

Strategic Pricing in Cultural Organizations: Methodological and Managerial Reflections From the Case of the Swiss Science Center Technorama

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ABSTRACT

Our interdisciplinary study combines proven methodologies from arts management, pricing theory, and strategic marketing for a novel approach to audience development that draws on non-visitor analysis and strategic pricing decision-making. The findings presented here allow us to compare visitors and non-visitors and to look at other potential influencing factors such as distance, gender, age, and children in the household. It is shown that the van Westendorp method can be applied to cultural organizations to determine the optimum price and to extract further information for strategic pricing decisions.

Keywords: pricing strategy, cultural marketing, arts and cultural organizations, visitor and non-visitor research

1 Introduction

Managing arts and cultural organizations involves the often thematized challenge of balancing conflicting goals, often conceptualized as a dichotomy between economic and artistic considerations (Cray, Inglis, & Freeman 2007). Organizations, especially those subsidized and focusing on cultural participation – a cornerstone of Swiss cultural policy – face a conflict of objectives when it comes to strategic pricing. On the one hand, they seek social inclusion and advocate low entrance prices to encourage visitors. At the same time, they need to maintain organizational viability and economic sustainability (Althaus, Mueller, & Kundisch, 2023). Therefore, it is unsurprising that admissions issues have been widely discussed in arts management research and practice. However, less attention has been paid to the strategic pricing of arts and cultural organizations, particularly for the non-visitor group. This is surprising given that, traditionally, price is the only element of the marketing mix that directly influences revenue, while product, place, people, and promotion all relate to costs. Most importantly, price is a crucial success factor in attracting and capturing demand (Yeoman, 2009). The strong signalling effect of price raises the question of how visitors perceive the image of a particular arts and cultural organization (Schössler, 2019).

Receiving even less attention is the methodological question of how to determine the importance of the current price of a given service as a reason to visit (or not to visit) a venue, as well as the related question of what the optimum entry price is. To address this question, our interdisciplinary study combines proven methodologies from arts management, pricing theory, and strategic marketing, which we apply to a case study reach based on the Swiss Science Center Technorama. Notably, we draw on the methodology of van Westendorp (1976; see also Reinecke, 2009), adapting it to the cultural sector to understand better the potential of pricing strategies concerning non-visitors. To achieve this, our article focuses on the following research questions:

- Can the van Westendorp method be used to determine the optimum price for a cultural institution such as Technorama?
- Do factors such as distance from the venue, gender, age, price knowledge, and children in the household influence willingness to pay?
- How does empirical data of (non-) visitor pricing perceptions inform managerial decision-making?

The findings presented here allow us to compare visitors and non-visitors and to look at other potential influencing factors such as distance from the venue, gender, age, and children in the household.

In the following section, we present an overview of the background literature and elaborate on the model put forward by van Westendorp. In the methodology section, we describe the selected case

study as well as the design of the surveys we conducted in cooperation with Technorama. Subsequent sections discuss the study findings and elaborate on how the organization uses these for decision-making. We conclude by pointing out our paper's limitations, the potential of its insights for practical application in other cultural institutions, and the possibilities for further research.

2 Background Literature and Theoretical Framing

Price and Audience Development

Much academic and professional literature has examined visitors to museums, theaters, and festivals (Mandel, 2008; Renz, 2016, Wegner, 2016). However, owing to demographic and societal changes such as aging audiences, changing lifestyles, and increasingly diverse societies, understanding existing and potential audiences better remains challenging for marketing arts and cultural organizations (Hannich et al., 2024). In this context, visitor surveys are becoming an established practice in the cultural sector, though only arts and cultural organizations with sufficiently large budgets to afford more resource-intensive, non-visitor research (ibid).

Despite its practical relevance, including the context of attracting new audiences, the issue of pricing in arts and cultural organizations has not received much attention from researchers in recent years. Most scholarly discussion on pricing has focused on museum admission fees (e.g., Frey & Steiner, 2010). While some studies argue that the admission price is a crucial barrier to attendance, others claim that price reductions primarily promote (more) attendance among existing visitors. Nevertheless, it has been argued that introducing dynamic pricing in arts organizations could help build a broad and diverse audience (Labaronne & Slembeck, 2015). A fundamental issue at the heart of this discussion is the apparent consensus that demand for attendance in the arts and cultural sector is inelastic (i.e., the price of admission has little effect on the decision to visit a cultural institution) – an issue that has been explored particularly in regard to performing arts organizations. Seaman (2005), who has conducted a comprehensive review of the empirical literature over the past 40 years, concluded that this critical issue remains unresolved. In the wake of COVID-19, questions of strategic pricing in cultural institutions have regained momentum in the context of digital products and services and changing audience reception patterns (Hüttermann et al., 2021). In this light, new questions are being raised about determining better (e.g., empirically) one's own visitors' willingness to pay. Willingness to pay refers to the maximum price a buyer is willing to pay for a unit of a product or service (Allen, 2009). In the marketing literature, it is frequently linked to perceived customer value (Izogo, 2021).

Pricing Theory in the Marketing Literature

The marketing literature has long put forward methodologies in relation to pricing decisions. The van Westendorp method (1976), also known as the “price sensitivity meter” (Reinecke, 2009), was used to determine the optimal price and willingness to pay. The van Westendorp method, also known as the

Price Sensitivity Meter (PSM), is a market research method for determining consumers' willingness to pay for a product or service. It was developed in 1976 by the Dutch economist Peter van Westendorp and has since become a widely used tool for pricing. The PSM is based on the assumption that a customer's willingness to pay includes both a maximum price and a price range, within which purchases are not made due to prices being too high or too low (Simon & Fassnacht, 2016).

To determine price perception, the following four price points are queried (Chhabra, 2015):

Too cheap: At what price is this product so cheap that you would question its quality and not buy it?

Cheap: At what price does the product start to appear cheap, meaning when does it become a bargain?

Expensive: At what price does the product start to become expensive for you, so that it is not out of the question, but you would have to consider the purchase carefully?

Too expensive: At what price does the product become too expensive, so that you would no longer consider purchasing it?

These price points are queried openly, allowing respondents to specify any amount for each price point. The responses are displayed in a diagram as cumulative frequency distributions (Lipovetsky et al., 2011). The intersections of the graphs then determine the indifference price point (IPP), the optimal price point (OPP), as well as the lower and upper price limits (van Westendorp, 1976). The IPP describes the intersection of the cumulative distribution of the 'cheap' and 'expensive' graphs. At this point, consumers perceive the price equally as cheap and expensive (Simon & Fassnacht, 2016; van Westendorp, 1976). For example, at an indifference percentage of 20%, 20% of respondents perceive the price as "cheap" and 20% as "expensive." In this example, 60% of the respondents would perceive the price as normal. The intersection between the 'too cheap' and 'too expensive' graphs describes the optimal price point. Here, an equal number of respondents perceive the product as too cheap or too expensive (van Westendorp, 1976). At this price, consumer resistance to purchase is at its lowest (Reinecke, 2009).

The graphs from the first set of distributions for the indifference price point can be reversed, resulting in the distributions "not expensive" and "not cheap." When the reversed graphs are combined with the original "too - too" distributions, two new intersection points are obtained: the lower and upper price limits. The range of prices between these two points is referred to as the "range of acceptable prices" (van Westendorp, 1976). Below the lower price limit, willingness to pay significantly decreases due to the impression of poor product quality. Conversely, above the upper price limit, willingness to pay significantly decreases due to the high price (Simon & Fassnacht, 2016).

In summary, the van Westendorp method represents a valuable tool for determining consumers' willingness to pay for a product or service. It can assist companies in identifying a price that is acceptable to both consumers and the company. However, it is crucial to combine this method with other pricing methods and to interpret the results within the context of the specific situation of the company.

Against this background, our case study research addresses the often-neglected methodological question of how to determine the importance of the current pricing strategy as a reason to visit (or not to visit) a venue and, subsequently, the question related to the optimum entry price. To this end, our study combines proven methodologies from arts management, pricing theory, and strategic marketing for a novel approach to audience development that draws on non-visitor analysis and strategic pricing decision-making.

3 Methodology

Our research is based on the Swiss Science Center Technorama, for which data collection about non-visitors is conducted using a quantitative survey approach. Technorama is one of the most visited cultural institutions in Switzerland, with a sizable number of visitors from other European countries. Technorama is the biggest science center in Europe and a popular leisure destination, serving as an important cultural beacon in the canton of Zurich. It is also the largest extra-curricular science learning center in Switzerland. Its diverse range of exhibits, demonstrations, laboratories, and workshops enable all visitors – regardless of age, background, or education – to learn about natural phenomena in a relaxed and playful way.

From previous studies to the present research, a wide range of information about Technorama visitors was obtained from surveys conducted in 2014 and 2017 by researchers at the Zurich University of Applied Sciences (ZHAW). Technorama wanted to learn more about non-visitor perceptions, which led to the current study focusing on non-visitors rather than visitors. Figure 1 outlines surveys conducted in the past, the current survey on which this study is based (Wave 1 in 2019), and planned future surveys.

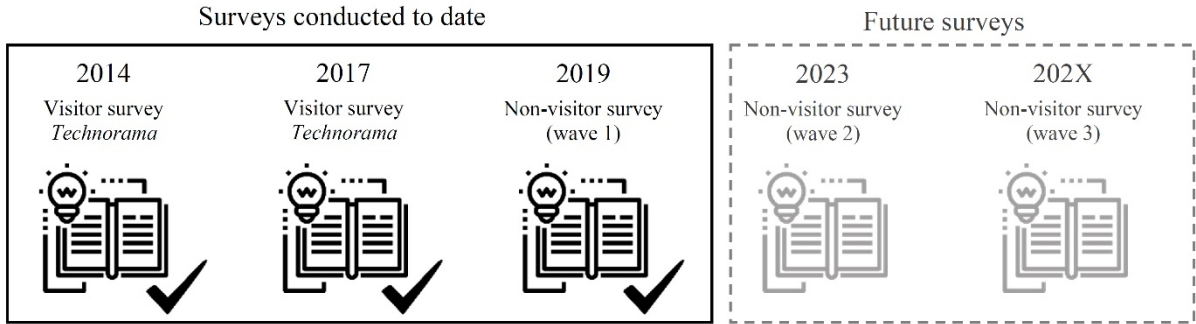


Figure 1 Overview of already-conducted and future visitor/non-visitor surveys

Survey Design

In contrast to the 2014 and 2017 visitor analyses, which were carried out using an online questionnaire, the non-visitor survey was conducted offsite at the locations of the “Technorama on Tour” traveling exhibition, which aimed to reach (non-)visitors in a neutral location. The presentation of Technorama on Tour in four large shopping centers in Eastern Switzerland provided an ideal platform for reaching non-visitors. The following figure shows our survey research design.

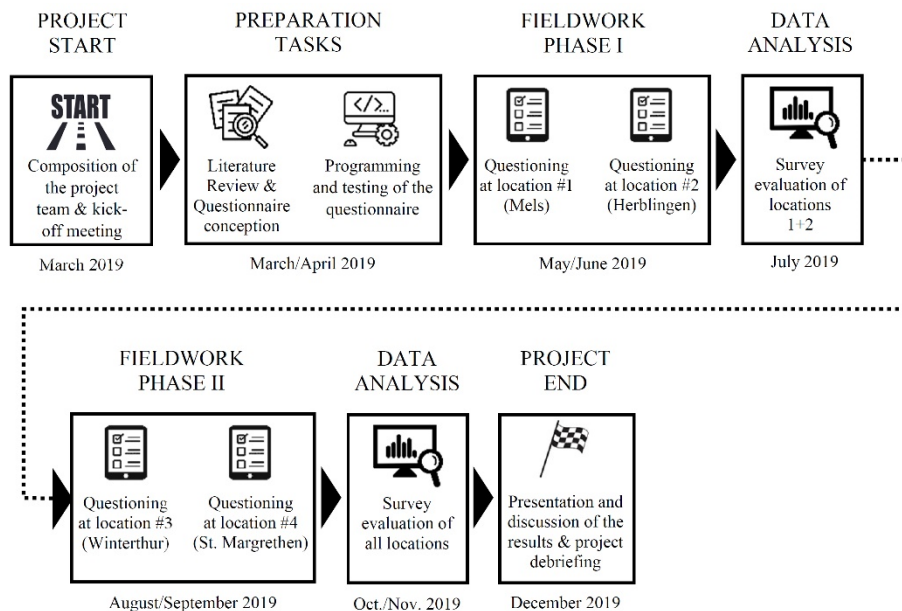


Figure 2 Research design of the non-visitor survey 2019

Data Collection

Survey participants were asked about their general leisure behavior and motivations for pursuing general free time activities. Questions about awareness of Technorama were used to divide survey participants into visitor and non-visitor groups. Additional questions were then asked about visiting habits and motives concerning Technorama. We aimed to establish – from people who had already visited Technorama at least once – their reasons for visiting, while people who had heard of Technorama but never visited were also asked for their feedback. Subsequent image questions sought to determine how those who had visited or at least had already heard of Technorama perceived the venue and what it offered the visitor. Survey participants were given the same or similar response options for these image questions as in the 2014 and 2017 visitor surveys. The statements to which visitors and non-visitors responded were composed with the aid of a semantic differential, among other things.

A further goal of the 2019 non-visitor survey was to present the planned Technorama park project, “Technorama Outdoors,” to survey participants to ascertain whether they could envisage revisiting Technorama in the future – or for the first time in response to the newly planned outdoor feature. This was followed by a classic net promoter score (NPS) survey based on Reichheld (2003) for all participants

who had already visited Technorama at least once. The survey was completed with socio-demographic questions and conducted between May and September 2019. To ensure that the sample was as large as possible and that a good cross-section of the population was reached, the days and times with the highest visitor frequency were chosen in all four shopping centers. The project team was on site for the non-visitor survey for 14 days.

Data Analysis

All responses were analyzed using SPSS 28. Visitor/non-visitor groups were segmented as follows: Survey participants were divided into two groups – visitors and non-visitors. The target group was then divided into three non-visitor groups to gain deeper insights into non-visitor preferences. All survey participants were asked at the beginning of the survey if they had heard of Technorama before the current traveling Technorama on Tour exhibition. Of the 432 survey participants, 215 (49.75%) answered “No,” which placed them in the “never visitors” group. The remaining 217 survey participants who answered “Yes” were asked if they had ever visited Technorama in person. Of these 217 people, 39 (18%) stated they had never been to Technorama despite hearing about it, also placing them in the “never visitor” group. This resulted in 254 (215+39) “never visitors.” To create a “no longer a visitor” category, the 178 people who stated they had already been to Technorama once were asked when their last visit to Technorama had taken place. Here, 56 (31.45%) said they had not visited for at least five years, placing them in the “no longer a visitor” group. For further analysis, an “almost a visitor” group was created from participants who resemble visitors to Technorama in socio-demographic terms but have not yet been to the venue.

In addition to the classic descriptive analyses, significance tests were conducted to determine whether differences existed between the various visitor groups. For questions that could be answered on a five-point Likert scale, mean comparisons were made using single-factor analyses of variance (ANOVA) with Bonferroni correction (Bonferroni post hoc test). Questions for which multiple answers were possible were tested using Pearson’s chi-square tests. For both methods/tests, a significance level of five percent ($\alpha = 0.05$) was chosen.

4 Findings

To segment the respondents, particularly in terms of their willingness to pay, we also build on previous studies conducted by the authors at Technorama on the Falk phenotypes (Falk, Heimlich, & Bronnenkant, 2008). These earlier visitor studies showed that the Falks’ facilitators phenotype forms the largest segment of Technorama visitors – those who should be more willing to pay for the people accompanying them, such as children, than for themselves. However, the results show that even a single priced group entry fee for adults and children was widely rejected. Approximately 75 percent of respondents answered “strongly disagree” to this question in the visitors’ and non-visitors’ groups.

Indeed, the results were so transparent that Technorama decided not to continue asking this at the last two survey sites, leading to a lower N for this question.

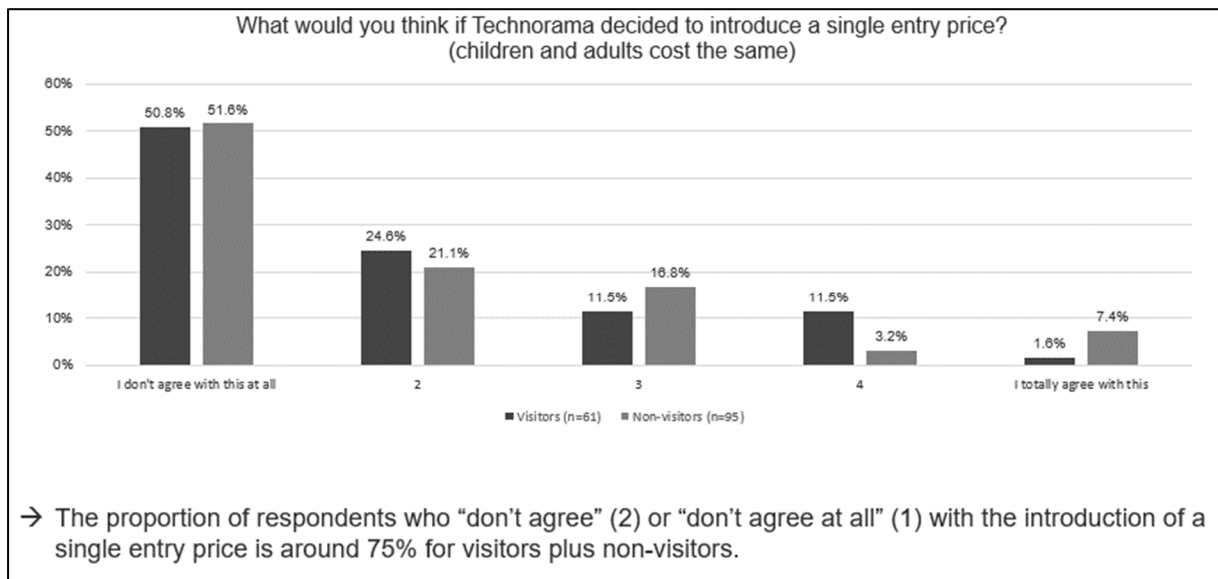


Figure 3: Acceptance of a uniform ticket price

The analysis of the indicated price points from non-visitors shows that the lower price limit is CHF 10.80 and the upper price limit is CHF 34.40. Thus, the price should fall within this price range to be accepted by consumers. Prices outside this range lead to a decrease in willingness to pay, either due to a price being too high or due to the impression of poor product quality at lower prices.

With an indifference price point (IPP) of CHF 20.20, it is only slightly above the optimal price point (OPP), which was determined to be CHF 19.80. According to Reinecke (2009), the small difference between these two price points indicates high price sensitivity among consumers.

Although the current entry price of CHF 29.- is still within the specified price range, it is significantly higher than the optimal price point (OPP), where consumer purchase resistance is at its lowest (Reinecke, 2009). However, this does not necessarily imply that the current price must be urgently lowered, as the van Westendorp method is only one method for determining consumer' willingness to pay. Other factors such as cost structures, competitive analysis, and the company's marketing objectives must also be taken into account in pricing decisions. Figure 4 shows the curves and price points for non-visitors.

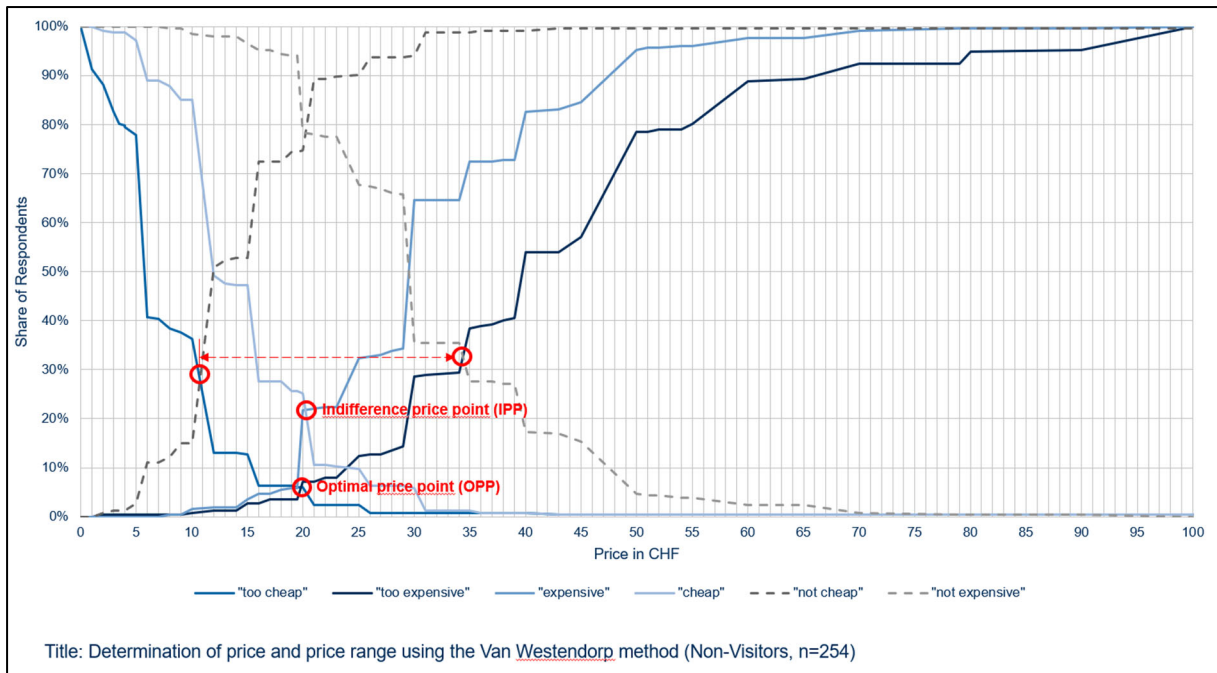


Figure 4: Determination of price and price range using the Van Westendorp method

The data collected allow comparisons by gender, age, children, and traveling distance from Technorama. Only three differences were found to be significant at the 0.05 level:

- Respondents from survey points geographically further from Technorama considered the entry price to be good value sooner/at a higher price than those living closer to Technorama.
- Females had a higher threshold price, below which they considered entry tickets good value or even too cheap to be perceived as high quality.
- Respondents with children in the household were more likely to consider the entry price expensive.

Respondents were also asked what they thought the current price range was.

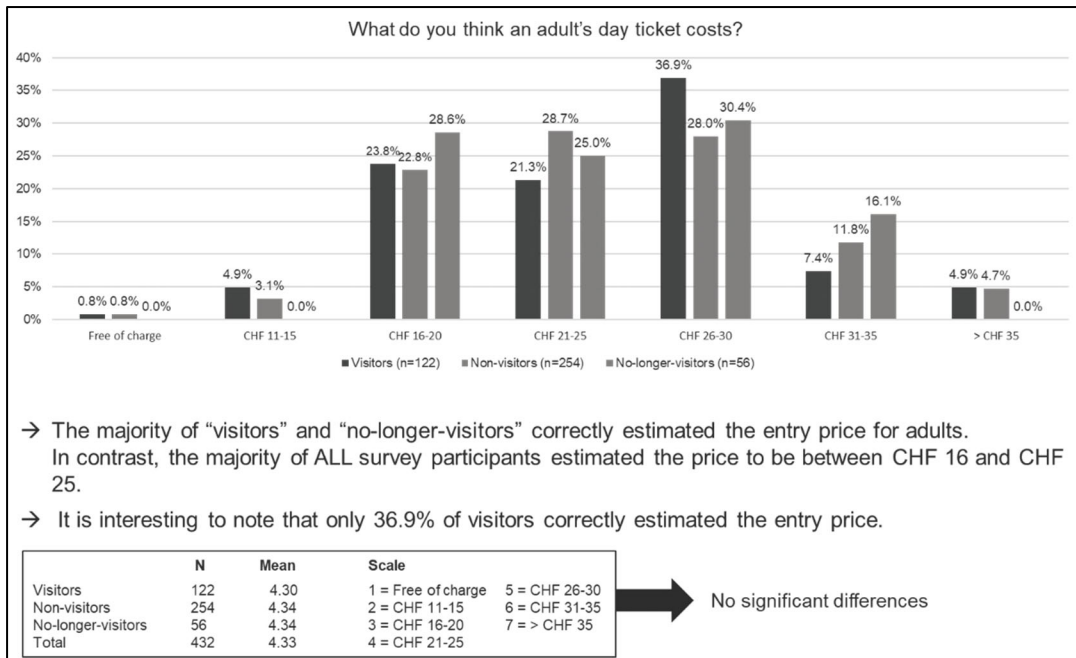


Figure 5: Results to the question, “What do you think an adult day ticket costs?”

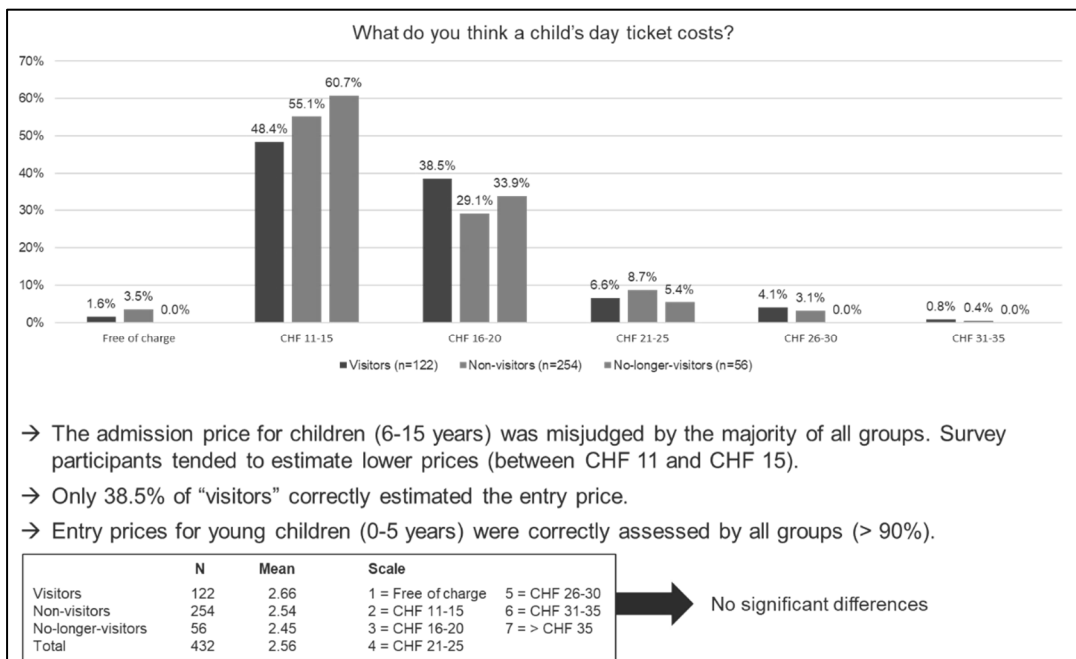


Figure 6: Results to the question, “What do you think a children's day ticket costs?”

Even among visitors, only 36.9 percent of respondents estimated the correct price range of CHF 26 to CHF 30, while 12.3 percent thought the prices were higher and 50.8 percent thought they were lower. In the non-visitor segment, only 28.0 percent estimated the correct price range, while 16.5 percent overestimated and 53.2 percent underestimated the entry fees. When considering (re-) visiting Technorama, the price image held by the average potential visitor differs significantly from the actual price.

5 Discussion and Conclusion

The first research question revolves around the suitability of the van Westendorp methodology in the context of cultural products and services. Our study shows that the van Westendorp method can be used in the arts and cultural sector and provide helpful information for cultural organization pricing decisions. It shows the optimum price and the price levels above or below which the offer is considered too cheap, cheap, expensive, or unaffordable. Such a method requires several specific questions in a quantitative questionnaire but no complicated statistical methods, and results are relatively straightforward to interpret, adding to its applicability within cultural organizations. Questions can be easily incorporated into regular visitor surveys or non-visitor analyses. The results will help predict how prices may impact the number of visitors (and associated revenue) and at what level to set entry prices.

Of course, our study has clear limitations. The number of responses in excess of 400 is substantial, but when split up into various subgroups, they become too small to achieve significant results. Furthermore, the van Westendorp method used in our study applies only to Technorama, so there is a clear potential for future research in other types of institutions and different contexts. We trust that our study finds broader applications in cultural organizations and expect the method to be useful in future research.

Our study found few significant differences in willingness to pay concerning our second research question. However, the findings still provide some guidance on which types of price differentiation are appropriate. The results clearly show that a uniform, fixed entry price will not be accepted by the large majority of visitors and potential visitors. This despite the fact Falk's phenotype facilitators form the largest visitor group at Technorama and these mainly visit for the benefit of those with them and not for themselves. The results of the van Westendorp method indicate a higher price sensitivity by people living close to the organization, in this case, the residents of Winterthur, where Technorama is located. Families also seem to have a higher price sensitivity, which could be addressed by introducing a group ticket for families. In addition, the results raise the question of whether the perceived price is more significant than the actual price when people make their leisure plans. Our study shows that most respondents – visitors and non-visitors – believe Technorama entry to be cheaper than it really is. As entry tickets are often sold “on the door” at Technorama, the price difference is only noticed once visitors arrive at the venue and it is too late to make alternative plans.

The strategy by Technorama to deliver an exceptional experience to visitors to justify its price structure seems promising based on this study's findings. For example, this is achieved by introducing special shows, lab experiences, the possibility to test and experience installations simultaneously, actively communicating educational value, and highlighting that Technorama is the largest out-of-school learning space for natural sciences in Switzerland. However, our study found no indication that entry prices should rise further.

Cultural organizations are typically characterized by limited marketing resources and often lack specific pricing expertise. At the same time, pricing decisions directly impact the number of visitors and resulting revenue, making such activity high-risk. In this situation, predicting the results of pricing decisions rather than relying on trial and error is a very valuable tool, but usually beyond the scope of cultural organizations. However, the suggested method could herald change – at least for existing visitors. To fully replicate our approach, it would be necessary to have an efficient way of reaching non-visitors as well. One solution might be collaboration with companies sponsoring the cultural institution, as was done in partnership with the shopping centers in our study.

6 References

- Allen BW, Weigelt K, Doherty NA, Mansfield E. 2009. *Managerial Economics* (7th ed). W. W. Norton & Company: New York.
- Althaus, Maïke, Stefanie J. M. Mueller, and Dennis Kundisch 2023 What Price Culture? – A Taxonomy of the Admission Pricing Policy at Museums. *International Journal of Cultural Policy*: 1–16.
- Cray, D., L. Inglis and S. Freeman. 2007. “Managing the Arts: Leadership and Decision Making under Dual Rationalities.” *The Journal of Arts Management, Law, and Society* 36 (4): 295–313. <https://doi.org/10.3200/JAML.36.4.295-314>
- Falk, John H., Joseph Heimlich, and Kerry Bronnenkant 2008 Using Identity-Related Visit Motivations as a Tool for Understanding Adult Zoo and Aquarium Visitors’ Meaning-Making. *Curator: The Museum Journal* 51(1): 55–79.
- Frey BS, Steiner L. 2010. Pay as you go: A new proposal for museum pricing, Working Paper Series - Working Paper No. 485, Institute for Empirical Research in Economics, University of Zurich.
- Hannich, F., Labaronne, L., Schedler, R., Leuschen, L. und Heierli, R. 2024. «Comparing Visitors’ and Non-Visitors’ Motivations and Sociodemographics—The Case of the Swiss Science Center Technorama”. *Journal of Cultural Management and Policy*, 2024:1 (upcoming)
- Hüttermann, Marcel, Frank Hannich, Leticia Labaronne, Lara Leuschen. 2021 Events Schweiz 2021. 35, application/pdf. ZHAW Zürcher Hochschule für Angewandte Wissenschaften. <https://digitalcollection.zhaw.ch/handle/11475/23954>, accessed November 28, 2023.
- Ernest, Emeka, Izogo., Mathias, Egede, Elom., Mercy, Mpinganjira. (2021). Examining customer willingness to pay more for banking services: the role of employee commitment, customer involvement and customer value. *International Journal of Emerging Markets*, 16(6):1176-1201. doi: 10.1108/IJOEM-10-2019-0850
- Labaronne, Leticia, and Tilman Slembeck 2015 Dynamic Pricing in Subsidized Performing Arts. *International Journal of Nonprofit and Voluntary Sector Marketing* 20(2): 122–136.
- Mandel, Birgit (Hg.) (2008): *Audience Development, Kulturmanagement, Kulturelle Bildung. Konzeptionen und Handlungsfelder der Kulturvermittlung*. München, kopaed Verlag
- Reinecke, S., Mühlmeier, S. & Fischer, P. H. (2009). Die van Westendorp-Methode: Ein zu Unrecht vernachlässigtes Verfahren zur Ermittlung der Zahlungsbereitschaft? *Wirtschaftswissenschaftliches Studium: WiSt*, 38(2), 97-100
- Renz, T (2016): Nicht-BesucherInnen öffentlich geförderter Kulturveranstaltungen. Der Forschungsstand zur kulturellen Teilhabe in Deutschland . In: *KULTURELLE BILDUNG ONLINE*: <https://www.kubi-online.de/artikel/nicht-besucherinnen-oeffentlich-gefoerderter-kulturveranstaltungen-forschungsstand-zur> (letzter Zugriff am 11.10.2021).

Seaman, Bruce Alan, Attendance and Public Participation in the Performing Arts: A Review of the Empirical Literature (August 2005). Andrew Young School of Policy Studies Research Paper Series No. 06-25

Schössler, T. (2019). Preispolitik im Kulturbetrieb. Eintrittspreise erfolgreich gestalten. Wiesbaden: Springer

Van Westendorp, P. H. (1976): NSS-Pricesensitivity-Meter (PSM) – A New Approach to Study Consumer Perception of Prices, Proceedings of the 29th ESOMAR Congress, 139-167.

Yeoman I, McMahon-Beattie U. 2009. Revenue Management and Pricing. Case Studies and Applications. Cengage Learning EMEA: London.