1989). *Whose keeper? Social science and moral obligation*. Berkeley: University of California Press.

Zweizig, D. and Dervin, B. (1977). Public library use, users, uses: Advances in knowledge of the characteristics and needs of the adult clientele of American public libraries. *Advances in librarianship, 7*, 231-255.

Appendices

Appendix 1

The contingent valuation (CV) method

The contingent valuation (CV) method is a method from economics that is not well known by library professionals. We therefore present a brief introduction here, although thorough introductions to the method are given by Mitchell and Carson (1989), Braden and Kolstad (1991), Kopp, Pommerehne, and Schwarz (1997). The CV method uses surveys to value nonmarket goods. In short, respondents are presented with a description of the good to be valued, its present quantity and quality, and an estimated change in this quantity or quality, as well as the payment vehicle. In interviews, the respondents are asked to state their value of constructed changes in the provision of particular goods. The respondents are asked, typically, to state their maximum willingness to pay for the improvement (or alternatively, their minimum compensations for the worsening) that this change implies for them. There is a strong theoretical and empirical basis for constructing such hypothetical markets. Research has made use of knowledge from the areas of social sciences, sociology, psychology, survey research, experimental design, and marketing, as well as from economics (Carson, 1991).

An important characteristic of hypothetical markets is that the market situation is likely to be unfamiliar to participants. People are mainly used to much simpler survey questions, for instance ”Which political party would you give your vote if the national election was today?” or ”Will you buy a new car this year?” To be forced to assign particular dollar values to goods that are not normally traded in markets is new and unknown for most people. By differing from attempts to infer values based on actual market behavior, this methodology has given rise to debate within economics literature (Arrow et al., 1993; Bateman and Willis, 1999; Diamond and Hausman, 1994; Hanemann, 1994; Hausman, 1993; Milgrom, 1993; Portney, 1994). Concern is expressed about the ability of the CV method to value non-market goods, since individuals have no experience in purchasing them, neither in modifying their choices in light of what they experience from their purchases, nor in learning about their preferences for and the characteristics of non-market goods (Bateman and Willis, 1999, p. 6). There may be problems of:

(1) Cognition. Difficulties of observing and understanding the good or resource to be valued, and of weighing up the attributes of the good.

(2) Incongruity. Individuals being unable to accept that price can capture all relevant information about a good and its value.

(3) Composition. The inability of individuals to accept that a non-market good or service can be "commodified" in order to be priced separately from its intrinsic contribution to the whole.

(4) Aggregation. Problems concerning the aggregation of the individual values, including the question of whether the choice of numéraire matters (Brekke, 1997).

(5) Altruism. Values motivated with altruism and the problem of double counting (Milgrom, 1993; Ray, 1987; Sen, 1979).

Point 5 is discussed separately in this article but point 4 is not addressed here. The problems 1-3 can – if not properly solved – result in responses that are inconsistent with the assumptions of rational choice, crucial in economics.[0] There are therefore strict requirements as to how such surveys ought to be carried out. The careful considerations that are necessary in designing these markets are continuously examined in the economics literature. An accurate design can minimize key sources of error of CV, summed up as inconsistency with regard to rational behavior, lack of a meaningful budget restriction, exact understanding of what is being valued, acceptance of the scenario, the extent of the market, and the warm glow effect[0] (Arrow et al., 1993).

In 1993, the National Oceanic and Atmospheric Administration (NOAA) in the U.S. Department of Commerce appointed a panel of experts, mainly consisting of economists, to evaluate the use of CV in determining nonuse values. The Nobel Prize laureates Kenneth Arrow and Robert Solow chaired the Panel. The conclusion of the Panel's final report is that CV is suitable for this purpose, given that the survey design ensures minimizing of the key error sources. The Panel's final report contains a systematic presentation of possible sources

[0] Aabø and Audunson (2002) discuss whether all human behavior of relevance for assessing public libraries can be explained as rational behavior, understood in the sense that economists use, i.e., maximizing utility; and whether utility is to be understood as self-interest only. They find that economic methods for valuing non-market goods in general, and CV in particular, seem to be capable of capturing the value people attach to public libraries – both use and non-use values – in its totality and in a way not colliding with the assumptions of rational behavior. Concerning the special case of altruism, however, they find that further elaboration is needed before one can determine whether or not values thus motivated should be included as benefits in public library (and other public good) valuation.

[0] A warm glow effect means that the respondent overstates her willingness to pay because it feels right or popular to pay to good, superior purposes, such as charity and environment, and often, as well, to the arts and culture.

of error and guidelines for performing high quality CV studies (Arrow et al., 1993). The forthcoming presentation of the main valuation results from the CV study of public libraries in Norway will contain a thorough explanation of our efforts to minimize key error sources.[0]

The main strength of the CV method is its directness. It seeks to elicit the value of the nonmarket good directly, without any detour, by asking individuals to express their valuation in a hypothetical market. The method's weaknesses are the possibility of strategic manipulation, the lack of familiarity with the choice situation, and (usually) the lack of formal commitment to the stated values, in terms of actual payment. The pros and cons of the method are cause of discussions but there is still a reasonable consensus that the method is in most cases better than the alternatives available, and this is responsible for its popularity.

[0] See paper 4.

Appendix 2

Theoretical considerations concerning WTA in the form of local public goods

Consider the following model:

X = amount of private goods
L = amount of library goods
P = amount of other local public goods,

all consumed by a representative consumer. Set (0) to indicate initial levels, and (1) to indicate levels after a change (but where L = 0 after a change which closes down the local library).

The consumer's utility function is

U = u(X) + v(L) + w(P), all arguments have standard properties, (and function strongly separable in arguments).
We then have

$U(0) = u(X(0)) + v(L(0)) + w(P(0))$
$= u(X(1)) + v(0) + w(P(0))$
$= u(X(0)) + v(0) + w(P(1))$

$\Rightarrow \; v(L(0)) - v(0) = w(P(1)) - w(P(0)) = u(X(1)) - u(X(0))$

Assume now that consumers are approximately risk neutral over the relevant interval for income change. We can then write $u(X(1)) - u(X(0)) \approx X(1) - X(0)$, which is the relevant WTA amount.

Question: What is the magnitude of P(1) – P(0) = necessary compensation in the form of (a money-equivalent value of) local public goods, in order to abstain from the library good. Depends on the marginal utility dw(P)/dP over the relevant interval. In the case where the local public good has "full" value (and the consumer would be exactly willing to pay the full

cost of the additional good provision), this derivative would equal one over the whole interval from P(0) to P(1). Consider however the case where this marginal utility is lower, say on average some $\alpha < 1$. Then

$$w(P(1)) - w(P(0)) = \alpha(P(1)) - P(0))$$

$$\Rightarrow \; P(1)) - P(0)) = (1/\alpha)(X(1) - X(0))$$

$$\Rightarrow X(1) - X(0) = \alpha(P(1)) - P(0)).$$

$X(1) - X(0)$ is here the "true" WTA, and $(P(1)) - P(0))$ the stated WTA. If α is much less than one, there can be a large discrepancy (the consumer must have a lot of local public goods to be compensated for the loss of the library good, because the local public good has a small marginal value to him/her).

Appendix 3

Questionnaire 1.1: Valuation of public libraries - Willingness-to-pay (WTP) format. January 2000

Part one: Presentation and registration[0]

Good afternoon/morning, my name is <SHOW YOUR ID-CARD> and I am working for <THE NAME OF THE OPINION AGENCY>. We are conducting an omnibus survey and would like to interview a person in your household 15 years old or more. If there are several persons older than 15 years of age, I would like to talk to the one of them who will first reach her/his birthday. This interview is voluntary and it will not be possible to trace individuals based on their responses in the interview. The questionnaire will take approximately 30 minutes.

Part two: Introductionary questions – Top-down design

READ OUT LOUD
The first theme in this questionnaire concerns cultural activity offers in the municipalities.

HAND OUT CARD 1

This card shows how total annual costs of an average Norwegian municipality are distributed to main items of expenditure, in percentages.

Question 1:
Municipalities' costs to *recreation, culture and religion* amount to about 4000 NOK in average per household per year. Do you think the part designated to this purpose, 4% of the

[0] In this questionnaire upper case letters indicate information to the interviewer, lower case letters indicate questions or information to the respondent.

total budget of the municipalities, is too big, appropriate, or too small? *Too big / Appropriate / Too small / Don't know / Will not answer*
TAKE BACK CARD 1

HAND OUT CARD 2
TO THE INTERVIEWER: PLEASE NOTE THE NUMBER OF TIMES THE RESPONDENT HAS USED EACH OF THE LISTED CULTURAL ACTIVITIES, AND NOTE "0" FOR THOSE SHE/HE HAS NOT USED.

Question 2:
How many times during the last 12 months have you used some of these *cultural* activities in your municipality?

TAKE BACK CARD 2

READ OUT LOUD:
We will now ask some questions about the library in your municipality. With the term "library" we mean the municipality's central library and library branches, regardless of what they are called, for instance "Deichman's library" in Oslo, bookmobiles by bus or boat, "Reach out" services.

Question 3:
Do you think you have a right to have access to a public library in the municipality where you live? *Yes / No / Don't know*

Part three: Scenario description and willingness to pay questions

READ OUT LOUD:

We have a Public Library Act in Norway, stating that the task of the public libraries is to *promote enlightenment, education and other cultural activity by making books and other material available free of charge to all those who live in Norway*. All municipalities *shall* offer public library services to their inhabitants. In the political debate around the last two local elections, however, there have been suggestions to annul or amend the Public Library Act.

TO THE INTERVIEWER: THE INFORMATION OF AVERAGE LIBRARY COSTS PER HOUSEHOLD, WHICH IS INSERTED IN SHARP PARENTHESIS IN THE TEXT BELOW, SHALL BE READ TO HALF OF THE RESPONDENTS.

Scenario description in the two WTP subsamples, subsample I: MBDC-WTP and subsample II: DM-WTP

CONTINUE TO READ OUT LOUD:
We want to investigate how you and your household value the public library services in the municipality. <For your information, we will give you the *nationa*l average library costs per household: Each household pays on average about 420 NOK annually in local taxes to public libraries.> It is well known that the economic situation in most of the municipalities is deteriorating. This can imply that some public services have to be reduced or closed down, unless the municipality's revenues are increased.

Assume the Public Library Act amended, so that the municipalities themselves could decide whether or not they wanted a public library. Imagine that the council administration was considering to close down the library. An option would then be to use the public library in a neighbouring municipality or to buy all books, reference manuals, information services, etc. needed by yourself and your household. Library services to schools and adult training courses and to various groups in the local community, such as the "Reach out"-service to elderly in institutions, kindergardens, etc. will cease to exist.

Another alternative is maintaining the library servies, if the muncipality's revenues are sufficiently increased through additional local taxes.

Willingness-to-pay questions <u>to subsample I: MBDC-WTP</u>

Question 4.I:
We now want to know whether you would *support* or *oppose* a proposition of maintaining the public library services in your municipality, if it implied an annual increase in local taxes for your household?

HAND OUT CARD 3 AND TICK OFF AT ONE CERTAINTY LEVEL FOR EACH AMOUNT

Think about how much the library services in the municipality are worth for yourself and your household. Look at the amounts on this payment card and ask yourself whether you would be *definitely for, probably for, not sure, probably against* or *definitely against* maintaining the library services, if it implied an annual increase in local taxes of 100 NOK. Do the same consideration, but for 300 NOK and so on up to 10000 NOK. By ”probably sure” we mean 95% sure. Please tick off at one certainty level for each amount, that is once per line.

TAKE BACK CARD 3

Question 5.I:
We will now ask you an open question, which is not limited by the amounts on the card of the previous question. You can now state any amount. Please state the amount that best fit your answer to the question:

What is the *maximum* cost you and your household are willing to pay as an increase in annual local taxes to be *probably sure* to vote FOR the proposition to maintain the library services in your municipality?

TO THE INTERVIEWER – NOTE ON THE QUESTIONNAIRE:
NOTE THE STATED AMOUNT IN NOK.
IF THE RESPONDENT DOESN’T ACCEPT THE QUESTION, NOTE ”NOT”.
IF THE RESPONDENT IS NOT WILLING TO PAY ANYTHING, NOTE ”0”.

ANSWER: _____

Willingness-to-pay questions to <u>subsample II: DM-WTP</u>

SHOW CARD 4

TO THE INTERVIEWER:

ROTATE THE MONETARY AMOUNT BETWEEN 100 NOK, 300 NOK, 500 NOK AND 1000 NOK. PRESENT EACH RESPONDENT WITH ONLY ONE OF THE AMOUNTS. NOTE THE AMOUNT USED ON THE QUESTIONNAIRE.

Question 4.II:

Do you support maintaining the local public library services and are willing to pay _____ NOK in additional annual local taxes to prevent closing down of the library?

Which one of the statements on this card is best expressing your answer?

TAKE BACK CARD 4

ONLY TO RESPONDENTS WHO RESPONDED OPTION 03 IN QUESTION 4:

Question 5A.II:

Do you fully agree, partly agree, partly disagree or fully disagree with the following statements:

READ OUT LOUD THE STATEMENTS A, B AND C SEPARATELY:

A: I would be willing to pay _____ NOK to maintain the local library service if I was convinced that the municipality is unable to pay the costs within their budget. *Fully agree / Partly agree / Partly disagree / Fully disagree / Don't know*

B: I would be willing to pay _____ NOK to maintain the local library service if I was convinced that the municipality is unable to pay the costs without having to reduce the services in the health and educational sectors. *Fully agree / Partly agree / Partly disagree / Fully disagree / Don't know*

C: I cannot afford to pay anything to maintain the local library service. *Fully agree / Partly agree / Partly disagree / Fully disagree / Don't know*

NOTE ON THE QUESTIONNAIRE

Question 5B.II:

There is uncertainty about the costs of maintaining the library services of today. Consider how much you and your household think it is worth to maintain the library services in the municipality where you live.

What is your *maximum* willingness to pay in annual local taxes to this end? Remember that this means that you can spend less money to other ends.

ANSWER: _____

Part four: Follow-up questions

Question 6A:

ONLY TO RESPONDENTS WHO DID *NOT* STATE A POSITIVE AMOUNT TO QUESTION 5

HAND OUT CARD 5

TO THE INTERVIEWER: TICK OFF THE STATED REASONS

Why don't you want to pay anything? There may be several reasons for responding like you did. On this card we have listed some statements giving different reasons. Please tell me if there is one or more of the statements on this card you agree with.

TAKE BACK CARD 5

Question 6B:

ONLY TO RESPONDENTS WHO STATED A POSITIVE AMOUNT TO QUESTION 5

HAND OUT CARD 6
TO THE INTERVIEWER: NOTE THE POINTS SCORES

There can be several reasons for why you find the library valuable. On this card we have listed five reasons, but you may want to suggest other reasons that you find important for the existence of a good public library in the municipality. How will you distribute your total valuation between these reasons? Imagine that you have 100 points to distribute among these reasons. The more influential you find the reason, the higher points score you give it. Give zero points to reasons you don't attach importance to. Remember that the sum must equal 100.

TAKE BACK CARD 6

Part five: Use or non-use of the public library and attitudes towards it

TO ALL RESPONDENTS
SHOW CARD 7
TO THE INTERVIEWER: NOTE THE POINTS SCORES

Question 7:

I am now going to ask some questions concerning your own and your family's use of the public library. On this card we have listed some library services. Which importance do your household attach to them?

Imagine that you have 100 points to distribute to these library services according to how important they are for your household. The more important you find a library service, the higher points score you give it. Give zero points to services you don't attach importance to. Remember that the sum must equal 100.

TAKE BACK CARD 7

ONLY TO RESPONDENTS WHO IN QUESTION 2 STATED THAT THEY HAD VISITED THE LIBRARY

SHOW CARD 8

Question 8A:

Can you please tell me why you use the library? Please tick off all relevant reasons listed on this card.

TAKE BACK CARD 8

ONLY TO RESPONDENTS WHO IN QUESTION 2 STATED THAT THEY HAD *NOT* VISITED THE LIBRARY

SHOW CARD 9

Question 8B:

Can you please tell me why you don't use the library? Please tick off all relevant reasons listed on this card.

TAKE BACK CARD 9

TO ALL RESPONDENTS

SHOW CARD 10

Question 9:

On this card we have listed some public library services aimed at different groups and problem areas in local communities. Will you please read the card and tell me which 3-4 of them you think are of most importance for the public library in your municipality?

You can just mention the number in front of each service or task you feel are most important to fulfil (max 4 services).

TAKE BACK CARD 10

Question 10:

About how far do you live from your nearest public library, in kilometers? _____ km

Question 11:

Did you often visit the public library as a child or as a youth? *Yes / No / Don't know or Can't answer*

Question 12:

Do you think the public library service in your municipality, such as it is today, is too big, appropriate, or too small? *Too big / Appropriate / Too small / Don't know or Can't answer*

Question 13:

Imagine that the Public Library Act was amended so that each municipality itself could decide whether or not it would maintain the library services. In such a situation, do you think it would be *very realistic, rather realistic, rather unrealistic,* or *very unrealistic* that increased demands on the local public economy could put the question of closing down the public library on the agenda? *Very realistic / Rather realistic / Rather unrealistic / Very unrealistic / In doubt or Unsure*

Question 14:

If the question of closing down the public library really was put on the agenda in your municipality – do you then think it *very probable, rather probable, rather improbable*, or *very improbable* that the public library really would be closed down? *Very probable / Rather probable / Rather improbable / Very improbable / In doubt or Unsure*

Part six: The respondent's evaluation of the valuation questions

Question 15:

Do you think the questions whether or not your household was willing to pay to avoid closing down the public library, were difficult or easy to answer? *Difficult to answer / Easy to answer / Don't know*

Question 16:

Do you find the payment vehicle – additional annual local taxes – a good and fair payment vehicle? *Yes / No / Don't know*

Part seven: Social and economical variables

We will now ask you some general background questions.

TICK OFF ON THE QUESTIONNAIRE

Question B1:

First, a couple of questions about politics: If a general election were to be held tomorrow, would you vote? (If "Yes"): Which political party would you give your vote?

a) Arbeiderpartiet (Labour Party)
b) Sosialistisk Venstreparti (Socialist Left Party)
c) Fremskrittspartiet (Progress Party)
d) Høyre (Conservative Party)
e) Kristelig Folkeparti (Christian Democratic Party)
f) Senterpartiet (Centre Party)
g) Venstre (Liberal Party)
h) Rød Valgallianse (Red Electorial Alliance)
i) Other, please specify

NOTE: _____

j) Would not vote

TICK OFF ON THE QUESTIONNAIRE

Question B2:

Did you vote in the general election in September 1997? (If "Yes"): Which party did you give your vote?

a) Arbeiderpartiet (Labour Party)

b) Sosialistisk Venstreparti (Socialist Left Party)
c) Fremskrittspartiet (Progress Party)
d) Høyre (Conservative Party)
e) Kristelig Folkeparti (Christian Democratic Party)
f) Senterpartiet (Centre Party)
g) Venstre (Liberal Party)
h) Rød Valgallianse (Red Electorial Alliance)
i) Other party, please specify

NOTE: _____

j) Did not vote

NOTE ON THE QUESTIONNAIRE

Question B3:

What is your profession?

a) Student/pupil
b) Retired/on welfare
c) Worker, unskilled
d) Worker, skilled
e) Self-employed, farmer
f) Self-employed, craftsman
g) Self-employed, other
h) Public servant, lower
i) Public servant, higher
j) Housewife/-husband
k) Unemployed

HAND OUT CARD 11

TICK OFF AT ONE LINE FOR THE ANNUAL GROSS INCOME OF THE TOTAL HOUSEHOLD (SECOND COLUMN).

Question B4:

What is your household's total annual gross income?

TICK OFF AT ONE LINE FOR THE ANNUAL GROSS INCOME OF THE RESPONDENT HER-/HIMSELF (CARD 11, THIRD COLUMN).

Question B5:

What is your own annual gross income?

TACK BACK CARD 11

NOTE ON THE QUESTIONNAIRE

Question B6:

How many people are there in your household, including all adults and all children living at home?

_____ persons

Question B7:

How old are you?

Can you tell us the age of all the people in your household as well?

NOTE THE AGE OF THE RESPONDENT ON LINE 1 BELOW, AND THE AGE OF OTHER PEOPLE IN THE HOUSEHOLD ON THE FOLLOWING LINES.

People in the household	**Note age**
1. (The respondent)	
2.	
3.	
4.	
5.	
6.	
7.	

Question B8:

What is your highest accomplished education? *Primary school / High school / College or University / Other, please specify* NOTE: _____

Question B9:

Is the area where you live in the coutryside, a town or a city? *Countryside / Town / City*

Part eight: Questions to the interviewer

THIS PART IS TO BE ANSWERED BY THE INTERVIEWER AFTER THE INTERVIEW IS OVER

The respondent's sex:

Male: _____

Female: _____

NOTE THE TYPE OF DWELLING:

a) Farm house
b) Single-family house
c) Duplex
d) Three or four-family house or row house
e) Apartment or tenement building

Question A:

How well informed and interested in the public library and its services did the respondent appear to be? *Well informed / Informed/ Not informed / Don't know*

Question B:

Did the respondent find it difficult to understand the willingness-to-pay questions? *Yes / No / Don't know*

Question C:

How seriously was the respondent considering the interview? *Very seriously / Seriously / Not seriously / Don't know*

The interview is conducted in municipality:

(NOTE THE NAME OF THE MUNICIPALITY _____

Netto interview time (in minutes): _____

Date of the interview: _____

Name of the interviewer: _____

Section nine: Cards

Card 1: Total annual costs of an average Norwegian municipality distributed to main items of expenditure, in percentages.[0]

Purpose	**Municipalities' total annual costs, in percent**
Primary and secondary education and other teaching	25 %
Health institutions, e.g., hospitals	22 %
Community health care services, incl. elderly care in institutions	16 %
Social security and welfare	12 %
Economic and industrial purposes	6 %
Public services	6 %
Recreation, culture and religion	**4 %**
Other purposes	9 %
SUM	100 %

[0] Source: Statistics Norway

Card 2: Cultural activities in municipalities

Cultural activities in the municipality	**No of times used**
Cinema	
Sports event	
Public library	
Museum	
Theater/musical/revue	
Art exibition	
Consert, popular music	
Consert, classical music	
Ballet/dance performance	
Opera/comical opera	
Other	

Card 3: Payment card with a scale of safety levels. Tick off at one certainty level for each amount, i.e., once per line.

NOK/Household/ Per year	**Definitely FOR**	**Probably FOR**	**Not sure**	**Probably AGAINST**	**Definitely AGAINST**
100					
300					
500					
700					
1000					
2000					
5000					
10000					

Card 4: Response options to valuation question 4 in subsample III, DM-WTP.

TO THE INTERVIEWER:
VARY THE BID AMOUNTS RANDOMLY BETWEEN 100 NOK, 300 NOK, 500 NOK AND 1000 NOK.

Do you support maintaining the local public library services and are willing to pay _____ NOK in additional annual local taxes to prevent closing down of the library?

Which one of these statements best expresses your answer?

1. I support maintaining the local public library services and am willing to pay _____ NOK in local tax increase.

2. I support maintaining the local public library services and am willing to pay an additional local tax, but it is worth less than _____ NOK to me.

03. I support maintaining the local public library services but disagree that it demands additional local taxes.

04. I don't support maintaining the local public library services even if it doesn't cost me anything.

05. Don't know
06. Don't want to answer

Card 5: Reasons for not wanting to pay extra for maintaining the library services in the municipality. Tick off for all relevant reasons.

Reasons	**Tick off relevant reasons**
1)I already pay too much taxes and don't want to pay more	
2) The authorities should be able to fund the libraries within the municipality budget, if they used the money efficiently	
3) I support maintaining the current library services, but don't think increased local taxes are necessary to achieve this	
4) I don't think it is right to link the need for reduction in public expenses with cuts in the public library funding	
5) It is impossible or difficult to valuate the local library in a monetary value	
6) I think it is unrealistic that the library will cease to exist	
7) I have no interest or need for the library	
8) The library services are not good enough	
9) The local library is located too far away	
10) I can't afford to pay more	

Card 6: Reasons for valuing public libraries.

Reasons stated as motives for valuing public libraries	**Percentage of total value**
1. I or others in my family use the public library	
2. I or others in my family may need the public library later in life	
3. Others in the community use the public library	
4. The public library disseminates culture and knowledge and takes care of our literary heritage	
5. The public library promotes democracy and equality	
6. Other reasons – Please specify NOTE: _____	
SUM POINTS	100

Don't know: _____

Will not answer: _____

Imagine that you have 100 points to distribute among the reasons listed on this card, according to their importance for you and your household. The more influential you find the reason, the higher points score you give it. Remember that the sum must equeal 100.

How many points would you give each of the six reasons?

Card 7: Importance of different library services.

LIBRARY SERVICES	**Points of importance**
1. Borrow books, music (CDs), videos or talking books	
2. Use services in the library – for instance read newspapers or journals, use reference manuals or the Internet, use a copying machine, etc.	
3.Attend exibitions and arrangements such as author meetings, speeches, puppet shows, storytelling sessions, etc.	
4. Other – Please specify NOTE _____	
SUM POINTS	100

I never visit the library: _____

Don't know: _____

Will not answer: _____

Imagine that you have 100 points to distribute among the library services listed on this card, according to their importance for you and your household. The more important you find the library service, the higher points score you give it. Remember that the sum must equeal 100.

How many points would you give each of the four library services?

Card 8: Reasons for visiting the library. Tick off all relevant reasons.

REASONS	**Tick off relevant reasons**
1. To read for pleasure	
2. Recreation and hobby purposes	
3. Work purposes	
4. Educational purposes	
5. To bring children in order to make them fond of books and reading	
6. To acquire knowledge; self development	
7. To find literature on specific subjects or seek answers to questions or solve problems	
8. To be informed in current political questions	
9. To be kept updated in matters that interest me	
10. Interest in local history	
11. Interest in literature and culture, and the library has access to culture and knowledge from all the world	
12. To find books etc. to other members of the family (children, infirm or elderly persons)	
13. To obtain expert help from library staff to find the information needed	
14. To be kept updated in local community matters	
15. To be kept updated in job searching possibilities	
16. To meet people from the local community	
17. Other, please specify NOTE: _____	

Card 9: Reasons for not visiting the library. Tick off all relevant reasons.

REASONS	**Tick off relevant reasons**
1. No time	
2. No interest or need	
3. I can buy all books etc. I want	
4. Fines for returning books late is too high	
5. Don't want to have to remember to return the books	
6. Don't like libraries as places	
7. The library is located too far away	
8. The opening hours are not convenient	
9. The library doesn't have materials of interest to me	
10. Have to wait too long for new books	
11. The library staff doesn't have competence to help me	
12. The staff is not service minded	
13. I have health problems	
14. Other, please specify NOTE: _____	

Card 10: Most important public library services or tasks. Tick off 3-4 services (max 4).

LIBRARY SERVICES OR TASKS	Tick off the 3-4 tasks found most important
1. Give pupils and students access to books, reference materials, journals, etc.	
2. Support lifelong learning	
3. Be a place for children to discover literature and the pleasure of reading	
4. Give local businesses access to information	
5. Offer high quality literature and popular reading materials for recreation	
6. Give access to community information, for instance Council minutes and papers, public regulations and laws	
7. Be a local cultural center offering author meetings, storytelling sessions, theatre performances for children, etc.	
8. Contribute to equal access to modern information technology by offering use of computers and the Internet	
1. Contribute to integration of foreign language groups by offering community information and literature especially adapted for them	
2. 10. Offer library services to homebound people	
11. Don’t know / Can’t answer	

Card 11: Annual gross income of the total household and of the respondent her-/himself.

	The household's total annual gross income	**The respondent's annual gross income**
a) No income		
b) Less than 50 000 NOK		
c) 50 000 NOK – 99 999 NOK		
d) 100 000 NOK – 149 999 NOK		
e) 150 000 NOK – 199 999 NOK		
f) 200 000 NOK – 249 999 NOK		
g) 250 000 NOK – 299 999 NOK		
h) 300 000 NOK – 349 999 NOK		
i) 350 000 NOK – 399 999 NOK		
j) 400 000 NOK – 449 999 NOK		
k) 450 000 NOK – 499 999 NOK		
l) 500 000 NOK – 549 999 NOK		
m) 550 000 NOK – 599 999 NOK		
n) 600 000 NOK or more		

Appendix 4

Questionnaire 1.2: Valuation of public libraries - Willingness-to-accept (WTA) format. January 2000

This appendix comprises the parts of the Valuation of public libraries-questionnaire that differs from those used in the willingness-to-pay (WTP) format in Appendix 3.[0]

Scenario description to <u>subsample III: MBDC-WTA</u>

We want to investigate how you and your household value the public library services in the municipality. It is well known that in the municipality there are needs for further efforts in several fields, including enterprises for elderly care and for the school sector. One way to make room for such further enterprises could be to close down the library and transfer the saved budget funds to other municipality tasks. It is uncertain how much of the budget funds will be saved by such means and thus will benefit your household. <For your information, we will give you the *nationa*l average library costs per household: Each household pays on average about 420 NOK annually in local taxes to public libraries.>[0]

If the library were closed down, the option would then be to use the public library in a neighbouring municipality or to buy all books, reference manuals, information services, etc. needed by yourself and your household. Library services to schools and adult training courses and to various groups in the local community, such as the ”Reach out”-service to elderly in institutions, kindergardens, etc. will cease to exist.

Assume the Public Library Act amended, so that the municipalities themselves could decide whether or not they wanted a public library. Imagine that the council administration was considering to closing down the library.

Valuation questions to <u>subsample III: MBDC-WTA</u>

[0] In this questionnaire upper case letters indicate information to the interviewer, lower case letters indicate questions or information to the respondent.

[0] The text in sharp parenthesis is read to half of the respondents.

Question 4.III:

We now want to know whether you would *support* or *oppose* a proposition for closing down the public library services in your municipality, if it implied that the saved budget funds were transferred to other municipality tasks benefiting your household?

SHOW CARD[0]

Think about how much the public library services in the municipality are worth for yourself and your household. Look at the amounts on this payment card and ask yourself whether you would be *definitely for, probably for, not sure, probably against* or *definitely against* closing down the library, if it implied annually saved budget funds of 100 NOK per household to be transferred to other municipality tasks benefiting your household. Do the same consideration, but for 300 NOK and so on up to 10000 NOK. By ”probably sure” we mean 95% sure. Please tick off at one certainty level for each amount, that is once per line.

TAKE BACK CARD

Question 5.III:

We will now ask you an open question, which is not limited by the amounts on the card of the previous question. You can now state any amount. Please state the amount that best fit your answer to the question:

What is the *minimum* annual amount per household to be transferred to other municipality tasks benefiting your household, for you to be *probably sure* to support the proposition to close down the library in your municipality?

TO THE INTERVIEWER – NOTE ON THE QUESTIONNAIRE:

NOTE THE STATED AMOUNT IN NOK.

[0] Identical to Card 3 in Appendix 3.

IF THE RESPONDENT OPPOSES CLOSING DOWN OF THE LIBRARY AND DOESN'T ACCEPT A MONETARY COMPENSATION, NOTE "NOT".
IF THE RESPONDENT IS INDIFFERENT AND MEANS 0 NOK, NOTE "0".

ANSWER: _____

Scenario description in the <u>subsample IV: DM-WTA</u>

The scenario description in subsample IV: DM-WTA is identical with the scenario description in subsample III: MBDC-WTA, with one exception – the last sentence is here omitted ("Imagine that the Council was considering to close down the library.").

Valuation questions to <u>subsample IV: DM-WTA</u>

SHOW CARD 1.IV
TO THE INTERVIEWER:
ROTATE THE MONETARY AMONUNT BETWEEN 100 NOK, 300 NOK, 500 NOK AND 1000 NOK. PRESENT EACH RESPONDENT WITH ONLY ONE OF THE AMOUNTS. NOTE THE AMOUNT USED ON THE QUESTIONNAIRE

Question 4.IV:

Imagine that the municipality council considers two alternatives:

a) To *close down* the local library and use the saved budget funds to increase the efforts on other municipality tasks that will benefit your household.
b) To *maintain* the local library and also other municipality tasks on today's level of activity.

Which one of the statements on this card is best expressing your answer?

Question 5.IV:

What is the *minimum* annual amount per household to be transferred to other municipality tasks benefiting your household, for you to support the proposition to close down the library in your municipality?

TO THE INTERVIEWER – NOTE ON THE QUESTIONNAIRE:
NOTE THE STATED AMOUNT IN NOK.
IF THE RESPONDENT OPPOSES CLOSING DOWN OF THE LIBRARY AND DOESN'T ACCEPT A MONETARY COMPENSATION, NOTE "NOT".
IF THE RESPONDENT IS INDIFFERENT AND MEANS 0 NOK, NOTE "0".

ANSWER: _____

The respondent's evaluation of the valuation questions, where it differs from those used in the WTP subsamples

TO THE INTERVIER: TICK OFF ON THE QUESTIONNAIRE

Question 15.II:

I will now read out load some statements. Please tell me to which degree you agree or disagree with them.

a) Do you fully agree, partly agree, partly disagree or fully disagree with the following statement:
"I don't think the budget funds saved by closing down the library will be used to improve other municipality tasks – they will disappear into the bigger figures, without us, the local inhabitants, noticing it. *Fully agree / Partly agree / Partly disagree / Fully disagree / Don't know*

b) Do you fully agree, partly agree, partly disagree or fully disagree with the following statement:

”I don’t think the saved budget funds will be used to improve municipality tasks that I and my household will benefit from.” *Fully agree / Partly agree / Partly disagree / Fully disagree / Don’t know*

c) Do you fully agree, partly agree, partly diagree or fully disagree with the following statement:
”We must retain the local library regardless of the sum of budget funds saved by closing it down.” *Fully agree / Partly agree / Partly disagree / Fully disagree / Don’t know*

d) Do you fully agree, partly agree, partly disagree or fully disagree in the following statement:
”One cannot set municipitality tasks against one another in this way.” *Fully agree / Partly agree / Partly disagree / Fully disagree / Don’t know*

e) Do you fully agree, partly agree, partly disagree or fully disagree with the following statement:
”A few hundreds NOK per household will not increase the offer of other public services to any noticeable extent.” *Fully agree / Partly agree / Partly disagree / Fully disagree / Don’t know*

Question to the interviewer, the only question that differs from those used in the WTP subsamples

Question B.II:
Did the respondent find it difficult to understand the valuation questions? *Yes / No / Don’t know*

CARD

Card 1.IV: Response options to valuation question 4 in subsample IV, DM-WTA

TO THE INTERVIEWER: VARY THE BID AMOUNTS RANDOMLY BETWEEN 100 NOK, 300 NOK, 500 NOK AND 1000 NOK

Imagine that the municipality council considers two alternatives:

a) To close down the local library and use the saved budget funds to increase the efforts on other municipality tasks that will benefit your household.

b) To maintain the local library and also other municipality tasks on today's level of activity.

Which one of the statements below is best expressing your answer?

01. I support maintaining the local public library if the alternative is to close down the library and transfer ….. NOK in saved budget funds to other municipality tasks that will benefit my household.

02. I support maintaining the local library if the alternative is to close down the library, independent of the amount of saved budget funds that then can be transferred to other municipality tasks that will benefit my and other households.

3. I support closing down the local library if it involves that ….. NOK is transferred to other municipality tasks that will benefit my household.