Impacts of Increased Restaurant Taxes on Restaurant Demand: Implications for Managers, Policy Makers, and Lobbyists

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1. Research Problem
2. Research Question and Hypotheses
3. Theoretical Framework
4. Research Design
5. Results & Conclusions
Public Policy Problem

- Kentucky cities with populations of 1,000 to 7,999 people may choose to levy a tax up to 3% of restaurant sales (in addition to retail sales tax) to be used for tourism promotion or multi-purpose arenas
  - Tax was created to help communities without a critical mass of lodging establishments from which to earn occupancy tax revenues
- Legislation has been proposed that would give all cities, regardless of population, the option to levy a 3% restaurant tax
Restaurant Tax – Policy Positions

Support

Belief: Revenue could help cities’ budget shortfalls
New tourism marketing money would lead to more dining demand
Smaller cities’ CVBs support it because it would significantly increase their budgets

Oppose

Belief: Tax would limit restaurant demand
Restaurants should not be responsible for cities’ budget shortfalls
Larger cities’ CVBs oppose it because having to promote all restaurants in the community would not be worth the budget increase
Research Purpose

- Examine how a 3% tax on restaurant meals might affect consumer demand for dining out in restaurants
  - Conceptual framework: Restaurant demand

- Understand how demand for dining out in restaurants may change, based on a self-reported cost increase threshold
  - Theoretical framework: Just Noticeable Difference (Weber’s Law)
Restaurant Demand Variables

Type of Restaurant
1. Chain vs. independent (Kim & Kim, 2004; Parsa et al., 2005)
2. Full-service vs. fast-casual/quick-service (Swinyard & Struman, 1986)
3. Buffets (Raab et al, 2009)
4. Quality of service (Gupta, McLaughlin, & Gomez, 2007; Lynn, 2001; Oh, 2000; Susskind & Chan, 2000)

Menu Offerings
5. Local foods (Sill, 1991)
6. Menu variety (Knutson et al., 2006; Wansink et al., 2006; Wansink, Painter, & Van Ittersum, 2001)
7. Portion sizes (Bayou & Bennett, 1992; Knutson et al., 2006; Wansink et al., 2006; Wansink et al., 2001)
8. Quality of food (Gupta, McLaughlin, & Gomez, 2007; Lynn, 2001; Oh, 2000; Stevens, Knutson, & Patton, 1995)

Frequency
9. Dine out more (Lin, Guthrie, and Frazao, 1999)
10. Eat at home more (Kant & Graubard, 2004)

Expenses
11. Price of menu items (Andreyeva et al., 2010; Elder et al., 2010; Hiemstra & Kosiba, 1994)
12. Amount of tips (Kiefer et al., 1994; Pantelidis, 2010; Raab et al., 2009)
13. Special promotions and discounts (Kimes et al., 1998; Knutson et al., 2006; Quain et al., 1999)

Location
14. Restaurant taxes in the community (Cornia et al., 2010; Ferris, 2000; LeAnn, 2004; Thompson & Rohlin, 2012)
15. Distance relative to value (Knutson et al., 2006; Parsa et al., 2005)
16. Downtown vs. suburban areas (this study)
Theoretical Framework

• Weber’s Law (Monroe, 1971; Dehaene, 2002)
  ◦ The smallest detectable difference between a starting and secondary level of a particular stimulus is the “Just Noticeable Difference” (JND)
  ◦ In a marketing context (Grewal & Marmorstein, 1994)
    • The price of something can go up or down in small proportions (relative to the original price) with little impact
      ◦ At the JND point, the price change is expected to affect demand
Hypotheses

Analysis 1: 3% cost increase

H1: The types of restaurant that customers choose are influenced by a 3% increase in restaurant meal costs.

H2: The characteristics of the menu offerings that customers prefer are influenced by a 3% increase in restaurant meal costs.

H3: The frequency that restaurant customers dine out is influenced by a 3% increase in restaurant meal costs.

H4: What consumers spend money on at restaurants is influenced by a 3% increase in restaurant meal costs.

H5: The location of a restaurant that customers prefer is influenced by a 3% increase in restaurant meal costs.

Analysis 2: JND cost increase

H1: The types of restaurant that customers choose are influenced by the JND increase in restaurant meal costs.

H2: The characteristics of the menu offerings that customers prefer are influenced by the JND increase in restaurant meal costs.

H3: The frequency that restaurant customers dine out is influenced by the JND increase in restaurant meal costs.

H4: What consumers spend money on at restaurants is influenced by the JND increase in restaurant meal costs.

H5: The location of a restaurant that customers prefer is influenced by the JND increase in restaurant meal costs.
Research Design

• An online Qualtrics survey was distributed via email during 2/5/13 – 2/16/13

• Incentive
  ◦ The first 700 respondents were entered into a random drawing for one of seven $50 restaurant gift cards

• Panel
  ◦ 7,746 adults in Kentucky
  ◦ Identified by having publicly-available email addresses

• Of the 7,746 panel members
  ◦ 1,588 people began the survey
    ▪ 1,252 completed the entire survey (n=1,252)
### Descriptive Statistics

63% female, 37% male

#### Annual household income

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>under $20,000</td>
<td>55</td>
<td>4.5%</td>
</tr>
<tr>
<td>$20,000 - $39,999</td>
<td>112</td>
<td>9.1%</td>
</tr>
<tr>
<td>$40,000 - $59,999</td>
<td>199</td>
<td>16.1%</td>
</tr>
<tr>
<td>$60,000 - $79,999</td>
<td>202</td>
<td>16.4%</td>
</tr>
<tr>
<td>$80,000 - $99,999</td>
<td>182</td>
<td>14.8%</td>
</tr>
<tr>
<td>$100,000 - $119,999</td>
<td>173</td>
<td>14.0%</td>
</tr>
<tr>
<td>$120,000 - $139,999</td>
<td>106</td>
<td>8.6%</td>
</tr>
<tr>
<td>$140,000+</td>
<td>204</td>
<td>16.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1233</td>
<td></td>
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#### Level of Education

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Count</th>
<th>%</th>
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<tbody>
<tr>
<td>Less than High School degree</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>High School degree/GED equivalent</td>
<td>117</td>
<td>9%</td>
</tr>
<tr>
<td>2-year college degree</td>
<td>148</td>
<td>12%</td>
</tr>
<tr>
<td>4-year college degree</td>
<td>311</td>
<td>25%</td>
</tr>
<tr>
<td>Graduate/professional degree</td>
<td>674</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,252</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### Age Range

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>18-30</td>
<td>288</td>
<td>17%</td>
</tr>
<tr>
<td>31-40</td>
<td>310</td>
<td>19%</td>
</tr>
<tr>
<td>41-50</td>
<td>380</td>
<td>23%</td>
</tr>
<tr>
<td>51-60</td>
<td>466</td>
<td>28%</td>
</tr>
<tr>
<td>61 or above</td>
<td>210</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,654</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Descriptive Statistics

By how much would the total cost of restaurant meals have to increase before you would eat in restaurants less frequently or change what you typically purchase in restaurants?

<table>
<thead>
<tr>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3% or less</td>
<td>103 6.6%</td>
</tr>
<tr>
<td>4% - 9%</td>
<td>263 16.9%</td>
</tr>
<tr>
<td>10% - 14%</td>
<td>287 18.5%</td>
</tr>
<tr>
<td>15% - 19%</td>
<td>269 17.3%</td>
</tr>
<tr>
<td>20% - 24%</td>
<td>278 17.9%</td>
</tr>
<tr>
<td>25% - 29%</td>
<td>96 6.2%</td>
</tr>
<tr>
<td>30% - 34%</td>
<td>136 8.8%</td>
</tr>
<tr>
<td>35% - 39%</td>
<td>15 1.0%</td>
</tr>
<tr>
<td>40% - 44%</td>
<td>25 1.6%</td>
</tr>
<tr>
<td>45% - 49%</td>
<td>8 0.5%</td>
</tr>
<tr>
<td>50% - 54%</td>
<td>52 3.4%</td>
</tr>
<tr>
<td>55% or more</td>
<td>20 1.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,552</strong></td>
</tr>
</tbody>
</table>

Mean = 17.8%
Differences: Current vs. 3% Increase

Type of Restaurant
1. Chain vs. independent (p=0.015)
2. Full-service vs. fast-casual/quick-service (p=0.000)
3. Buffets (p=0.685)
4. Quality of service (p = 0.414)

Menu Offerings
5. Local foods (p=0.001)
6. Menu variety (p=0.004)
7. Portion sizes (p=0.000)
8. Quality of food (p=0.000)

Frequency
9. Dine out more (p=0.000)
10. Eat at home more (p=0.000)

Expenses
11. Price of menu items (p=0.000)
12. Amount of tips (p=0.000)
13. Special promotions and discounts (p=0.000)

Location
14. Restaurant taxes in the community (p=0.000)
15. Distance relative to value (p = 0.956)
16. Downtown vs. suburban areas (p=0.003)

We conducted a paired samples t-test to determine significant differences between cost increase scenarios.

Correlation is significant at p< 0.05. n = 1,262

No Significant Difference
Differences: Current vs. JND Increase

Type of Restaurant
1. Chain vs. independent (p=0.000)
2. Full-service vs. fast-casual/quick-service (p=0.000)
3. Buffets (p=0.942)
4. Quality of service (p=0.041)

Menu Offerings
5. Local foods (p=0.041)
6. Menu variety (p=0.000)
7. Portion sizes (p=0.000)
8. Quality of food (p=0.000)

Frequency
9. Dine out more (p=0.000)
10. Eat at home more (p=0.000)

Expenses
11. Price of menu items (p=0.000)
12. Amount of tips (p=0.000)
13. Special promotions and discounts (p=0.000)

Location
14. Restaurant taxes in the community (p=0.000)
15. Distance relative to value (p=0.000)
16. Downtown vs. suburban areas (p=0.019)

Paired samples t-test
Correlation is significant at p< 0.05. n = 1,262
Interpreting the Results

When the costs of eating in restaurants go up, diners are:

- More inclined to:
  - Select chain restaurants over independent restaurants
  - Pick a restaurant based on the portion sizes of menu items
  - Eat more meals at home
  - Dine at restaurants that offer special promotions or discounts
  - Order menu items that are less expensive than other options on the menu
  - Leave smaller tips for servers, as a percentage of the total check
  - Choose in which community to dine based on taxes added to the cost of the meal
  - Decide at which restaurant to eat based on the expected quality of service

- Less inclined to:
  - Select full-service restaurants over fast-casual/quick-service restaurants
  - Choose restaurants that use local foods in their menu offerings
  - Use menu variety as the basis for choosing a restaurant
  - Decide at which restaurant to eat based on the expected quality of food
  - Travel relative to value
Implications

• Policy Implications
  ◦ Assist government officials make informed public policy decisions that impact hospitality and tourism
  ◦ Strengthen policy positions for advocacy groups who support or oppose the Kentucky proposal
    • Or similar proposals in other states

• Management Implications
  ◦ Provide restaurant operators with a better understanding of customer’s willingness-to-pay in light of rising costs
  ◦ Highlight important factors of restaurant demand
References


Survey Start Dates

In case you’re curious

<table>
<thead>
<tr>
<th>Start Date</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 Feb 13</td>
<td>862 (50.86%)</td>
</tr>
<tr>
<td>07 Feb 13</td>
<td>285 (16.81%)</td>
</tr>
<tr>
<td>08 Feb 13</td>
<td>46 (2.71%)</td>
</tr>
<tr>
<td>09 Feb 13</td>
<td>9 (0.53%)</td>
</tr>
<tr>
<td>10 Feb 13</td>
<td>10 (0.59%)</td>
</tr>
<tr>
<td>11 Feb 13</td>
<td>23 (1.36%)</td>
</tr>
<tr>
<td>12 Feb 13</td>
<td>373 (22.01%)</td>
</tr>
<tr>
<td>13 Feb 13</td>
<td>58 (3.42%)</td>
</tr>
<tr>
<td>14 Feb 13</td>
<td>23 (1.36%)</td>
</tr>
<tr>
<td>15 Feb 13</td>
<td>6 (0.35%)</td>
</tr>
</tbody>
</table>

Reminder email sent on 12 Feb 13.
Public Policy Problem

• City Classes
  • Fourth class cities
    ◦ Population: 3,000 to 7,999
    ◦ 107 communities in Kentucky
    ◦ Examples: Bardstown, Berea, Elizabethtown
  • Fifth class cities
    ◦ Population: 1,000 to 2,999
    ◦ 116 communities in Kentucky
    ◦ Examples: Crittendon, Louisa, Sadieville
Almost every respondents (94%) responded that they eat in restaurants at least once a month.

price is not the factor they consider the most (80%).
Descriptive Statistics

- Average dining frequency per month (n=1,568)
  - Breakfast: 1.9; Lunch: 5.9; Dinner: 6.4 times
- Average meal expenses

![Chart showing meal expenses distribution by price range and meal type]