

Complementing Scott: Justifying Discounts for Low-Income Groups through an Economic Lens

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EXECUTIVE SUMMARY: In a recent article in this journal, Scott (2014) documented the social welfare rationale for offering discounts to the economically disadvantaged. However, he acknowledged the conventional view is that discounts equate to reduced revenue and more tax support which makes them difficult to sustain in many communities. The goal of this paper is to offer an alternative justification for discounts, which suggests that rather than lowering revenues, discounts are a vehicle for increasing revenues. The paper begins by explaining the concept of price elasticity in non-technical terms, its limitations, and the factors that influence it, since this is the principle upon which the economic justification is based. Two methods managers can use to estimate elasticity are described and illustrated: Review of the historical record and willingness-to-pay. The elasticity principle is operationalized by park and recreation managers through the use of differential pricing by which different users are charged a different price for the same service based on their different price elasticities. This means that discounts can generate net revenue for agencies they would otherwise forego. If there are no capacity constraints then, as long as a discounted price exceeds the variable costs, revenue accruing from those who are responsive to the discount price who would not participate at the regular price, is net gain. The paper concludes by describing the three conditions that must exist if discounts are to be effectively implemented: (i) They must not arouse antipathy and resentment from those paying the regular price; (ii) there should be no opportunity to engage in arbitrage; and (iii) there is horizontal equity, meaning that all low income users should pay the same price for the same service at the same time and location.

KEYWORDS: *Discount; low-income groups; price elasticity of demand; differential pricing*

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In a recent *JPR* article, my good friend and colleague, David Scott, made a passionate exhortation for inclusion of low-income residents: “Professionals associated with recreation and parks and their allies must proactively work to change how agencies currently operate and implement inclusive systems and strategies to ensure that leisure services are available to all Americans regardless of their socioeconomic status” (Scott, 2014, p. 1). Prominent among the “six major strategies” for addressing the economic inequality he documents are to couch inequality as an “environmental justice and civil rights issue” and “make services affordable.” Scott’s exhortation will resonate with many in this field, but professionals have limited power to implement some of the strategies he advocates. Much of that power resides with elected officials who exert it through policies, ordinances and control of the budget.

Scott (2014) acknowledged “the anti-progressive political climate in contemporary America” (p. 6) and notes: “In these fiscally challenging times, it is understandable that there is resistance by recreation and park agencies to reduce fees and charges to make programs and services affordable to people with low income” (p. 8). I concur with Scott that in the prevailing political climate the social welfare justification that he articulates for reducing prices for low-income residents will be resisted by elected officials in many (perhaps most) communities. However, I believe that if the issue is viewed through an economic lens, then Scott’s goal can realistically be accomplished. This approach offers an alternative route to the same end, but it advocates discounts because they maximize revenue. This is the antithesis of revenue reduction, which is conventionally assumed to be the outcome of a social welfare justification for discounts.

Hence, this paper is intended to complement Scott’s work. The first section of the paper describes price elasticity of demand in some depth, since many park and recreation professionals may have limited familiarity with it and it is the scaffolding on which the concept of differential pricing (i.e. the use of price discounts and premiums) is built. The paper’s *raison d’être* is to demonstrate that discounts can be justified as a mechanism for maximizing revenue.

The “Law” of Market Demand

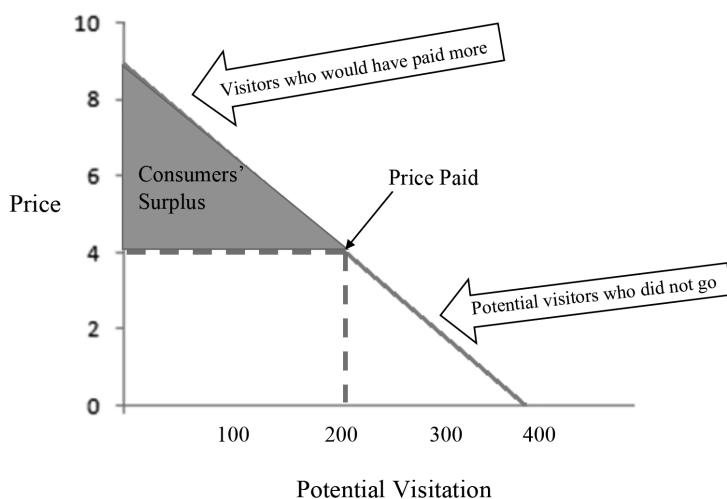


Figure 1. The Law of Market Demand and Consumer Surplus at a Swimming Pool

Economists describe the effects of changes in price on level of participation and revenues by the “law” of market demand. This is illustrated in Figure 1, which represents the visitation that would occur at each price point. It shows that, other things being equal, the quantity demanded of any service falls (rises) as its price rises (falls). A demand curve is simply a statement of the amount of a leisure service that will be purchased at a specific price. Thus, if the admission price to the swimming pool is \$4, then the average number of daily visitors will be 200. The curve shows that if admission was free then 400 would be attracted, while if it was raised to \$9, then nobody would show up. The 200 users paying \$4 each would generate \$800 in revenue. If \$5 were charged, there would only be 160 admissions, but the total revenue would remain the same. All other potential prices below \$4 or above \$5 would yield less revenue.

The concept that demand will fall when price rises is predicated on two assumptions. First, that buyers’ actions are rational, so they always act to maximize their utility. That is, they will always use more of a service when the price falls, because the lower price enhances the benefit/satisfaction value they derive from the purchase. However, it has been consistently demonstrated in recent decades that purchasers engage in cognitively processing multiple psychological and behavioral cues and frameworks in addition to the actual price which may result in actions that do not maximize utility (McCarville, 1990; Crompton, 2011).

The second assumption is that price is the only—or at a minimum, the most significant—determinant in a purchase decision. This assumption has not been supported by empirical studies in the public leisure field. For example, an experimental study of price elasticity at five recreation centers concluded: “Price is only one and in the majority of cases a minor, factor in the decision to participate in sport and physical recreation” (p. 19) and “Non-participants did not regard the cost of admission as a significant obstacle to participation” (Scottish Sports Council, 1993, p. 30). Similar findings have been reported by others (Howard & Crompton, 1984; Coalter, 1993; Kay & Jackson, 1991; Taylor, Panagouleas & Kung, 2011).

Thus, as Scott recognizes, in the “real world” there are features other than price that people evaluate when they purchase leisure services. They may consider changes in the attributes of a service such as refurbishment of a facility or the equipment; changes in program leadership; how well it is delivered (reliability, responsiveness, empathy, assurance) (Parasuraman, Zeithaml, & Berry, 1985); when it is available or scheduled; and convenience of its location. Beyond these features of a service, other factors influencing demand may include the buyers’ levels of discretionary income; the amount of promotion; accuracy of information; cost of search time; cost of participation and travel time; cost of equipment, clothing and footwear; and cost of substitute services offered by competitors.

Economists may respond to the challenges in constructing demand curves posed by these other variables in two ways. First, they may disregard them, focus exclusively on the likely impact of price on demand, and proceed on the dubious premise that other factors remain constant so “all else is equal.” Alternatively, they may incorporate a set of these attributes as constraints into their models. However, these variables are in a constant state of flux and are difficult to quantify. This makes the accuracy of economists’ analyses notoriously tentative. For example, the authors of an analysis of the effects of price on visitation to a set of rural parks and recreation facilities observed:

Other factors (than price) that may affect demand cause complications and, in order to isolate the influence of admission prices, we need to take account of the effect of these on visitors. To do this, it is necessary to know what the most important influences are, what effects they have, and how they change over time. In this analysis, the influences of weather, incomes, gas costs, site promotion, and special events are analyzed, where possible, together with a range of other variables. This is not a straightforward exercise and it has not often been attempted in the past. This has meant that previous judgments about the effects of admission prices have been greatly misleading, since they have not isolated

the influence of many other factors from that of price changes (Bovaird, Tricker, & Stoakes, 1984, p 6).

At this point, leisure managers may ask: If demand curves have to be so carefully and comprehensively qualified are they too complicated and too arbitrary to be useful in practice? (Clawson & Knetsch, 1966). This is a reasonable reaction. However, they do have conceptual value because, notwithstanding these limitations and difficulties with developing and using demand curves, the basic premise that as a price goes down visitation and use will increase is appropriate in many “real-world” contexts. This makes the concept a useful starting point for reviewing the impact of price on different target markets.

Consumers’ Surplus

When a price for a leisure service is established, groups of users will have different levels of sensitivity to it. Invariably, there will be some who would be willing and able to pay more than the price being charged. This potential revenue which is “left on the table” is termed consumers’ surplus. A consumer’s surplus is the difference between the price that a user is willing and able to pay for a service, and the price he or she actually pays. In the hypothetical example shown in Figure 1, 40 of the pool users would have paid \$5 if the price had been set at that level; another 40, \$6; another 40, \$7; and another 40, \$8. Thus the total consumers’ surplus would be \$400: $(40 \times \$1) + (40 \times \$2) + (40 \times \$3) + (40 \times \$4)$.

The Concept of Price Elasticity

Demand curves have different gradients and shapes depending on how sensitive users are to different price levels. This price sensitivity is termed elasticity. Price elasticity of demand is defined as the percentage change in use of a service, resulting from a given percentage change in its price. That is, if price is raised (or lowered) by a given percentage, elasticity is a measure of the percentage decrease (or increase) in use.

Illustrations of Price Elasticity of Demand

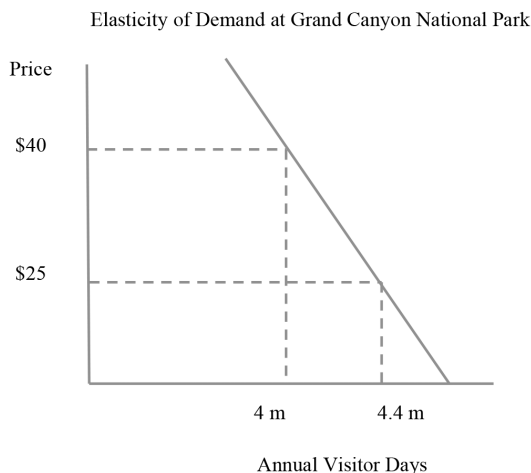
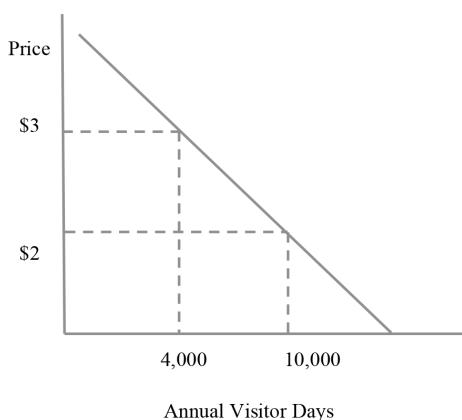


Figure 2.a. Relatively Inelastic Demand

Elasticity of Demand at an Urban Recreation Center

**Figure 2.b.** Relatively Elastic Demand

Figures 2a and 2b illustrate the difference between inelastic and elastic demand. Figure 2a illustrates what might be expected to occur if the price of an admission permit at Grand Canyon National Park was raised from its current level of \$25 per vehicle to \$40. The permit is good for a week and may be used for multiple day visits into the park during that period. At the current fee, there are 4.4 million per person day visits. When the price is raised to \$40, it is projected that there would be 4 million day visits and annual revenue would rise from \$18 million to \$27 million. Thus, raising the price by 60% would result in a day visit reduction of only approximately 10 percent, and in a 50 percent increase in revenue. This target market is relatively insensitive to price increases. Where the visitation declines by a smaller percentage than the price increase, demand is said to be *inelastic*.

Figure 2b illustrates the opposite case. In this scenario, the price is for a hypothetical youth after-school basketball program in an urban recreational center. When the price was \$2, there were 10,000 participant days (i.e., approximately 50 youth per day on average for the 200 school days). When it was raised to \$3, the number dropped to 4,000 (i.e., approximately 20 per day) and annual revenues declined from \$20,000 to \$12,000. This target market was sensitive to the price increase. Visitation declined by a larger percentage (60%) than the price increase (50%). In such cases demand is said to be *elastic*.

The dividing line between relatively elastic and relatively inelastic demand is where changes in price are exactly offset by proportionate changes in use, so total revenue remains constant. A demand curve for public leisure services is usually relatively elastic in some visitation and price ranges, and relatively inelastic in others. For example, in Figure 2b if the existing price was \$3 and it was reduced by 33% to \$2, then visitation would increase 150% from 4,000 to 10,000 and revenues would increase 67% from \$12,000 to \$20,000. Demand at this point on the curve is highly elastic. However, if the existing price was \$2 and was increased by 50% to \$3, there would be a 60% decrease in both visitation, from 10,000 to 4,000, and in revenues from \$20,000 to \$12,000. This is a much less elastic response.

Factors that Influence Price Elasticity

There are four main factors that influence price elasticity: proportion of the composite price that the use price comprises; availability and relative price of substitute services; users' income levels; and the existence of a strong price-quality relationship. The monetary

price paid for a leisure service is only one component of the composite price i.e. a user's total expenditures (Gratton & Taylor, 1995). Other variable components of the composite price include travel costs; costs incurred while participating such as equipment rental, and food and drink consumed on site; and the opportunity cost of time comprised of preparation time, travel time to the site, time spent engaging in the activity, travel time from the site, and subsequent "cleaning" time (e.g., laundry or equipment cleaning or repairing). These costs are incurred every time an individual engages in an activity. In addition, individuals incur fixed costs such as expenditures on equipment, clothing, and footwear. Total composite price is comprised of both variable and fixed costs. However, only price changes in the variable components are likely to influence a participant's decision, because the fixed costs were previously incurred. The fixed costs are "sunk costs," that is, they are irrecoverable and as such it is not rational to consider them in future decisions.

The illustration in Figure 2a suggested that increasing the entrance price at the Grand Canyon National Park from \$25 to \$40 would likely have minimal impact on visitation. In that case, the cost of traveling to the park by automobile or airplane; the cost of accommodations, food, and drink both en route and in or near the park; and the opportunity cost of several days of traveling and experiencing the park, may amount to thousands of dollars for many visitors. *When the price of admission is such a small proportion of the composite price, then it is not likely to lead to a meaningful change in demand.*

Price elasticities for some activities may be misleading if only the admission price is considered. If other components of the composite price which constitute a larger proportion of it, such as airfares or gasoline prices, were to change by 60% like the admission price in Figure 2a, then it is likely the negative impact on visitation would be much more substantial. These changes are completely beyond the control of leisure managers but, nevertheless, may have a substantial impact on demand.

The dominant role of composite price was empirically confirmed in a study of the contributions of economic factors to attendance declines at national parks: Between 1993 and 2010, visitor attendance at the 58 nature-based parks in the National Park system declined 7%. When allowance was made for increases in the U.S. population during this period, the per capita decline was 19%. An analysis of economic factors contributing to this decline demonstrated that the influence of increases in visitor entrance fees was small and demand was very price inelastic: "If simple revenue generation is a goal, the national parks probably could increase entry fees without having major impacts on visitation" (Stevens, Moore, & Markowski-Lindsay, 2014, p. 162). In contrast, the impact of large increases in gas prices during this period, while household incomes had stagnated or declined, was substantial. The average entry fee at the parks was \$12.77 per vehicle, while the average spending for visitor groups who stayed in a motel outside the parks was \$262 per day. As the authors noted "Crudely estimated then, a 10-day family trip to visit a major national park might cost over \$2,600" (p. 161). They observed, "The visitation impacts of fees [were] small because, for most people, the entry price is small relative to total cost" (Stevens, Moore, & Markowski-Lindsay, 2014, p. 160). These findings reinforced earlier studies that reported similar results (Walsh, Peterson, & McKean, 1989).

A second factor that determines elasticity is the *availability and relative price of substitute services*. If a similar service of comparable quality is offered by another supplier, then a substantial increase or decrease in the agency's price relative to the alternative supplier's price is likely to lead to a substantial change in demand for the service. The reverse situation also applies (i.e., a change in an alternative supplier's price is likely to have an impact on demand for an agency's service).

The fewer substitutes from which a participant can select, the more inelastic the demand is likely to be. More substitutes generally means participants will be more apt to resist an agency's price increases. Importantly, this refers to the number of substitutes of which participants are aware. Frequently, they have incomplete information about all the leisure service options available and may not know of all the acceptable alternatives.

There are two other dimensions of substitutability that influence elasticity. First, the more loyalty or affinity individuals feel toward other participants, program leaders, or particular facilities, the less substitutable these services become. Such unique or salient features differentiate a service from competitors, making demand more inelastic. Second, even if there are no substitutes, demand could be fairly elastic if the service is not an important element of an individual's life style. The more it is perceived as being necessary to well-being and quality of life, the more inelastic demand becomes.

Income level of the target market is a third factor that determines elasticity. The greater the level of affluence, the less likely a price adjustment will lead to a change in use. Participants become more sensitive to price when the expenditure constitutes a larger proportion of their budget. A corollary of this factor is that it challenges the contention that demand curves are indicators of utility (i.e., measures of the amount of benefit/satisfaction derived from a purchase). A \$5 price is a much more substantial investment to someone earning a minimum wage than to an executive earning \$100,000 a year. The utility interpretation of a demand curve suggests the benefit/satisfaction each receives is the same. However, it seems reasonable to postulate that since the price is a much higher proportion of income, then benefit/satisfaction derived has to be higher before the minimum wage person would be tempted to purchase a service.

A final influence on elasticity is the existence of a *strong price-quality relationship*. This suggests that demand is more inelastic for leisure services if people use price as an indicator of a service's level of quality. In these cases, an increase in price may be viewed positively as signaling an increase in quality (Crompton, 2010).

The different elasticities shown in Figures 2a and 2b are explained by these four factors. At Grand Canyon the composite cost in time, effort and money of getting there is high compared to the admission charge; Grand Canyon is unique, there is only one, so it has no direct substitutes; surveys show its visitors are affluent; and a higher price would signal or confirm that it is a high quality attraction.

In contrast, at the urban recreation center the entrance price is likely to represent a relatively high proportion of the total monetary costs associated with a visit, and its proximity means the opportunity cost of time will be lower; there may be several substitute opportunities available at a lower price; the target population is assumed to be relatively poor; and the clientele are likely to have had regular exposure to it, so do not need to use price to infer its quality.

Estimating Elasticity

There are two "hands-on" approaches managers can use to estimate price elasticity: Review of the historical record and willingness-to-pay. These tools supplement rather than supplant the intuition and experience of managers. Analysis of historical trends uses actual data, but they may not accurately predict reaction to a price change since the environmental contexts may be different. Accordingly, the example given below shows the review can usefully be supplemented by asking a sample of current users a few critical questions that will help guide the price charge decision. The historical approach requires agencies to maintain detailed records of the impact on use when past price increases occurred. Electronic technology makes this relatively easy to do, but many public park and recreation agencies have not customized the technology so it incorporates data that would facilitate such analyses. The advantage of the willingness-to-pay approach is that it solicits information on elasticity directly from existing users, rather than relying on what happened in the past. The technique's disadvantage is that respondents indicate their behavioral intentions, and their intentions may differ from their actual behavior.

Review of the historical record. This approach assesses the likely impact of a new price by reviewing the sensitivity of users to past price changes. Figure 3 shows the historical reactions to price increases during a festival's fifteen years of operation (Crompton & Love 1994). The figure shows the event was characterized by a remarkable level of price inelasticity. With the exception of the last price increase to \$6 in Year 13, every year in which the admission price was raised, the attendance increased substantially. In year 13, there was a 3% decline in attendance, but the increase from \$5 to \$6 represented a 20 percent increase in price. Figure 3 shows there was no price increase in years 14 and 15. Nevertheless, the decrease in attendance in those years was substantially greater than that in Year 13, suggesting that price may not have been a prime reason for the slight attendance decline in that year. The historical evidence suggests that the festival's visitation had not been adversely affected by increases in price.

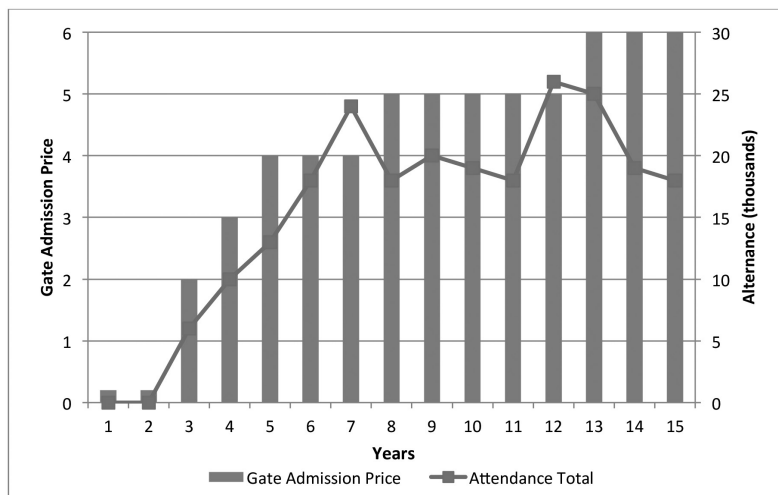


Figure 3. Historical Record of Attendance Total and Admission Price at a Festival

This festival was organized by a nonprofit organization. It had two primary goals: to generate awareness for its mission of restoring historical properties and to raise revenue to support that mission. Given that maximizing revenue was a primary goal, managers explored the potential for raising price again in year 16.

The historical review was supplemented with information derived from surveying a sample of visitors. The survey provided six valuable insights:

- Forty-nine percent of attendees had not visited any other festival in the previous two years, while only 19% had been to three or more other festivals in that period. This suggested that many visitors did not perceive a direct substitute experience to be available. Further, 40% of those who did go to another festival named the same alternative. Its admission price was \$12.95, over double the existing price at the festival of interest.
- The survey found that 47% were first-time visitors, suggesting that they had no firm price expectation stemming from previous experiences. Others had the \$12.95 alternative as part of their expected price for admission to a major festival. Thus, the existing \$6 price was unlikely to be firmly established in memory as the “expected” or “fair” price.
- The \$6 price accounted for only 8% of the average total trip expenditures of out-of-town visitors. It seemed unlikely that an increase in admission price would deter them when it was such a small proportion of total costs.

- Almost 60% of visitors reported household incomes over \$70,000, so they were relatively affluent.
- Given that 47% were first-time visitors, it was likely that for some a higher price would be used as an informational signal confirming this was a high quality festival.
- Visitors were given a five-point value-for-money scale ranging from very poor value to very good value and responded to the following question: "Given the admission price my group paid, our experience at the festival was...". 60% reported it was good or very good value; 32% fair value; and only 8% poor or very poor value (Crompton & Love 1994).

These data led the organization to raise the price 33% from \$6 to \$8. Their judgment proved correct in that attendance increased in year 16 from 19,000 to 21,000.

Willingness-to-pay. When the Corps of Engineers implemented fees for the first time at some of their reservoir parks, they surveyed a sample of visitors to identify the day-use and annual pass fees they should charge. Each respondent received one of the 50 options shown in the matrix in Table 1. He/she was asked: "If the fee was \$__ per vehicle per day or \$__ per vehicle for an annual pass, which of the following options would you choose?" Respondents were given three options: pay the per-vehicle per day fee; pay for an annual pass; or indicate they would not visit the site anymore (Reiling, McCarville, & White, 1994).

Table 1

Projected Revenue at Alternative Fee Levels for Harry S. Truman Lake

Annual Fee	Daily Fee				
	\$1	\$2	\$3	\$4	\$5
\$10	224,960	248,130	227,909	223,275	208,530
\$20	289,204	343,759	313,217	255,292	210,637
\$30	257,609	310,479	247,709	140,705	78,989
\$40	244,128	337,019	250,026	160,927	78,989
\$50	269,194	397,682	320,168	206,003	91,627

Results in Table 1 show that at Lake Harry S. Truman maximum revenue would be raised if the annual pass was \$50 and the day fee was \$2. The results show that the loss of revenue associated with setting fees too high would be greater than the revenue lost by setting them too low. That is, the revenue projections in the \$1 day fee column are substantially greater than those in the \$5 column, across all the given annual fee options. The data suggest that the reaction of many respondents to increasing the existing price from \$0 to \$5 would be to cease visiting the site.

It was recognized that the projections in Table 1 were minimal estimates of revenue for two reasons. First, they reflected respondents' behavioral intentions. Some who indicated they would cease visiting likely would reconsider the decision if they failed to find an alternative substitute. Second, when asked their willingness to pay, some people are likely to engage in "strategic bidding." That is, they report an unwillingness to pay either the day fee or to purchase an annual pass with the expectation that this will dissuade managers from implementing the fee program, when in fact their real response is that they would pay the fee. They seek to influence the outcome by not revealing their true reaction, because it is in their self-interest to give false responses.

This proved to be the case with this study at Truman Lake. Across all 50 options, almost half the visitors checked option 3, that is, they would no longer visit the site. However, a follow-up study reported that, this simply did not occur. Indeed, three years after the fee program was implemented visitation at the lake had increased by 16 percent (Calkin & Henderson, 1997).

The Rationale for Differential Pricing

A single price for all users is an imperfect compromise because users differ in both their willingness and ability to pay for a leisure service, and the amount of value they attach to it. Hence, their elasticities also differ. Most agencies seek to create a price structure that aligns with these differences by offering discounts to those who are likely to have difficulty in paying the regular price, and charging premiums to capture consumers' surplus from those who are willing to pay more for additional increments of benefit.

This strategy of charging different users a different price for the same service, even though there are no proportional differences in the cost of providing the service, is termed price segmentation in the marketing field and price discrimination in economics. However, both of these terms have exclusionary connotations that are contrary to the inclusiveness which is sought in the delivery of public leisure services. Accordingly, in this context the term differential pricing has been adopted (Howard & Crompton, 1980).

Differential pricing balances the weights assigned to each of the two principles that guide all public leisure service pricing decisions. The Benefit Principle states that those who benefit from a public service should pay a price that covers the cost of delivering the service. Thus, for example, since the benefits associated with an adult softball league in a middle-class suburb are likely to accrue almost exclusively to the 1% of residents who play in it, they may be expected to pay a price that covers all costs because the other 99% of residents receive no benefit from the service. However, the Ability-to-Pay Principle directs that as far as possible no residents should be excluded from participating because they lack the funds to do so. If a discount is not offered to the economically disadvantaged, then one of two undesirable outcomes will occur: (i) prices will be set at a level that is too high for them so those whose need for the service may be greatest are effectively excluded which abrogates the Ability-To-Pay Principle; or (ii) to preclude such exclusion prices are set at a low level for all, resulting in a large consumers' surplus among those who could pay more, the probability of inappropriate income redistribution, and abrogation of the Benefit Principle.

As Scott (2014) noted, in some communities when discounts for the economically disadvantaged are proposed based on social justice arguments, there is political resistance. The source of the resistance may be ideological or pragmatic. The political reality for many elected officials is that they are unlikely to be re-elected if they raise taxes. Hence, they search for areas where tax subsidies can be reduced.

Park and recreation managers frequently are exhorted by elected officials "to operate like a business," by which they mean reduce costs and increase revenues so the agency's subsidy from taxes is minimized. Typically, it is relatively difficult to communicate with economically disadvantaged groups; they are less leisurely literate; and they are more price sensitive. Because these factors make them costly to service and because they generate relatively low amounts of revenue, it is tempting to withdraw from the commitment to ensure services are accessible to them in order to appease the pressures to reduce tax subsidy.

In this climate, discounts for the economically disadvantaged are vulnerable to being discontinued. If this occurs, then an agency no longer serves all residents in the community. If that issue is framed as a trade-off between financial and access objectives, then the latter will often be compromised. However, if the issue is presented to elected officials through an economic lens, rather than from a social justice perspective, it is likely to be more palatable and result in discounts being supported. There are three prongs to the economic case.

First, a substantial empirical literature has verified the aphorism: you are, what you were, yesterday. As Scott (2014) notes, "Early childhood experiences in leisure tend to carry over into adulthood" (p 7). If people do not acquire leisure skills in their formative years, it is unlikely they will participate in their adult lives (Scott & Willis, 1998). Thus, discounting to encourage youth to participate is an investment in the field's future economic viability. However, this argument is unlikely to resonate with those elected officials whose focus is on short-term re-election, rather than on the long-term well-being of their constituents.

A second economic prong is to articulate the economic consequences of not having the economically disadvantaged engage in leisure services. These may be framed, for example, in terms of savings in health care costs from alleviating obesity, perhaps quoting from the U.S. Surgeon General: "Americans can substantially improve their health and quality of life by including moderate amounts of exercise in their daily lives" (U.S. Department of Health and Human Services, 1996, p 3) or, "Health benefits appear to be proportional to the amount of activity; thus every increase in activity adds some benefits" (U.S. Department of Health and Human Services, 1996, p 2).

Similarly, the potential of recreation programs for alleviating juvenile delinquency was the primary rationale for establishing recreation as a public service in the field's formative years (Crompton & Witt, 1999). A comparison of the subsidies provided to encourage youth to engage in a park and recreation agency's programs with the costs incurred when they enter the criminal justice system may be used to frame the economic case.

However, the strongest economic argument is the different elasticities of users, which means that discounts can generate net revenue for agencies they would otherwise forego. Differential pricing is a market oriented response to users' heterogeneity that enables a park and recreation agency to increase both its revenues and the number of participants using a service. It means finding credible and sustainable ways to serve different segments at different prices.

The ultimate manifestation of differential pricing would be to set a customized price which would be the maximum each individual was willing and able to pay. Clearly, that is administratively non-feasible, but it is feasible to segment users into price sensitive groups enabling managers to customize a price that is most appropriate for users in each segment. Establishing a range of prices that is sensitive to the maximum each group of users is willing and able to pay will yield the most revenue. Consider the following hypothetical example:

A large outdoor public swimming pool that opens for the summer months charges an admission price of \$7 per person for all who are 4 years of age or older. On average, the pool receives 200 visits a day. Almost all of its costs are fixed: debt charges, heating, number of lifeguards, front desk personnel, maintenance costs, etc. For the most part, these costs remain the same irrespective of whether 200 or 300 people visit the pool. For an economically disadvantaged family of five, \$35 for admission is not feasible so they are excluded. If a discounted price of \$3 is made available to the economically disadvantaged so the family of five pays \$15, then an additional 100 visits a day from among this group would occur. That would translate to over \$2,000 a week in additional net revenue the park and recreation agency would receive which would not be forthcoming without the discount.

This accomplishes the access goal, but uses an economic framework to make it more palatable to those who are more focused on financial outcomes. Most leisure facilities have high fixed costs and low variable costs. Thus, if there are no capacity constraints, then as long as a discounted price exceeds the variable costs, agencies capture revenues that would be foregone at the regular price.

Conditions for Effective Implementation of Discounts

Three fundamental conditions must exist if discounts are to be effectively implemented. First, they are only politically and ethically acceptable and viable if they do not arouse antipathy or resentment from a threshold number of users who are paying the regular price, and if they are culturally consistent with a jurisdiction's normative values so there is no widespread indignation within the community. If users say, "It is unfair to charge us more than you charge them," then it is untenable. If a discount is presented as a revenue-maximizing strategy rather than a "handout to low-income groups," then such resentment is less likely to arise. Communities evaluate fairness by whether or not a discount is justifiable and reasonable. However, communities' prevailing normative value

systems vary, so discounts to particular subgroups that are accepted in one community may not be deemed appropriate in another community. The second condition is that those receiving a service at a lower price must not have the opportunity to engage in arbitrage, that is, to resell it at a higher price to those who are willing to pay more for it. This leads to the creation of a parallel or gray market in which consumers' surplus is captured as private gain by the resellers and the revenue does not accrue to the public agency.

Unauthorized differential pricing and an arbitrage situation that was unwittingly created at Yosemite National Park illustrates the need to protect against resale. Large blocks of reservations for some of Yosemite's 900 campsites for peak times were being secured as soon as they were offered for sale. They were purchased for \$20, but were then resold on e-Bay and similar sites for much as \$100. Also, to protect the resource, the National Park Service limited the number of hikers ascending Half Dome to 400 per day and charged \$1.50 for a permit. Again, these were resold by scalpers. Individuals were exploiting the situation for personal gain, when these funds should have been accruing to the Park Service and the public who owned the resource. There were two ways to resolve this issue. First, the Park Service could have created an official differential pricing process by either auctioning or premium pricing some proportion of the reservations on e-Bay, while meeting their mandate to be accessible by selling the remainder at the original price and auditing those who purchased them. Second, which was the approach they adopted, they could implement auditing procedures for all. Thus, Yosemite rangers subsequently required those possessing permits to show identification that matched the reservation and prohibited name changes on permits.

The third condition relates to the fairness with which differential prices are applied among subgroups and the consistency with which they are implemented across all the park and recreation services that an agency provides. This condition is termed "horizontal equity" and it mandates that equals should be treated equally (i.e., users within a given category should pay the same price for the same service at the same time and location).

Horizontal equity contrasts with vertical equity which takes account of people's ability to pay. While vertical equity applies across income levels, horizontal equity refers to fairness at a given income level (Crompton, 1984). Consistency across like subgroups raises questions such as: Is it fair to give discounts to all senior citizens irrespective of their economic status, when among the rest of the community they are given only to the economically disadvantaged? Or, should golfers be required to pay a price that covers all costs, while tennis players are not charged for use of the courts? Consider the following complaint: "I am a golfer. Why must the price for golf be set at a high level that ensures revenues will cover costs, when this is not done at any other recreation facilities? If my taxes go to support all the other activities, why should they not also go to support the activity in which I participate? It is my feeling that the city should not discriminate against a person just because of the kind of recreation he or she enjoys."

In a broader context, consider the following conundrum: The U.S. Department of Interior traditionally has leased Bureau of Land Management lands to ranchers at a heavily subsidized rate to graze their cattle. Environmentalists have long argued that ranchers should be charged a full market rate. However, national parks are heavily subsidized, since admission charges cover less than 10% of their operating costs. Is it equitable to charge ranchers full market price, while continuing to subsidize national park visitors?

Users care about the price others pay for the same service and the online environment makes it relatively easy to share experiences and arouse resentment. The belief that others who are like you are being treated more favorably, creates a sense of unfairness. Hence, segments paying different prices must be perceived by all concerned to be different. Perceived fairness will depend on the justification given for price differences. An agency's responsibility when adopting discounts is to be explicit in explaining how segments are different and how the strategy maximizes revenue, so the fairness of the price differentiation is apparent to all. The more aware people are of the differences justifying different prices, the less resistance there will be to them. Thus, conceptualization, rationale

and information dissemination are a crucial part of the differential pricing process, as well as these elements being consistent with the goal of enhancing transparency in government.

A common abuse of the requirement to treat equals equally that occurs in multiple contexts is application of the “Robin Hood” Principle. This is especially prominent in enterprise provided services. It involves charging some users a higher price than it costs to deliver a service and using the surplus revenues to subsidize other users of that service or other services. The principle was described to the author by a PARD director in these terms:

A sliding scale for after-school programs is appropriate. To me, this is similar to the progressive principle of the income tax—those who are wealthy, pay more. Take, for example, the case of a widow in our program who works all day and is raising three children. We let her set her own fee. Sometimes she pays \$20, sometimes \$10, sometimes nothing for her three kids. The regular price is \$50 per child per week and because it’s an enterprise fund other users have to pay her share—but that’s ok.

Others may argue that this strategy is inequitable and ask: Why should users be singled out to subsidize her? If some users of a service should be subsidized, then shouldn’t the cost of the subsidy be shared by the whole community? Isn’t it unfair to select some citizens to carry this compensatory burden solely because they happen to be users of the service? Some PARDs generate surplus revenues from golf facilities and use them to subsidize other services. Essentially, this is a premium which captures consumers’ surplus, but golfers may legitimately question why they should be responsible for the subsidy rather than all taxpayers.

Concluding Comments

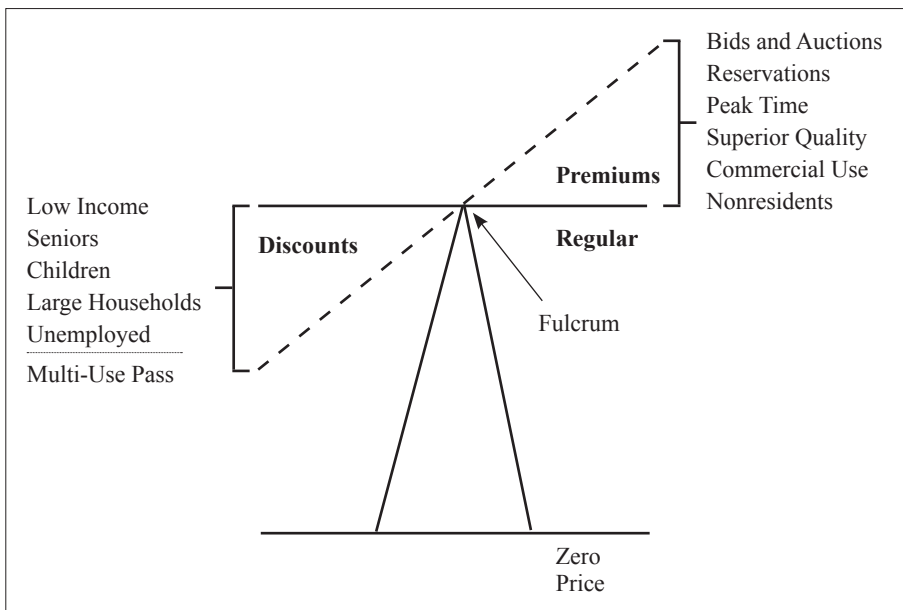


Figure 4. A Taxonomy of Differential Price Opportunities

In communities where there is political resistance to discounts based on social justice arguments, the same end may be accomplished by presenting the discount as an economic response to different elasticities among potential users that enables revenues from a service to be maximized. Figure 4 indicates that differential pricing is comprised of both discounts and premiums, and that these can be conceptualized as leverage points around the fulcrum of a regular price. The notion of a fulcrum suggests that the two approaches to some extent are counterbalanced. Typically, discounts based on different price elasticities are offered to low income households, seniors, children, large households, and the unemployed, while the multi-use pass is a different kind of discount analogous to a quantity discounts in the private sector.

Premiums are designed to capture consumers' surplus. Discussion of them is beyond the scope of this paper, but Figure 4 shows they may be imposed on users when additional increments of benefits are provided to users through reservations, peak time pricing, or increments of superior quality. Since park and recreation departments serve as their taxpayers' agents in managing public assets, they have an obligation to maximize the revenue potential when those assets are not fully accessible to residents. This rationale underlies the justification for charging premiums for nonresident and commercial use of the assets, and the selective adoption of auctions or bidding to capture more consumers' surplus.

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