WILLINGNESS TO PAY FOR AN ENTRANCE FEE: A
CASE OF MARDI AGRO TECHNOLOGY PARK,
LANGKAWI

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MASTER OF ECONOMICS
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WILLINGNESS TO PAY FOR AN ENTRANCE FEE: A CASE OF MARDI AGRO TECHNOLOGY PARK, LANGKAWI

By

FAIRUZ BIN PUASA

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ABSTRACT

This study assesses the Willingness to pay (WTP) for an entrance fee in MARDI Agro Technology Park, Langkawi. The main objective 1) to identify the demographic characteristics of respondent’ to MARDI Agro Technology Park, 2) to estimate WTP for additional facility namely Health and Spa Centre through entrance fee, 3) to assess the differences of WTP between local and foreign visitors, 4) to identify the level of visitors’ satisfaction that come to MARDI Agro Technology Park. The data were collected through questionnaire among local and foreign visitors (n = 100) separately. Contingent Valuation Method (CVM) technique was used to determine willingness to pay where the Single Dichotomous Choice Method was used to analyze data. The results of the CVM approach reveal that 59% of the foreign respondents and 56% of the local respondents were willing to pay for additional facility namely Health and Spa Centre. The bid amount and income were a common factor which influenced the Willingness to Pay of both local and foreign respondents. The researchers estimate the mean of WTP for local and foreign visitors are which additional for entrance fee is RM6.35 and RM7.20. Finally, the study yields several recommendations for development and improvement of available facilities and service those involved in MARDI Agro Technology Park. The study also proves that an increment of budget outlays for construction Health and Spa Centre is feasible while providing forums to communicate with regulatory bodies to maximize the revenue and visitor attraction in future generation.

KEYWORDS: contingent valuation method (CVM), Health and Spa Centre, willingness to pay (WTP), MARDI Agro Technology Park
Kajian ini menilai kesanggupan membayar (WTP) untuk bayaran masuk di Taman Agro Teknologi MARDI. Objektif utama 1) untuk mengenalpasti ciri-ciri demografi respondent di Taman Agro Teknologi MARDI, 2) menilai WTP untuk penambahan kemudahan yang dinamakan Pusat Kesihatan dan Spa melalui bayaran masuk, 3) menilai perbezaan WTP antara pelancong tempatan dan asing dan menilai tingkat kepuasan pelancong yang datang ke Taman Agro Teknologi MARDI. Data dikumpul dengan kaji selidik antara pengunjung tempatan dan asing (n = 100) secara berasingan. Teknik Kaedah Penilaian Kontingen (CVM) telah digunakan untuk menentukan kesanggupan membayar di mana Kaedah Pilihan Dikotoni Tunggal (Single Bounded Dichotomous Choice Model) digunakan untuk menganalisis data. Hasil pendekatan CVM mendedahkan bahawa 59% daripada responden asing dan 56% daripada responden tempatan bersedia membayar untuk pembinaan Pusat Kesihatan dan Spa. Jumlah tawaran dan pendapatan merupakan faktor utama yang mempengaruhi Kesanggupan Membayar (WTP) untuk responden tempatan dan asing. Penyelidik menganggarkan min WTP bagi pelancong tempatan dan asing untuk penambahan bayaran masuk-masuk kira-kira RM6.35 dan RM7.20. Akhir sekali, kajian ini menghasilkan beberapa cadangan untuk pembangunan dan penambahbaikan kemudahan dan perkhidmatan yang sedia ada di Taman Teknologi Agro MARDI. Kajian ini juga membuktikan bahawa peningkatan perbelanjaan bajet untuk pembinaan Pusat Kesihatan dan Spa boleh dilaksanakan sambil menyediakan forum untuk berkomunikasi dengan badan-badan peraturan untuk memaksimumkan hasil dan tarikan pengunjung pada generasi akan datang.

KATA KUNCI: kaedah penilaian kontingen (CVM), Pusat Kesihatan dan Spa, Kesanggupan membayar (WTP), Taman Agro Teknologi MARDI.
ACKNOWLEDGEMENTS

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Dengan nama Allah Yang Maha Pemurah Lagi Maha Mengasihani.

Alhamduliilah Was Salatu Was-salam ‘ala Rasulillah Wa ‘ala ‘ahlik Wa Sabbihiajma’in

Alhamdulillah. Firstly, I am most thankful and grateful wish to the almighty Allah S.W.T in allowing and gave the strength in the preparation and successfully of this project paper on time it submitting.

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LIST OF ABBREVIATIONS

CVM: Contingent Valuation Method
WTP: Willingness to Pay
WTA: Willingness to Accept
LADA: Langkawi Development Authority
MARDI: Malaysian Agricultural Research and Development Institute
IAT: Institute of Animal Technology
GDP: Gross Domestic Product
EV: Equivalent Variation
ES: Equivalent Surplus
CV: Compensating Variation
CS: Compensating Surplus
USD / US$: United State Dollar
OE: Open Ended
DCS: Discrete Choice Single
DCM: Discrete Choice Multiple
PC: Payment Card
TEV: Total Economic Value
RM: Ringgit Malaysia
MPA: Marine Protected Area
VND: Vietnamese Dong

RP: Rupiah

TNGP: Taman Negara Gunung Gede Panegrango, Indonesia

SPSS: Statistical Package for the Social Science

LBD: Log Bid Amount
CHAPTER 1

INTRODUCTION

1.1 Background of study

MARDI Agro Technology Park, Langkawi is the government agency which functions as a centre for technology transfer and information dissemination for the Malaysian agro-industry. Currently, it functions as an agro tourism place and is an example of one of the parks that is most often associated with open spaces. Open spaces, by definition are areas of land that are put aside for multiple reasons including for recreational purposes (Gibberd, 1982; Elliot, 1988)

In 1928, the United States of America defined a park as any area of land or water set aside for outdoor recreational purposes. These include both active and passive activities and at least part of this recreation is expected to come from the park’s appearance. Gibberd (1982) defines a park as an enclosed piece of ground, within or near a city or town, ornamentally laid out and devoted to public recreation. Meanwhile, Elliot (1988) describes parks as lands intended and appropriated for people’s recreation by means of their rural, sylvan, and natural scenery and character. In Malaysia, parks refer to areas of open space where recreational activities are held (Town and Country Planning Department Peninsular Malaysia, 2002)

According to the National Recreation and Park Association in the United States of America, parks may be classified into four types: mini parks, neighbourhood parks;
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BIBLIOGRAPHY


Nuva, A. (2007). *Willingness to pay toward the conservation of ecotourism resources at Gunung Gede Pangrango National Park, West Java, Indonesia.* School of Graduate Studies, Universiti Putra Malaysia.


APPENDIX 1: List of table

Table 1(a)

Country of Origin for foreign respondents

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Source: Field Survey
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</tr>
<tr>
<td></td>
<td>% with Yes / No to card value</td>
<td>5.4%</td>
<td>38.6%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of total</td>
<td>3%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>56</td>
<td>44</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to card value</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>% of total</td>
<td>56%</td>
<td>44%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Chi Square Tests of Local Tourist

<table>
<thead>
<tr>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2 sides)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi Square</td>
<td>34.253&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>38.897</td>
<td>4</td>
</tr>
<tr>
<td>Linear-by-Linear Assoc</td>
<td>33.770</td>
<td>1</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Table 2(b): Card Value * Yes/No to Card Value* of Foreign visitors

<table>
<thead>
<tr>
<th>Card Value</th>
<th>Foreign Tourist</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes / No to Card Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM5</td>
<td>Count</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>30.5%</td>
<td>4.9%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>18%</td>
<td>2%</td>
<td>20%</td>
</tr>
<tr>
<td>RM10</td>
<td>Count</td>
<td>15</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>25.4%</td>
<td>12.2%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>15%</td>
<td>5%</td>
<td>20%</td>
</tr>
<tr>
<td>RM15</td>
<td>Count</td>
<td>13</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>22.0%</td>
<td>17.1%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>13%</td>
<td>7%</td>
<td>20%</td>
</tr>
<tr>
<td>RM20</td>
<td>Count</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>13.6%</td>
<td>29.3%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>8%</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>RM25</td>
<td>Count</td>
<td>5</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>8.5%</td>
<td>36.6%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>5%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>59</td>
<td>41</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>% with Yes / No to Card Value</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Chi Square Tests of Foreign Tourists

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2 sides)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi Square</td>
<td>22.902a</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>24.563</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>Linear – by - Linear Association</td>
<td>22.284</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a.0 cell (0.0%) have expected amount less than 5. The minimum expected count is 8.60
APPENDIX 2

COMMENT AND SUGESTION TO IMPROVEMENT

Local respondents

1) Kekalkan persekitaran yang menarik dan kemudahan yang lengkap
2) Info centre untuk pelancong
3) Pelbagaikan tanaman sayur dan herba untuk pengetahuan pelancong
4) Membuat penambaikan lagi terhadap kawasan
5) Perlahankan tram di jalan berbahaya untuk keselamatan pelancong
6) Perbaiki jalan ladang yang berlubang dan bahaya
7) Turunkan harga makanan di cafeteria. Terlalu mahal
8) Pelbagaikan makanan yang dijual di cafeteria
9) Menyedia dan menambahkan lagi bilangan buah – buahan untuk pelancong
10) Banyakkan tanaman pelbagai jenis sayur dan jual dipusat jualan
11) Menambahkan lagi information untuk pengetahuan pelancong
12) Jalan ataupun laluan harus diperbaiki untuk keselamatan pelancong
13) Tambah buah - buahan lagi
14) Tambahkan petugas supaya dapat beri penerangan kepada pelancong semasa dalam lawatan
15) Cadangan saya supaya menambahbaikan kawasan di kiosks supaya lebih selesa
16) Tambahkan kemudahan dan maklumat
17) Meningkatkan kualiti kebersihan taman
18) Patut ada pemberi penerangan ketika lawatan ladang
19) Keselamatan penumpang perlu diutamakan
20) Pelbagaikan tanaman buah dan sayur di kawasan taman
21) Banyakkan promosi dan aktiviti
22) Agak memuaskan
23) Tambah bilangan pekerja dan petugas
24) No comment, everything OK
25) Mewujudkan lebih banyak aktiviti yang boleh menarik perhatian pelancong
26) Menambahkan lagi pilihan buah – buahan dan memperbanyak lagi aktiviti tentang penanaman
27) Tambah kemudahan maklumat kepada pelancong
28) Banyakkan aktiviti di kawasan taman
29) Tambah kemudahan awam
30) Banyakkan aktiviti rekreasi
31) Banyakkan kenderaan ladang untuk mengelakkan kesesakan di kawasan menunggu
32) Bagi minuman percuma / water cooler kepada pelancong selepas makan buah
33) Banyakkan “signboard” jalan. Susah nak jumpa
34) Bersihkan signboard yang kotor dan gantikannya yang kurang jelas
35) Agar MARDI dapat lebih banyak lagi buah – buahan tempatan yang terdapat di Malaysia
36) Perbaiki semua kekurangan ladang terutama ladang herba
37) Adakan aktiviti mengutip dan makan buah kepada pelancong yang hadir bagi menambah minat pengetahuan pelancong terutama pelancong dari luar
38) Menambah pokok buah – buahan tempatan
39) Kekalkan persekitaran taman yang menarik
40) Sangat bagus, pusat ilmu pelancongan terbaik
41) Menambahkan petting zoo / taman haiwan peliharaan di kawasan taman untuk tarikan pelawat
42) Aktiviti semuanya puas hati
43) Pastikan buah – buahan yang diberi kepada pelancong adalah buah hasil ladang MARDI sendiri
44) Banyakkan jualan buah – buahan segar di pusat jualan MARDI
45) Menambah ruang dan keselesaan kepada pelancong
46) Banyakkan promosi
47) Pelbagaikan tanaman hiasan dan landskap di kawasan taman agro pelancongan
48) Banyak buah yang masak tapi tidak dipetik dan gugur
49) Banyakkan bunga – bungaan, wangi – wangian, dan landskap yang lebih menarik
50) Wujudkan aktiviti memancing di kawasan taman agro
51) Kebersihan taman dan kemudahan awam perlu dikekalkan untuk generasi masa hadapan
52) Banyakkan buah yang ada di kawasan kiosk
53) Baik dan memuaskan
54) Langkawi adalah tarikan pelancong untuk berehat dan beriadah. Pihak MARDI perlu mengutamakan tarikan tersebut dalam memajukan taman ini supaya menepati citarasa pelawat sasaran
55) Lebihkan tempat riadah untuk keluarga dan anak dan kenalkan kepada anak jenis buah yang anak tak kenal
56) Perlu di war- warkan dalam media massa
57) Tambahkan kemudahan dan maklumat
58) Penambahbaikan kafeteria supaya selesa terutama kedatangan pelancong pada cuti sekolah dan waktu kemuncak
59) Banyakkan aktiviti pendidikan kepada pelancong
60) Pelbagaikan jenis buah di kawasan kiosk
61) Bagus
62) Bina kemudahan homestay kepada pelancong untuk merasa suasana persekitaran taman agro pada waktu malam
63) Perbanyakkan buah – buahan tempatan yang dapat dirasai oleh pelancong
64) Kemudahan mencukupi
65) Promosi perlu diperhebat
66) Sesuai untuk program lawatan
67) Kawasan yang sesuai untuk program pendidikan
68) Pastikan harga tiket yang dijual setaraf dengan perkhidmatan yang disediakan
69) Perlu banyak perhentian semasa lawatan untuk memastikan pelancong dapat melihat pokok buah – buahan tropika dengan lebih dekat
70) Semasa lawatan ada petugas memberi penerangan
71) Amat memuaskan
72) Persekitaran yang menarik. Harap dapat dikekalkan
73) Banyakkan aktiviti yang lebih menarik
74) Perlu ada promosi pada rakyat tempatan
75) Harga tiket tidak terlalu tinggi dan berpatutan
76) Pastikan berhenti di banyak tempat perhentian ladang untuk tujuan penyampaian
   maklumat oleh petugas
77) Perbesar dan penambahbaikan kawasan parking
78) Café di pelbagai jenis makanan
79) Kebersihan harus diutamakan
80) Perlu maklumat penanaman yang lebih terperinci
81) Jalan ladang tak sesuai (tak selamat)
82) Membina taman permainan untuk keseronokan anak-anak pelancong yang datang.

**Foreign respondents**

1) Quality of herbs species to be planted
2) Add more gift for visitor as souvenir
3) This park is suitable for research programme
4) Add more activity in this park
5) Fruit are fresh and delicious. I like it
6) More fresh fruit
7) Nice place to visit
8) Retrieve more information to visitor
9) Provide more activity here
10) Everything is OK. Good enjoy for it.
11) The service is good and we need to stop with every plant and tested fruit
12) Build chalet for visitor to stay
13) More information
14) Get down the ticket for visitor
15) Very good. Better with Health Center
16) This place is so cool and nice. Very happy with family
17) More education program
18) The management have done their very best already
19) More information especially the planting for knowledge of visitor
20) More activity in MARDI Agro Technology Park
21) I happy so much. Nice place
22) Build bigger cafeteria
23) I would really appreciate it if there is a supermarket up there and also restaurant
24) Arabic translation information
25) Standardize the fee for visitor
26) Enough facilities available. Thank you
27) Well set out
28) Develop the park without damages the natural resources
29) More advertisement TV on planting
30) I hope this park will add more flowers as a new attraction.
31) Thank. I love Langkawi agro park
32) Everything was OK. The staff of the agropark very nice. Thank you very much.
33) No need to take ticket for the child
34) Their management can promote the education program to agencies / visitor to get more knowledge
35) Very good
36) Education program for visitor that come
37) Wish we can go and walk around the farm and touch or get close to the fruit tree and we can take photos
38) More information for visitor is good
39) Should provide better resting area for visitor
40) Upgrade the toilet and kiosks at the testing fruit corner
41) Close sign forbidding
42) It was nice but if these add juice it will be good.
43) Advertisement on TV of planting
44) Take care the safety in the farm road
45) Showering facilities
46) More fantastic and good nature
47) Planting more fruit, vegetable, herb and flower to get more knowledge to visitor
48) Build chalets for visitor to enjoy the environment especially at night
49) Maybe offer fruit drink from fruit grown at park
50) Should provide and plant more fruit and vegetables.
51) Abdul Kadir is good guide. Hope can come again in future
52) Good place for interest. Hope can come again later.
53) Advertisement on TV of planting the fresh fruit tropical
54) The park is very beautiful
55) Take care the service s and environment to attract visitor especially the tram
56) The landscape is interesting and many of planting to attract visitor.
57) I enjoy visit this park. Hope can maintain this agro park with the fresh fruit
58) Enjoying visit
59) More activities in here
60) The research program should be continues to get a better attraction of the visitor
   I nthe future
61) Improve the available information such as planting
62) Safety first
63) More fruit and activity here
64) Provide the comfortable and good safety for watch tower
65) Information technology center must be open for visitor to get knowledge of
tropical fruit farm in agro tourism park
66) Farm visit should be make a long time to ensure the visitor can enjoy the natural
   environment in agro technology park.
67) More Arabic signboard to read
68) Facilities that have is perfect and comfortable
69) Education and video for planting
70) You guy were amazing, this was the best experience of my life.
71) You should keep the seeds for your promotions
72) Thank you for being so nice for tourist and the garden very nice
73) More study / research here
74) Safety first especially park vehicle / tram
75) Concern about cleanliness
76) Standardize the fee for many recreational activities
## Appendix 3a: STATA Program for logit and probit estimation (Foreign Respondents)

```stata
. logit D_WTP INCOME DUMOCC DUMDEU WTIME TRAMCON CLNTOILET CLNPARK FRUITTEST LB
> D
Iteration 0:  log likelihood = -67.685855
Iteration 1:  log likelihood = -37.807949
Iteration 2:  log likelihood = -35.905544
Iteration 3:  log likelihood = -35.831555
Iteration 4:  log likelihood = -35.831314
Iteration 5:  log likelihood = -35.831314

Logistic regression  Number of obs   =    100
LR chi2(9)      =    63.71
Prob > chi2     =   0.0000
Log likelihood = -35.831314  Pseudo R2   =    0.4706

                    | Coef.     Std. Err.     z  P>|z|      [95% Conf. Interval]
-------------|-----------|------------------|-----|--------|-----------------------------|
D_WTP        |           |                  |     |        |                            |
INCOME       | 1.499733  |  .3653906       | 4.10| 0.000  |    .7835808 - 2.215886     |
DUMOCC      |  .5670748 |  .2340927       | 2.42| 0.015  |   .1082615 - 1.025888     |
DUMDEU      | -2.388944 |  1.21699       | -1.96| 0.050  |   -4.774201 - .0036885     |
WTIME       | -1.080698 |  .552574       | -1.96| 0.050  |   -2.163723 - .002372      |
TRAMCON     |  .7048951 |  .4187244       | 1.68| 0.092  |  - .1157896   1.52558    |
CLNTOILET  |  1.155462 |  .6597406       | 1.75| 0.080  |  - .1376055   2.44853    |
CLNPARK     | -2.087312 |  .8301312      | -2.51| 0.012  |   -3.714339 - .460285     |
FRUITTEST   |  1.553101 |  .6689184       | 2.32| 0.020  |   .2420454   2.864157    |
LBD         |  -.272095 |  .0653212      | -4.17| 0.000  |   - .4001224 - .1440681   |
_cons        |  7.570823 |  5.289233       | 1.43| 0.152  |  -2.795883  17.93753      |
```

```stata
. probit D_WTP INCOME DUMOCC DUMDEU WTIME TRAMCON CLNTOILET CLNPARK FRUITTEST LB
> D
Iteration 0:  log likelihood = -67.685855
Iteration 1:  log likelihood = -36.780115
Iteration 2:  log likelihood = -35.512936
Iteration 3:  log likelihood = -35.491797
Iteration 4:  log likelihood = -35.491783
Iteration 5:  log likelihood = -35.491783

Probit regression  Number of obs   =    100
LR chi2(9)      =    64.39
Prob > chi2     =   0.0000
Log likelihood = -35.491783  Pseudo R2   =    0.4756

                    | Coef.     Std. Err.     z  P>|z|      [95% Conf. Interval]
-------------|-----------|------------------|-----|--------|-----------------------------|
D_WTP        |           |                  |     |        |                            |
INCOME       |  .8794337 |  .2006921       | 4.38| 0.000  |   .4860844   1.272783      |
DUMOCC      |  .3334344 |  .1351779       | 2.47| 0.014  |   .0684906   .5938782     |
DUMDEU      | -1.401455 |  .7117438       | -1.97| 0.049  |   -2.796447 - .0064623     |
WTIME       | -1.616421 |  .3294196       | -4.87| 0.061  |   -1.262072 - .292229     |
TRAMCON     |  .143218  |  .2509306       | 1.65| 0.099  |  -.0774932   .9061368     |
CLNTOILET  |  .6503608 |  .3854759       | 1.69| 0.092  |   -1.051581  1.40588     |
CLNPARK     | -1.229276 |  .4815114       | -2.55| 0.011  |   -2.173021  -.2855308     |
FRUITTEST   |  .9311935 |  .3900453       | 2.39| 0.017  |   .1667187   1.695668    |
LBD         |  -.161659 |  .0369803       | -4.37| 0.000  |   -.234137 - .0891769     |
_cons        |  4.446701 |  3.075634       | 1.45| 0.148  |  -1.581431  10.47483      |
```
Appendix 3b: STATA Program for logit and probit estimation (Local Respondents)

`. logit D_WTP LBD INCOME TIMEVISIT PARKING TICKET SALE NTOILET`

Iteration 0:  log likelihood =  -68.59298
Iteration 1:  log likelihood =  -23.289569
Iteration 2:  log likelihood =  -21.812564
Iteration 3:  log likelihood =  -21.608941
Iteration 4:  log likelihood =  -21.608732
Iteration 5:  log likelihood =  -21.608732

Logistic regression  Number of obs =  100
LR chi2(7) =  93.97
Prob > chi2 =  0.0000
Log likelihood =  -21.608732  Pseudo R2 =  0.6850

| D_WTP       | Coef.  | Std. Err. | z     | P>|z|    | [95% Conf. Interval] |
|-------------|--------|-----------|-------|--------|---------------------|
| LBD         | -.5116206 | .1163173 | -4.40 | 0.000  | -0.7395937 -0.2836428 |
| INCOME      | 1.826119  | .5348412 | 3.41  | 0.001  | .7778491 2.874388   |
| TIMEVISIT   | 2.927836  | .8127688 | 3.60  | 0.000  | 1.3348380 4.520834  |
| PARKING     | -1.78496  | .9032644 | -1.98 | 0.048  | -.3555325 -.0145939 |
| TICKET      | 2.08734   | 1.071555 | 2.69  | 0.007  | .7871305 4.98755    |
| SALE        | -2.48584  | .8674782 | -2.87 | 0.004  | -.4186066 -.785614  |
| NTOILET     | 2.054267  | .7816747 | 2.63  | 0.009  | .5222129 3.586321   |
| _cons       | -3.605441 | 3.638336 | -0.99 | 0.322  | -10.73645 3.525567  |

`. probit D_WTP LBD INCOME TIMEVISIT PARKING TICKET SALE NTOILET`

Iteration 0:  log likelihood =  -68.59298
Iteration 1:  log likelihood =  -22.956658
Iteration 2:  log likelihood =  -21.556831
Iteration 3:  log likelihood =  -21.428328
Iteration 4:  log likelihood =  -21.428148
Iteration 5:  log likelihood =  -21.428148

Probit regression  Number of obs =  100
LR chi2(7) =  94.33
Prob > chi2 =  0.0000
Log likelihood =  -21.428148  Pseudo R2 =  0.6876

| D_WTP       | Coef.  | Std. Err. | z     | P>|z|    | [95% Conf. Interval] |
|-------------|--------|-----------|-------|--------|---------------------|
| LBD         | -.2903113 | .0606335 | -4.79 | 0.000  | -.4091508 -.1714717 |
| INCOME      | 1.031206  | .285895  | 3.61  | 0.000  | .4708623 1.59155    |
| TIMEVISIT   | 1.630207  | .4191143 | 3.89  | 0.000  | .8087585 2.451666   |
| PARKING     | -1.01911  | .5140815 | -1.98 | 0.047  | -.2026691 -.0115285 |
| TICKET      | 1.617117  | .5944837 | 2.72  | 0.007  | .4519503 2.782283   |
| SALE        | -1.400423 | .4620655 | -3.03 | 0.002  | -.2306055 -.4947913 |
| NTOILET     | 1.218837  | .4386205 | 2.78  | 0.005  | .3591565 2.078517   |
| _cons       | -2.101501 | 2.07645  | -1.01 | 0.312  | -6.171267 1.968265  |
Appendix 3c: STATA Program for logit and probit estimation (All Respondents)

. logit D_WTP LBD INCOME TIMEVISIT

Iteration 0:  log likelihood = -136.37092
Iteration 1:  log likelihood = -79.424784
Iteration 2:  log likelihood = -77.708713
Iteration 3:  log likelihood = -77.684863
Iteration 4:  log likelihood = -77.684846
Iteration 5:  log likelihood = -77.684846

Logistic regression
Number of obs = 200
LR chi2(3) = 117.37
Prob > chi2 = 0.0000
Log likelihood = -77.684846
Pseudo R2 = 0.4303

| D_WTP     | Coef.    | Std. Err. | z     | P>|z|   | [95% Conf. Interval] |
|-----------|----------|-----------|-------|-------|---------------------|
| LBD       | -.248094 | .0375804  | -6.60 | 0.000 | -.3217503 -.1744377 |
| INCOME    | .9905167 | .1873823  | 5.29  | 0.000 | .6232541 1.357779  |
| TIMEVISIT | 1.494579 | .3917946  | 3.81  | 0.000 | .7266761 2.262483  |
| _cons     | -.582675 | .7684608  | -0.76 | 0.448 | -2.088831 .9234806 |

. probit D_WTP LBD INCOME TIMEVISIT

Iteration 0:  log likelihood = -136.37092
Iteration 1:  log likelihood = -79.530384
Iteration 2:  log likelihood = -78.012326
Iteration 3:  log likelihood = -77.994765
Iteration 4:  log likelihood = -77.994761

Probit regression
Number of obs = 200
LR chi2(3) = 116.75
Prob > chi2 = 0.0000
Log likelihood = -77.994761
Pseudo R2 = 0.4281

| D_WTP     | Coef.    | Std. Err. | z     | P>|z|   | [95% Conf. Interval] |
|-----------|----------|-----------|-------|-------|---------------------|
| LBD       | -.1415721| .0194084  | -7.29 | 0.000 | -.179612 -.1035322 |
| INCOME    | .551306  | .0975964  | 5.65  | 0.000 | .3600206  .7425914 |
| TIMEVISIT | .8401185 | .2206419  | 3.81  | 0.000 | .4076684 1.272569  |
| _cons     | -.2724431| .4335119  | -0.63 | 0.530 | -1.122111 .5772247 |
Appendix 4a: Sample of questionnaire (English)

Dear visitor
Welcome to MARDI Agrotechnology Park, Langkawi. I am a student master of Economics at Universiti Utara Malaysia (UUM), and I am conducting this field survey for academic research. The main objective is to evaluate the visitor willingness to pay for entrance fee toward construction and usage of Health and Spa Exhibition Center in MARDI Agrotechnology Park. I do appreciate if you only take 10 minute of your valuable time in completing this questionnaire. All information gathered is confidential and used only for academic purposes.

Researcher:
FAIRUZ BIN PUASA (814269)
UNIVERSITI UTARA MALAYSIA, SINTOK KEDAH

SECTION A: DEMOGRAPHY
Please tick (✓) only one answer to each question.

1. Gender:
   (   ) Male
   (   ) Female

2. Age:
   (   ) < 20
   (   ) 20 – 29
   (   ) 30 – 39
   (   ) 40 – 49
   (   ) 50 – 59
   (   ) ≥ 60

3. Marital status:
   (   ) Single
   (   ) Married
   (   ) Others: (please specify) ____________________________

4. Nationality
   (   ) Malaysian (State your state) ____________________________
   (   ) International (State your country) _______________________

5. Occupation:
   (   ) Professional / Management
   (   ) Technical
   (   ) Clerical
   (   ) Self employed
   (   ) Student
6 Monthly household Income:
( ) ≤ US$1000
( ) US$1001 – US$ 2000
( ) US$2001 – US$ 3000
( ) US$3001 – US$ 4000
( ) US$4001 – US$ 5000
( ) > US$ 5000

7 Highest education attained :
( ) No education
( ) Primary school
( ) Secondary school
( ) Higher Institution
( ) Others: (please specify) __________

SECTION B: THE VIEW ABOUT MARDI AGROTECHNOLOGY PARK?

8 Where did you get information about MARDI Agrotechnology Park? /
( ) Newspaper
( ) Internet
( ) Magazine
( ) Television / Radio
( ) Friends / Family
( ) Tourism agent
( ) Others: (please specify) __________

9 How many times have you visited MARDI Agrotechnology Park? If more than one, give the reason to come again?
( ) First time
( ) 2 time __________________________
( ) 3 time __________________________
( ) More than three times __________________________

10 Transportation that you use to MARDI Agrotechnology Park?
( ) Car
( ) Motorcycle
( ) Bus
( ) Other (please specify) __________

11 With whom do you come to MARDI Agrotechnology Park?
( ) In group
( ) Partner / spouse
( ) Alone
( ) Family
( ) Others: (please specify) __________

12 Purpose of visit to MARDI Agrotechnology Park? (Choose ONLY one)
( ) Relaxing
( ) Sightseeing
( ) Enjoying the natural beauty
( ) Farm visit
( ) recreational activities
( ) Study / Research
( ) Others: (please specify) __________________________
13 What types of activity that you do at MARDI Agrotechnology Park? Please choose the main 5 activities that you do and arrange rank on the answer, 1 – the highest to 5 – the lower

( ) Farm visit  ( ) Testing Fruit
( ) Sightseeing  ( ) Camping
( ) Shopping  ( ) Relaxing
( ) Jungle Tracking  ( ) Photography
( ) Others (Please specify) ______________________

14 Please tick ( / ) the answer whether you (1) extremely dissatisfied, (2) dissatisfied, (3) neutral, (4) satisfied, (5) extremely satisfied on the facilities/ service conditions that have been provided in MARDI Agrotechnology Park

<table>
<thead>
<tr>
<th>Facilities Conditions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Number of parking space</td>
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<tr>
<td>Short queue at the ticket counter</td>
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<tr>
<td>Safety in - farm Road</td>
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<tr>
<td>Number of tourist guide</td>
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<tr>
<td>Position of resting area</td>
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<tr>
<td>Number of resting area</td>
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<tr>
<td>Comfortable information technology center</td>
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<tr>
<td>Comfortable cafeteria</td>
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<tr>
<td>Condition of sales center</td>
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<tr>
<td>Number of public toilet</td>
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<tr>
<td>Fruit variety</td>
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<tr>
<td>Vegetable variety</td>
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<tr>
<td>Flower and herb variety</td>
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<tr>
<td>Number of park vehicle / tram</td>
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<tr>
<td>Clear and readable signboard</td>
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<td>Safety of watch tower</td>
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<tr>
<td>Camping site position</td>
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<tr>
<td>Beautiful landscape</td>
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<tr>
<td>Service Conditions</td>
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<tr>
<td>Waiting time for park vehicle / tram</td>
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<tr>
<td>Park vehicle / tram condition</td>
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<tr>
<td>Farm Visit period</td>
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<tr>
<td>Cleanliness of toilet</td>
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<tr>
<td>Cleanliness of park</td>
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<tr>
<td>Creativity of tourist guide</td>
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<tr>
<td>Information by tourist guide</td>
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<tr>
<td>Friendliness and hospitality of tourist guide</td>
<td></td>
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<tr>
<td>Variety of fruit testing</td>
<td></td>
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</tbody>
</table>

**SECTION C: WILLINGNESS TO PAY AMONG VISITOR**

The below box explains the information about MARDI Agro Technology Park. It is important for you to read to answer the following questions.

MARDI Agro Technology Park functions as a center for technology transfer and information dissemination concerning agro-industry. After this park is being upgraded as agro-tourism attraction. It gaining the visitor attention with increment from 9206 in 2006 to 75,877 in 2013.

Currently, main attraction in the park is taking photograph with a variety of visitors who come can pose with a variety of tropical fruit trees, hi-tech vegetable farm, deer park, flower and herb garden. In addition, visitors have the opportunity to taste and buy fresh tropical fruits and the hi-tech vegetables at the sales center.

Assume that the agro technology park management intends to build Health and Spa Exhibition Center. The center will fully utilize the entire herb grown in MARDI Agro Technology Park. This will allow visitors to experience the advantages and benefits of herb grown in the park such as Tongkat Ali, Kacip Fatimah, Sireh, Kunyit, Serai Wangi, limau purut, Avokado and stevia. This center will also become a platform to popularize Malaysia herbs to the world.

Currently, an entrance fee is charged at RM 5 for local visitor and RM20 for foreign visitor. Park management plan to increase the entrance fee to accommodate of expenditure the Health and Spa Center that can be enjoyed by all visitors.
If the entrance fee is increased to RM__________, are you willing to pay for this amount?

( ) Yes (Please answer no 16)
( ) No (Please answer no 17)

If YES, please state your reason.

( ) Agree with the plan to build the Health and Spa Center.
( ) Will increase knowledge about usage of herbs available in Malaysia
( ) It can help MARDI Agro Technology Park to expend its service
( ) I love health and spa service
( ) Others: (please specify)

If NOT, what is your main reason?

( ) I don’t like spa
( ) Current entrance fee is already sufficient
( ) The cost should be provided by Malaysian Government
( ) Health and Spa center is not suitable to be built in MARDI Agro Technology Park
( ) Others: (please specify)

Do you feel this questionnaire provided you with

( ) Too much information
( ) About the right amount of information
( ) Not enough information

SECTION D: COMMENT/ RECOMMENDATION

Do you have any comment or suggestion on how to improve the facilities/service in MARDI Agro Technology Park?

Thank you Very Much for Your Time. Your cooperation is greatly appreciated.
Appendix 4b: Sample of questionnaire (Malay)

Pelawat yang dihormati,
Selamat datang ke Taman Agro teknologi MARDI, Langkawi. Saya adalah pelajar Ijazah Sarjana / Master Ekonomi di Universiti Utara Malaysia(UUM), Sintok, Kedah dan sedang menjalankan kajian akademik untuk menilai kesediaan pelancong untuk membayar untuk pembinaan dan penggunaan Pusat Pameran Kesihatan dan Spa di Taman Agro Teknologi MARDI. Saya sangat menghargai sekiranya anda dapat meluangkan sedikit masa sekurang-kurangnya 10 minit untuk mengisi borang selidik ini. Segala maklumat yang diberikan adalah sulit dan hanya digunakan untuk tujuan akademik sahaja.

Penyelidik:
FAIRUZ BIN PUASA (814269)
UNIVERSITI UTARA MALAYSIA, SINTOK KEDAH

BAHAGIAN A: DEMOGRAFI
Sila tandakan (√) hanya satu jawapan bagi setiap soalan

1. Jantina:
   ( ) Lelaki
   ( ) Perempuan

2. Umur:
   ( ) < 20
   ( ) 20 – 29
   ( ) 30 – 39
   ( ) 40 – 49
   ( ) 50 – 59
   ( ) ≥ 60

3. Status perkahwinan:
   ( ) Bujang
   ( ) Berkahwin
   ( ) Lain-lain: (sila nyatakan) ____________

4 Kewarganegaraan
   ( ) Malaysia (Nyatakan negeri anda) ________________
   ( ) Asing (Nyatakan Negara anda) __________________

5 Pekerjaan:
   ( ) Profesional / Pengurusan
   ( ) Teknikal
   ( ) Perkerjaan
   ( ) Bekerja sendiri
   ( ) Pelajar
(   ) Suri rumah / Tidak bekerja
(   ) Lain-lain: sila nyatakan) __________

6 Pendapatan isi rumah sebulan (RM):
(   ) ≤ 3000
(   ) 3001 - 6000
(   ) 6001 - 9000
(   ) 9001 – 12000
(   ) 12001 – 15000
(   ) > 15000

7 Taraf pendidikan tertinggi :
(   ) Tiada Pendidikan
(   ) Sekolah Rendah
(   ) Sekolah Menengah
(   ) Institusi Pengajian Tinggi
(   ) Lain-lain: (sila nyatakan) __________

BAHAGIAN B: PANDANGAN MENGENAI TAMAN AGROTEKNOLOGI MARDI

8 Bagaimanakah anda mendapat maklumat mengenai Taman Agroteknologi MARDI?
(   ) Surat khabar
(   ) Internet
(   ) Majalah
(   ) Televisyen / Radio
(   ) Rakan / Keluarga
(   ) Agen pelancongan
(   ) Lain-lain: (sila nyatakan) __________

9 Kali keberapakah anda melawat Taman Agro Teknologi MARDI? Jika lebih sekali berikan sebab untuk datang semula?
(   ) Kali pertama
(   ) Kali ke 2 ______________________________
(   ) Kali ke 3 ______________________________
(   ) Lebih 3 kali ______________________________

10 Pengangkutan yang digunakan untuk ke Taman Agro Teknologi MARDI?
(   ) Kereta
(   ) Motosikal
(   ) Bas
(   ) Lain-lain (sila nyatakan) ______

11 Bersama siapakah anda datang ke Taman Agro Teknologi MARDI?
(   ) Dalam kumpulan
(   ) Rakan / Pasangan
(   ) Seorang diri
(   ) Keluarga
(   ) Lain-lain: (sila nyatakan) __________

12 Tujuan berkunjung ke Taman Agro Teknologi MARDI? (Pilih HANYA SATU)
(   ) Berehat
(   ) Bersiar - siar
(   ) Menikmati keindahan semula jadi
(   ) Melawat ladang
(   ) Melakukan aktiviti rekreasi
(   ) Pembelajaran atau melakukan kajian
13 Apakah jenis aktiviti yang anda lakukan di Taman Agro Teknologi MARDI? Pilih 5 aktiviti utama yang dilakukan dan susun mengikut kedudukan, 1 – paling utama ke 5 – paling rendah

<table>
<thead>
<tr>
<th>Keupayaan Utama</th>
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<th>2</th>
<th>3</th>
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<tr>
<td>Bersiar-siar</td>
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<tr>
<td>Membeli belah</td>
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<td>Merentas rimba</td>
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<tr>
<td>Bergambar</td>
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</table>

(   ) Lain-lain: (sila nyatakan) _________________________

14 Sila tandakan ( / ) pada jawapan sama ada anda (1) sangat tidak berpuas hati, (2) tidak puas hati, (3) Tiada pandangan, (4) berpuas hati, (5) sangat berpuas hati dengan keadaan kemudahan awam / perkhidmatan yang disediakan di Taman Agro Teknologi MARDI.

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<td>jalan ladang yang selamat</td>
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<td>Bilangan pemandu pelancong</td>
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</table>

[Table for other conditions]

Kedudukan Wakaf - wakaf rehat
Tempat duduk / rehat yang cukup
pusat teknologi maklumat yang selesa
Cafeteria yang selesa
Keadaan pusat jualan
Bilangan tandas awam
Kepelbagaian jenis buah
Kepelbagaian jenis sayur
Kepelbagaian jenis bunga / herba
Bilangan kenderaan taman
papan tanda yang jelas dibaca
Keselamatan Menara tinjau
Kedudukan Tapak perkhemahan
Landskap yang indah
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<td>Masa menunggu kenderaan ladang</td>
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<tr>
<td>Tempoh lawatan ladang</td>
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<td>Kepelbagaian buah yang dirasa</td>
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</tbody>
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**BAHAGIAN C: KESEDIAAN UNTUK MEMBAYAR ANTARA PELANCONG**

Kotak di bawah menerangkan maklumat tentang Taman Agro Teknologi MARDI. Adalah penting bagi anda untuk membaca untuk menjawab soalan-soalan berikut.

Taman Agro Teknologi MARDI Langkawi berfungsi sebagai pusat pemindahan teknologi dan penyebaran maklumat mengenai industri pertanian. Setelah taman ini dinaik taraf sebagai tarikan agro-pelancongan, ia semakin mendapat perhatian orang ramai dengan peningkatan pelawat yang datang dari 9206 pada tahun 2006 kepada 75877 pada tahun 2013.

Pada masa kini, tarikan utama di taman ini termasuklah bergambar dengan pelbagai tarikan utama termasuk ladang buah-buahan tropika, kebun sayur hi tech, taman rusa, kebun bunga dan taman herba. Di samping itu, pelawat berpeluang merasa dan membeli buah–buahan tropika dan sayur hi tech segar yang dijual di pusat jualan.

Andaikan pihak pengurusan taman agro teknologi bercadang untuk membina **Pusat Pameran Kesihatan dan Spa**. Pusat ini akan menggunakan keseluruhan herba yang di tanam di Taman Agro Teknologi MARDI. Ini membolehkan pelawat mengetahui mengenai kelebihan dan khasiat herba yang ada. Pusat ini juga akan menjadi platform untuk mempopularkan herba Malaysia di mata / seluruh dunia.

Pada masa ini, bayaran masuk yang dikenakan adalah RM6 dan RM 20 untuk pelancong tempatan dan asing. Pengurusan taman bercadang untuk meningkatkan bayaran masuk untuk menampung perbelanjaan Pusat Kesihatan dan Spa yang boleh dinikmati oleh semua pelawat.
15 Sekiranya bayaran masuk ditingkatkan sebanyak RM________, adakah anda sedia untuk membayar dengan jumlah tersebut.

( ) Ya (sila jawab soalan no 16)
( ) Tidak (sila jawab soalan no 17)

16 Sekiranya YA, sila nyatakan alasan anda.

( ) Bersetuju dengan rancangan pembinaan Pusat Kesihatan dan Spa
( ) Akan meningkatkan pengetahuan mengenai penggunaan herba yang terdapat di Malaysia
( ) Boleh membantu Taman Agro Teknologi MARDI dalam perbelanjaan pusat dan perkhidmatan tersebut
( ) Saya suka kepada perkhidmatan kesihatan dan spa.
( ) Lain-lain: (sila nyatakan)

18 Adakah anda rasa kajian ini menyediakan anda dengan

( ) Terlalu banyak maklumat
( ) Maklumat yang tepat dan mencukupi
( ) Tidak cukup maklumat

BAHAGIAN D: CADANGAN

19 Komen atau cadangan anda untuk menambahbaik kemudahan/ perkhidmatan yang ada di Taman Agro Teknologi MARDI?

________________________________________________________

________________________________________________________

TERIMA KASIH ATAS KERJASAMA ANDA. KERJASAMA ANDA AMAT DIHARGAI
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<thead>
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<tr>
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<td>RM20</td>
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<tr>
<td>RM25</td>
<td>RM25</td>
</tr>
</tbody>
</table>
Appendix 5: Photographs of available facilities and service in MARDI Agro Technology Park

Farm tour shuttle

Jungle tracking

Sales centre

Counter ticket

Public toilet

Cafeteria
Test fruit corner

Parking car

Waiting Area

Watch tower

Farm visit
Creativity of tourist guide

Variety of fruit

Variety of hi tech vegetables
Photograph Activity

Beautiful Landscape

Information technology centre

Petting zoo