TOILET SURVEY STUDY 2011

EXECUTIVE SUMMARY

From 11-29 December 2011, a class of 21 graduating students from the Ngee Ann Polytechnic’s School of Business and Accountancy conducted a comprehensive toilet survey (refer to annex for the results) of 500 Singaporeans and PRs ranging from age 18-65. The survey covered 5 core sections as follows:

A) Toilet happiness
B) Facilities, design and maintenance of toilets
C) User experience
D) Awareness, education and enforcement
E) User and cleaner behaviour

Based on the survey findings consolidated by the students, the Restroom Association (Singapore) or RAS is proposing a holistic approach to enhance the standard of the restroom environment as follows:

1. Mandatory rating scheme for toilets
2. Continued government intervention and enforcement
3. Specialised training of restroom attendants
4. Higher toilet design guidelines
5. Effective public awareness and engagement
SUMMARY OF FINDINGS

**Overall**
1. Most of the respondents were either very unhappy or unhappy with the cleanliness of coffee shops and hawker centres followed by bus interchanges, parks and MRT stations. Most felt that the rating of toilets should be made compulsory.
2. About half were very unhappy or unhappy with users’ efforts while most remained neutral about owners’ efforts and government intervention. The respondents were happiest about the effort of cleaners.
3. About half felt that users are most responsible for keeping the toilets happy followed by owners and cleaners.
4. With regard to the need for improvement, respondents ranked toilet cleanliness first followed by its maintenance and design.
5. Respondents felt that the main cause of dirty toilets was irresponsible users.
6. Respondents felt that it was most important that users took responsibility for maintaining toilet cleanliness.
7. There is also a need for owners and cleaners to step up efforts in keeping toilets clean.

**Facilities**
1. Generally, toilets in Singapore possess basic facilities and average levels of cleanliness.
2. Monitoring of the odour problem and the sensor automatic flushing system is needed.
3. Sanitary bins, urinals and toilet bowls are the least clean facilities.
4. Male toilets are dirtier than female toilets.
5. Public parks, pools and food establishments have dirty walls and doors.
6. MRT stations, bus interchanges and food establishments have dirty toilet bowls and urinals.
7. Schools and food establishments have dirty washbasins.
8. Public parks, swimming pools and schools have dirty sanitary bins.
9. Food establishments have the worst ventilation.
10. Many locations have dirty floorings.

**Design**
1. About half of the respondents responded that the cubicle door space was tight.
2. Correct positioning and adequate provision of hand dryers are needed because few would use the hand dryer frequently and most who did not use the hand dryer would use it if it is within reach.
3. Design preference:
   - Slide latch/turn knob door lock
   - Sit type toilet bowl
   - Drum roll toilet paper dispenser
   - Individual wash basin
   - Automatic tap and soap dispenser
   - Automatic hand dryer (female) vs Jet (male)
   - Full length mirror
   - Urinal with modesty board

**Awareness, education and enforcement**
1. Though educational posters did remind users to keep the toilets clean, less than half noticed the presence of posters.
2. Though about half felt that users should be responsible in enforcing cleaner toilets, few would consider even gently reminding those who dirty the toilet.
3. Some felt that enforcement would propel everyone to react faster.
User Behaviour
1. Generally, respondents are neutral with regard to toilet cleanliness.
2. The top three user behaviours were splashing water on the floor, not flushing after use* and litter in urinals and toilet bowls*
3. Only a third of the respondents would not visit an establishment selling good food if its toilets were the dirtiest.
4. Few would inform owners or cleaners to clean up dirty toilets.
5. Few would consider even gently reminding others who dirty the toilet.

*Attributed more to ineffective/malfunctioned automatic flushing system than poor user behaviour

RECOMMENDATIONS

1. Mandatory rating scheme for toilets
Locals were either very unhappy or unhappy with the cleanliness of coffee shops (Qn A2: 61.3%) and hawker centres (57.1%) followed by bus interchanges (43.5%), parks (40.3%) and MRT stations (32.4%). For a start, the government should consider a mandatory rating scheme for the coffee shops and hawker centres. Many (Qn D5: 82.8%) felt that a compulsory grading scheme for all public toilets is needed. The current Happy Toilet Programme (HTP) is a voluntary scheme.

2. Continued government intervention and enforcement
Though about half (Qn D4: 40.6%) felt that users should be responsible in enforcing cleaner toilets, few (Qn E6: 18.2%) would consider even gently reminding others who dirty the toilet. The government (Qn D4: second highest at 33.8%) should therefore continue its efforts to enforce cleaner toilets. Moreover, few (Qn E3: 15.2%) would inform errant owners or cleaners to clean up dirty toilets. Given that businesses at food establishments selling good food would not be much affected by their dirty toilets, errant owners will not see the need to clean up their toilets. (Qn E2: 34.8%).

3. Specialised training of restroom attendants
With regard to the need for improvement, respondents ranked toilet cleanliness (Qn A5: 84.6%) first followed by its maintenance (76.8%) and design (57.8%). Therefore, the cleanliness and maintenance of toilets have to be addressed. Take for instance, to resolve the odour problem (Qn C3: 47.61%) and functionality of the sensor automatic flushing system (Qn E7: second highest), owners should not only step up cleaning and inspection schedule but also hire cleaners who have undergone the toilet cleaning and inspection course. More attention should be focused on the regular cleaning of sanitary bins, urinals and toilet seats (Qn C2) as they are the least clean facilities.

4. Higher toilet design guidelines
Better designs will help provide a more pleasant experience for the users. Therefore, owners should look into the design preference (Qn B1- B9), cubicle door space (Qn C3: 43.6%) and positioning of the wash basins, soap dispensers, hand dryers (Qn B10: 23% vs B11: 70%) and litter bins. Provision of litter bins near urinals can resolve the problem of littering in urinals (Qn E7). More comprehensive guidelines on toilet designs and maintenance should be established for owners to adhere to. The guidelines in Japan can serve as a reference guide.
5. **Effective public awareness and engagement**

Apart from poster displays, other means of reaching out to the public are needed such as our existing education programmes for preschools, schools and the general public. If posters are to be displayed (Qn D1: 48.6% vs D2: 76.1%), they should be captivating and strategically displayed such as near the wash basins, urinals and cubicle areas. The public are generally not associating dirty toilets with food, safety and health (Qn E2: 65.2%). Therefore, the content should adopt the deterrent approach such as fatal consequences of unhygienic practices. Materials can be targeted and focussed on the following user behaviours (Qn E7):

a. Splashing of water on the floor  
b. Not flushing after use*  
c. Litter in toilet bowls or urinals*  
d. Littering on toilet floors  
e. Not washing hands after use  
f. Footprints on toilet seats  

*Educational messages conveyed to the public should be to ensure toilet bowls and urinals are flushed before leaving.

Apart from awareness, means of engaging the public are also important. Since adopting the approach of users policing users (Qn E6: 18.2%) is not appropriate, engaging the public to take ownership should be promoted such as picking up litter in the toilet even if it is left behind by others.

**CONCLUSION**

RAS will work with its identified key players to enhance the standard of the restroom environment as follows:

**Government**
- Mandatory rating scheme for toilets  
- Continued government enforcement and intervention  
- Specialised training of restroom attendants  
- Higher toilet design guidelines

**Owners especially coffee shops and hawker centres**
- Specialised training of restroom attendants  
- Higher toilet design guidelines  
- Effective public awareness and engagement

**The Keep Singapore Beautiful Movement, Public Hygiene Council and Singapore Kindness Movement**
- Effective public awareness and engagement
ANNEX

SURVEY RESULTS

AGE GROUP

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of ppl</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>15.80%</td>
</tr>
<tr>
<td>26-35</td>
<td>22.20%</td>
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<tr>
<td>36-45</td>
<td>22.00%</td>
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<tr>
<td>46-55</td>
<td>20%</td>
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<tr>
<td>56-65</td>
<td>20%</td>
</tr>
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</table>

n= 500

GENDER

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Male</td>
<td>249</td>
</tr>
<tr>
<td>Female</td>
<td>251</td>
</tr>
</tbody>
</table>
SECTION A: TOILET HAPPINESS

A1. How happy are you with the cleanliness of Singapore’s public toilets

Results:
Average Rating: 3.04 (Neutral – Happy)

No. of Respondents
mean happiness = 3.04

Implications:
Singaporeans are mostly neutral with regards to toilet cleanliness but are considerably happy with toilets in Singapore.

n=500

<table>
<thead>
<tr>
<th></th>
<th>Very Unhappy</th>
<th>Unhappy</th>
<th>Neutral</th>
<th>Happy</th>
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<tr>
<td>1</td>
<td>14</td>
<td>119</td>
<td>213</td>
<td>140</td>
<td>14</td>
</tr>
<tr>
<td>%</td>
<td>26.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A2. In the last one month, which toilets have you visited?
Please rate how happy are you with cleanliness of the toilets you have selected.

Results:
Mean Rating: 3.73 (Neutral – Happy)

Implications:
68.7% were happy or very happy with the standard.

Shopping Centre

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Respondents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Very Unhappy</td>
<td>0.40%</td>
<td>4.80%</td>
</tr>
<tr>
<td>2 Unhappy</td>
<td>4.40%</td>
<td></td>
</tr>
<tr>
<td>3 Neutral</td>
<td>26.50%</td>
<td></td>
</tr>
<tr>
<td>4 Happy</td>
<td>59.20%</td>
<td></td>
</tr>
<tr>
<td>5 Very Happy</td>
<td>9.50%</td>
<td></td>
</tr>
</tbody>
</table>
Coffee Shop

Results:
Mean Rating: 2.31 (Unhappy – Neutral)

Implications:
61.3% were unhappy or very unhappy with the standard thus more focus is needed.

Hawker Centre

Results:
Average Rating: 2.39 (Unhappy – Neutral)

Implications:
57.1% were unhappy or very unhappy with the standard thus more focus is needed.
**Food Court**

- **Results:**
  - Mean Rating: 3.24 (Neutral – Happy)

- **Implications:**
  - Most respondents were neutral about food court toilets.

**MRT Station**

- **Results:**
  - Average Rating: 2.88 (Unhappy – Neutral)

- **Implications:**
  - Most respondents were neutral about MRT toilets.
School

Results:
Average Rating: 3.58
(Neutral – Happy)

Implications:
54.4% were happy or very happy with the standard

Bus Interchange

Results:
Mean Rating: 2.69
(Unhappy – Neutral)

Implications:
About an equal percentage were neutral and unhappy with the standard.
### Restaurant

#### Results:
- Mean Rating: 3.40

#### Implications:
- About an equal percentage were neutral and happy with the standard.

<table>
<thead>
<tr>
<th>% of Respondents</th>
<th>1 Very Unhappy</th>
<th>2 Unhappy</th>
<th>3 Neutral</th>
<th>4 Happy</th>
<th>5 Very Happy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41.20%</td>
<td>41.90%</td>
<td>5.60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22.00%</td>
<td>9.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Park

#### Results:
- Mean Rating: 2.66 (Unhappy – Neutral)

#### Implications:
- 44.4% were neutral about the standard.

<table>
<thead>
<tr>
<th>% of Respondents</th>
<th>1 Very Unhappy</th>
<th>2 Unhappy</th>
<th>3 Neutral</th>
<th>4 Happy</th>
<th>5 Very Happy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>72.60%</td>
<td>30.60%</td>
<td>44.40%</td>
<td>14.60%</td>
<td>0.70%</td>
</tr>
<tr>
<td>No</td>
<td>27.40%</td>
<td>9.70%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Swimming Pool

Results:
Average Rating: 3.20 (Neutral – Happy)

Implications:
44.4% were happy or very happy with the standard.

Others

Results:
Mean Rating: 3.35 (Neutral – Happy)

Implications:
57.3% were neutral about the standard.
A3. Who do you think is responsible for keeping the toilets happy for you? Please rank in order of responsibility.

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>260</td>
<td>52%</td>
</tr>
<tr>
<td>Owners of Toilets</td>
<td>102</td>
<td>20.4%</td>
</tr>
<tr>
<td>Cleaners</td>
<td>97</td>
<td>19.4%</td>
</tr>
<tr>
<td>Government</td>
<td>36</td>
<td>7.2%</td>
</tr>
<tr>
<td>NGO</td>
<td>6</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

A4. How happy are you with their efforts in keeping the toilets happy for you?

Results:
Average Rating: 2.97 (Unhappy)

Implications:
Generally, respondents were neutral to the efforts of owners.

Toilet Owners
Implications: 53% were unhappy or very unhappy with users’ efforts, this reveals that user education is needed.

Results: Average Rating: 2.49 (Unhappy with users)

Users

Implications: 34.6% were happy, the highest as compared to owners, users, government and NGO.

Results: Average Rating: 3.22 (Neutral – Happy)

Cleaners
**Government**

Results:
Average Rating: 2.97 (Unhappy)

Implications:
64.4% were neutral about the government's intervention.

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**NGO (RAS)**

Results:
Average Rating: 2.98 (Unhappy – Neutral)

Implications:
73.0% were mostly neutral to what RAS has done.
A5. “Singapore’s toilets have a need for improvement.”
To what extent do you agree with this statement in the follow areas?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neutral (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness Mean=4.19</td>
<td>1.8%</td>
<td>13.0%</td>
<td>47.0%</td>
<td>37.6%</td>
<td></td>
</tr>
<tr>
<td>Maintenance Mean=3.94</td>
<td>4.6%</td>
<td>18.0%</td>
<td>54.2%</td>
<td>22.6%</td>
<td></td>
</tr>
<tr>
<td>Design Mean=3.63</td>
<td>6.2%</td>
<td>35.0%</td>
<td>44.6%</td>
<td>13.2%</td>
<td></td>
</tr>
</tbody>
</table>

n=500

Implications:
Cleanliness ranked first, the maintenance of facilities was second and finally design. Smart design can be a key success factor, but most respondents think design in its aesthetic domain. More public awareness in terms of smart designs should be generated.

SECTION B: IMPORTANCE OF FACILITIES, DESIGN & MAINTENANCE OF TOILETS

B1. Which door knob design do you prefer?

- Turn Latch
- Turn Knob
- Slide Latch
B2. Which design of toilet bowl do you prefer?

**Results:** 53% of respondents preferred sit type toilet bowl. A huge percentage when individually compared to the others.

**Implications:** Future toilet bowl designs can be modeled with sitting type.

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**Results:** A fairly high number of respondents preferred slide latch or turn knob.

**Implications:** Future door knob designs can be modeled with slide latch or turn knob.
B3. Which design of toilet paper dispenser do you prefer?

![Images of toilet paper dispensers](Image)

- Horizontal Bar: 21%
- Drum Roll: 51%
- Motorised Dispenser: 16%
- No Preference: 12%

**n=500**

**Implications:** Future toilet paper dispenser can be modeled with drum roll model.

**Results:** More than half of respondents preferred Drum roll toilet paper dispenser.

B4. Which design of wash basin do you prefer?

- Joint Basin
- Individual Basins
B5. Which design of wash basin taps do you prefer?

Implications: Future wash basin taps can be automated.

Results: A huge percentage of respondents preferred automatic wash basin taps.

B6. Which design of soap dispenser do you prefer?

Implications: Future soap dispensers can be automated.

Results: A huge percentage of respondents preferred automatic soap dispenser.
B7. Which design of urinals do you prefer? (Males only)

![Urinals with Modesty Boards](image1)

- Individual Urinal: 55%
- Joint Urinal: 27%
- Urinals with modesty boards: 3%
- No preference: 15%

*n= 249*

**Implications:** Existing individual urinals can be fitted with modesty boards. Joint urinal design should be discontinued.

**Results:** Slightly more than half of male respondents preferred urinals with modesty boards. Only 4% preferred joint urinal.

B8. Which design of hand dryer do you prefer?
**Implications:** Manual hand dryer designs should be discontinued for new toilets and existing manual dryers to be replaced with automated ones.

**Results:** A fairly huge number preferred non-manual hand dryer.

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**B8. Which design of hand dryer do you prefer?**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Jet</th>
<th>Automatic</th>
<th>Manual</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>105</td>
<td>97</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Female</td>
<td>129</td>
<td>77</td>
<td>40</td>
<td>41</td>
</tr>
</tbody>
</table>

**Results:** Females prefer the automatic hand dryer whereas males prefer the jet hand dryer.

**Implications:** Install automatic hand dryers in female toilets and install jet hand dryer in male toilets.
**B9. Which design of mirror do you prefer?**

![Pie chart showing mirror preference]

- **Implications:** Future toilets can be fitted with at least one full-length mirror.
- **Results:** About 74% of respondents have no preference or preferred the full-length mirror.

**B10. How often do you use the hand dryer?**

![Pie chart showing hand dryer usage]

- **Note:** Respondents who answered Hardly or Occasionally were required to answer question B11.
- **Results:** Only 23% of the respondents often used hand dryer.
B11. Would you use the hand dryer if it is within your reach? i.e. just above the wash basin

**Implications:** Hand dryers are to be fitted within reach i.e. just above the wash basin.

**Results:** 70% of those who did not use the hand dryer often will use the hand dryer if it is convenient.

SECTION C: USER EXPERIENCE OF PUBLIC TOILETS

C1. Location of public toilet you just visited

**Implications:** The small number of respondents for other venue may provide too small of a sample size for the particular venue. Thus causing limitations to data analyses.

**Results:** 67% of respondent just visited shopping malls’ toilets. Small Percentage for other venues.

- Shopping Mall
- Coffee shop/Hawker Centers
- Food Courts/Fast Food Restaurants
- MRT station/Bus Interchange
- Public Parks/Swimming Pool
- School
- Others
C2. With reference to the toilet that you have just visited, how would you rate its cleanliness?
On a scale of 1 to 5, with 1 being very dirty and 5 being very clean.

Implications: Toilet cleaners to pay extra attention to the low scoring areas when cleaning these areas. Re-evaluating ways and improving cleanliness in these areas.

Results: Sanitary Bin is the only basic facilities in our survey to score less than 3, which is our ‘neutral value’. With toilet seat and Urinal coming not far behind.

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n=483

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>2.8</td>
<td>25</td>
<td>47.2</td>
<td>22.2</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>0.11</td>
<td>27.8</td>
<td>55.6</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>0</td>
<td>35.7</td>
<td>42.9</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>MRT Stations/Bus Interchange</td>
<td>0.11</td>
<td>52.8</td>
<td>30.6</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Food Establishment</td>
<td>1.9</td>
<td>32.1</td>
<td>50.9</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>1.5</td>
<td>43.6</td>
<td>45.7</td>
<td>7.1</td>
<td></td>
</tr>
</tbody>
</table>

Results: Public parks, pools and food establishments have dirty doors.

Implications: More focus in keeping doors clean should be done.
### Walls

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>0.0</td>
<td>0.0</td>
<td>57.1</td>
<td>14.3</td>
<td>0.0</td>
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<tr>
<td>MRT Stations/Bus Interchange</td>
<td>2.7</td>
<td>16.2</td>
<td>51.4</td>
<td>27</td>
<td>2.7</td>
</tr>
<tr>
<td>Food Establishment</td>
<td>3.6</td>
<td>38.2</td>
<td>50.9</td>
<td>5.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>63.1</td>
<td>41.4</td>
<td>45.4</td>
<td>9.5</td>
<td></td>
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</tbody>
</table>

**Results:** Public parks, pools and food establishments have dirty walls.

**Implications:** More focus in keeping walls clean should be done.

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### Floors

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>7.1</td>
<td>42.9</td>
<td>35.7</td>
<td>14.3</td>
<td>0.0</td>
</tr>
<tr>
<td>MRT Stations/Bus Interchange</td>
<td>5.4</td>
<td>29.7</td>
<td>48.6</td>
<td>16.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Food Establishment</td>
<td>9.1</td>
<td>54.5</td>
<td>27.3</td>
<td>7.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>1.2</td>
<td>17.4</td>
<td>33.5</td>
<td>43</td>
<td>4.9</td>
</tr>
</tbody>
</table>

**Results:** Many locations face dirty floorings.

**Implications:** More should be done to improve the standard of cleanliness.
**Toilet Bowl**

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>2.7 5.4</td>
<td>29.7</td>
<td>40.5</td>
<td>21.6</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>5.6 22.2</td>
<td>16.7</td>
<td>55.6</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>0</td>
<td>23.1</td>
<td>69.2</td>
<td>7.70</td>
<td></td>
</tr>
<tr>
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<td>2.9 37.1</td>
<td>42.9</td>
<td></td>
<td>17.1</td>
<td>0</td>
</tr>
<tr>
<td>Food Establishment</td>
<td>9.6 42.3</td>
<td>38.5</td>
<td>5.8</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>3</td>
<td>17.3</td>
<td>37.1</td>
<td>36.5</td>
<td>6.1</td>
</tr>
</tbody>
</table>

**Results:** MRT station, bus interchanges and food establishments have dirty toilet bowls.

**Implications:** More should be done to improve the standard of cleanliness.

---

**Urinal**

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>11.1 0</td>
<td>22.2</td>
<td>44.4</td>
<td>22.2</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>0</td>
<td>18.2</td>
<td>54.5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>0</td>
<td>80</td>
<td>20</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MRT Stations/Bus Interchange</td>
<td>4</td>
<td>24</td>
<td>60</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Food Establishment</td>
<td>10</td>
<td>55</td>
<td>25</td>
<td>7.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>5.1</td>
<td>16.1</td>
<td>38.1</td>
<td>36.1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**Results:** MRT station, bus interchanges and food establishments have dirty urinals.

**Implications:** More should be done to improve the standard of cleanliness.
**Washbasins**

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>5.4</td>
<td>37.8</td>
<td>35.1</td>
<td>21.6</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>29.4</td>
<td>17.6</td>
<td>52.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>21.4</td>
<td>64.3</td>
<td>14.3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MRT Stations/Bus Interchange</td>
<td>13.5</td>
<td>56.8</td>
<td>29.7</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Food Establishment</td>
<td>5.5</td>
<td>27.3</td>
<td>50.9</td>
<td>14.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>12.2</td>
<td>8.2</td>
<td>46.5</td>
<td>39.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>

**Results:** Schools and food establishments have dirty washbasins.

**Implications:** More should be done to improve the standard of cleanliness.

---

**Sanitary Bins**

<table>
<thead>
<tr>
<th>Location</th>
<th>Very Dirty</th>
<th>Dirty</th>
<th>Normal</th>
<th>Clean</th>
<th>Very Clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>19.2</td>
<td>34.6</td>
<td>38.5</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>42.9</td>
<td>42.9</td>
<td>14.3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Public Parks/Swimming Pool</td>
<td>62.5</td>
<td>37.5</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MRT Stations/Bus Interchange</td>
<td>18.2</td>
<td>27.3</td>
<td>45.5</td>
<td>9.1</td>
<td>0</td>
</tr>
<tr>
<td>Food Establishment</td>
<td>23.1</td>
<td>76.9</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>4.7</td>
<td>20.9</td>
<td>44.2</td>
<td>27.3</td>
<td>2.9</td>
</tr>
</tbody>
</table>

**Results:** Public parks and swimming pools have the dirtiest sanitary bins.

**Implications:** Specific efforts should be made to improve this situation.
C3. With reference to the toilet you have just visited, evaluate its facilities:

**Hand-dryer**

- **Available**: 86.60% Yes, 6.20% No, 7.20% N/A
- **Working**: 78.80% Yes, 16.80% No, 4.40% N/A
- **Airflow Appropriate**: 69.40% Yes, 10.40% No, 20.20% N/A

**Results:** 86.60% of the respondents evaluated that there are hand dryers. And within these respondents, 78.80% and 69.40% indicate that the hand dryer is working and the airflow is appropriate respectively.

**Implications:** A need to ensure that an available hand-dryer is always in good working condition.
Toilet Flushing System

Results: 92.8% of the respondents evaluated that toilet flushing system is working and 74.2% stated that it is auto-sensed while 82.2% indicate that the water pressure is appropriate.

Implications: Majority of respondents were satisfied with the toilet flushing system.

Toilet Paper & Dispenser

Implications: High percentage of respondents are satisfied with the aspects of toilet paper and dispenser.

Results: A high percentage of 82.2% of the respondents indicated that toilet paper is available and 73.6% of these segment indicated that the toilet dispenser is working and only a small percentage of 20.2 state that the toilet paper dispensed too fast.
**Hand-towels**

**Results:** 53.8% of respondents indicate that no hand-towels were available.

**Implications:** Owners are not providing hand towels possibly due to wastage.

---

**Basin Tap**

**Results:** High percentage of respondents was satisfied with the basin taps except the sensitivity of the auto-sensor taps.

**Implications:** Sensitivity of auto-sensor taps should be monitored more often than the water pressure.
**Hand Soap Dispenser**

Results: A significant 35.6% of respondents responded that soap was diluted.

Implications: Monitoring the quality of soap is required.

---

**Air Freshener**

Results: 23.8% of the respondents did not see any air freshener in the toilet. 17.4% also responded that the air freshener was not working.

Implications: Installation of more air fresheners and maintain its efficiency.
**Cubicle Door**

*Results:* 43.6% of the respondents agreed that the space for the cubicle door was tight.

*Implications:* Enlarging tight spaces of cubicle doors.

---

**Cubicle Door Lock**

*Results:* High percentage of respondents was satisfied with the functionality of the cubicle door lock.

*Implications:* Keeping up the good work in the cubicle door lock.
**Cubicle Door Hook**

Results: High percentage of respondents was satisfied with the functionality of the Cubicle Door Hook.

Implications: Keeping up the good work in the cubicle door hook.

---

**Lighting**

Results: High percentage of respondents was satisfied with the functionality of the lighting.

Implications: Keeping up the good work in the lighting maintenance.
**Ventilation Systems**

**Results:** High percentage of respondents was satisfied with the functionality of the ventilation systems.

**Implications:** Keeping up the good work in the ventilation system maintenance.

---

**Litter Bins**

**Results:** Low percentage of dissatisfaction with the functionality of litter bins but a noticeable 33.2% responded that the litter bin was not cleared of rubbish.

**Implications:** Monitoring of rubbish in litter bins is needed to ensure it will not overflow.
**Sanitary Bins**

Results: 93.73% of the female respondents responded that sanitary bins were available, within this group, 79.8% responded that the bins were dispose-friendly.

Implications: Dispose-friendly design of sanitary bins is needed.

n = 251

**Urinal**

Implications: Proper cleaning of the urinals is needed to fight the smell problem.

Results: 47.61% of the male respondents responded that the urinal was smelly. As compared to a high 76.29% on the sensitivity of the urinal sensors.

n = 249
SECTION D: AWARENESS, EDUCATION & ENFORCEMENT

D1. Did you notice any posters asking you to keep the toilet clean inside this toilet you just visited?

Results: 48.6% (less than half) of the respondents took notice of the educational posters.

Implications: Three possibilities: Either the posters were not available, the posters failed to capture attention, the posters were not strategically displayed.

n= 500

D2. Did the educational posters remind you to keep the toilets clean?

Results: Of the 48.6% who had noticed the posters, 76.1% responded that the posters did remind them to keep the toilets clean.

Implications: Educational posters are still an effective tool to remind users but it has to be captivated.

n= 243
D3. To whom do you think the education of clean toilets should be targeted?

![Bar chart showing the results]

Results: 84.8% of the respondents felt that education should be targeted at users.

Implications: A need to focus on user education.

n= 500

---

D4. Who do you think should be responsible in enforcing cleaner toilets?

![Bar chart showing the results]

Results: 40.6% of the respondents felt that users should police users. The next alternative is the government.

Implications: It may not be effective for users to police users because in question E6, 81.8% responded that they would not even gently remind irresponsible users. Therefore, the other two alternatives are either the government or cleaners enforcing cleaner toilets.

n= 500
D5. Should there be compulsory grading scheme for all public toilets? For example rating public toilets with 3, 4 or 5-Stars.

Results: 82.8% of the respondents felt that toilet grading should be made compulsory.

Implications: The government should consider making toilet grading mandatory since it is well received by the public.

n= 500

D7. In your opinion, which toilet grading schemes is the easiest to distinguish its cleanliness?

Results: The star rating is more recognised by the public.

Implications: The current star-rated grading system of the Happy Toilet Programme is on the right track.

n= 500
SECTION E: USERS & CLEANER BEHAVIOUR

E1. Are you willing to pay to use a clean toilet?

<table>
<thead>
<tr>
<th>No</th>
<th>53.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>47.0%</td>
</tr>
</tbody>
</table>

n= 500

Results: More than half (53%) of the respondents not willing to pay to use a clean toilet.

Implications: If owners would like to charge for toilet usage, the toilets should not only be clean but the owners should also clearly explain the reasons.

E2. If a food establishment (for example a coffee shop or restaurant) serves very good food, but its toilet has been rated as the dirtiest in Singapore, would you still buy food from this food establishment?

Results: Few respondents (34.8%) would not visit popular F&B establishments with dirtiest toilets.

Implications: There is a need to generate awareness so that the public can relate the importance of having clean toilets at F&B outlets to the risk of food poisoning.
E3. If you have visited a dirty toilet, would you inform the owner or the cleaner to clean up?

**Results:** Only 15.2% of the respondents would take the initiative to inform the owner/cleaner.

**Implications:** Given the low dirty toilet feedback, there is a need for the government to conduct more regular checks when owners and cleaners fail to take the initiative to ensure toilets are kept clean.

---

E4. Do you see any “wet floor” sign when the floor has just been mopped?

**Results:** 85.8% of the respondents saw the wet-floor sign.

**Implications:** Most cleaners adhere to the rules and standards when cleaning toilets.
E5. Do you feel pressured to keep the toilet as clean as possible when the cleaner is in the toilet?

**Results:** Close to half (41.8%) would be pressured to keep the toilet clean when a cleaner is present.

**Implications:** Having cleaners present during peak hours can help to keep the toilets clean.

n= 500

E6. If you see someone dirtying the toilet, would you gently remind him or her?

**Results:** Few (18.2%) would remind those who dirty the toilet.

**Implications:** This is contradictory to an earlier question D4 whereby respondents felt that users should be the ones policing users. Generally, public either lacks initiative or courage to police irresponsible users.

n= 500
E6. If you see someone dirtying the toilet, would you gently remind him or her?

<table>
<thead>
<tr>
<th>Age</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-65</td>
<td>24%</td>
<td>75%</td>
</tr>
<tr>
<td>46-55</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>36-45</td>
<td>18.20%</td>
<td>81.80%</td>
</tr>
<tr>
<td>26-35</td>
<td>20.70%</td>
<td>79.30%</td>
</tr>
<tr>
<td>18-25</td>
<td>15.20%</td>
<td>84.80%</td>
</tr>
</tbody>
</table>

% of people

**Results:** Every age group is guilty for being socially irresponsible due to relatively low “yes” responses compared with “no” responses.

**Implications:** Cannot rely on “users policing users” hence need to find another approach to handle dirty toilets.

---

E7. Have you ever heard of or seen people...

<table>
<thead>
<tr>
<th>Habit</th>
<th>Never</th>
<th>Seldom</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Splashing water on the floor</td>
<td>1.82</td>
<td>2.51</td>
<td></td>
</tr>
<tr>
<td>Smoking in the toilet</td>
<td>2.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Littering on toilet floor</td>
<td>2.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litter in toilet bowls or urinals</td>
<td>1.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spitting on toilet floor</td>
<td>2.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not washing hands after toilet use</td>
<td>2.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not flushing after use</td>
<td>2.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footprints on toilet seats</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Results:** Splashing water on the floor, not flushing after use and litter in toilet bowls or urinals were the top three behaviours.

**Implications:** Public education to target on high scoring (more than the score of 2.0) behaviours. Good to mention, not flushing after use & litter in toilet bowls should be attributed more to faulty or ineffective sensor flushing system than user behaviour.
E7. Have you ever heard of or seen people... \( \text{n=500} \)

<table>
<thead>
<tr>
<th></th>
<th>Splashing Water on the Floor</th>
<th>Not Flushing After Use</th>
<th>Littering on Toilet Bowls</th>
<th>Littering on Toilet Floors</th>
<th>Not Washing Hands after Toilet Use</th>
<th>Footprints on Toilet Seats</th>
<th>Smoking in the Toilet</th>
<th>Spitting on Toilet Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2.55</td>
<td>2.43</td>
<td>2.35</td>
<td>2.24</td>
<td>2.22</td>
<td>2.08</td>
<td>1.95</td>
<td>1.8</td>
</tr>
<tr>
<td>Female</td>
<td>2.46</td>
<td>2.48</td>
<td>2.3</td>
<td>2.29</td>
<td>2.09</td>
<td>2.12</td>
<td>1.69</td>
<td>1.69</td>
</tr>
</tbody>
</table>

**Results:** Overall, the male toilet is dirtier than the female toilet with the male toilet topping 5/8 of the common causes of dirty toilet.

**Implications:** More control should be placed on problems that is more evident in the respective gender toilets.

---

F. Any other feedback or improvements on Public Toilets in Singapore?

**Maintenance**

- Keep it clean
- Keep it dry
- Keep it odorless

\( n = 77 \)
**Design**

- Taps sensitivity/pressure
- Air ventilation
- Provide adequate toilet paper & soap
- Consistent quality

*n = 77*

---

**Business Owners**

- Provide channels for feedback to proprietor
- Proprietor/in-charge should be more responsible
- Reward system for proprietor/in-charge

*n = 77*
Cleaners

- Cleaners always on standby
- Financial incentive to cleaners/Tips
- Cleaners checking on a higher frequency

Enforcement

- Law to penalize users and proprietors
- Shaming dirty toilets on websites

n = 77