

THE TIB – A FUTURE WITH ADDED VALUE

Description of Methodology

A Study on the Value and Benefits of the German National Library of Science and Technology

Carried out by



CONTINGENT VALUATION

HOW CAN THE ADDED VALUE OF PUBLICLY FUNDED INSTITUTIONS BE QUANTIFIED?

USED FOR THE FIRST TIME IN GERMANY

A scientifically recognised questioning technique was used to determine the added value that the German National Library of Science and Technology (TIB) generates for the national economy. This so-called “Contingent Valuation” - technique includes the construction of a “hypothetical market” in a questionnaire and was specifically developed to measure the value of non-material goods.

The “Contingent Valuation”-procedure that is used to determine value was developed at the end of the 1940’s in USA. It was fundamentally reviewed and further developed in 1993 by Nobel Prize winners Robert Solow and Kenneth Arrow¹. The procedure is used in many areas nowadays, such as in cultural policy, health care, tourism and within the environmental sector. The World Bank and the OECD also use this technique to quantify their added value. Over 1,000 Contingent Valuation studies have since been proven in scientific literature.

The British Library used the technique in 2004² in Europe for its own research. Inspired by this study, the procedure will now be used for the first time in Germany to determine the value of a library.

THE QUESTIONS TO DETERMINE THE VALUE

The participants will be asked over several questions to give a financial appraisal of the value of the TIB. The answers will enable the calculation of the added value that the TIB generates for its customers. The direct questions will incorporate the following:

- An estimation of how high the losses would be for the individuals if the library were no longer to exist and the maximum amount individuals would accept in the form of a compensation from the German State to gain access to the TIB (“Willingness to Accept”)
- An estimation of the willingness to pay and the value that individuals would pay to continue to gain access to the TIB’s services (“Willingness to Pay”)
- An indication of the changes in demand in response to a hypothetical price change (“Elasticity of Demand”)

These direct questions will be cross-validated in the questionnaire with other questions:

- Which costs do individuals incur for using the existing services of the TIB (“Investment in Access”)?
- Which additional costs would arise if the TIB were to be closed (“Cost of Alternatives”)?

The results of these individual questions will be weighted and grouped in an index factor to present the added value of the TIB as a figure.

¹ Arrow, Solow, et al: Report of the NOAA Panel on Contingent Valuation, Federal Register, 58, Washington DC, 1993

² Pung, Caroline; Clarke, Ann; Patten, Laurie: Measuring the economic impact of the British Library. New Review of Academic Librarianship, Vol. 10, No.1, 2004, p. 79-102



THREE STEPS TO QUANTIFYING THE ADDED VALUE OF INSTITUTIONS

1. Aggregation of the individual results into a grand total

In the first step, the results will be allocated an individual euro value for each respondent. This value will be weighed according to the customer's usage intensity and the extent of the expected additional costs. The individual values of each respondent will subsequently be added together. This sum will result in an initial approximation of the added value.

2. Review of the grand total

From the activity on this topic, it appears that a few of the respondents are increasingly willing to pay. The direct calculation in step 1 does not take this into account and as such, underestimates the actual willingness to pay. Therefore, a review of the value (via a regression model) is carried out to correct this and any other negative impacts. Consequently, a more realistic value can now be determined for the added value.

3. Quantification of the added value in Euros and as an index factor

The added value calculated in steps 1 to 2 will be deducted from the net public funding amount. The remaining amount is the added value per annum calculated in Euros that will be generated by the TIB. The index factor can subsequently be calculated from the remaining amount.

The survey was carried out between November and December 2009. A total of 663 TIB customers completed the online questionnaire.

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THE FIVE TYPES OF QUESTIONS TO QUANTIFY THE VALUE OF THE TIB

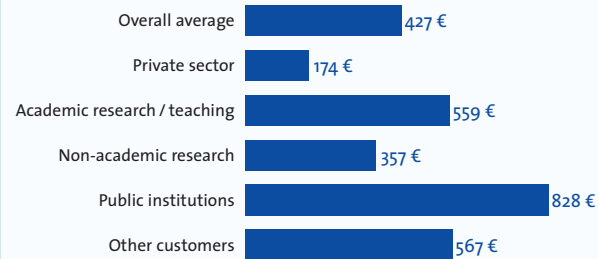
TYPES OF QUESTION	INCLUSION IN THE TIB QUESTIONNAIRE
1. WILLINGNESS TO ACCEPT (WTA)	Assuming that public money was no longer available, what would the German government have to pay you in compensation for the TIB? What additional costs would incur you?
2. PRICE ELASTICITY OF DEMAND	How would your usage of the TIB change if the price was to rise by 50 %?
3. WILLINGNESS TO PAY (WTP)	If public money was no longer available to finance the TIB, how much would you be prepared to pay to ensure the survival of the TIB?
4. INVESTMENT IN ACCESS	How restricted would you be in your work if the TIB was to no longer exist? What additional time would you then have to spend?
5. COST OF ALTERNATIVES	What additional costs (not including personnel costs) would you incur each year, if you could not use the TIB and were reliant on alternatives?

THE FIVE QUESTIONS TO QUANTIFY THE VALUE OF THE TIB

1. WILLINGNESS TO ACCEPT (WTA)

MONTHLY COMPENSATION

The respondents would demand on average € 427 per month as compensation for the closure of the TIB.

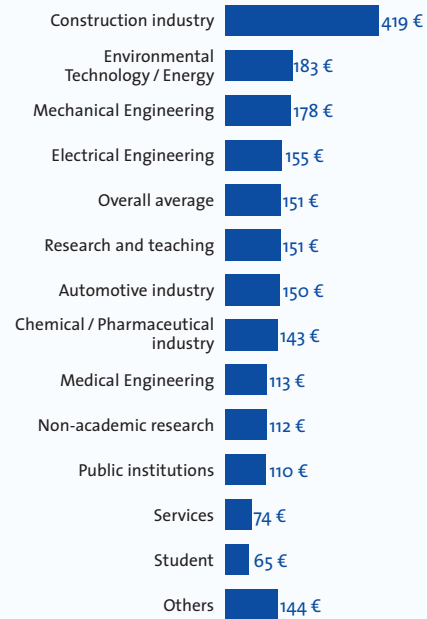


Question: Just imagine that the public authorities stopped financing the TIB. As a result, the TIB would close. However, the government would be prepared to pay you a monthly compensation for this loss. What would the minimum amount have to be for you to agree to this? All respondents, n = 663

Source: TNS Infratest Business Intelligence, 2010

WILLINGNESS TO PAY BY INDUSTRY SECTOR

The construction industry would be the most generous. The TIB's core industry sectors are positioned around € 150.

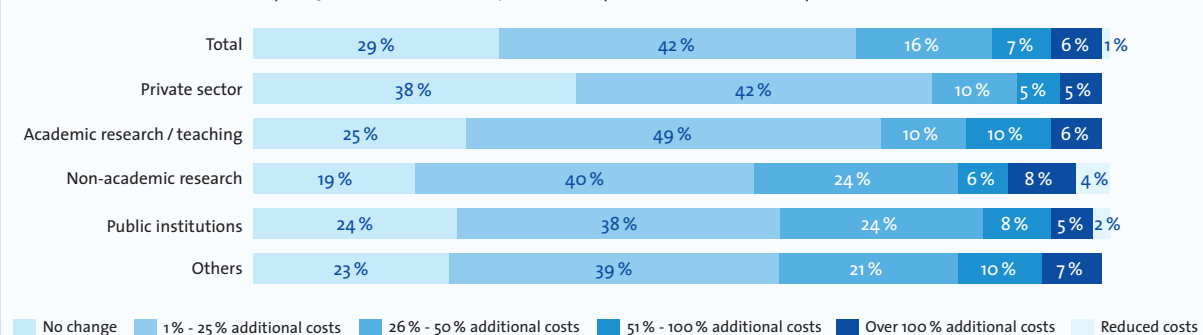


Average hypothetical willingness to pay per month in euros. All respondents, n = 663

Source: TNS Infratest Business Intelligence, 2010

WHAT WOULD HAPPEN IF THE TIB NO LONGER EXISTED?

Closure of the TIB would result in up to 25% additional costs for 42% of the respondents, a third would expect no additional costs.



Question: What additional costs (excluding personnel costs) would incur you if you could no longer use these services and, consequently, were reliant on other suppliers? n = 582, all respondents who indicated their monthly expenditure

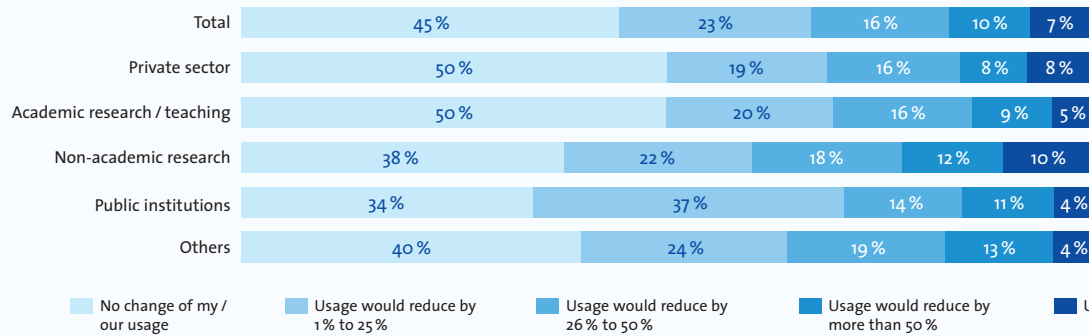
Source: TNS Infratest Business Intelligence, 2010



2. PRICE ELASTICITY

THE CONSEQUENCES OF A PRICE INCREASE OF 50 %

45 % would not change their usage pattern, even if the TIB drastically increased their prices.



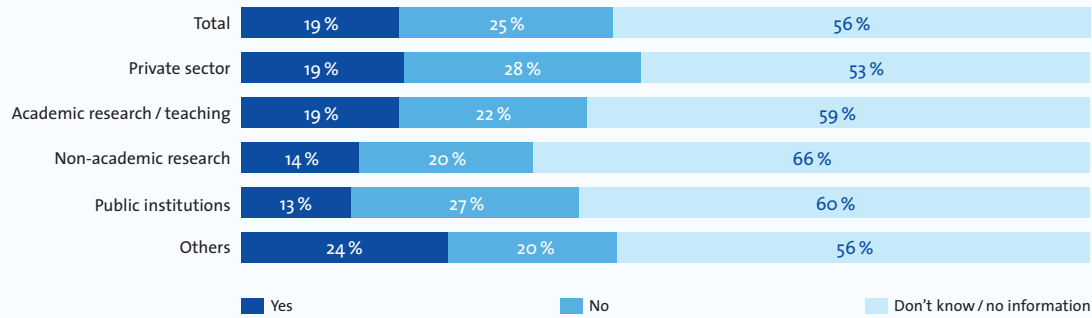
Question: Just imagine that the prices for the TIB service packages would rise by an average of 50 %. What outcome do you estimate that this would have for the usage of the TIB by your organisation / you personally? All respondents, n = 663

Source: TNS Infratest Business Intelligence, 2010

3. WILLINGNESS TO PAY

A POTENTIAL PERSONAL CONTRIBUTION TOWARDS THE SURVIVAL OF THE TIB

Regular financing of the TIB by a standalone institution could be envisaged by only 19 % of the respondents.



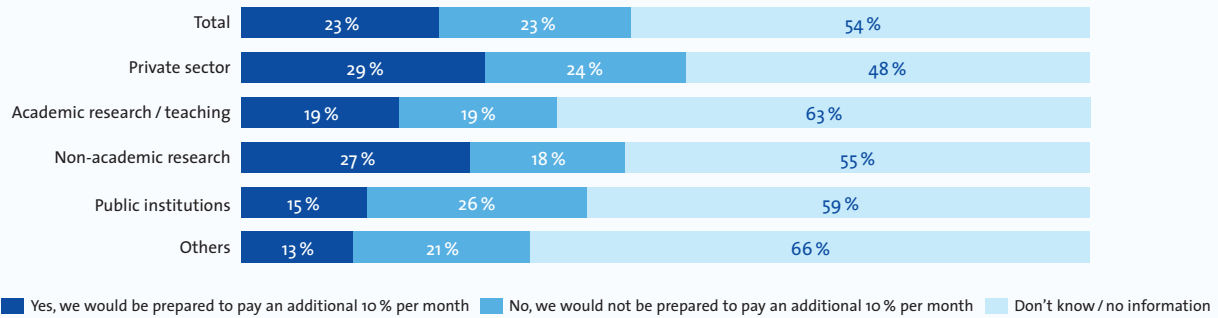
Question: In the unlikely event that public money would no longer be available to finance the TIB, would you / your organisation be prepared to pay a specific amount on top of your present expenditure to guarantee the survival of the TIB? All respondents, n = 663

Source: TNS Infratest Business Intelligence, 2010

3. WILLINGNESS TO PAY

QUESTION REGARDING A POTENTIAL PERSONAL CONTRIBUTION

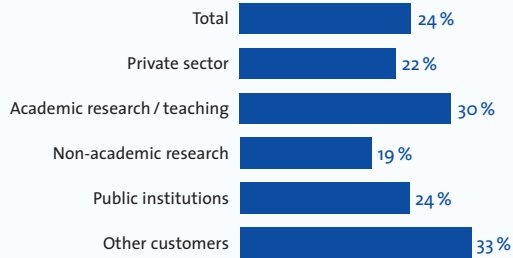
Almost a quarter of the respondents would be prepared to pay 10% more than at present, if asked. 54% answered with "don't know."



Question: Therefore, that means that your organisation would not be prepared to pay 10% on top of your present expenditure towards the survival of the TIB and its services?
 All respondents, n = 540, who could not envisage any regular financing.
 Source: TNS Infratest Business Intelligence, 2010

WILLINGNESS TO PAY MORE

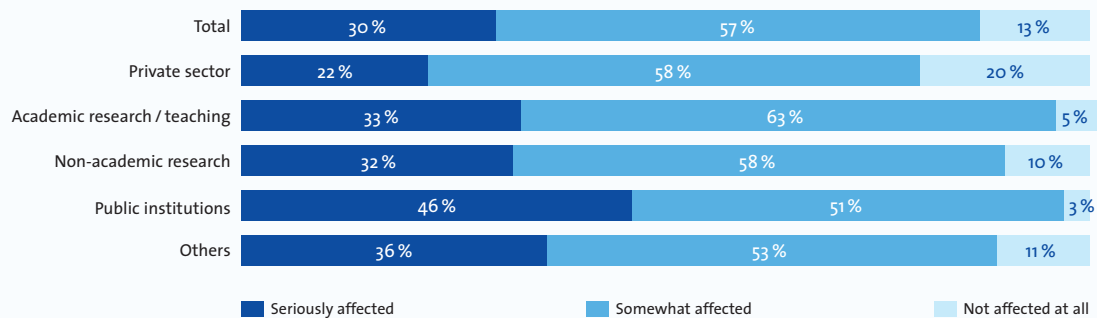
If the respondents could make a decision on their budget themselves, they would be prepared to pay an average of 24% more to ensure that the TIB remains.



Question: If you were free to make any decisions on the budget, what is the maximum percentage that you would be prepared to pay to guarantee the survival of the TIB?
 All respondents who indicated their monthly expenditure, n = 579
 Source: TNS Infratest Business Intelligence, 2010

WHAT WOULD HAPPEN IF THE TIB NO LONGER EXISTED?

57% of the respondents would be "somewhat affected" in their work, 30% would be "seriously affected."

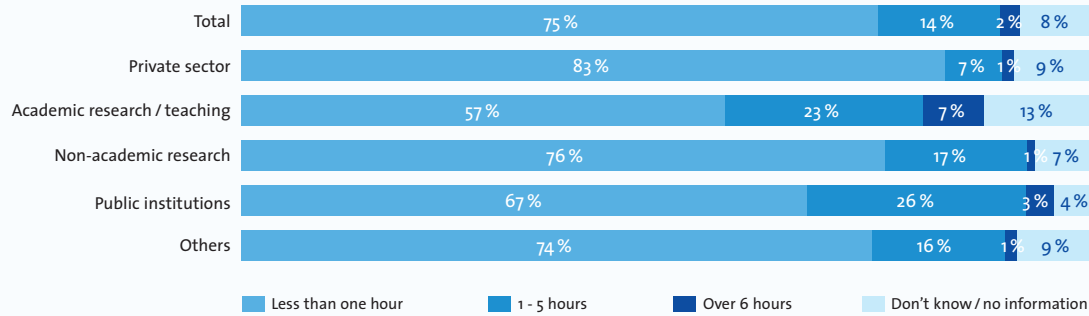


Question: To what extent would your work be affected if you could no longer use the TIB and its services?
 All respondents, n = 663
 Source: TNS Infratest Business Intelligence, 2010

4. INVESTMENT IN ACCESS

TIME INVESTED EACH DAY

75% consider the TIB service quick to use. 25% from research and teaching, as well as from public institutions use it for longer than one hour.



Question: What is the total amount of time each day that the relevant employees within your organisation spend using the TIB range of services?

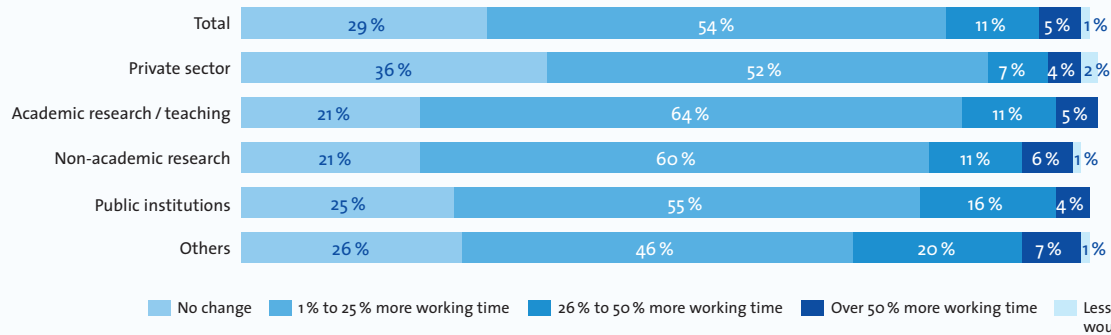
All respondents, n = 650, without students

Source: TNS Infratest Business Intelligence, 2010

5. COSTS OF ALTERNATIVES

WHAT WOULD BE THE EXTENT OF THE "COST OF ALTERNATIVES" IN THIS CASE?

Without the TIB, 54% of the respondents would have to use 25% more working time, in research / teaching this would even be 64% longer.

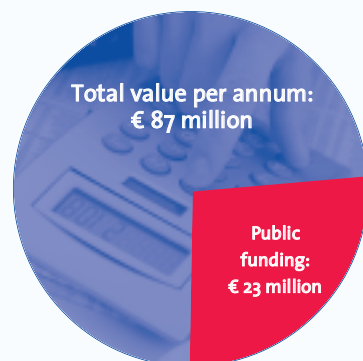


Question: If the TIB was to no longer be available for you, how much additional working time would you / your organisation have to use each week to guarantee a comparable supply of specialist information? All respondents, n = 663

Source: TNS Infratest Business Intelligence, 2010

6. THE ADDED VALUE

THE ECONOMIC BENEFITS OF THE TIB



Cost benefit ratio: 3.8 : 1

Source: TNS Infratest Business Intelligence, 2010

