

Visitors' reactions to the Pinnawala Elephant Orphanage in Sri Lanka: An empirical survey

RANJITH BANDARA AND CLEM TISDELL

Department of Economics, University of Colombo, Colombo, Sri Lanka

School of Economics, The University of Queensland, Brisbane, Australia

ABSTRACT. The Pinnawala Elephant Orphanage (PEO), a well-known captive elephant-based recreational facility in Sri Lanka, attracts many domestic and foreign visitors. Over 35,000 visitors (both local and foreign) visit the PEO per month on average for a variety of reasons. However, little or no attempt has been made to examine their reaction to its activities. This paper reports preliminary findings from two visitor surveys (one local and one foreign) conducted at the PEO to examine the characteristics of visitors, the satisfaction they gained from the visit, their attitudes towards conservation of the elephant, their reactions to the current facilities available at the orphanage, and their opinions and the maximum willingness to pay (WTP) to enter the PEO. It is found that, although some variations occurred between the samples, the majority of all respondents showed a similar reaction to the activities and facilities at the orphanage. However, some differences are evident between these two samples in relation to satisfaction received, responses to the WTP (elicitation) and attitudes towards the information and interpretive facilities. Overall, the majority of the respondents indicated that their support for the conservation of the Asian elephant had increased considerably with their visit to the orphanage. This indicates that considerable unrecorded and as yet unutilised support could be generated both financially and otherwise to conserve this endangered species through wildlife based recreation facilities such as the PEO in Sri Lanka.

KEY WORDS. Asian elephant, economics of recreation, outdoor recreation, Pinnawala Elephant Orphanage, tourism management, visitor profiles, wildlife conservation.

Introduction

With increased concern for conservation, people both in developed and less developed countries (LDCs) have become more environmentally sensitive (Butler and Boyd, 2000). As a result, nature/wildlife-based recreation has received increased attention both from tourists and recreationists (Lee, 1997).

Furthermore, Reynolds and Braithwaite (2001) point out that, within the overall context of tourism, wildlife-based tourism has experienced a rapid growth in recent decades. Harrison (2001) predicts that this sector will generate more economic opportunities in developing countries than conventional tourism. The analysis of Tosun (2001) provides useful insights into the challenges and the obstacles facing countries in the developing world in achieving economic stability in their tourism industry. From the literature (see, for instance, Obua and Harding, 1996; Akama and Kieti, 2003), it is clear that one of the keys to economic stability and effective management of recreation-sites in developing countries is accurate information about visitors, and the attractions/resources that bring them as well as their reaction to the available facilities and services.

Harrison (2001) claims that managers of most recreation-sites in LDCs either do not seem interested in integrating information about visitors or collected from visitors into their development planning, or lack the capability (financially and otherwise) of gathering and analysing this information. The situation in Sri Lanka does not seem to be an exception.

Our investigation into the research undertaken on outdoor recreation sites in Sri Lanka reveals that, although some studies have been completed, none have focused on issues raised by visitors. For example, Abeygunawardena and Kodituwakku (1992) and Gunathilaka and Vieth (1998) estimated the scenic value of the Peradeniya Royal Botanical Garden and the elephants in the Pinnawala Elephant Orphanage respectively. Similarly, Silva and Kotagama (1997) estimated an optimal entry fee for the Udawalawe National Park. Rajaratne and Walker (2001) and Thilakarathne and Santiapillai (2002) have examined aspects of the development of captive breeding and the management of elephants in the Pinnawala Elephant Orphanage.

This study presents the results from two sample surveys completed in early 2003 of visitors to the Pinnawala Elephant Orphanage (PEO) in Sri Lanka in early 2003. One survey was of visitors from foreign countries, and the other of local (Sri Lankan) visitors. The aims were to assess the characteristics of

visitors, the stated satisfaction they gained from the visit, their attitudes towards the conservation of the elephant, their reactions to the current facilities available at the orphanage, and their maximum willingness to pay (WTP) to enter the PEO. It was felt that recreation sites such as this in Sri Lanka could be better managed if policy-makers and their managers had more information about the visitors and their reaction to the existing set up in those places. Knowledge of the attributes and attitudes of visitors is essential for recreational planning and management.

The paper first briefly describes the background of the PEO and identifies the main management issues. Then the survey method and data collection procedure are outlined. Next follows an empirical analysis of results from the visitor surveys. First, the attributes of those surveyed are presented; second, stated enjoyment of visits and willingness to pay for the improvement of the PEO by visitors are analysed; third, the attitudes of visitors to conserving the Asian elephant and the reaction to information and to interpretive facilities are assessed; fourth, visitors' suggestions for improving the PEO are presented. The results for local and foreign visitors are reported, analysed and compared.

Pinnawala Elephant Orphanage: Background

The PEO in Sri Lanka is a well-known captive elephant-based outdoor recreation facility that was initially established in 1975 by the Department of Wildlife Conservation (DWC). It covers an area of nine hectares of a former coconut plantation in the Kegalle District, some 90km northeast of Colombo. At present, the PEO is managed by the Department of National Zoological Gardens (DNZG) of the Ministry of Environmental and Natural Resources Management. Apart from volunteers, casual workers and people who work for the contract suppliers of fodder for the elephants, it has a fulltime workforce of 65 people. This includes two veterinary surgeons working at the PEO. The elephants' day at the orphanage begins as early as 7.00 am and visitors are allowed to enter the facility

after 8.30 am. It remains open until 6.00 pm every day including public holidays. DNZG (2000) provides a detailed account of the daily events and the other activities of the PEO as well as the entry fee.

The initial objectives of establishing the PEO was the provision of refuge and care for the elephants that were injured, orphaned, abandoned or separated from their families/herds in the wild. Although the PEO started with five such animals, currently the PEO provides shelter for 69 captive elephants. Of these, 15 animals are less than 10 years old, 36 animals are between 10 and 20 years, and 18 animals are older than 20 years. According to DNZG (2000), this is the largest captive herd of Asian elephants in the world belonging to the *Elephas maximus*, the Sri Lankan sub species of Asian elephant. Most of the young elephants in this herd, those aged less than 20 years, were born in the PEO after the captive breeding programme was started in the early 1980s (Lair, 1997).

Thilakaratne and Santiapillai (2002) provide a detailed account of the captive breeding programme undertaken at the PEO. With the success of this breeding programme, the PEO has become an important place for education and research involving the elephant as well as the main centre in the country for supplying domesticated elephants. However, the number of elephants released by the PEO over the last ten years is insufficient to meet the current demand for domesticated elephants in Sri Lanka. This situation was highlighted by a public protest held in Colombo in early 2003 demanding that wildlife authorities in the country release more elephants for domestic use (see Wijewardana, 2003).

With the increase in the number of elephants in the orphanage, the PEO has become an attractive outdoor recreational facility for both local and foreign visitors. Our analysis of secondary data on tourist arrivals at the PEO between 1993-2002 reveals that 39,765 visitors came to the orphanage per month on average, of which 97.3 % were local visitors. Tourist arrivals at the PEO peak every year between August and September. This seems to be linked with the local school holidays, the well-known religious pageant (*Esala Perahara*) in Kandy, and the increase in foreign tourist arrivals due to the summer holidays in

Europe. The PEO charges two different admission fees to visitors: locals pay less than the foreign visitors. These entry fees alone generate an income of Rs. 1,156,606 per month for the PEO amounting to Rs. 13,879,272 per annum on average.

The actual economic impact of the PEO on the local and regional economies has been assessed by us and found to be substantial (Tisdell and Bandara, in press). According to the local government authority in Pinnawala, during the period 1993-2002, 152 new businesses were started in the vicinity of the PEO and along the road to it from the Colombo-Kandy main road junction. Moreover, our informal discussions with locals and the business community while undertaking this study reveal that most of these businesses in the Pinnawala area came into existence after the PEO was established. Now they seem to depend heavily for their business on tourists visiting the orphanage. Thus, local people see the PEO as an economic generator in their locality and would not like to see it disappear from Pinnawala. The assurance of the continued existence of the PEO is quite important for ensuring the stability of local and regional economies in and around Pinnawala.

Currently, policy-makers at the DNZG and the local government authorities in Pinnawala face at least four major challenges as far as the PEO is concerned: a) achieving the initial objectives for which the PEO was established; b) fostering visitors' support for the long-term objectives of conserving the elephant in Sri Lanka; c) assuring the economic stability of local and regional economies in and around the PEO; and d) providing a visitor-friendly environment in and outside the PEO. In meeting these challenges, it is important to maintain a continuous flow of visitors to the PEO, at least at the current level in the short-run, while formulating long-run strategies to attract new visitors and return-visits. This is because the PEO, like any other display facility, may become less popular over time unless its existing structure is continuously revitalised. Visitors to any such facility always search for high quality services

and products that correspond to their changing lifestyles, tastes, needs and wants, and return-visits often depend on innovation and new displays.

According to Akama and Kieti (2003) most visitors, particularly Western and affluent local tourists, are usually influenced by 'push and pull' motivational factors when they make their initial decision to visit a tourist destination in LDCs. The push factors may include the urge to escape from the pressure of their workplace and the stress associated with their urban life while the pull factors may include the ambition to travel to different places in search of novelty and exploration in a natural setting. Thus, the key to the success of recreation ventures, such as the PEO, is found in satisfying or more than meeting these expectations of visitors. Such expectations can be stimulated through information provided via advertisements, commercials, brochures, mass media and informal information from friends and relatives, but understanding what exactly tourists would like to have is an empirical issue that requires more research and discussion. Jayawardena (2002) points out that this has become an important consideration in most service industries. Our surveys of visitors to the PEO provide some significant indicators of the expectations and demands of its visitors.

The survey

The data presented in this paper were collected from two sub-samples of visitors to the PEO between 20 March and 10 April 2003. One was a sample of local adult visitors and the other consisted of foreign adult visitors. A hundred and fifty visitors were included in each of these samples so as to provide a stratified sample. In this process, we kept in mind the potential differences in the preferences and values of these two visitor groups, both in the preparation of questionnaires and the administration of the survey. Thus the main purpose of these two samples was to help identify the reaction to the PEO by different

social groups of visitors who may have different perceptions about wildlife-based recreation facilities and services, such as those of the PEO.

According to Akama (1996), the support of Western tourists for the conservation of wildlife and natural areas, particularly in LDCs, has increased in recent years for at least three reasons: a) post-modern social and economic changes; b) the emergence of a new set of environmental ethics and values; and c) their experiences with the degradation of previously pristine natural areas since the advent of the Industrial Revolution. Thus, tourists from the Western countries have increased their willingness to provide both financial and other forms of support to improve wildlife-based recreation facilities in LDCs. Furthermore, if they are satisfied with the existing facilities in those places, they are more likely to recommend them to others as places that should be visited (Akama and Kieti, 2003). Söderlund (1998) suggests that word-of-mouth recommendations are the cheapest and most effective form of marketing and promotion of the tourist destinations in the LDCs.

Sri Lankans, particularly urban-dwellers and nature-lovers, including students, who visited the PEO provide a strong local market-base for sustaining the PEO. They spread the message among locals that the conservation of the elephant in Sri Lanka is a common responsibility that should be shared with others. For example, offsetting the economic losses incurred by the farmers in areas where human-elephant conflict prevails might be shared by the community. As Bandara and Tisdell (2003) observe, a considerable unrecorded and as yet unutilised level of support exists among the majority of Sri Lankans for conserving wild elephants. Thus local visitors' reactions to the PEO might be used as a basis to further investigate the extent of local support (both financially and otherwise) for the conservation of this endangered species. However, the main use of the present survey is to highlight ways in which the PEO can enhance its performance in achieving its goal of helping to conserve the Asian elephant.

Deriving accurate information from field surveys depends upon the survey methods employed. Direct face-to-face interviews are the most commonly used approach at recreation sites (Lee and Han, 2002), and this approach was used in this study at PEO. FAO (2000) has assessed the value of this method compared to the mailed and self-administered questionnaire formats in the developing country context. Mail surveys yield a low response rate and self-administered questionnaires suffer from self-selection biases. Further, face-to-face surveys have the advantage that trained interviewers can actually interact with respondents, and can clarify respondents' doubts thereby minimising non-response rates. Consequently, the quality of the data generated is likely to be improved.

In the present study, two separate questionnaires were used to conduct the interviews. One was developed for the local visitors and the other was for the tourists from foreign countries. Both questionnaires focused on four major aspects: (1) visitors' socio-economic characteristics; (2) their willingness to pay for entry to the PEO; (3) their conservation attitudes towards the Asian elephant; and (4) their perceptions of the current facilities and future development of PEO. Respondents were asked eight common sets of questions: (1) the first questions established conversational rapport with the respondents; (2) others identified their origin and travel arrangements; (3) and some evaluated their satisfaction with their visit and (4) the change in their conservation attitudes after their visit to the PEO. Further questions: (5) assessed their maximum WTP for their PEO experience; (6) sought respondents' views on the present status of interpretive facilities available in the PEO; (7) canvassed respondents' opinions/suggestions about how to improve the PEO; and (8) elicited information about the socioeconomic background of respondents.

Interviews were conducted both in Sinhala and English by six graduate research students from the University of Kelaniya. The supplementary information, particularly about existing facilities available in the PEO for visitors and historical data in relation to the establishment of the PEO, tourist arrivals

and other information were obtained from the unpublished official documents of the DNZG, and informal interviews were held with the officials at both PEO and DNZG. We also undertook a number of informal interviews with local people and the business community around the PEO area to gather the supplementary information, in particular, to better understand the impact of the PEO on the local economy.

Attributes of those surveyed

Haefen and Phaneul (2003) claim that an understanding of visitor attributes/characteristics is needed to manage outdoor recreation sustainably. This is because the planning of new developments, management of visitors, monitoring trends and predicting recreation demands all require adequate information on the characteristics of visitors. Provision of good quality services and facilities demanded by visitors depends, to a large extent, on sound management and this requires such knowledge about visitors.

We found that one-third of the respondents had visited the PEO before. This was high for the sample of local visitors, with 56% having visited the PEO previously. This indicates that the PEO has become a popular recreation destination worth visiting more than once, at least for the majority of local visitors. Kozak (2002) claims that the habit of repeated visitation by tourists is influenced by the following motivational factors: 'culture', 'pleasure-seeking/fantasy', 'relaxation', or 'physical'. Although in this study we did not specifically investigate the factors that influenced the respondents' repeat visits to the PEO, informal discussions with them revealed that a mixture of all these factors was responsible for their decision. The majority of the respondents (about 83% at the aggregate sample level) stated on their current visit that they came to the PEO to seek pleasure either with their family or friends. Table 1 indicates that the PEO is a popular family recreation site, especially for Sri Lankans.

Table 1: Type of visit (as an individual, with family or with friends) to the PEO by the respondents

Type of visit	Sample		
	Local	Foreign	Aggregate
As an Individual visitor	7 (4.7)	41(27.3)	48 (16.0)
Part of a family group	74 (49.3)	47 (31.3)	121 (40.3)
With Friends	69 (46.0)	62 (41.3)	131 (43.6)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of total in respective samples

Data on the origins of the visitors to the orphanage were analysed separately: local visitors in relation to the area (district) where they were settled in Sri Lanka; visitors from overseas were identified by the country where they had permanently settled. It was found that 80.6% of foreign visitors were from Europe, and the rest from Asia and Asian Pacific countries. Table 2 presents the distribution of foreign visitors to the PEO according to their country of permanent residence. The data gathered in relation to travel arrangements of these visitors reveals that 57% of respondents travelled to the PEO as part of a package tour and the rest as independent travellers. This information suggests that a large percentage of independent foreign tourists selected the PEO as a place to visit during their stay in Sri Lanka, or that many travel agents, either in Sri Lanka or overseas, chose the PEO as one of the places that their customers should visit in Sri Lanka. The attention of travel agents might be captured in the number of web pages appearing on in the World Wide Web. At present there are 132 web-pages devoted to the PEO.

Table 2: The distribution of sampled foreign visitors to the PEO according to their country of permanent settlement

Country	Number	Country	Number	Country	Number
England	51 (34.0)	Sweden	5 (3.1)	Japan	1 (0.6)
Germany	29 (19.3)	India	3 (1.8)	Hungary	1 (0.6)
Holland	11 (7.3)	Austria	2 (1.2)	Malaysia	1 (0.6)
France	8 (5.3)	USA	2 (1.2)	Slovenia	1 (0.6)
Australia	8 (5.3)	Pakistan	2 (1.2)	Ireland	1 (0.6)
Switzerland	8 (5.0)	Spain	2 (1.2)	Canada	1 (0.6)
Denmark	6 (3.7)	China	2 (1.2)	Czech	1 (0.6)
				Republic	

Note: Values in parentheses are percentages of total number of foreign respondents in the sample

Data on the origin of the local visitors to the PEO reveals that the majority were from urban and semi urban areas in Sri Lanka, and that about 55% were from the areas located within a 60km radiance of the PEO such as Kagalle, Kandy, Kurunagala, Matale and Gampaha. Table 3 gives the distribution of local visitors to the PEO in relation to the area (district) where they are resident in Sri Lanka.

Table 3: The distribution of local visitors to the PEO in relation to the area (district) where they are settled in Sri Lanka

District	Number	District	Number	District	Number
Kandy	34 (22.7)	Gampaha	11 (7.3)	Anurathpura	2 (1.3)
Colombo	28 (18.7)	Ratnapura	9 (6.0)	Matara	1(0.7)
Nuweraeliy	20 (13.3)	Kagalle	8 (5.3)	Puttalam	1(0.7)
a	16 (10.7)	Galle	3 (2.0)		
Kurunagala	14 (9.3)	Kalutara	3 (2.0)		
Matale					

Note: Values in parentheses are percentages of total number of local respondents in the samples

We only gathered information about two socioeconomic attributes of the visitors to the PEO, that is about their perceived comparative level of income and their level of education. Questions had to be kept simple and minimised because the interview method was adopted and we needed not to impose too much on the time of visitors. In relation to their level of income, the respondents were asked: *Do you consider your level of income to be above the average in your country?* Respondents' answered 'yes' or 'no'. About 55% of visitors surveyed (both at aggregate and sub-samples) considered their income to be above average in their home country (see Table 4 for details). However, we do not have the information to determine to what extent the rest of the respondents belonged to the average income group or were below it. But the responses indicate that the majority of visitors (both Sri Lankans and foreigners) to the PEO have an above average income.

Table 4: The distribution of income of respondents surveyed in relation to average income levels

Survey question: Do you consider your level of income to be above the average in your country?	Sample		
	Local	Foreign	Aggregate
Yes	85 (56.7)	81 (54)	166 (55.3)
No	65 (43.3)	69 (46)	134 (44.7)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

Respondents were also asked: *Have you had any tertiary education, for example, university or technical college education?* Responses were recorded as 'yes' or 'no'. About 65% of the foreign visitors surveyed had tertiary education qualifications. This is well above the average in Western countries. However,

this was only 12% for the local visitors. This is quite understandable because the annual placements offered by the tertiary education institution (both universities and technical colleges) in Sri Lanka to those who qualify at the General Certificate of Education Advance Level Examination, known as GCE A/L, is still less than 5% of the total number of students who sit for this exam every year. Thus the number of Sri Lankan visitors with tertiary education is well above the Sri Lankan average.

Therefore, the following profiles of visitors to the PEO emerge. Sri Lankan visitors are more likely to be urban than rural in origin and the majority have an above average income and have more education than is the norm in Sri Lanka. Furthermore, foreign visitors are likely to have an above average level of income in their country and to have substantially more education than is normal in their home countries. Nevertheless, many Sri Lankan visitors also had not more than an average level of income in their view.

Enjoyment of visits and willingness to pay

Akama and Kieti (2003) state that tourists, like other consumers, usually have initial expectations of the type and quality of service to be offered in a particular destination that they visit. Thus, it is important to assess the level of satisfaction or enjoyment that visitors receive from their visit to any tourist attraction. In this study, we used the responses to a specific question (i.e. *How much have you enjoyed your visit to the PEO?*), which was presented in relation to visitor enjoyment, as a starting point to elicit respondents' maximum willingness to pay, to enter the PEO.

Respondents' opinions of the level of satisfaction they received by visiting the PEO were recorded on a three-point-scale: 'a lot or very much', 'a little' or 'not at all'. The majority of respondents (87.6%) in the aggregate sample indicated that they enjoyed their visit to the PEO very much. This was even higher for the foreign visitor sub-sample level where 95.3% stated that they

enjoyed it very much. None of the respondents in either of the sub-samples indicated that they did not enjoy their visit to the orphanage. Table 5 summarises the stated levels of satisfaction at aggregate and sub-sample levels.

Table 5: The stated level of enjoyment received by the visitors surveyed

Level of enjoyment	Sample		
	Local	Foreign	Aggregate
A lot or very much	120 (80.0)	143 (95.3)	263 (87.6)
A little	30 (20.0)	7 (4.6)	37 (12.3)
Not at all	---	--	--
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

As mentioned, we used the question presented in relation to enjoyment as a lever to ask participants the maximum price (entry fee) that they would have been prepared to pay to enter the orphanage. Interestingly, about 72% of the respondents at the aggregate level were prepared pay a higher entry fee than the existing fees for their entry to the orphanage. The percentage of foreigners who stated they would have been prepared to pay higher fees (75%) exceeded that for locals (69%). Table 6 presents the distribution of the maximum increase in fees that respondents stated they would be willing to accept.

It can be observed (see Table 6) that, in retrospect, 28% of respondents stated that they would not be prepared to pay more than the current fee for entry to the PEO. This may be genuine. If so, it suggests that they received no consumers' surplus for their visit. On the other hand, the answer could reflect a strategic bias. This would involve, in this case, putting forward this answer in the expectation that it would deter any increase in entry fees. Another interpretation is that these responses indicate a protest element. For example, a protest against the questioning might have brought such a response. Again, to many the question might have appeared to be hypothetical and an easy way to resolve their

dilemma was to say they would not pay more than the current entry fee. The question then arises of whether these responses should count or not.

Table 6: The distribution of the maximum WTP for entry compared to the existing entry fee to the orphanage as stated by the respondents

Sample	Number of respondents					
	Unwilling to change or offered lower amount	Willingness to increase up to 25%	Willingness to increase 25 to 50%	Willingness to increase 50 to 75%	Willingness to increase 75 to 100%	Willingness to increase more than 100%
Local	46 (30.7)	21 (14.0)	3 (2.0)	7 (4.7)	54 (36.0)	19 (12.7)
Foreign	38 (25.3)	19 (12.6)	11 (7.3)	4 (2.7)	18 (12.0)	60 (40.0)
Aggregate	84 (28.0)	40 (13.3)	14 (4.7)	11 (3.7)	72 (24.0)	79 (26.3)

Note: Values in parentheses are percentages of totals in respective samples

The mean WTP estimates, calculated on the maximum WTP amount offered by the respondents, reveal that non-protest respondents (i.e., excluding the respondents who were unwilling to change the current entry fee or who offered a lower amount than the existing entry fee to the orphanage) on average were willing to pay Rs. 409.39 at the aggregate sample level to enter the orphanage. However, the mean WTP values estimated at the sub-sample level reveal that a considerable difference exists between the two visitor groups. Respondents in the local visitor sub-sample were WTP Rs. 55.09 to enter the orphanage whereas the visitors in the foreign sub-sample were WTP Rs. 738.39. This means, in other words, that the local adult visitors are prepared to pay just over twice the price that they currently pay (i.e. Rs. 25) to enter the orphanage whereas the adult visitors from overseas are willing to pay between 3 and 4 times higher than the current entrance fee (i.e., Rs. 200). In terms of the dollar or any other strong currency, Rs. 200 for an overseas visitor may not be a significant amount. On the other hand, local visitors who were prepared to pay a

higher entry fee must also have felt that it is reasonable to pay something more for the enjoyment that they received visiting the PEO. Table 7 presents a summary of estimates of the important statistics based on the willingness to pay to enter the PEO by the respondents surveyed.

However, as mentioned above, it is debatable if those who said they are unwilling to pay more than the current entry fee to the PEO should be excluded from the analysis. Their inclusion will provide more conservative estimates of consumers' or visitors' surplus. Suppose that those who said they are not willing to pay more than the present entry fee are nevertheless willing to pay this entry fee. In fact, they actually paid it. Then the maximum, a Sri Lankan would be prepared to pay, on average, for entry to the PEO is $0.693 \times \text{Rs. } 55.09 = \text{Rs. } 38.18$ and for foreigners it is $0.747 \times \text{Rs. } 738.39 = \text{Rs. } 551.16$. Because the adult entry fee for Sri Lankans is Rs. 25, their consumers' surplus, on average, is Rs. 13.18 or about 53% above their entry fee. Adult foreigners have an entry fee of Rs. 250. Therefore, on average, their consumers' surplus is Rs. 301.16 or 120% above their entry fee.

This does not, however, imply that the entry fee for Sri Lankans should be raised by 53% and by 120% for foreigners. Increasing the entry fee for Sri Lankans by 50% would actually reduce the revenue earned by the PEO from Sri Lankans by 5%. On the other hand, doubling the entry for foreigners would raise the PEO's revenue from foreigners by 20%. This is assuming that our samples are representative of visitors to the PEO. These results imply that the demand for visits by Sri Lankans is relatively elastic whereas for foreigners it is comparatively inelastic.

Nevertheless, doubling the entry fee for foreigners would considerably reduce their surplus. In turn this may reduce the likelihood of their recommending the PEO to others. The recommendation effect might thus be weakened. Furthermore, it is doubtful if maximising revenue or income should be the goal of the PEO given that its prime mission is to help conserve Asian elephants.

Table 7: Summary of estimates in rupees of statistics for the maximum price (entry fee) that respondents say that they are willing to pay to enter the orphanage, excluding 'protest' bids

Sample	Statistic				
	Mean	Mode	Stan. Dev	Maximum	Minimum
Local	55.09	50	26.83	200	30
Foreign	738.39	500	734.66	4500	250
Aggregate	409.39	50	629.36	4500	30

Information and interpretive facilities

One of the most challenging problems faced by educators, environmentalists and policy-makers, particularly in the LDCs, is finding ways to effectively communicate existing environmental issues to the general public. This is especially true in the case of the PEO. During our visit to the PEO, we found that it gave little attention to educating visitors about issues involved in conservation of the Asian elephant and the role of the orphanage. This situation seems to be serious in the case of local visitors because literally there are no interpretive facilities available to them, except the information brochures for sale at the information centre. Informal discussions with tourist operators reveal that visitors from overseas receive some information prior to their visit from the tour company which also guides them at the site. They also indicated that, since most of the foreign visitors were well informed before arrival, many seem to be clear about what is happening at the PEO. However, they did not deny that the meagre interpretive facilities at the orphanage have hampered the objectives of the PEO.

In this study, we assessed the visitors' perceptions of the information and interpretive facilities available at the orphanage by presenting two questions: the first assessed the level of information obtained by them from the orphanage; the second asked whether they would like to have had more information about the orphanage. Answers to these questions identify gaps in the information

supplied by the PEO. Tables 8 and 9 summarise responses to these two questions.

Table 8: Stated level of information obtained by respondents visiting the orphanage

Response	Sample		
	Local	Foreign	Aggregate
A lot of information	0 (0.0)	52 (34.7)	52 (17.0)
Not much information	33 (22.0)	75 (50.0)	108 (36.0)
No information	117 (78.0)	23 (15.0)	140 (46.7)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

Table 8 indicates that a little over 80% of the respondents in the aggregate sample said that they did not obtain much or any of the information that they wished to have from the orphanage. All Sri Lankans, in particular, said that they received little or no relevant information during their visit to the PEO. Nearly all respondents (93.6%) said that they wished to have more information (see Table 9). The feeling of insufficiency of information provision was marked for both Sri Lankans and foreigners, but greatest amongst Sri Lankans.

Table 9: The desire of respondents to obtain more information about the role of the PEO

Response	Sample		
	Local	Foreign	Aggregate
Yes	149 (99.3)	132 (88.0)	281 (93.6)
No	1 (0.7)	18 (12.0)	19 (6.3)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

Attitudes towards the conservation of the Asian elephant

As briefly mentioned earlier, one of the initial objectives of establishing the PEO was to improve public attitudes towards conservation of the Asian elephant, which was first declared by the World Conservation Union (IUCN) in 1986 to be an endangered species (IUCN Conservation Monitoring Centre, 1986) and was included in the IUCN Red List in 1996 (IUCN, 1996). Therefore, in this study, we tried to assess to what extent this objective has been fulfilled by presenting three questions to the respondents. In the first, they were asked: *Has your experience at the PEO increased your support for the conservation of the Asian elephant?* The responses were recorded as 'a lot', 'a little' or 'not at all'. Table 10 summarises the responses to this question. About 70% of the respondents at the aggregate level said that their support for the conservation of the Asian elephant has increased a lot as a result of the experience they gained from visiting the PEO (Table 10). A very small number of respondents (2% of the total respondents surveyed) indicated that their support for the conservation of the Asian elephant had not increased as a result of their experience. This was zero for the sample of local visitors. Thus it seems that visits to the PEO do increase support for conservation of the Asian elephant but by less than might be the case if there was more effective communication about the status of the Asian elephant and the role of the PEO in its conservation.

Table 10: Increased respondents' support for conservation of the Asian elephant following their experience at the PEO

Response	Sample		
	Local	Foreign	Aggregate
A lot	118 (78.7)	94 (62.7)	212 (70.6)
A little	32 (21.3)	50 (33.3)	82 (27.3)
Not at all	--	6 (4.0)	6 (2.0)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

In the second question, we asked respondents whether much more should be done to conserve the elephant. The respondents in both samples were asked: *Do you agree with the view that much more should be done to conserve the Asian elephant?* Just over 97% of respondents thought that more should be done to conserve the Asian elephant in Sri Lanka (see Table 11).

Table 11: Responses by those sampled to the view that much more should be done to conserve the Asian elephant

Response	Sample		
	Local	Foreign	Total
Yes	148(98.6)	144 (96.0)	292 (97.3)
No	02 (1.3)	2 (1.3)	4(1.3)
Unsure	--	4 (2.6)	4 (1.3)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

A third question assessed respondents' attitudes towards the view that high income countries should help pay for the conservation of the Asian elephant. Tisdell (1999) discusses this view and gives Asian examples. Respondents were asked: *Do you think high income countries should provide help for conserving Asian elephants?* Table 12 summarises responses to this question. While 98 % of local respondents believed that high income countries should help to conserve the Asian elephant, only about 76 percent of the overseas visitors sampled shared this view. A substantial percentage of foreigners said that they were unsure whether high income countries should provide support for conservation of the Asian elephant.

Table 12: Distribution of responses to the view that high income countries should provide help to conserve the Asian elephant

Response	Sample		
	Local	Foreign	Total
Yes	147(98.0)	115 (76.7)	262 (87.3)
No	03 (2.0)	7 (4.6)	10 (3.3)
Unsure	--	28 (18.6)	28 (9.3)
Total	150 (100)	150 (100)	300 (100)

Note: Values in parentheses are percentages of totals in respective samples

Suggestions for improving the Pinnawala Elephant Orphanage: Visitors' perspective

Visitors were asked if they had any suggestions for improving the PEO and if so what these were. They were asked: *Do you have any suggestions for improving the PEO?* Responses were recorded as 'yes' or 'no'. Those who responded 'yes' were asked to specify their suggestions. Approximately 68% of all respondents gave their suggestions for improving the PEO. Approximately 52 % of the Sri Lankan respondents made suggestions.

It is possible to classify their suggestions under six headings. These are: a) improvement of current services and facilities at the orphanage; b) safety and security; c) elephant care and welfare; d) information and interpretative facilities; e) improvement of services and facilities outside the orphanage; and f) improvement of revenue and encouragement of visitor spending. The range of suggestions received is presented in Table 13.

Concluding observations

Most visitors to the PEO appear to come with family members or friends. This is true both for Sri Lankan and foreign visitors, but the percentage of individual

Table 13: Suggestions for improving the PEO by the visitors surveyed

Improvement of the current service and facilities at the orphanage	<ul style="list-style-type: none"> • Construct resting huts for public. • Relocate existing car park near the orphanage gate. • Build more public toilets. • Develop cafeteria facilities. • Establish a camping site • Expand the size of the orphanage. • Construct walking tracks. • Provide public drinking water facility. • Establish regular system to collect garbage. • Hire a professional manager and a curator.
Safety and security of the visitors	<ul style="list-style-type: none"> • Construct observation platform for public along the riverbank. • Set up a first aid or medical centre • Tighten security along the road from the orphanage to the river when elephants take their usual bath in the morning and afternoon. • Use appropriate safety standards.
Elephant care and welfare	<ul style="list-style-type: none"> • Plant more shade trees. • Increase the space available for the elephants inside the orphanage. • Begin public sponsorship program for elephants. • Encourage more volunteers. • Construct proper pond inside the orphanage for elephants. • Grant more freedom for elephants. • Free some elephants to the wild or keep in natural habitat. • Encourage visitor involvement with the orphanage activities such as feeding. • Do not fully domesticate elephants in the orphanage.
Information and interpretive facilities	<ul style="list-style-type: none"> • Provide information booklet at the gate. • Employ professional guides. • Display more information about elephants and their way of life. • Encourage lectures, public talks educational demonstrations. • Set up an elephant museum to display more information about human-elephant relationships and conflict. • Employ interpreters.
Improvement of	<ul style="list-style-type: none"> • Construct wider roads.

services and facilities outside the orphanage	<ul style="list-style-type: none"> • Provide shuttle bus service at least from Colombo-Kandy main road junction. • Regulate activities of the business people along the road to orphanage. • Construct public car park.
Improvement of revenue status and encouragement of visitor spending	<ul style="list-style-type: none"> • Begin elephant- based extra activities such as elephant dances. • Amalgamate other public entertainment activities such as carnivals, fairs and exhibitions with the orphanage. • Encourage visitors to spend more time inside the orphanage by providing more entertainment opportunities. • Promote local business people to pay a certain percentage of their income to improve the facilities in the orphanage. • Increase entry fee. • Encourage public donation. • Use trained elephants for elephant's rides. • Sell the excess stock as domesticated elephants.

visitors is higher amongst foreigners. The majority of visitors are from urban areas; they are well educated and have higher than average incomes. Most of the visitors interviewed said that they enjoyed their visit to the PEO very much. On average, locals reported that they would have been prepared to pay about 50 percent more and foreigners indicated, on average, a willingness to pay up to 120 percent more than their current entry fees to the PEO. However, to increase entry fees to these levels would not increase the total receipts of the PEO in the case of Sri Lankans, and would only increase it by 20 percent in the case of foreign visitors. But, as discussed, the goal of profit or revenue maximisation would be inappropriate for the PEO given its conservation mission. Such a goal would be at the expense of visitor numbers and would reduce the extent of exposure of individuals to the potential pro-conservation impacts of the orphanage.

Unfortunately, our survey results reveal that the PEO's conservation message is weaker than it could be. The majority of respondents reported that they received little or no information about the role of the PEO. Its communication system is defective in this respect. Nevertheless, the majority of

respondents said that their experience at the PEO had made them a lot more supportive of the conservation of the Asian elephant, although there were still many respondents who said that it only increased their support for conservation of the Asian elephant marginally. Despite the fact that visits to the PEO did not cause an overwhelming increase in support for the conservation of the Asian elephant, the bulk of those interviewed agreed that more should be done to conserve the Asian elephant. Whereas virtually all Sri Lankans thought high income countries should help with this, foreign visitors were more circumspect about this even though the majority of those in the foreign sample favoured the idea.

The visitors interviewed gave several suggestions for improving services and facilities at the PEO. These included several useful suggestions for improved information and interpretative facilities. Some of the suggestions would cost little to implement, such as providing visitors with an informative pamphlet with their entry ticket. Extra costs associated with some of the suitable suggestions could be covered by a small increase in the entry fee. However, care would be needed in implementing a few of the suggestions such as training elephants to perform, e.g., dance, because many Westerners are now sensitive to captive animals being used for performances to please humans. This is particularly so of those who favour animal rights or animal liberation.

There could be a case for developing, at the PEO, a museum and archives concentrating on the Asian elephant. This could have interpretative facilities and could become a research resource, especially if linked to an appropriate university. The economics of this would, however, need to be carefully explored. It could enhance the conservation goals of the PEO. The main focus of the PEO at present seems to be on entertaining visitors. In our view, which is supported by the results of our surveys, it needs to give more attention to integrating its entertainment activities with the long-term objective of fostering support for the conservation of the Asian elephant in Sri Lanka.

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