Addressing the Tax Gap
Leveraging Behavioral Economics to Increase Tax Compliance
August 9, 2018
Agenda

1. Introduction to Tax Compliance Analytics and Behavioral Economics

2. Nudging and Tax Compliance

3. Case Studies: State of Indiana / IRS
Introduction to Tax Compliance Analytics and Behavioral Economics
Tax Compliance Analytics Overview

The following capabilities are some possible applications of advanced analytics and behavioral economics to improve tax compliance

**Behavioral Nudging**
*Raise voluntary compliance rates by tailoring taxpaying experience to distinct population cohorts*

**Taxpayer Segmentation**
*Use demographic and geographic data to understand taxpayer behavior*

**Anomaly Detection**
*Flag taxpayers exhibiting unusual activity*

**Risk Scoring**
*Identify taxpayers with the highest risk of fraud or non-compliance*
Advantages of a Behavioral Economic-Enabled Tax Collection Process

- Uses **predictive analytics** and **behavioral insights** to reduce the tax gap by encouraging taxpayers to pay outstanding tax debt
- Encourages **voluntary payment compliance**, improving collections with **fewer internal resources** and **reducing costs** to agencies
- **Drives taxpayers to self-service channels**, reducing the workload on overburdened agency staff
- Improves the taxpayer experience by **simplifying outbound communications** and providing **more clarity** in notices
- **Reduces financial burden** on the taxpayer and provides a **better customer experience**
Nudging and Tax Compliance
Behavioral Economics ("Nudging") Overview

What is a Nudge?
A nudge is a concept from behavioral science and economics that steers people in a particular direction and allows them to preserve their freedom of choice without imposing any significant material incentives.

Examples of nudges
- A reminder is a nudge.
- It is also a warning.

Examples that are NOT nudges
- A subsidy is NOT a nudge.
- Neither is a fine/jail sentence.

Application of nudges
"Putting fruit at eye level counts as a nudge. Banning junk food does not."

Impact of nudges
"Nudges specifically promise a "middle way": they influence choices without coercing choice."

Types of Tax Compliance Nudges

Social norms and identity: Reference peers to boost effectiveness
“You are in the small minority of taxpayers who have not yet paid their taxes.”

Loss aversion: Highlight financial penalties or loss of other services
“You will be subject to $xxx.xx in interest payments.”

Incremental impact: Stress lower monthly cost
“With a payment agreement, your cost could be as low as $xxx.xx.”

Loss-framed public good: Highlight societal benefits
“Your tax dollars help pay for education in schools – losing this funding takes away from students’ education.”

Simplification: Use layout and formatting to highlight the next step
“Go online to https://treasury.state.gov/”, “Call (555) 555-5555 Option 1”, “Make a payment here.”
Tax Compliance: Recent Nudging Success Stories
Singapore increased voluntary payments by nudging employers with a more eye-catching notification

In 2013, the Ministry of Manpower in Singapore improved its reminder letters by:

• Simplifying the language used in correspondence.
• Printing the letters on pink paper that is typically used for debt collection.
• Including a social norm message stating “96% of employers pay their levy on time.”

These interventions were tested on employers who did not pay their taxes on time.

There was an improvement of 3 to 5 percentage points of employers who paid their foreign domestic worker taxes on time when they received the pink letter, compared to those who received the regular letter.

Source: https://www.challenge.gov.sg/print/cover-story/a-tip-for-policy-making-nudge-not-shove
In the UK, Her Majesty’s Revenue and Customs (HMRC) lifted voluntary payments with a single statement added to a notification.

Tax Compliance: Recent Nudging Success Stories

Adding the statement "Nine out of ten people pay their taxes on time" boosted voluntary tax payments.

Case Study: State of Indiana
Analysis of nudges on Small Business Tax Compliance Correspondence

Example: Tax Compliance Nudge Pilot in Indiana DOR

Overview
- IN DOR engaged Deloitte to deploy a tax collection nudge pilot
- Pilot consisted of a four week development phase to determine pilot population selection criteria, draft behavioral correspondence, and map KPIs to various nudges

Proposed assessment

NUDGE PILOT: Demand Notice for Payment

Tax Warrant Clerk, Sheriff, Agency

60 days

20 days

Nudge pilot consisted of five messages randomly assigned with four nudge types, segmented across “test” and “control” overdue taxpayer groups

Group 1
Control Group
- Current language and form ("Business As Usual")

Group 2
Simplification
- Reword current language in a more simplified fashion
- **Bold** text to create assertive language

Group 3
Loss Aversion
- Describe penalties for failure to pay
- **Bold and underline** text to draw attention to penalty

Group 4
Social Norm 1
- Highlight non-conformity "you are one of a very select number..."

Group 5
Social Norm 2
- Stress the possibility of published list of late taxpayers
Nudge Overview
Based on our behavioral science experience in tax compliance, four different nudges were tested in AR-40 messages

**Simplification:**
You have 20 days to pay $XXX or show reasonable cause (with supporting documentation) for not paying.

This requires a response no later than May 22, 2017.

If you fail to do so, this bill will convert to a tax warrant and will be referred for immediate collection action. You could lose your license for selling lottery tickets, alcohol, or your Retail Merchant Certificate – the right to do business in Indiana. Please note we can recover what you owe by collecting money from your bank account or by auctioning corporate or personal property pursuant to Indiana Code 6-8, 1-8-3, -4, and -8.

**Loss Aversion:**
You have 20 days to pay $XXX or show reasonable cause (with supporting documentation) for not paying.

This requires a response no later than May 22, 2017.

If you fail to do so, this bill will convert to a tax warrant and will be referred for immediate collection action, which can include garnishment of wages, levying your bank account, or auctioning personal property pursuant to Indiana Code 6-8, 1-8-3, -4, and -8.

**Social norms and Identity:**
Most Hoosiers pay their taxes on time. You are part of a small group of business that have not.

Please pay $XXX over the next 20 days, or show reasonable cause (with supporting documentation) for not paying. To avoid penalties, pay no later than May 22, 2018. To make a payment arrangement online or pay your tax bill in full, please visit: www.intaxpay.in.gov today

**Social pressure:**
By not paying sales tax, you are effectively taking money from your customers. Indiana law requires the department to post online the names and addresses of all businesses whose registered retail merchant certificates have expired because they did not pay. If you do not resolve this issue before May 22, 2018, your business name will be posted

Please pay $XXX over the next 20 days, or show reasonable cause (with supporting documentation) for not paying. To avoid penalties, pay no later than May 22, 2018. To make a payment arrangement online or pay your tax bill in full, please visit: www.intaxpay.in.gov today

Changes were only made to this section of the warrant
Nudge Efficacy: Non-Remittance

Initial experimental results indicate that nudges were more effective in soliciting higher resolution rates

<table>
<thead>
<tr>
<th>Resolution Rate</th>
<th>Control (Original AR-40)</th>
<th>Simplification</th>
<th>Loss Aversion</th>
<th>Social Norms and Identity</th>
<th>Social Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution Rate</td>
<td>44.5%</td>
<td>48.7%</td>
<td>48.1%</td>
<td>45.1%</td>
<td>44.4%</td>
</tr>
</tbody>
</table>

Percentage of Late Payers Reporting Taxes by Nudge Type
Predicted Resolution Rates

When considering all aspects of collection data, liabilities were segmented into groups that exhibited varying degrees of predicted resolution rates to support collection triage.

Liabilities in the highest predicted resolution group were 4X likely to be resolved than those in the lowest predicted resolution group.
Key Findings
The analysis and review of IN DOR’s tax collection nudge pilot revealed key findings

Finding #1
Behavioral nudges are effective for non-remittance/withholding (“NRM”/“WTH”)

Finding #2
Compliance varies across population sub-groups (e.g., industry/location), suggesting a potential to apply statistical segmentation techniques that drive nudge application

Finding #3
Preliminary predictive models identify cases that are likely to be compliant with a 70% accuracy rate

Both behavioral science (design) considerations and statistical effects (sample size) may be root causes to the lower efficacy of SAU AR-40 nudges
Case Study: Mainstreaming Behavioral Insights in the IRS
The Context at IRS

Service Oriented – Going beyond enforcement to enable compliance

The need to develop tools and approaches to support the new direction

Shift in funding towards proactive measures
The circumstances of each organization determine where it falls along the Behavioral Insights adoption spectrum.

**Concentration Model**
A unit of Behavioral Insights experts that consults and advises on applying BI to public policy.

**Diffusion Model**
Behavioral Insights is diffused throughout the organization rather than expertise being housed in a central unit.

**1: Informing**
Providing knowledge and resources to utilize Behavioral Insights.

**2: Promoting**
Promoting lessons learned and wins across stakeholders.

**3: Engaging**
Creating a culture where principles become a part of our thought processes and approaches.
1. Informing: The Behavioral Insights Toolkit
We designed the Behavioral Insights Toolkit to serve as a unified source of information for the entire agency.

**Toolkit sections include:**

- **Behavioral Insights Overview** – an overview of foundational concepts of Behavioral Insights, and how to use the Toolkit.

- **Behavioral Insights Application Framework** – an organizing framework of behavioral factors and concepts that influence taxpayer behavior.

- **Application to Tax Administration** – a guide to how Behavioral Insights can improve relevant concepts associated with tax administration.

- **Behavioral Insights and Organizations** – an overview of how Behavioral Insights relates to organizations (as distinct from individuals).


- **Additional Resources** – references with additional depth in the latest Behavioral Insights developments, and documentation of recent findings relevant to the IRS.
The Toolkit is organized around a framework for applying Behavioral Insights to the IRS’ tax administration priorities

**Individual Factors**
Human decision-making is based on both deliberate and automatic modes of information processing. These processes can be harnessed to make compliance easier.

- **Individual Concepts:**
  - Cognitive Load
  - Self-image
  - Fast vs. Slow Processing
  - Heuristics and Biases
  - Intention and Commitment
  - Rewards and Penalties
  - Time Distortion

**Environmental and Design Factors**
Because most information processing is automatic, our behavior is largely shaped by contextual factors and cues in the environment.

- **Environmental and Design Concepts:**
  - Choice Architecture
  - Feedback and Reminders
  - Framing and Priming
  - Salience
  - Simplification
  - Timing

**Social Factors**
How people act and think often depends on the actions of those around them. Most people make efforts to conform to social norms and expectations.

- **Social Concepts:**
  - Messenger Effects
  - Reciprocity
  - Social Norms

**Organizational Factors**
Behavior within organizations is complex, involving individual, environmental, and social factors as well as factors unique to institutions (e.g., culture, governance). For a consideration of Behavioral Insights at the organization level, please see the Behavioral Insights and Organizations section.
Simplification

Keep it simple

Simplification makes tasks easier to accomplish by reducing complexity, using clear language, and making action items straightforward. Conversely, aspects of a task that make it seem more difficult, called friction costs, can be the reason people put off or are unable to complete a task.

How to Use

Limit, cluster, or simplify the amount of information people have to process when making decisions

Polish tax authorities simplified its tax letters, which increased the average amount paid between $40-$326, and increased the payment rate by 17%.

Take advantage of information already provided

When personal information was pre-populated into the Free Application for Federal Student Aid (FAFSA), college enrollment increased by 8% over a two-year period.

Shorten the number of steps necessary to complete a task

The UK’s HMRC directed mail recipients to a specific form that they needed to complete instead of a webpage to get to the form, which improved tax collection rates. Every additional step increases the psychological burden of completing a task.

Simplification works well when...

• Sub-processes of a task can be eliminated or altered. In many cases, small changes like shortening URLs or reducing required pages to click through can result in a marked increase in effectiveness.

• There are non-essential steps or options that can be eliminated. For a long form, designers and requestors of information can re-examine the elements of the form to determine where the scope of information presented and/or collected can be reduced.

Be careful when...

• Making changes without testing. Any effort to simplify a form or process only makes sense if the end product is actually better for the person. Without conducting testing to confirm that people prefer a new, simpler option, people may find themselves equally burdened or even more confused.

• Implementing changes in the costs associated with choice pathways. The IRS needs to balance taxpayer rights and taxpayer compliance costs with the objectives of promoting certain desired behaviors.

Tax Applications and Impacts

- Accurate and complete forms
- Simplify outbound correspondence
- Increase response to tax notices

Further Reading
2. Promoting: A Shared Understanding
Behavioral Insights as a culture has been shaped by several factors

**Leadership Support**
Leadership has given the charge to disseminate Behavioral Insights throughout the organization rather than simply creating a central Behavioral Insights unit.

**Skilled Researchers**
The IRS is comprised of skilled researchers who are interested in how to apply Behavioral Insights to their work. The Community of Practice offers a way to discuss their research and apply Behavioral Insights more systematically.

**Appetite for Behavioral Insights**
There has been an increased demand for Behavioral Insights interventions, with a recognition that Behavioral Insights is a credible and effective method of increasing taxpayer compliance.

**Shared Understanding**
Through tools like the Behavioral Insights Toolkit, we have continued to drive understanding and share knowledge about Behavioral Insights.
2. Engaging: Community of Practice
Our Community of Practice extends beyond the IRS

Drawing on best practices in the literature and from other Behavioral Insights subject matter experts who implement Behavioral Insights projects

Knowledge sharing with other agencies and peer organizations to build a knowledge base about what works

IRS Community of Practice fosters knowledge sharing among internal researchers

Collaboration with academic institutions and other experts to develop and test novel methods
Impact:
The IRS is applying Behavioral Insights to communications to improve outcomes.

Message Testing for Different Population Segments

Control group letter

- Penalties and loss aversion
- Highlighting Urgency

Installment Agreements

- Salience
- Temporal Discounting
- Simplification
The IRS is applying Behavioral Insights practices from other domains to improve communication and transparency.

Where’s My Pizza?

Domino’s Pizza Tracker lets customers know exactly *where their pizza is*, and *when to expect it*.

- **Immediate assurance** the order was received
- **Live information about progress**, and **estimate of completion** time

Where’s My Refund?

Where’s my Refund/Amended Return leverages a **status bar** to provide information to taxpayers.

- **Transparency and Feedback**
  - Providing information about what is happening behind the scenes builds user’s trust and improves satisfaction by reducing ambiguity
Final Thoughts
Lessons for other agencies

Our diffusion model suited IRS’s devolved structure

This is a fast evolving field – it makes sense to be sharing knowledge internally and externally

Tools need to be analytically robust yet accessible and compelling to a lay audience
Questions?