

**A critical appraisal and rebuttal of the  
KPMG Hong Kong Report:**

*“Proposed smoking ban: impacts on Hong Kong hospitality businesses”*

**produced by KPMG for  
the Hong Kong Catering Industry Association**

**and**

**Analysis of a new survey: the Health and Welfare Bureau  
“Tracking Survey” data on expected patronage of the hospitality  
industry by the general population, after the introduction of  
smoke-free policies in catering venues in Hong Kong**



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## **The KPMG Ottawa Report**

### **Preface**

The following quotations are extracts from a consulting report by KPMG LLP (Canada) for the City of Ottawa to “provide assistance in the ongoing monitoring of the economic and health impact of no smoking legislation enacted on August 1 2001.”

- *“Methodologically sound studies in other jurisdictions have found restrictive legislation does not have a permanent negative impact on restaurant, bar and pub sales, although short term effects have been observed, generally lasting a month or two, but occasionally as long as six months. Surveys based on establishment owners’ or managers’ perceptions of impact have often reported significant impacts, but these have not been born out by proper studies.”*
- *“In our analysis of the available literature on the economic impacts we found that the initial concerns and responses by owner/managers, often in research funded by the tobacco industry, describing the impact to their business exhibited little or no correlation to the actual effects when measured in a quantitative, objective manner.”*
- *Members of the Ottawa chapter of the Ontario Restaurant, Hotel, Motel Association, indicated that “better ventilation of smoking areas was not an answer, either to resolving employee health care issues or as a solution available to all establishments (recognizing the costs for smaller establishments in particular), reflecting statements made by the American Society of Heating, Refrigeration and Air Conditioning Engineers in terms of cost and benefit.”*
- *“Since the implementation of smoke-free policies in Ottawa in August 2001, employment in the Ottawa accommodation and food service sector appears to have risen 6.5% from June to October (from 22,800 to 24,300) despite the decline in total employment from 585,500 to 566,900 (a decline of 18,600 or 3.1%).”*
- *“Bankruptcy and insolvency statistics for restaurants are lower for the period August to November than they have been the last two years (7 versus 12 last year and 8 in 1999). Two “tavern, bar or nightclub” operations underwent insolvency procedures this year, versus one last year and two in 1999.”*

*The KPMG Ottawa report cites a study by Dr R Colman of GPI Atlantic (a non-profit research organization) entitled “The Economic Impact of Smoke-Free Workplaces”. (GPI Atlantic is a non-profit research group.)*

- ***“Smoke-free policy has no adverse impact on business and may be good for business***

*Without exception, every objective study using official sales tax data demonstrates that smoke-free legislation has no adverse impact on restaurants, bar, hotel and tourism receipts. Two studies find an initial decline in receipts in the first 1-2 months following enactment, but no evidence of any overall or aggregate decline in the longer term. Indeed, several studies find that restaurant, bar, hotel and tourism receipts increase following smoke-free legislation, indicating that it may be good for business as non-smokers frequent eating and drinking establishments more often and smokers adjust to the new rules.”*

- ***Ventilation does not remove toxins or prevent ETS\* exposure***

*Expert assessments, empirical evidence, risk assessment procedures, and internationally accepted indoor air quality and ventilation standards have determined that ventilation and non-smoking sections do not remove the toxic constituents of tobacco smoke from the air and provide no solution to the problem of exposure to second-hand smoke. Instead, the recommendations of expert scientific panels on ETS exposure are “clear, consistent and unanimous – all involuntary exposure is harmful and should be eliminated”. The US Surgeon-General has called for “100% smoke-free environments in all public areas and workplaces, including all restaurants and bars.”*

\* Environmental Tobacco Smoke (= Second-hand Smoke)

**THE KPMG REPORT FOR THE HONG KONG CATERING INDUSTRY ASSOCIATION,  
SEPTEMBER 2001:**

**SUMMARY OF THE RE-ANALYSIS AND REBUTTAL OF THE KPMG REPORT BY THE  
DEPARTMENT OF COMMUNITY MEDICINE, UNIVERSITY OF HONG KONG**

• **Proposed smoke-free policies in the catering industry**

\* The Hong Kong SAR Government has proposed amendments to the Smoking (Public Health) Cap 371 Ordinance which would introduce comprehensive smoke-free policies in the catering industry.

\* The aim of this proposal is to protect the health of both workers and customers from exposures to second hand tobacco smoke.

• **Why have we produced this report?**

\* In September 2001, a report was published by KPMG<sup>1</sup> for the Hong Kong Catering Industry Association (香港飲食業聯合總會) which claimed to show expected losses in revenues and jobs after a ban on smoking in catering venues.

\* The KPMG Report received wide publicity and generated considerable concern about the impact of smoke-free policies on business and jobs.

\* The KPMG Report was flawed and in this report we demonstrate why.

\* *Our new analysis finds that there would be no net loss overall in the catering industry after the introduction of smoke-free policies.*

\* These new findings will provide reassurance to those working in the catering industry that smoke-free policies will not harm business.

• **What are the problems with the KPMG report?**

\* The KPMG report claims that the current spending per person per week in the Hong Kong population which dines out, on eating and drinking, amounts to \$1426. This figure is totally implausible because:

- \* First, to calculate the whole catering industry revenue, based on this weekly per-person spend, would imply that only 0.9 million (14%) people eat out.
- \* Second, the amount also greatly exceeds the Hong Kong Household Expenditure Survey<sup>2</sup> estimate of \$255 per person per week spent on meals away from home.
  
- \* Furthermore, the shares of the market applied to bars and hotels by the KPMG report are 24% and 14% respectively, but we know that only 3% and 8% of revenue comes from these venues.<sup>3</sup>
  
- **Why is the KPMG report so misleading?**
- \* The answer to this can be found in their sampling strategy and their methods used to analyze the data, as follows:
  - \* *Sample:* In the KPMG study they obtained their sample by going into venues and interviewing customers; but this leads to over-sampling of frequent visitors - the more times you eat out, the greater your chance of being included in the KPMG sample. To answer the questions posed by this KPMG study, we needed a representative sample from the whole population to assess current and future patronage of the catering industry.
  - \* *Analysis:* In the KPMG report, the proportions of revenue apparently generated by each sector of the catering industry do not match the true proportions determined from the published revenues of the catering industry.<sup>2</sup> Their results needed to be adjusted to take account of this bias, but this was not done in their report.
  
- **What is the evidence that the KPMG report is wrong?**
- \* The KPMG findings are implausible and not consistent with other published data on household spending.
  
- \* In addition it can be shown that the KPMG findings can be reproduced by using representative data from a whole population sample, *which is then incorrectly manipulated and analyzed.*

- **What are the implications?**

- \* The KPMG findings on the impact of smoke-free policies are wrong and their prediction of a 10.6% drop in catering industry revenue with the loss of 21,500 jobs is incorrect.
- \* The result from our own study using the Tracking Survey data indicates that there will be *at least* no change in catering business overall *or* even an increase of between up to 6% in revenue and associated jobs.
- \* *Furthermore, we find that the public are willing to pay more for smoke-free dining.*

## **1. Introduction**

### **1.1 Background**

In 2001, a report was produced by KPMG for the Hong Kong Catering Industry Association (香港飲食業聯合總會) which claimed to show expected job losses due to revenue loss if smoke-free policies were to be introduced in catering venues.

### **1.2 The KPMG Report**

This report is flawed because the sampling method and the analysis both created biases in the data and these have not been recognized or adjusted for in the report. These biases created an inaccurate and negative picture of the impact of smoke-free policies on catering industry revenues. The KPMG Report is therefore an unsatisfactory source from which to estimate the likely future impact of smoke-free policies on catering business.

In light of the above, it was necessary to obtain more appropriate data and analyse it in a way which would indicate the true spending pattern and the resulting changes which may occur if smoke-free policies were introduced into catering venues.

### **1.3 The Hong Kong Tracking Survey analysis**

In the population-based *Third Tracking Survey*<sup>\*,4</sup> data was collected which can be used to answer the questions posed by KPMG. The Tracking Survey is designed to sample the whole population, not just those eating or drinking out at any one point in time, as in the KPMG study. Only the Tracking Survey data therefore can show what the whole population impact of smoke-free policies will be. However, the Tracking Survey data can also be analyzed to study only those who do eat out, similar to the KPMG analysis, to assist the interpretation and evaluation of the KPMG Report.

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\* Conducted by the Computer Assisted Survey Team of the Hong Kong Polytechnic University for the Health and Welfare Bureau, HKSAR Government, in January 2002.

## Section 2: What is wrong with the KPMG Report?

### 2.1 Background

When sampling a population, care must be taken to ensure that all potential subjects have an equal chance of being included in the sample, this is called *random selection*. The problem with sampling from only one or more *specific sites* (e.g. restaurants and bars) is that such a sample will only include those who go to restaurants or bars. Therefore those who do not currently go (perhaps because they want to avoid a smoky atmosphere), but might go if the venue was smoke-free, are excluded. Also those who go more often are more likely to be included than those who go less often. These features of the sampling process can create very marked biases in the data, and as a result the data may not be suitable to show the effect of smoke-free policies on the resulting revenue of catering venues.

A household telephone survey in Hong Kong, as used in the Tracking Survey, has the advantage that it covers virtually the whole population. So, when asking about visits to catering venues, all customers and non-customers are included and frequent customers will not be over-sampled. However, a household telephone survey might be considered to over-sample those who go out less frequently because they are more likely to be at home when the interviewer calls. While such a possible bias in the Tracking Survey should have been minimized by frequent call-backs to reach the targetted respondent, it cannot be ignored. The data must be scrutinized to identify any potential biases of this type.

### 2.2 Are there important biases in the KPMG data and the Tracking Survey data?

#### 2.2.1 Generalisability

- **KPMG Report:** There is no data in the KPMG Report which allows a comparison to be made with the general population, except for the prevalence of smoking in the sample. Therefore we cannot say whether the findings can be generalised to the whole population or even to all of those who eat out.
- **Tracking survey data:** This sample has been compared with the general population data as reported in the most recent Census.<sup>5</sup> It was found that the Tracking Survey over-sampled younger people and those with higher education.

Any analysis in which either age or education level may be a confounding factor should therefore adjust for these variables.

### 2.2.2. Smoking

- **KPMG Report:** Smoking prevalence is reported on page 21 of the full KPMG Report as 31% among restaurant customers, 29% among café customers, 24% among hotel customers, 33% among bar customers and 31% overall. These figures are very high in comparison to average Hong Kong population smoking figures.
- **Tracking Survey:** 14% of restaurant customers reported that they smoke, 16% of café customers, 11% of hotel customers, 35% of bar customers and 15% overall.
- **Comparison data:** In the General Household Survey 2000, the prevalence of smoking in the population is 14.4%.<sup>6</sup>

### 2.2.3 Average weekly spend

- **KPMG Report:** The KPMG report claims that current weekly spending on eating and drinking out is \$1,426 on average. This is implausible because it amounts to 89% of the average weekly total per capita household expenditure of \$1,605 in the Hong Kong population. This figure includes expenditure on food, housing, electricity, clothing, transport and other goods and services.<sup>2</sup>
- **Tracking Survey:** From respondents' reports the current weekly spend on eating and drinking out is estimated to be \$512 after adjusting for age and education.
- **Comparison data:** According to the Household Expenditure Survey<sup>2</sup> the weekly total household expenditure on meals outside the home is \$868 for a whole household, based on monthly expenditure (\$3,471) divided by 4. Given the average household size of 3.4 persons,<sup>2</sup> the estimated spend per person is \$255 per week. Allowing that only two adults might share the average household spend between them, we have \$434 per person. This appears to refute the KPMG finding of \$1,426 but is close to the TrackingSurvey finding of \$512.

### 2.2.4 Numbers eating out

- **KPMG Report:** Given the calculated weekly spend of \$1,426, only 930,000 people could eat out at the frequency and spend reported by KPMG before

reaching the total annual reported receipts of the whole catering industry. It would clearly be an underestimate of the numbers dining out by several millions.

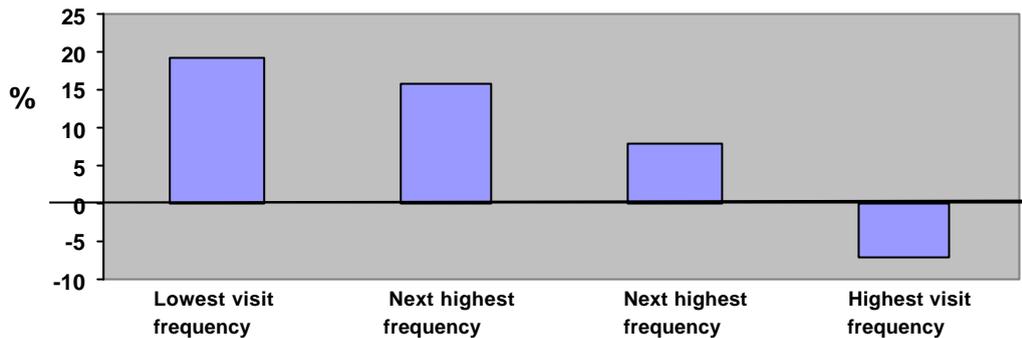
- **Tracking Survey:** Given the calculated weekly spend of \$512, 2.6 million people could eat out, at the frequency and spend they report, to reach the total annual receipts of the whole catering industry.
- **Comparison data:** Total annual receipts for the catering industry in 1999 were \$75 billion, including that proportion of hotel receipts which were for food and drink.<sup>3</sup> Since tourists' spend on meals outside hotels was around \$8.5 billion<sup>7</sup> this leaves \$66.5 billion for domestic expenditure. At a spend of \$1,426 a week, we need almost a million people to generate \$66.5 billion in a year or almost 3 million people each spending \$510 a week.
- From the Tracking Survey data, we can calculate how many people in the sample ate or drank out at least once in the last month. This number is 5.1 million people. It seems, therefore, that the Tracking Survey has overestimated, to some extent, the amount spent by an individual but that the KPMG Report has overestimated it by an enormous amount. The explanation, in the case of the Tracking Survey, may be that a proportion of respondents, in reporting their average spend per visit, may include the spend of other people in those cases where they paid the whole bill. This assumption concurs with the finding that the household spend on meals away from home, if spent by only two individuals in each household (see section 2.2.3), is only 15% lower than the Tracking Survey estimate of \$512.

### 2.2.5 Comparisons between KPMG Report and Tracking Survey

- Using the Tracking Survey sample, we can compare the number of visits of smokers and non-smokers. Current smokers claim that they visit catering venues an average of 9.5 times a week compared with 6.6 times for never-smokers. The KPMG sample has a very high proportion of smokers compared with the general population (31% compared with 14%); this is true even for restaurants, which are visited by almost everyone in the population. In the KPMG Survey this discrepancy has probably been contributed to by over-sampling of smokers, who are more frequent visitors to catering venues.
- Again using Tracking Survey data, we find an expected negative impact of smoke-free policies among the frequent visitors but a strong positive impact

among the less frequent visitors (see Figure 1). It therefore appears that over-sampling of frequent visitors would bias findings on the impact of smoke-free policies in a negative direction.

Figure 1: Percent expected change in average total weekly spend per person by frequency of visit\* to catering venues



\* Visit frequency shown for sample groups of equal size (200-250 in each group)

- From the KPMG report, current weekly spending per person in a cafe is estimated at \$212, in a bar is \$342 and in restaurants and hotels is \$872. To compare the Tracking Survey data with the KPMG data we need to do two things:
  - reflect the customer-only nature of the KPMG data by analyzing only *visitors to that venue* and calculating the *average spend per customer*. Note that in this case the average spend per customer ignores those who do not visit that venue and so spend nothing there. This cannot be used as a population average because it does not apply to the non-customers of that venue. It also cannot be added up across venues because, for example, the visitors to cafes are not the same people as visitors to bars.
  - adjust the Tracking Survey data so that it will have as high a proportion of smokers as in the KPMG study
- After adjustment so that smokers are over-represented, non-customers are ignored and the analysis is carried out only by specific type of venue, the Tracking Survey data can be made to produce estimates that are very similar to those included in the KPMG Report. From this incorrect method of analysis the Tracking Survey data gives \$212 spend per person per week for a café (compared with \$212 in the KPMG Report), \$862 for restaurants and hotels (\$872) and \$374 for a bar (\$342).

The fact that we obtain figures close to the KPMG data by using an incorrect method of analysis on the Tracking Survey data leads to the conclusion that there are indeed biases in the KPMG estimates. We also conclude therefore that the average total spend per week reported in the KPMG Report is incorrect.

### **2.3 Conclusion**

- There is evidence of over-sampling of frequent visitors in the KPMG sample. This bias leads to excessively negative findings on the impact of smoke-free policies on catering revenues.
- The generalisability of the KPMG findings is unknown; the Tracking Survey data is biased towards younger and better educated respondents and the data should be adjusted for age and education levels.
- The Tracking Survey data can reproduce the KPMG findings for average weekly spend only after adjustments. The adjustments required are precisely those needed to mimic the biases that were predicted to exist due to the sampling methods used by KPMG. This leads to the conclusion that there are indeed reproducible biases in the KPMG data leading to an inaccurately high estimate of average spend per week. This is also borne out by the fact that the KPMG findings are not consistent with either the Household Expenditure Survey<sup>2</sup> or the annual survey of sales and other receipts from restaurants, cafés, hotels and bars.<sup>3</sup>
- The findings in the KPMG Report have been shown to be flawed and the KPMG Report is therefore an inadequate basis for assessing the impact of smoke-free policies on catering revenues.

### Section 3: What is the expected impact of smoke-free policies in catering venues?

The expected impact of smoke-free policies in catering venues has been estimated using respondents' responses in the Third Tracking Survey when they were asked to declare their current patterns of visits and spend in catering venues and to predict changes in visits and/or spend following the introduction of smoke-free policies. The questions used are included in the Appendix. When any item of data was missing, we followed usual practice in substituting the mean value for the missing data.

#### 3.1 What is the current pattern of visits and spend in catering venues?

**Visits:** The proportions of the population who visit each venue, estimated over the previous month, are shown in Table 1.

*Table 1: Proportions of the population who visit each type of venue in the Tracking Survey sample (n=1005)*

|            | Visited<br>% | Didn't visit<br>% | Total<br>% |
|------------|--------------|-------------------|------------|
| Restaurant | 84           | 16                | 100        |
| Café       | 76           | 24                | 100        |
| Hotel      | 12           | 88                | 100        |
| Bar        | 10           | 90                | 100        |

Using the data\* from the Tracking Survey,<sup>4</sup> and after adjusting for age and education level, we conclude that on average each person in the population eats 6.6 times a week and makes each week:

- 2.8 visits to a restaurant
- 3.3 visits to a fast food shop or cafe
- 0.3 visits to a hotel
- 0.2 visits to a bar

These frequencies are for the whole population and include those people who do not visit these venues; this means that they can be added together to give a figure for average total visits.

\* Tables 32, 40, 48 and 56. See appendix.

If we take only those who patronise a specific venue, the *customers*, then the average number of visits, for those who do visit, does not change much for restaurants or cafes, when compared with the population average, because most of the population visit these venues. However, the average number of visits becomes much higher for hotels and bars reflecting that the low population average for these venues is due to a large majority of the population making no visits.

Customers i.e. those who visited that specific venue, make on average each week:

- *3.3 visits to restaurants*
- *4.3 visits to cafes*
- *2.1 visits to hotels*
- *1.7 visits to bars*

These numbers cannot be added together because the customers of each establishment are different groups of people.

*The distinction between average visits made by every member of the **population** and average visits made by **customers** in specific venues is important, because we can only estimate the overall impact of smoke-free policies on total catering business by using the whole population data.*

*The Tracking Survey allows us to do this, but the KPMG Report did not take this approach.*

**Spending:** Respondents to the Tracking Survey<sup>4</sup> declared how much they spent, on average, each time they visited each type of catering venue in the last month\*.

The average *spend per visit* for the whole population, including those who spent nothing in that venue in the last month was:

- *\$94 in a restaurant*
- *\$31 in a café*
- *\$55 in a hotel*
- *\$23 in a bar.*

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\* Tables 33, 41, 49 and 57. See appendix.

The average *spend per visit per customer* can also be calculated just for the customers of a specific venue. The average spend per visit per customer in the different venues was:

- *\$112 in a restaurant*
- *\$40 in a café*
- *\$345 in a hotel*
- *\$232 in a bar*

The population average spend is similar to the customers' average spend for restaurants and cafes because most of the population visited these venues; however the population average and the customers' average for hotels and bars are quite dissimilar because most of the population do not visit hotels and bars.

*This stage of the analysis clearly shows that unless you use population average spends you will over-estimate the contribution of spending in hotels and bars to the total catering industry revenue.*

The spend per visit for each individual in the Tracking Survey was combined with the number of visits per week to obtain a spend per week for each respondent. From this we can calculate a weekly spend in each venue and an overall weekly spend.

*The calculations for each respondent to the Tracking Survey are:*

$$\text{current weekly spend in each venue} = \text{current number of visits} \times \text{current spend per visit for that venue}$$

$$\text{total weekly spend} = \text{sum of weekly spend in each venue}$$

*For the whole population:*

$$\text{Population average current weekly spend for each venue} = \text{average of all current weekly spends in that venue (including those who do not visit this venue)}$$

$$\text{Population average total weekly spend} = \text{average of all total weekly spends}$$

Calculations from the Tracking Survey show that each person in the population spends, on average:

- *\$512 per week in total on eating and drinking out.*

This is made up from a total spend of:

- *\$242 in restaurants*
- *\$137 in cafes*
- *\$90 in hotels*
- *\$43 in bars*

Again we can look at this by the average amount spent by the customers of a specific type of venue. The customers spend, on average, per week is:

- *\$312 in restaurants*
- *\$201 in cafés*
- *\$646 in hotels*
- *\$414 in bars*

### **3.2 What are the expected patterns of patronage if smoke-free policies are introduced in catering venues?**

In order to estimate the impact of smoke-free policies, respondents to the Tracking Survey<sup>4</sup> were asked whether they thought they would change the number of visits they made to each venue and, if so, whether this would increase or decrease and by how much<sup>\*</sup>. They also declared whether they thought they would change the amount they spent and by how much<sup>\*\*</sup>.

Table 2 shows the proportion of respondents to the Tracking Survey who thought they would change their pattern of visits and spend.

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\* Tables 34-36, 42-44, 50-52 and 58-60. See appendix.

\*\* Tables 37-39, 45-47, 53-55 and 61-63.

Table 2: Proportion of Tracking Survey respondents (n=1005) who expected to change their visits or spend in catering venues if smoke-free policies are introduced

|                 | Expected patronage with smoke-free policies |               |               | Total<br>% |
|-----------------|---|---------------|---------------|------------|
|                 | No change<br>%                              | Increase<br>% | Decrease<br>% |            |
| Restaurant      |   |               |               |            |
| Visits or spend | 84  | 10            | 6             | 100        |
| Café*           |   |               |               |            |
| Visits or spend | 82  | 12            | 6             | 100        |
| Hotel#          |   |               |               |            |
| Visits or spend | 96  | 3             | 1             | 100        |
| Bar             |   |               |               |            |
| Visits or spend | 88  | 6             | 6             | 100        |

\*Café and fast-food shop are taken as the same

#Hotel refers to all food and beverage outlets in hotels

**No change in visits and spend:** Between 82% and 96% said they would not change their number of visits to specific venues or their spend per visit.

**Change in visits and spend:** Between 3% and 12% said they would increase their visits to specific venues and/or their spend. Between 1% and 6% said they would decrease visits and/or spend.

Overall, 18% would expect to increase visits or spend or both in catering venues and 10% would expect to decrease them.

*Most people would not change either visits or spend after the introduction of smoke-free policies in Restaurants, Cafés, Hotels and Bars. Overall almost twice as many people would increase visits and/or spend as would decrease them.*

### 3.3 What is the impact of smoke-free policies in catering venues on the expected revenues for the catering industry?

We can now calculate the impact of smoke-free catering:

*The calculations, for each respondent to the Tracking Survey are:*

*Expected number of visits = (initial visits +/- expected change in visits)*

*Expected spend per visit = (initial spend per visit +/- expected change in spend)*

We can average these amounts over all individuals in the sample to give the patterns shown in Figure 2.

Visits would be expected to increase in all venues except bars where they would remain at the same level; spend per visit would increase in all venues.

Using this data on expected number of visits per week and expected spend per visit, we can calculate expected spend per week for each individual:

*The calculations for each respondent to the Tracking Survey are:*

*Expected weekly spend for each person in each venue = expected number of visits × expected spend per visit for that venue*

*Total expected weekly spend for each person in all venues = sum of expected weekly spend in each of the venues*

*For the whole population:*

*Population average expected weekly spend for each venue = average of all expected weekly spends in that venue*

*Population average total expected weekly spend = average of all total expected weekly spends*

The average weekly spend per person in all catering venues, after the introduction of smoke-free policies, would be expected to rise from \$512 to \$540.

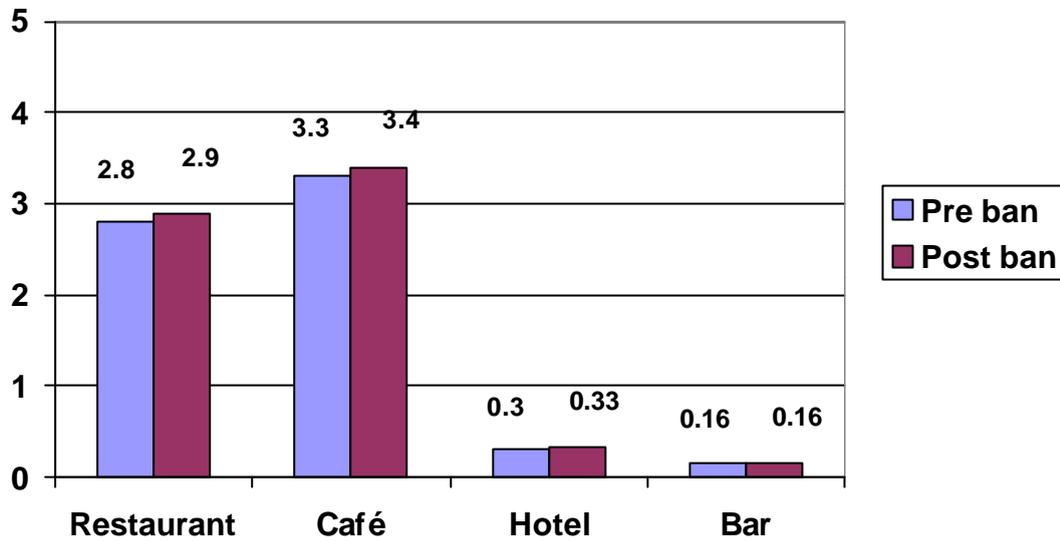
The expected percentage change in average weekly spending for each venue (change/original spend × 100) is:

- *restaurants* + 7%
- *cafes* + 10%
- *hotels* + 3%
- *bars* - 12%

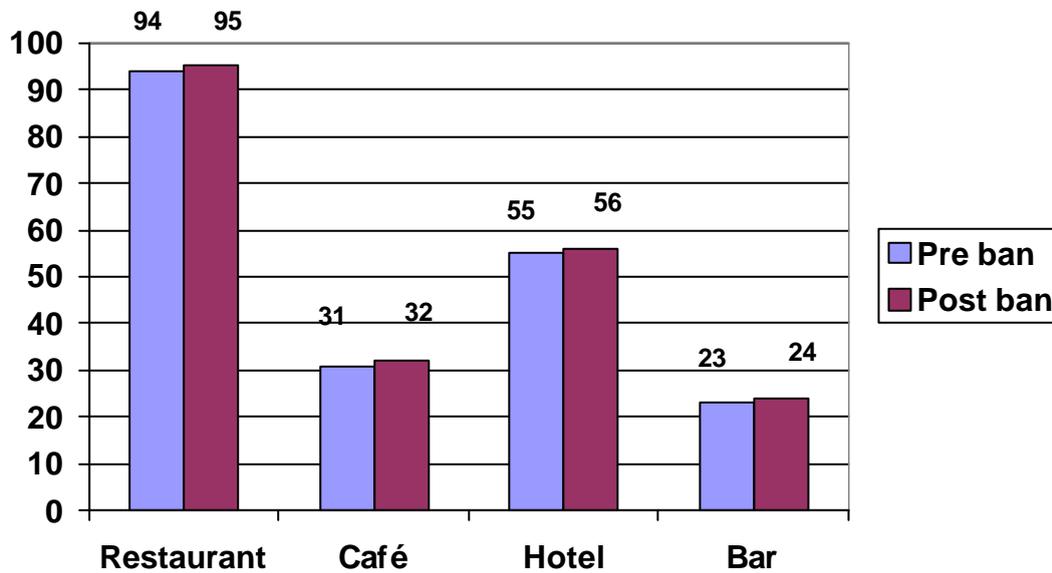
This gives an expected average gain of + 5.5% on weekly spending across the catering venues.

Figure 2: Expected visits and spend per week for each type of catering venue before and after the introduction of smoke-free policies

a) Visits per week



b) Spend per visit



If we extrapolate this change of +5.5% to the annual receipts from catering venues for 1999, we obtain an estimated increase of \$4.1 billion in one year (5.5% x \$75 billion).

*The expected increase in weekly spending across catering venues is estimated at 5.5%; this is equivalent to \$4.1 billion in one year based on 1999 receipts.*

### 3.4 Willingness to pay for smoke-free dining

We examined whether, on average, people in the Hong Kong population would pay more in order to have access to smoke-free dining. The Tracking Survey Report\* provides the responses to a question asking whether respondents would be willing to pay more to be able to dine free from smoke. Forty percent of respondents said that they would pay more. The Tracking Survey also shows the amount that people would be willing to pay *extra* on a \$100 meal in order to have smoke-free dining. Table 3 below indicates the amounts that people are willing to pay.

*Table 3: Extra amount \$ that those who are willing to pay (40% of the population) would offer for a smoke-free \$100 meal (excluding those not willing to pay)*

|               |           |
|---------------|-----------|
| Average       | \$23      |
| Middle value  | \$10      |
| Range         | \$1-\$200 |
| Lower quarter | \$10      |
| Upper quarter | \$25      |
| Top 5%        | \$80      |

The range was wide with the lower quarter of respondents willing to pay up to \$10 and the upper quarter willing to pay \$25 or more.

*A large proportion of the population (40%) would pay more (\$23 on average) for smoke-free catering. A small additional charge for food and beverages would be feasible and could smooth the transition to universal smoke-free catering.*

The extra value of a smoke-free \$100 meal averaged for the whole population is \$9.

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\* Table 64. See appendix.

### **3.5 Discussion**

There is no evidence from our new population-based survey of the Hong Kong public that the catering and hospitality industry will be harmed by the introduction of smoke-free policies. This finding is entirely consistent with a new comprehensive review of 86 studies world-wide, which has been completed by Michelle Scollo (Anti Cancer Council of Victoria, Australia) and Professor Stanton Glantz (University of California, San Francisco), on the economic impact of smoke-free policies. It did not find any evidence of negative impact in those studies which were properly designed. All studies which found a negative impact were funded by the tobacco industry or hospitality groups which received funds from a tobacco company.

Finally, we have shown that our findings are very similar to those reported by KPMG for the city of Ottawa. The KPMG Ottawa report takes a rigorous and unbiased approach to the appraisal of the impact of smoke-free policies on catering business. This is what is needed now in Hong Kong.

### **3.6 Conclusions**

- Using the data on declared current visits and spend in catering venues, and predicted changes to these if smoke-free policies are implemented, we calculate that the net impact would be a rise of 5.5% in total revenue from catering establishments or, at the very least, no change. This translates to a change in revenues of around \$4 billion per year.
- Smoke-free policies would lead to an overall net increase in patronage of catering venues with protection of employment and possibly an increase in the number of jobs in the sector.
- Given the public demand for smoke-free catering and its perceived value, there is a new opportunity for the catering industry to expand its business and to give greater benefit to the majority of their customers.

## References

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## Appendix

### Tables from the Tracking Survey: Reports on public opinion survey on the proposed legislative amendments to Smoking and Public Health Ordinance Cap. 371

**Table 32: Within the last month, on average how often have you patronised restaurants each week?**

|                            | January 2002 |            |
|----------------------------|--------------|------------|
|                            | Frequency    | Percentage |
| Never                      | 129          | 13.1       |
| Once a week                | 279          | 28.4       |
| Twice a week               | 238          | 24.2       |
| Three times a week         | 120          | 12.2       |
| Four times a week          | 67           | 6.8        |
| Five times a week          | 52           | 5.3        |
| Six times a week           | 25           | 2.5        |
| Seven times a week         | 58           | 5.9        |
| Eight times or more a week | 15           | 1.5        |
| Total                      | 983          | 100        |

(\* 22 respondents did not answer this question.)

**Table 33: Within the last month, on average, how much did you spend each time you patronised a restaurant?**

|                | January 2002 |            |
|----------------|--------------|------------|
| HK\$           | Frequency    | Percentage |
| Below or \$50  | 263          | 32.6       |
| \$51 - \$100   | 231          | 28.6       |
| \$101 - \$200  | 211          | 26.2       |
| \$201 - \$250  | 31           | 3.8        |
| \$251 - \$300  | 38           | 4.7        |
| \$301 - \$400  | 13           | 1.6        |
| \$401 - \$500  | 15           | 1.9        |
| \$501 or above | 5            | 0.6        |
| Total          | 807          | 100        |

(\* 198 respondents are not included because they did not answer (69) or had no visits (129).)

About 15% per cent of respondents claimed they would alter the number of visits they make to a restaurant if there is a total smoking ban and 8% would also alter the amount they would spend (Tables 34 and 37). Among those who thought they would alter the number of visits, 61% thought they would increase visits and 39% thought they would decrease (Tables 35 and 36). Among those respondents who thought that they would change the amount they spent in a restaurant, 53% thought they would increase their spending and 47% thought they would decrease it (Tables 37 to 39).

**Table 34: Will you alter the number of visits you make to restaurants if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 151       | 15.0       |
| No           | 854       | 85.0       |
| Total        | 1,005     | 100        |

**Table 35: How much more will you visit restaurants if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 28        | 30.4       |
| 2            | 33        | 35.9       |
| 3            | 8         | 8.7        |
| 4 or more    | 9         | 9.8        |
| Don't know   | 14        | 15.2       |
| Total        | 92        | 100        |

**Table 36: How much less will you visit restaurants if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 24        | 40.7       |
| 2            | 10        | 16.9       |
| 3            | 3         | 5.1        |
| 4 or more    | 3         | 5.1        |
| Don't know   | 19        | 32.2       |
| Total        | 59        | 100        |

**Table 37: Will you alter the amount you spend in a restaurant if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 77        | 7.7        |
| No           | 928       | 92.3       |
| Total        | 1,005     | 100        |

**Table 38: How much more will you spend in a restaurant if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$25  | 8         | 19.5       |
| \$26 - \$50    | 14        | 34.1       |
| \$51 - \$100   | 5         | 12.2       |
| \$101 - \$150  | 2         | 4.9        |
| \$151 or above | 3         | 7.3        |
| Don't know     | 9         | 22.0       |
| Total          | 41        | 100        |

**Table 39: How much less will you spend in a restaurant if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$25  | 5         | 13.9       |
| \$26 - \$50    | 4         | 11.1       |
| \$51 - \$100   | 10        | 27.8       |
| \$101 - \$150  | 2         | 5.6        |
| \$151 or above | 4         | 11.1       |
| Don't know     | 11        | 30.6       |
| Total          | 36        | 100        |

A large majority, 89%, of respondents patronised fast food shops at least once a week (Table 40). Among these respondents, only 15% spent more than HK\$50 per visit (Table 41).

**Table 40: Within the last month, on average, how often have you patronised fast food shops each week?**

| January 2002               |           |            |
|----------------------------|-----------|------------|
|                            | Frequency | Percentage |
| Never                      | 113       | 11.5       |
| Once a week                | 94        | 9.6        |
| Twice a week               | 139       | 14.1       |
| Three times a week         | 148       | 15.1       |
| Four times a week          | 108       | 11.0       |
| Five times a week          | 128       | 13.0       |
| Six times a week           | 63        | 6.4        |
| Seven times a week         | 123       | 12.5       |
| Eight times or more a week | 67        | 6.8        |
| Total                      | 983       | 100        |

(\* 22 respondents did not answer this question.)

**Table 41: Within the last month, on average, how much have you spent each time you patronised a fast food shop?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$50  | 733       | 85.3       |
| \$51 - \$100   | 104       | 12.1       |
| \$101 - \$200  | 17        | 2.0        |
| \$201 - \$250  | -         | -          |
| \$251 - \$300  | 2         | 0.2        |
| \$301 or above | 3         | 0.3        |
| Total          | 859       | 100        |

(\* 146 respondents are not included in this question because they did not answer (33) or had no visits (113).)

About 18% per cent of respondents claimed they would alter the number of visits they make to a fast food shop if there is a total smoking ban and 9% would also alter the amount they would spend (Tables 42 and 45). Among those who thought they would alter the number of visits, 64% thought they would increase visits and 36% thought they would decrease visits (Tables 43 and 44). Among those respondents who think that they will change the amount they spend in a fast food shop, 58% think they will increase their spending and 42% thought they would decrease it (Tables 45 to 47).

**Table 42: Will you alter the number of visits you make to fast food shops if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 179       | 17.8       |
| No           | 826       | 82.2       |
| Total        | 1,005     | 100        |

**Table 43: How much more will you visit fast food shops if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 21        | 18.4       |
| 2            | 40        | 35.1       |
| 3            | 22        | 19.3       |
| 4 or more    | 12        | 10.5       |
| Don' t know  | 19        | 16.7       |
| Total        | 114       | 100        |

**Table 44: How much less will you visit fast food shops if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 9         | 13.8       |
| 2            | 13        | 20.0       |
| 3            | 9         | 13.8       |
| 4            | 3         | 4.6        |
| 5            | 4         | 6.2        |
| 6 or more    | 9         | 13.8       |
| Don' t know  | 18        | 27.7       |
| Total        | 65        | 100        |

**Table 45: Will you alter the amount you spend in a fast food shop if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 85        | 8.5        |
| No           | 920       | 91.5       |
| Total        | 1,005     | 100        |

**Table 46: How much more will you spend in a fast food shop if a total smoking ban is implemented?**

| January 2002  |           |            |
|---------------|-----------|------------|
| HK\$          | Frequency | Percentage |
| Below or \$25 | 19        | 38.8       |
| \$26 - \$50   | 8         | 16.3       |
| \$51 or above | 4         | 8.2        |
| Don' t know   | 18        | 36.7       |
| Total         | 49        | 100        |

**Table 47: How much less will you spend in a fast food shop if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$25  | 12        | 33.3       |
| \$26 - \$50    | 2         | 5.6        |
| \$51 - \$100   | 6         | 16.7       |
| \$101 or above | 3         | 8.3        |
| Don't know     | 13        | 36.1       |
| Total          | 36        | 100        |

It was found that only 15% of respondents patronised food and beverage outlets of hotels at least once a week (Table 48). Among these respondents, 83% spent more than HK\$100 per visit and 29% spent more than \$300 per visit (Table 49).

**Table 48: Within the last month, on average, how often have you patronised food and beverage outlets in hotels each week?**

| January 2002              |           |            |
|---------------------------|-----------|------------|
|                           | Frequency | Percentage |
| Never                     | 828       | 84.9       |
| Once a week               | 98        | 10.1       |
| Twice a week              | 27        | 2.8        |
| Three times a week        | 10        | 1.0        |
| Four times a week         | 2         | 0.2        |
| Five times or more a week | 10        | 1.0        |
| Total                     | 975       | 100        |

(\* 30 respondents did not answer this question.)

**Table 49: Within the last month, on average, how much have you spent each time you patronise a food and beverage outlet in a hotel?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$50  | 7         | 5.6        |
| \$51 - \$100   | 14        | 11.1       |
| \$101 - \$200  | 42        | 33.3       |
| \$201 - \$250  | 11        | 8.7        |
| \$251 - \$300  | 15        | 11.9       |
| \$301 - \$400  | 10        | 7.9        |
| \$401 - \$500  | 12        | 9.5        |
| \$501 or above | 15        | 11.9       |
| Total          | 126       | 100        |

About 5% per cent of respondents claimed they would alter the number of visits they make to a hotel if there is a total smoking ban and 3% would also alter the amount they would spend (Tables 50 and 53). Among those who thought they would alter the number of visits, 60% thought they would increase visits and 40% thought they would decrease (Tables 51 and 52). Among those respondents who thought that they would also change the amount they spend in a hotel, 56% thought they would increase their spending and 44% thought they would decrease it (Tables 53 to 55).

**Table 50: Will you alter the number of visits you make to food and beverage outlets in hotels if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 47        | 4.7        |
| No           | 958       | 95.3       |
| Total        | 1,005     | 100        |

**Table 51: How much more will you visit food and beverage outlets in hotels if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 12        | 42.9       |
| 2            | 10        | 35.7       |
| 3            | 2         | 7.1        |
| Don' t know  | 4         | 14.3       |
| Total        | 28        | 100        |

**Table 52: How much less will you visit food and beverage outlets in hotels if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 10        | 52.6       |
| Don' t know  | 9         | 47.4       |
| Total        | 19        | 100        |

**Table 53: Will you alter your spending in food and beverage outlets in a hotel if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 32        | 3.2        |
| No           | 973       | 96.8       |
| Total        | 1,005     | 100        |

**Table 54: How much more will you spend in food and beverage outlets in a hotel if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$25  | 1         | 5.6        |
| \$26 - \$50    | -         | -          |
| \$51 - \$100   | 6         | 33.3       |
| \$101 - \$150  | 3         | 16.7       |
| \$151 or above | 4         | 22.2       |
| Don' t know    | 4         | 22.2       |
| Total          | 18        | 100        |

**Table 55: How much less will you spend in food and beverage outlets in a hotel if a total smoking ban is implemented?**

| January 2002     |           |            |
|------------------|-----------|------------|
| HK\$             | Frequency | Percentage |
| Below or \$50    | 1         | 7.1        |
| \$51 - \$100     | 1         | 7.1        |
| \$101 - \$200    | 1         | 7.1        |
| \$201 or above   | 4         | 28.6       |
| Don't know       | 6         | 42.9       |
| Refuse to answer | 1         | 7.1        |
| Total            | 14        | 100        |

Only 16% of respondents patronised bars at least once a week (Table 56). Among these, 70% spent more than HK\$100 per visit and 15% spent more than \$300 per visit (Table 57).

**Table 56: Within the last month, how often have you patronised bars each week?**

| January 2002              |           |            |
|---------------------------|-----------|------------|
|                           | Frequency | Percentage |
| Never                     | 822       | 84.0       |
| Once a week               | 92        | 9.4        |
| Twice a week              | 40        | 4.1        |
| Three times a week        | 13        | 1.3        |
| Four times or more a week | 12        | 1.2        |
| Total                     | 979       | 100        |

(\* 26 respondents did not answer this question.)

**Table 57: Within the last month, on average, how much have you spent each time you patronised a bar?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$50  | 7         | 4.9        |
| \$51 - \$100   | 36        | 25.0       |
| \$101 - \$200  | 56        | 38.9       |
| \$201 - \$250  | 11        | 7.6        |
| \$251 - \$300  | 13        | 9.0        |
| \$301 - \$400  | 4         | 2.8        |
| \$401 - \$500  | 10        | 6.9        |
| \$501 or above | 7         | 4.9        |
| Total          | 144       | 100        |

About 13% per cent of respondents claimed they would alter the number of visits they make to a bar if there is a total smoking ban and 9% would also alter the amount they would spend (Tables 58 and 61). Among those who thought they would alter the number of visits, 41% thought they would increase visits and 59% thought they would decrease (Tables 59 and 60). Among those respondents who thought that they would change the amount they spend in a bar, 33% thought they would increase their spending and 67% thought they would decrease it (Tables 61 to 63).

**Table 58: Will you alter the number of visits you make to bars if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 132       | 13.1       |
| No           | 873       | 86.9       |
| Total        | 1,005     | 100        |

**Table 59: How much will you increase your number of visits to bars if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 23        | 42.6       |
| 2            | 16        | 29.6       |
| 3            | 3         | 5.6        |
| 4            | 2         | 3.7        |
| Don't know   | 10        | 18.5       |
| Total        | 54        | 100        |

**Table 60: How much will reduce your number of visits to patronise bars if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
| Visits       | Frequency | Percentage |
| 1            | 27        | 34.6       |
| 2            | 17        | 21.8       |
| 3            | 4         | 5.1        |
| 4 or more    | 5         | 6.4        |
| Don't know   | 25        | 32.1       |
| Total        | 78        | 100        |

**Table 61: Will you alter your spending in a bar if a total smoking ban is implemented?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 93        | 9.3        |
| No           | 912       | 90.7       |
| Total        | 1,005     | 100        |

**Table 62: How much more will you spend in a bar if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$25  | 1         | 3.2        |
| \$26 - \$50    | 1         | 3.2        |
| \$51 - \$100   | 3         | 9.7        |
| \$101 - \$150  | 1         | 3.2        |
| \$151 - \$200  | 2         | 6.5        |
| \$201 - \$250  | 2         | 6.5        |
| \$251 - \$300  | 3         | 9.7        |
| \$301 or above | 2         | 6.5        |
| Don't know     | 16        | 51.6       |
| Total          | 31        | 100        |

**Table 63: How much less will you spend in a bar if a total smoking ban is implemented?**

| January 2002   |           |            |
|----------------|-----------|------------|
| HK\$           | Frequency | Percentage |
| Below or \$50  | 5         | 8.1        |
| \$51 - \$100   | 11        | 17.7       |
| \$101 - \$150  | 5         | 8.1        |
| \$151 - \$200  | 6         | 9.7        |
| \$201 - \$250  | 4         | 6.5        |
| \$251 - \$300  | 4         | 6.5        |
| \$301 or above | 7         | 11.3       |
| Don' t know    | 20        | 32.3       |
| Total          | 62        | 100        |

**Table 64: Are you willing to pay more to have smoke free dining?**

| January 2002 |           |            |
|--------------|-----------|------------|
|              | Frequency | Percentage |
| Yes          | 402       | 40.0       |
| No           | 603       | 60.0       |
| Total        | 1,005     | 100        |