Building Research Capacity in LMICs Through Doing: Examples from the International Tobacco Control Policy Evaluation Project (the ITC Project)

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University of Waterloo and
Ontario Institute for Cancer Research

Symposium 4: “Challenges, Strategies, and Opportunities for Building Tobacco Research Capacity in Low- and Middle-Income Countries”
SRNT Annual Meeting, Seattle—Feb 6, 2014
Ford River Rouge Plant

- Completed in 1928
- 93 buildings, 16 million sq ft
- 100,000 workers in 1930s
- Vertical-integration production: From raw materials to finished automobile in 92 hours
The International Tobacco Control Policy Evaluation Project (the ITC Project)

12 of the 22 ITC countries are LMICs

Canada, United States, Australia, United Kingdom, Ireland, Thailand, Malaysia, South Korea, China, New Zealand, Mexico, Uruguay.
The ITC Survey Research Team: Principal Investigators, Co-Investigators

**Canada:** Geoffrey Fong, Mary Thompson, David Hammond, Changbao Wu, Mark Zanna, Christian Boudreau, Steve Brown, Sharon Campbell, Paul McDonald, Emmanuel Guindon, Matthias Schonlau

**United States:** Michael Cummings, Andrew Hyland, Richard O’Connor, Gary Giovino, Frank Chaloupka, Jim Thrasher, Ernesto Sébrie, Mohammad Siahpush, Hana Ross, Maansi Travers, Fritz Laux

**Australia:** Ron Borland, Hua Yong, Lin Li, Melanie Wakefield, David Young

**United Kingdom:** Ann McNeill, Gerard Hastings, Abraham Brown, Louise Hassan, Fiona Harris, Sara Hitchman

**Ireland:** Shane Allwright, Luke Clancy, Fenton Howell, Maurice Mulcahy

**Thailand:** Buppha Sirirassamee, Warangkana Polprasert, Philip Guest, Steve Hamann, Prakit Vateesatogkit, Aree Jampaklay, Aree Prohmmo, Chanya Sethaput, Charamporn Holumyong

**Malaysia:** Maizurah Omar, Rahmat Awang, Foong Kin, Ahmad Shalihin Mohd Samin

**New Zealand:** Nick Wilson, George Thomson, Richard Edwards, Judy Li, Janet Hoek

**South Korea:** Hong-Gwan Seo, Yoo-Seock Cheong, Seung-Kwon Myung, Yeol Kim

**China:** Jiang Yuan, Li Qiang, Yang Yan, Feng Guoze, Xiao Lin, Wang Congxiao

**France:** Romain Guignard, Pierre Awidson, François Beck, Jean-Louis Wilquin, Sylviane Ratte

**Germany:** Martina Pöttschke-Langer, Ute Mons

**Netherlands:** Marc Willemsen, Gera Nagelhout, Bas van den Putte, Hein de Vries, Karin Hummel

**Mexico:** Jim Thrasher, Edna Arillo Santillán, Eduardo Lazcano Ponce, Rosaura Pérez Hernández, Luz Myriam Reynales Shigematsu, Víctor Villalobos

**Uruguay:** Marcelo Boado, Eduardo Bianco

**Brazil:** Cristina Perez, Valeska Figuerido, Tania Cavalcante, André Szklo, Paula Johns, Vera e Costa da Silva

**Bangladesh:** Nigar Nargis, SM Ashiquzzaman, Ummul Ruthbah, Hussain Ghulum, Iftekharul Huq, Abu S.M. Abdullah

**Bhutan:** Sonam Phuntsho, Ugyen Norbu

**Mauritius:** Premduth Burhoo, Bimla Moussa, Deowan Mohee, Véronique Le Clézio, Marie France Wah

**India:** Prakash Gupta, Mangesh Pednekar

**Kenya:** Jane Nabongo, Lawrence Ikamari, Vincent Kimosop, Hillary Kipruto

**Zambia:** Fastone Goma, Richard Zulu, Masauso Moses Phiri, John Mayeya
ITC Evaluation of FCTC Policies (Partial List)

◆ **Warning labels**
  – UK (2003): Text
  – India (2009): Graphic
  – UK (2009): Graphic
  – Australia (2006): Graphic
  – Canada (2010): Graphic, Round 2
  – China (2008): Text
  – Mexico (2008): Graphic
  – Uruguay (2006,09): Graphic
  – Brazil (2008/09): Graphic, Round 3
  – Malaysia (2008): Graphic
  – Mauritius (2009): Graphic
  – New Zealand (2008): Graphic

◆ **Taxation**
  – All countries

◆ **Product policies**
  – UK (EU): 10-1-10 regulation
  – US/Canada: Reduced ignition propensity
  – All countries: product; product x behavior

◆ **Illicit trade**
  – China (2008): prevalence
  – Additional in Canada/U.S.: close to reserves
  – Bhutan (2009+): total ban on sales in country

◆ **Advertising/Promotion**
  – Canada (2003): Last part of Comp.
  – Mexico (2008): Comprehensive
  – Canada (2008+): Re-emergence of “descriptive” ads & possible new ban
  – China (2011): Comprehensive
  – Many other countries: Partial

◆ **Smoke-free**
  – Mexico (2008+)
  – Scotland (2005)
  – Brazil (2008+)
  – Bangladesh (2009+)
  – Uruguay (2006)
  – Bhutan (2009+)
  – France (2007/08)
  – India (partial)
  – Germany (2008+)
  – Mauritius (2009)
  – China (2008/09 + Olympics)
  – Netherlands (Part 2–2008/09)

◆ **Light/mild bans**
  – Australia (2005)
  – Canada (2006)
  – Brazil + others (2009+)
1. A research project is like building a car
2. If you understand all the steps in the research project, you gain knowledge about how those steps are essential for getting to where you want to go.
3. Knowing the research process makes one more effective in using the research to influence policy
The Life of an ITC Face-to-Face Survey Project

- **Hold Discussions with ITC Country Team**
- **Secure Funding by UW and Country Team**

**Plan Sampling Design and Scope of Survey with ITC Country Team**
Consider the number of individuals to be surveyed, upcoming policies that should be assessed, which regions/cities, rural vs urban areas, what groups to survey: smokers, non-smokers, smokeless tobacco users, youth, etc.

**Develop Survey Questions* and Interviewer Training Manual**
Survey questions are developed for smokers, non-smokers and youth based on policies that will be assessed. The training manual is developed specifically for an ITC Country based on the method of interviewer training.

*Most questions are derived from previous ITC surveys.

**Translate Surveys and Training Manual**
The surveys are originally developed in English and subsequently translated into the appropriate language(s) for the country being studied. This can be done through UW or by the ITC Country Team. In some countries, both the English and translated surveys are administered in the field.

**On-going Communication with ITC Country Team**
Once the surveys and training manual are translated, changes can be made to the survey questions and/or content of the training manual. While taking care to have common measure questions, some survey questions are uniquely tailored to the specific country, language and culture. The training manual is usually specifically written for each ITC Country Team.

**Finalize Survey Questions & Training Manuals**
ITC UW and ITC Country Team agree on the English and translated survey questions and training manual.

**Ethics Clearance**
ITC UW and ITC Country Team apply and receive full ethics clearance before conducting survey fieldwork.
Content of the ITC Surveys

<table>
<thead>
<tr>
<th>Content Domain</th>
<th>Number of Qs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking History and Frequency</td>
<td>7</td>
</tr>
<tr>
<td>→ Age started, 100 cigs,</td>
<td></td>
</tr>
<tr>
<td>Smoking Behaviour (current) and Dependence</td>
<td>7</td>
</tr>
<tr>
<td>→ Cigs/day, time to first, perceived addiction</td>
<td></td>
</tr>
<tr>
<td>Quitting: ever tried, most recent attempt</td>
<td>6</td>
</tr>
<tr>
<td>→ Duration of last attempt, planning vs. spontaneous</td>
<td></td>
</tr>
<tr>
<td>Quitting: Beliefs, efficacy, intentions, motivation, reasons for</td>
<td>21</td>
</tr>
<tr>
<td>→ Perceived role of policies</td>
<td></td>
</tr>
<tr>
<td>Knowledge: health effects, constituents</td>
<td>22</td>
</tr>
<tr>
<td>→ Health conditions (e.g., lung cancer, stroke, Impotence), role of nicotine</td>
<td></td>
</tr>
<tr>
<td>Health Warnings</td>
<td>13</td>
</tr>
<tr>
<td>→ Noticing, thinking about health risks, motivate quitting, emotional reaction</td>
<td></td>
</tr>
<tr>
<td>Anti-smoking campaigns</td>
<td>14</td>
</tr>
<tr>
<td>→ Noticing in various channels, perceived impact</td>
<td></td>
</tr>
<tr>
<td>Cigarette brand</td>
<td>35</td>
</tr>
<tr>
<td>→ Choice, history, perceptions, last purchase: size, price paid</td>
<td></td>
</tr>
<tr>
<td>Light/Mild and other supposedly reduced harm products</td>
<td>7</td>
</tr>
<tr>
<td>→ Perceptions of brand, relative risk</td>
<td></td>
</tr>
<tr>
<td>Cessation assistance</td>
<td>19</td>
</tr>
<tr>
<td>→ Physician mention, type of assistance sought, effectiveness</td>
<td></td>
</tr>
<tr>
<td>ETS and Smoke-Free policies</td>
<td>53</td>
</tr>
<tr>
<td>→ Personal policies (home, car), restaurants, bars, workplace (prevalence/support)</td>
<td></td>
</tr>
<tr>
<td>Psychosocial beliefs about smoking (mediators) and moderators</td>
<td>27</td>
</tr>
<tr>
<td>Advertising/Promotion</td>
<td>25</td>
</tr>
<tr>
<td>Tobacco industry beliefs and government role in TC beliefs</td>
<td>8</td>
</tr>
<tr>
<td>→ Trust in industry, need for regulation, should govt do more?</td>
<td></td>
</tr>
<tr>
<td>Individual difference variables</td>
<td>18</td>
</tr>
<tr>
<td>→ Depression, time perspective, rebelliousness</td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>13</td>
</tr>
<tr>
<td>→ Age, marital status (also whether partner smokes), income, education</td>
<td></td>
</tr>
<tr>
<td>TOTAL NUMBER OF QUESTIONS (MAXIMUM)</td>
<td>272</td>
</tr>
</tbody>
</table>

Throughout the policy sections there are measures relevant to monitoring.
Conceptual Model of the ITC Project

Policy

Policy-Specific Variables
- Label salience
- Perceived cost
- Ad/promo awareness
- Awareness of alternative products
- Proximal behaviors (forgoing a cigarette because of labels)

Psychosocial Mediators
- Outcome expectancies
- Beliefs & Attitudes
- Perceived Risk
- Perceived Severity
- Self-Efficacy/Perc. Beh Control
- Normalization beliefs
- Quit intentions

Policy-Relevant Outcomes
- Quit Attempts
- Successful Quitting
- Consumption changes
  - Brand switching
  - Tax/price avoidance
  - Attitude/belief changes (e.g., justifications)

Moderators
- Country Sociodemographics (e.g., age, sex, SES, ethnic background)
- Past Behavior (e.g., smoking history, CPD, quit attempts)
- Personality (e.g., time perspective)
- Psychological State (e.g., stress)
- Potential Exposure to Policy (e.g., employment status)

Economic Impact

Public Health Impact

International Tobacco Control Policy Evaluation Project
Advantages of a Cohort Design: Tests of the Mediational Model of Policy Effects

Policy → Proximal Variables (Policy-Specific) → Distal Variables (Psychosocial Mediators) → Behavior

Labels
- Label Salience
- Perc Effectiveness
- Depth of Processing
- Emotion/arousal

Ad Ban
- Advertising salience
- Positive assns

Perceived risk
- Perceived severity

Intentions to Quit

Quit Attempt

Different policies operate differently, but can be described by the same general model
Tracing the pathway from smoke-free laws to quitting

Figure 2. Structural Equation Model with standardized regression coefficients assessing the pathways of change between exposure to smoke-free legislation and quit attempts and quit success. * $p < .05$, ** $p < .01$, *** $p < .001$. To simplify the presentation, control variables, factor loadings, residual values and regression coefficients of non-significant paths (dotted lines) were omitted from the figure.

Nagelhout et al., *Nicotine & Tobacco Research* (2013)
The Life of an ITC Face-to-Face Survey Project

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Sampling Design and Scope of Survey

Develop Survey Questions and Training Manual

Translation into appropriate languages

Constant (incessant?) communication between ITC team and ITC Country Team
Interviewer training: Collaboration between ITC International Team and ITC Country Team

Fieldwork conducted

ITC DMC (Waterloo) creates program for data entry and management

Data entry/checking by ITC Country team. Sent to DMC, continued checking, survey weights, dataset prepared

Technical Report prepared by both teams

Data set released
China: Wave 1 Planning Meeting in Waterloo (Nov 2005)
China: Wave 2 Debriefing & W3 Training (Apr 2011)
Risk factors associated with smoking behaviour in recreational venues: findings from the International Tobacco Control (ITC) China Survey

X Li,1,4 Q Li,2,3 L Dong,4 B Sun,4 J Chen,4 Y Jiang,3 Y Yang,3 B Zhou,1 G T Fong2

ABSTRACT

Objective: To explore the determinants of smoking behaviour in recreational venues and to provide scientific bases for establishing smoke-free measures applying to these locations.

Methods: The International Tobacco Control (ITC) China Survey—a face-to-face cross-sectional survey of representative adult smokers from six cities (Shenyang, Beijing, Shanghai, Guangzhou, Changsha and Yinchuan) was conducted between April and August 2006. A total of 4815 smokers were selected using multistage sampling methods, and final analyses were conducted on 2875

China will become smokers, 50 million of whom will die from smoking-attributable diseases.9 According to the Report on Tobacco Control in China for 2007, 540 million non-smokers are suffering from secondhand smoke, including 180 million children aged below 15.10

Recreational venues (for example, restaurants, coffee shops and karaoke lounges) that allow smoking expose people to contexts in which smoking may be viewed as the norm. This may encourage their progression to more regular smoking.11 12 Further, the tobacco industry is actively
Formulate research ideas for research dissemination:
  – Conference presentations
  – Journal articles

Special focus on policy needs of country

Strong demand for capacity building in data analysis and writing
2007: Thailand & Malaysia—Data entry/analysis workshop

2007–13: Thailand & Malaysia—Ron Borland (Australia) conducts week-long paper-writing workshops approximately once a year

2007–13: Thailand & Malaysia—Hua Yong (Australia) conducts data analysis/paper writing workshops about every 1.5 years

2010: Malaysia—Ph.D. Candidate (Ahmed Fathelrahman) on internship to Australia’s Cancer Council Victoria to work with ITC Australia team on analyses and writing of journal articles.

2011: Malaysia—Pete Driezen (Canada) conducts data analysis workshop

2011–12: Malaysia—helping Melaka public health research team with evaluation studies of Smoke-Free Melaka program
WCTOH Singapore (March 2012)
WCTOH Singapore (March 2012)
WCTOH Singapore (March 2012)
Some Measures of Research Productivity

- Close to 300 peer-reviewed articles and over 700 presentations at scientific meetings
- 6 special ITC supplements in major scientific journals
- Major best practices handbook on evaluation of tobacco control policies published by the WHO International Agency for Research on Cancer
266 Journal Articles

- 190 HIC Authors Only
- 76 with LMIC Authors (29%)
  - 44 HIC 1st Author + LMIC Co-Author(s)
  - 32 LMIC 1st Author (42%)
    - 25 LMIC 1st Author + HIC Co-Author(s)
    - 7 LMIC Authors Only
- 25 LMIC 1st Author + HIC Co-Author(s)
- 7 LMIC Authors Only
Forthcoming ITC Economic Analysis Supplement
19 ITC National/Country Reports across 16 countries:

- France: Wave 1 National Report (Feb 2009)—English and French
- Germany: Wave 1 and Wave 2 National Report (Jan 2010)
- Bangladesh: Wave 1 National Report (Apr 2010)—English and Bengali
- Bhutan: Wave 1 ITC Bhutan Report (May 2011)
- India: Wave 1 (Sep 2013)
- Canada: Waves 1–8 (Nov 2013)

National Reports coming in 2014 for: United States, Brazil, Zambia, Kenya
Release of ITC Bhutan Report (May 2011)

The International Tobacco Control Policy Evaluation Project

ITC Bhutan Project Report

MAY 2011

Promoting Evidence-Based Strategies to Fight the Global Tobacco Epidemic
Release of ITC Bhutan Report (May 2011)
Impact of varying tax levels on tobacco use

Table 1: Projected effect of tax and price increases on cigarette and bidi consumption in Bangladesh

<table>
<thead>
<tr>
<th>CIGARETTES</th>
<th>Increase in SP over 2000</th>
<th>SD (%)</th>
<th>Increase in sale price ($)</th>
<th>Decrease in number of smokers</th>
<th>Decrease in total consumption (Million packs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5%</td>
<td>4.9%</td>
<td>8</td>
<td>966</td>
<td>856.090</td>
<td>0.068</td>
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<tr>
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<td>4</td>
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<tr>
<td>0.5%</td>
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<td>933</td>
<td>853.090</td>
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<tr>
<td>0.5%</td>
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<td>2</td>
<td>923</td>
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<td>0.032</td>
</tr>
<tr>
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<td>0.023</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BIDIS</th>
<th>Increase in SP over 2000</th>
<th>SD (%)</th>
<th>Increase in sale price ($)</th>
<th>Decrease in number of smokers</th>
<th>Decrease in total consumption (Million packs)</th>
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<td>0.023</td>
</tr>
</tbody>
</table>

Notes: 1. Decrease in number of smokers = Increase in sale price * (Pseudo elasticity of cigarette smoking participation * Estimated number of smokers in 2000)
2. Decrease in total consumption = Increase in sale price * (Pseudo elasticity of cigarette smokers) * Estimated total consumption in 2000

Figure 1: Annual cigarette tax revenue (Crore Taka) from given percentage increase in supplementary duty from 2009 rate

Bangladesh—Price & Tax Workshop (May 2011)
ITC Surveys

Longitudinal cohort surveys of tobacco users (smokers, smokeless users) and non-smokers to measure impact of tobacco control policies, regulations, and other interventions

22 countries: Canada, US, UK, Australia, Ireland, Netherlands, France, Germany, South Korea, China, Thailand, Malaysia, New Zealand, Bangladesh, India, Mauritius, Kenya, Zambia

ITC Experimental Studies

Experimental studies on the impact of various features of health warnings

7 countries: Mexico, US, China, India, Germany, South Korea, Bangladesh

ITC Tobacco Product Project

Collecting and analyzing leading cigarette brands to assess and evaluate physical characteristics of tobacco products and to understand the relation between design and consumer perceptions, smoking topography, impact on biomarkers of exposure

20 countries: linked to ITC Surveys over time
Challenges to Capacity Building

- Finding researchers with sufficient training/background
- Time constraints
- Reward systems
- Distance and time zones
- Communication challenges
- Language issues
- Capacity at the ITC Project to mentor researchers
- Funding for travel and training
Country Management Team
Anne C.K. Quah, Mary McNally, Janine Ouimet, Susan Kaai, Tom Agar, Steve Xu, Nadia Martin

Survey Management Team
Ruth Loewen, Michelle McAvoy, Shelly Jordan, Eddie Bauer

Data Management/Analysis Team
Mary Thompson, Matt Schonlau, Changbao Wu, Christian Boudreau, Pete Driezen, Gang Meng, Mi Yan, Grace Li, Megan Tait

Dissemination Team / Research
Lorraine Craig, Shannon Gravely, Janet Chung-Hall
Ron Borland, Hua Yong, Lin Li, Rich O’Connor, Maansi Travers
Support for the ITC Project

US National Cancer Institute Research Grants

Canadian Institutes of Health Research Research Grant

Ontario Institute for Cancer Research Senior Investigator Award

Canadian Cancer Society Research Institute Prevention Scientist Award

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www.itcproject.org
ITC Project Research Organizations

ITC Project Research Support

Core support provided by the U.S. National Cancer Institute (P01 CA138389)

Core support provided by the Canadian Institutes of Health Research (MOP-115016)