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Governing for
Growth
in Georgia

APPLICATION OF BEHAVIORAL INSIGHTS

FOR INTERNAL USE ONLY

31 MAY 2019

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APPLICATION OF BEHAVIORAL INSIGHTS

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USAID GOVERNING FOR GROWTH (G4G) IN GEORGIA

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ACRONYMS

BI	Behavioral Insights
G4G	Governing for Growth in Georgia
GOG	Government of Georgia
IRS	International Revenue System
OECD	Organisation for Economic Co-operation and Development
RCT	Randomized Control Trial
RS	Revenue Service
SOW	Statement of Work
USAID	United States Agency for International Development
VAT	Value Added Tax

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1. BACKGROUND

The USAID Governing for Growth (G4G) in Georgia project is designed to support the Government of Georgia (GoG) to create a better enabling business environment in which legal and regulatory reforms are fairly and transparently conceived, implemented and enforced through a consultative process. To achieve this goal, G4G focuses on strengthening the capacity of both the public and the private sectors to effectively cooperate on policy and legislation of key reforms.

The Revenue Service (RS) of Georgia has committed itself to raise the taxpayer compliance level through risk-based approaches and encouragement of voluntary compliance, as stated in its *Strategy for 2017-20* document.

In 2018, the RS began to partner with G4G to explore how the application of Behavioral Insights (BI) could help RS employees better influence taxpayer and stakeholder behavior to achieve tax compliance.

G4G, in coordination with a BI Team from Deloitte Consulting LLP, helped the RS in:

- (1) Developing a comprehensive methodology on the use of BI, and in
- (2) Building internal capacity to apply the methodology

The project culminated in three in-country visits and the BI team met with members of the RS both to provide training on qualitative and quantitative methods used in the application of BI and also to help with scoping initial areas where BI could be applied to RS processes and outreach. Deriving benefit from extensive research conducted by well-developed tax administrations, the focus of these assignments were on capacity building based on insights and approaches that can be tested and used by the Georgian tax administration in a practical setting.

This document contains a final report of activities over the course of the BI Team engagement. It recaps the original contractual statement of work and aligns deliverables and accomplishments to specific tasks. It also includes an overview of all documents delivered.

2. PROJECT ACCOMPLISHMENTS

In alignment with the original SOW, the project team accomplished each of the tasks outlined below:

Deliverable	Status	Description of Completed Activities
Task 1: Toolkit	✓	<ul style="list-style-type: none"> • Developed toolkit (in English) that includes: <ul style="list-style-type: none"> • How to understand tax compliance as a behavior • An overview of the BI framework Deloitte developed • An explanation of how BI can be used to understand compliance, including 2019 Georgian taxpayer survey results • Examples of how BI has been applied in tax settings and its application to the RS • Insights gained from the in-country site visits with Georgia-specific examples • A section on how to best identify where BI projects can be the most beneficial and how to objectively study their impacts to develop and refine your BI messages and/or techniques • An appendix of additional resources
Task 2: Leadership training	✓	<ul style="list-style-type: none"> • Completed during November 2018 visit <ul style="list-style-type: none"> • Provided several group presentations providing an introduction and overview of the intersection of tax and BI • Facilitated two workshops to discuss possible BI projects at RS • Completed during May 2019 visit <ul style="list-style-type: none"> • Prepared and delivered high-level executive training/briefings of potential RS pilot projects • Coordinated with stakeholders in-country to build buy-in for BI applications within various departments of the RS
Task 3: Introductory BI training	✓	<ul style="list-style-type: none"> • Completed during November 2018 visit <ul style="list-style-type: none"> • Met with smaller focused groups to discuss the applications of BI • Brainstormed potential application areas for further discovery/discussion in April 2019 visit • Completed the second iteration in April 2019 <ul style="list-style-type: none"> • Delivered 4-day BI Bootcamp for members of the RS Analytics Department (the sole focus of Day 1 being BI). Included an overview of BI definitions, plus a deep-dive explanation of principles that are often at play within the tax • Facilitated ideation session with smaller groups of RS employees to identify what behavioral barriers are preventing key stakeholders from behaving in compliant ways, and what interventions could mitigate the effects of those barriers

		<ul style="list-style-type: none"> • Repeated delivery for RS leaders during Toolkit delivery visit in May 2019 • Incorporated leave-behind materials for consideration in the BI toolkit
Task 4: Research methods training	✓	<ul style="list-style-type: none"> • Completed during April 2019 visit <ul style="list-style-type: none"> • Delivered 4-day BI Bootcamp for members of the Analytics Department (the focus of day 2, 3, and 4) • Covered both quantitative and qualitative elements of research methods, teaching statistical and evaluation concepts and methods • Developed workbooks and resource sheets for participants to reference after completion of the training • Facilitated ideation session during the workshop to have smaller groups of RS employees identify what research methods to use and when, and how best to evaluate the impacts of their proposed interventions • Incorporated leave-behind materials for consideration in the BI toolkit
Task 5: Department introduction meetings	✓	<ul style="list-style-type: none"> • Completed during November 2018 visit <ul style="list-style-type: none"> • Connected with local departments to determine appetite and feasibility of BI project applications • Identified the Analytics Department as the owner of RS BI projects • Reinforced departmental participation in April 2019 training • Aligned April 2019 BI Bootcamp curriculum to six RS priorities as articulated by the agency
Task 6: Pilot mentorship	✓	<ul style="list-style-type: none"> • Delivered 4-day BI Bootcamp for members of the RS Analytics Department (the focus of day 4) • Provided follow-up support via Skype meetings • Identified analytical department owners to move projects forward • Developed Research Protocol outlining sample activities to get the first set of pilots designed and implemented in the short-to-mid-term: <ul style="list-style-type: none"> • Provided an overview of research methodologies and best practices used in designing behavioral interventions • Prescribed requirements and logistics considerations to drive pilot program acceptance, coordination, and eventual implementation • Guided end-users with an idea for evaluation structures and timing • Presented BI Pilot Research Protocol overview to RS leadership during May visit.

**Task 7:
Information
sharing**



- Coordinated with global Deloitte BI and tax leadership to identify relevant connections
- Made introductions to the Organisation for Economic Co-operation and Development (OECD) global BI tax community
- Presented BI Toolkit overview to RS leadership and relevant stakeholders during May visit.

3. DOCUMENTS OVERVIEW

The team delivered the final toolkit materials alongside research plans for a pilot project developed on-site as part of the final project close-out. The team also delivered several presentations on-site.



BI TOOLKIT

The 100+ page toolkit includes an overview of how BI has been used in tax, a deep-dive of various BI concepts, and an interactive walkthrough of how to apply BI principles to RS priorities.



BI TRAINING

Delivered in April 2019, the training deck includes a 4-day curriculum covering topics from the end-to-end research process.



PILOT PROJECT RESEARCH PROTOCOL

A multi-page document outlining research plan elements and tactical next steps for implementing pilot projects identified during the April 2019 visit.

APPENDIX A: PILOT PLAN

1. BACKGROUND

1.1 RS BACKGROUND

The RS is currently embarking on several bold projects to increase the efficiency of its tax collection and monitoring systems. To ensure that these new projects and procedures are effective, RS proposed using BI principles to guide their development and test their impact. BI uses principles from the behavioral sciences such as psychology, neuroscience, and behavioral economics to understand how individuals absorb, process, and react to information and applies this to design practical policies and interventions with human behavior in mind.

This document presents an outline for a series of pilot studies to systematically test the implementation of a procedural change, a new web-based online system that businesses will use to report tax withholding from employees, for the RS that will use BI techniques to support adoption, accuracy, and compliance with the new system.

Currently, the RS relies on two systems to document payments to employees, one to report tax withholdings (including aggregated salaries) and one to record different pay-outs (including salaries), specifying recipients and amounts. Both types of information are reported on the 15th of the month following the transaction to the RS. The current system's limitations may be resulting in ***underreporting of employment information, therefore generating lower tax revenues for the country***. Additionally, employers have stated to the RS that the two reporting methods are too cumbersome. The result is that many companies may lack resources to submit these forms correctly and in a timely manner. In addition to employer complaints, it should be noted that there are insufficient penalties for non-compliance for under-reporting, which can facilitate non-compliance.

There are also several practical reasons as to why this system should be updated. First, ***better tracking*** of employees' salaries and tax withholdings can provide ***more transparency for both employees and employers***. Second, ensuring the correct amount of tax can be easily calculated and taken out can dissuade fraud. Finally, creating a system more in line with global standards puts Georgia in a better position when negotiating contracts with foreign businesses or governments.

To alleviate the issues with the current system, and bring its reporting more in line with global standards, the RS is developing a comprehensive web-based system for reporting. This system would include both employee information and tax withholdings, in a uniform system. As this represents a drastic shift in how this information is reported, testing to ensure the adoption, accuracy, and compliance with the new system is necessary. This document presents the overall study design plan for testing multiple pilot investigation to ensure smooth adoption, accuracy, and compliance.

1.2 BI BACKGROUND

BI uses principles from the behavioral sciences such as psychology, neuroscience, and behavioral economics to understand how individuals absorb, process, and react to information and applies this to design practical policies and interventions with human behavior in mind. BI techniques have successfully been used in the field of economics to affect tax compliance behaviors such as reporting wages, declaring the right amount of Value Added Tax (VAT), and cooperate with audits. Based on findings from the *Behavioral Insight Toolkit*¹ Deloitte developed for the United States Internal Revenue System (IRS), this project proposed to use BI techniques to ensure the smooth adoption, accuracy, and compliance of the system.

It is suggested to use the following **Deloitte Behavioral Insights Framework** (Figure 1) to inform the development of BI interventions. This framework posits that our behavior is shaped by three main factors - individual, environmental & design, and social - that combine to influence human behaviors patterns. A full description of each of these concepts can be found in the IRS toolkit.

Figure 1: Deloitte Behavioral Insights Framework



¹ <https://www.irs.gov/pub/irs-soi/17rpirsbehavioralinsights.pdf>

2. PILOT INTERVENTION FOCUS AND OVERALL DESIGN

The intention of this project is to help the RS pilot test and implement *the system*. To support these efforts, G4G sought technical assistance from the BI team of Deloitte Consulting LLP. BI uses principles from the behavioral sciences such as psychology, neuroscience, and behavioral economics to understand how individuals absorb, process, and react to information and applies this to design practical policies and interventions with human behavior in mind. This team suggests testing multiple BI methods to support acceptance, adoption, and ongoing compliance among users.

Overall Goal: Incorporate BI solutions into the RS employee registration and reporting system (i.e., *the system*) to ensure acceptance, adoption, and ongoing compliance among employers across the nation.

Overall Design: A mixed-methods approach to evaluating the effectiveness of different BI interventions is proposed. Qualitative analysis will assess problems with the existing system to encourage system adoption and presenting proposed features and processes of *the system* facilitating ease of use. Second, quantitative methods will test BI methods to increase both adoption during pilot testing through the use of targeted messaging and communication efforts.

Pilot Designs: It is proposed to run three separate pilot projects. Pilot 1 will take place first, and Pilots 2 and 3 can run simultaneously.

Pilot 1 (Focus Group): Qualitative study using focus groups to identify key elements of the website features to support adoption and compliance.

Pilot 2 (Randomized Control Trial): Qualitative study employing a randomized control trial (RCT) to test the effectiveness of behavioral nudges, in the form of pop-up messages, to test for *increased reporting accuracy*

Pilot 3 (Randomized Control Trial): Qualitative study employing an RCT to test the effectiveness of behavioral nudges, in the form of email or letter reminders, to test for *increased compliance*

2.1 PILOT PROJECT 1:

ADOPTION AND CHOICE ARCHITECTURE ASSESSMENT OF WEB-BASED SYSTEM

OVERALL APPROACH

The BI concepts suggest to assess/ test during this investigation are the following:

- **Individual:** Cognitive load, fast vs. slow processing, heuristic bias
- **Environmental & Design:** Choice architecture, simplification
- **Social:** Reciprocity

1. Define Research Objectives

The overall objective of this pilot study is to assess employers' feelings and impressions on the layout, embedded features, and workflows proposed for the system. These goals will focus on incorporating the BI concepts of choice architecture and mitigating cognitive load to increase overall system adoption and maximized user experience when interacting with the web-based portal.



Figure 2: Focus Group Methodology

2. Develop Analysis Plan

Study Design: The overall design for this should be qualitative in nature. It is suggested to conduct a series of focus groups among a sample of members from the target population. To ensure representation from a variety of businesses of varying sizes, as well as target specific industries where this change may be more impactful, it is suggested to stratify (group) businesses based on pre-determined criteria, strata (**Table 1**), and select participants from within each group. Experts would recommend at least two focus groups from each strata group be conducted.

Table 1: Proposed Strata or Pilot 1

Strata	Groups
Business Size	Small, medium, large businesses
Industry Specific	Restaurants, construction companies, other
Regional/Urban vs Rural	TBD

Target Population: The focus groups will target the person or party (e.g., HR administrator, accountant, administrative staff, owner) responsible for reporting employee registration and tax payout information to the RS.

Sampling and Recruitment Logistics: It is suggested the focus groups to be comprised of between 9-14 individuals and last no more than 90 minutes. A sampling frame of eligible businesses per strata will be generated by the RS. From this, a random sample of businesses will be selected and asked to participate. Using quota sampling to achieve recruitment goals and oversampling by at least 30% to account for no-shows (non-responses) is recommended. Typically, this means inviting 18-20 individuals to attend, expecting that no more than 14 will show up. The first 14 people who arrives will be invited to participate, later arrivals will be compensated for their time (given an incentive), but be told they cannot participate.

3. Draft Focus Group Facilitation Materials

Facilitator Questionnaire Guide: To guide focus group discussions, a questionnaire guide needs to be developed. For the purposes of this project, focus groups will be segmented into two distinct sections (**Table 2**). Section 1 will focus on the current system and what user feel should be done to improve it (45 minutes). Section 2 will focus on the new systems proposed features and process through the web-portal (45 minutes). Participants will be told that their responses are for research purposes only and that responses will be anonymized to accommodate an open and honest dialogue.

Table 2: Proposed Focus Group Questionnaire Guide

Section 1	Section 2
<p>Q1: What do you think about the current employee registration and tax reporting forms?</p>	<p>Q4: I am now going to walk you through the new online reporting system, at each page, I want to hear from you your impressions on the following topics:</p> <ul style="list-style-type: none"> • Describe your initial reactions. • Does this page provide the right information in the right format for you to understand what you need to do? • Is it apparent where you need to enter data? • Do you understand the language on the page? • Do you feel like this page is missing information? • How easy will it be for you to navigate the web-portal to get where you need to go? • Is there enough or too much information? • Where do you think tutorials or instructions should go?
<p>Q2: How user-friendly are the forms to fill out:</p> <ul style="list-style-type: none"> • On average, how much time does it take to complete each form? • Have you ever had to correct a form? If so, how easy is it to make changes or fix errors? • What staff resources (number of employees, time, etc.) does it take to complete monthly data calls? • How would you describe your organization’s attitude about submitting erroneous responses to the forms? 	
<p>Q3: How can/should we improve this system:</p> <ul style="list-style-type: none"> • What is the one thing you would change? • If you were to redesign the system, what would you include or remove? • What would you do to make it more efficient? • How can the RS help make it easier for you to report this information? 	<p>Q5: What is your overall impression of the new system:</p> <ul style="list-style-type: none"> • Is there enough information to allow you to report accurately? • Is there too much information in places? • What should the RS do to help businesses transition to this new system (online support, trainings, tutorials, etc.)?

4. Facilitate Focus Groups

Staffing: Each focus group will have one facilitator and one note-taker. The facilitator should be a person with knowledge of how to conduct and manage focus groups. At least one, but two is also acceptable, assistant(s) should be present to take notes and manage equipment. Ideally, these individuals will not be the RS staff as this may bias results.

Logistics and Data Collection: Focus groups should take place at a neutral location (i.e., not at the RS offices). Sessions will be audio-recorded. Video recording may be possible as well if necessary. Flipcharts may also be used to capture specific types of feedback. Assistants’ notes should focus on capturing the overall impression of participants and non-verbal communications. The Facilitator is responsible for managing group dynamics, time management, and overall session flow. Bi Experts suggest the following order of activities to ensure that all topics are covered (**Table 3**).

Table 3: Overall Structure of Focus Group Sessions

Stage	Description
Introduction	Facilitators will introduce topics and obtain verbal consent.
Ground rules	Facilitators will explain ground rules for the focus group participants, including: confidentiality, the principle that disagreement is alright but that participants should remain respectful of one another, the structure and nature of the session, and the pace

	of the conversation.
Rapport building	Light introductions to create group cohesion (no last names) and an ice breaker question/ activity.
In-depth investigation	Moderator will begin the major topic discussion and rely on the interview guide to ensure all topics are addressed.
False close	Ending of topic-specific discussion by asking a general question that the group can discuss amongst themselves without requiring the moderator to facilitate.
Closure	The moderator will thank participants for attending, provide compensation and a written survey for any other anonymized feedback that could not be shared during the oral session. The moderator will answer any last-questions.

Incentives: Participants should be compensated for their time by being given incentives such as gift cards to a local store. Amounts to be distributed should be discussed ahead of time so amounts are enough to encourage participation, but not be considered coercive.

5. Analyze Focus Group Data and Develop Final Report

At the completion of each focus group, staff (facilitator and assistant(s)) will convene to discuss their overall impression of the group, reflect on what was discussed and begin to note overall impressions, outcomes, or themes that emerged. Once all are completed, staff will review all materials (video, audio, notes, post-group debriefs). Unless specified, most of the coding will be conducted by hand. Subject matter experts will be on-hand to help guide the analysis process, which will primarily rely on an inductive reasoning approach (draw broad conclusions from specific instances) to take respondents answers and identify common themes that can be used to shape the overall structure and design of the web-portal.

From the analysis, a draft report will be developed which will include an assessment of themes, highlight any differences across strata, and make recommendations on how to strengthen the user-friendliness of the system and increase adoption among the target population. The draft will be submitted to all relevant stakeholders to incorporate any feedback on how to strengthen the findings and conclusion.

6. Facilitate Results Briefing and Action Planning

Once feedback has been incorporated, a final report will be drafted and a briefing scheduled with RS leadership and any other relevant stakeholders. In addition to sharing results and conclusions, the majority of this briefing will be devoted to action planning and decision making. From this meeting, how finding will affect the web-portal will be developed and a timeline for implementation will be determined.

TIMELINE OF ACTIVITIES

The pilot is anticipated to take about a total of four months to execute and analyze results. Much of this time will be devoted to focus group logistics and management, with major milestones including:

Month 1: Logistics

- Finalize the overall approach
- Refine questionnaire guide and develop facilitator guide/ script
- Identify staff (e.g., focus group facilitator(s) and note taker(s))
- Provide facilitator training
- Plan for data collection methods, protocols, and repositories
- Identify a location for focus groups
- Assist with messaging to potential participants, ensuring that representative samples are chosen
- Collect participation responses and segment groups
- Secure any materials (AV equipment, flipcharts) necessary
- Work with RS IT, and other departments to prepare a focus group version of online portal
- Craft recruitment materials and identify retention strategies (i.e., incentives)

Month 2-3: Data Collection

- Finalize and complete any outstanding Month 1 activities
- Conduct and manage recruitment and retention
- Facilitate focus groups and collect data
- Conduct debriefs, post-focus groups, to begin analysis phase

Month 4 Activities: Analysis and Dissemination

- Analyze focus group data to identify common themes and impressions
- Present preliminary findings to RS leadership and other relevant stakeholders
- Incorporate any edits from relevant parties and create a final report with recommendations
- Present major findings and recommendations
- Implement as agreed upon recommendations.

IMPLEMENTATION OF RECOMMENDATIONS

After the decision on what changes to the web-portal will be implemented, the working group should work with all relevant stakeholders to ensure changes are implemented and tested as specified within agreed-upon timelines. This may include another briefing with leadership to show changes.

2.2 PILOT 2: EFFECTS OF NUDGE MESSAGES ON REPORTING ACCURACY

OVERALL APPROACH

The purpose of this pilot is to assess the effectiveness of BI tailored messaging at improving the reporting accuracy of employee tax withholdings. This will be accomplished by testing a series of strategically placed pop-up message windows embedded in the web-portal. An RCT design will be used to test the effectiveness of each message type. The BI concepts suggested to assess/test during this investigation are the following:

- **Individual:** self-image, rewards, and penalties
- **Environmental & Design:** feedback and reminders, timing, salience
- **Social:** social norms, messenger effect

INTERVENTION DESIGN

Staff from the Analytics Department of the RS identified four distinct BI messages, and two unique times of the registration and tax withholding verification process to be tested. These messages, and the time in which they are to be delivered are thought to be critical to ensuring accurate reporting.

BI Messages: In total, three distinct BI concepts, and four unique messages were chosen to be tested for their influence over reporting accuracy.

Table 4: BI Accuracy Messages

BI Concepts	Logistics	Possible Message
Rewards & Penalties	Inform employers of penalties for misreporting the amount of salary paid to employees last month	“Did you know it’s a crime if your business under-reports how much you pay employees?”
Self-image	Appeals to employers’ desire to be good to their employees	“Your employees’ financial health depends on you accurately filing their tax withholdings”

Self-image	Appeals to employers' desire to be compliant with RS tax laws	"Your accurate filings helped the government do XX last year"
Social Norms	Appealing to employers' desire to not stand out and be doing the same as other businesses	"Did you know that X out of X employers accurately report their tax withholdings?"

Timing: Two distinct moments in the registration/ monthly withholdings confirmation process were chosen when employers may be under-reporting income and/or tax withholdings.

- **Big changes - verification during filing** – Each month employers have the opportunity to change the amount of income an employee received, which affects their overall tax withholdings. To ensure that this value is not being underreported, it was decided employers making certain types of reductions in this amount will receive a BI pop-up message, criteria include:
 - If employment income is reduced to zero
 - If employers reduce income from the previous month by 20% or 200 lari.
- **No changes - verification after submission** – Each month employers must verify all income and tax withholdings prior to the 15th submission deadline. There is speculation that some employers just submit the same forms each month without updating salary information or verifying accuracy. It is proposed to test the effectiveness of a BI pop-up message after employers hit submit if they have not made any changes to forms.

STUDY DESIGN

BI experts suggest the overall design for this pilot to be a quantitative, two-arm RCT overlaid with a case-crossover design (where each participant acts as their own control). One arm will be the experimental group that randomly receives one of four BI messages. The second arm will be the control group. If multiple messaging effects (two or more messages per respondent session) are to be tested, this design may need to be modified.

Target Population: Any person or party (HR, administrative staff, etc.) responsible for reporting this information to the RS will be eligible to participate.

Sampling and Recruitment: The RS will provide a sampling frame of all eligible businesses. Employers who have not reported employment income in the past two months will be eliminated to ensure only active businesses are selected. Standard sample size calculations will be performed to identify the number of participants per study arm to be recruited. From the sampling frame, an eligible person will be randomly assigned to one of two study arms. Either oversampling, or sampling with replacement, techniques will be used to ensure that the correct number of respondents per group are recruited.

Recruitment will take place using multiple methods (e.g., letters, emails) to enroll businesses. Selected participants will be told that RS is asking their help in beta-testing the system prior to formal rollout. Enrolled businesses will be granted special access and periodically asked their feedback on how this reporting mechanism compares to the previous. Any mention of the BI interventions will only be framed as additional features.

Non-Response: Businesses that refuse to participate or do not respond to requests will have available data collected from them (e.g., type of business, size, geographic location, number of employees, years of operation, etc.) and analyzed at the end of the study to account for non-response bias.

Study Logistics: The investigatory time will last four months. The first month will be the baseline month. During this month all participants will be granted access to a pilot web-portal where will be asked to register all employees (name, address, tax ID, etc.) and log in their tax withholding information (salary, job type, tax liability, etc.). For the next three months, participants will be asked to complete their monthly employee salary

and withholding information as normal. Pop-up messages will be set to automatically deploy if the above criteria are met. The message received will be randomly assigned through the experimental arms.

Data Collection: Data collection for each business will include basic publically available data on employer size, location, and type. Additionally, any changes in employee salaries and/or tax withholdings which occurred will also be tracked. In addition to the number, types, and effects of pop-up messages for subjects in the experimental arm will also be logged. Finally, to test any effects in this information accrued by using the new web-portal, historical data will be tracked from old filings for each business going back three months prior to baseline.

Analysis Plan: A variety of analytic techniques will be used to present findings. Initially, descriptive statistics will be presented to describe all variables of interest. As a case-crossover design will be used along with an RCT, the working group will analyze changes in reporting behavior prior to-and after-the use of the web-portal for all participates to capture any benefits of the system alone. Additionally, the effects of the individual pop-up messages on reporting behavior will be analyzed by comparing results to control participants. Finally, other regression or machine learning-based techniques may be used to identify the characteristics of businesses where certain BI messages, or any message, had an effect on reporting behavior.

Incentives: It is recommended that enrolled businesses receive some type of incentive (in the form of a gift card to local stores) to encourage recruitment and retention. Incentives will be provided as compensation for beta-testing efforts only.

TIMELINE OF ACTIVITIES

BI experts anticipate it will take a total of five months for the RS to execute and analyze results from this study:

Month 1: Logistics

- Identify the number and types of BI messages to be tested
- Work out recruitment implementation
- Work with RS IT, and other departments to identify key points where messages can be presented
- Craft recruitment materials (consent forms) and identify retention strategies (i.e., incentives)

Month 2-4: Data Collection

- Finalize and complete any outstanding Month 1 activities
- Manage recruitment and retention
- Implement intervention, work with RS IT to randomize messages and track results
- Conduct quality assurance check to ensure messages are being implemented as stated in the protocol

Month 4-5: Activities: Analysis and Dissemination

- Obtain pre-intervention reporting data and merge with intervention results
- Analyze data for trends and relevant outcomes
- Present preliminary finding to the RS leadership, and other relevant stakeholders
- Incorporate any edits from relevant parties and create the final report with recommendations
- Implement agreed-upon recommendations

PRESENTING RESULTS AND RECOMMENDATIONS

After the analysis is completed results will be presented to the RS and relevant stakeholders as well as recommendations around how, and what types, of BI messaging, should be implemented into the system long term. BI experts will also present an ongoing evaluation plan to test future messages or replace out ones that are determined to be no longer effective.

2.3 PILOT 3: REMINDER NOTICES ON COMPLIANCE

OVERALL APPROACH

The purpose of this pilot is to assess the effectiveness of BI-tailored messaging at improving the reporting compliance of employee tax withholdings. This will be accomplished by testing a series of well-timed reminder messages sent around the 15th of the month to businesses with a history of non-compliance with reporting of tax withholding information to the RS. An RCT design will be used to test the effectiveness of each message type. The BI concepts BI experts suggest to assess/test during this investigation are the following:

- **Individual:** Self-image, rewards, and penalties
- **Environmental & Design:** Feedback and reminders, timing, salience
- **Social:** Social norms, messenger effect

INTERVENTION DESIGN

Staff from the Analytics Department of the RS identified four distinct BI messages, and two delivery methods to be tested. These messages, and the time which they are to be delivered are thought to be critical to ensuring accurate reporting.

BI Messages: In total, four distinct BI concepts, and four unique messages were chosen to be tested for their influence over reporting compliance.

Table 5: BI Compliance Messages

BI Concepts	Logistics	Possible Message
Rewards & Penalties	Inform employers of penalties for not reporting withholding in a timely manner	“Did you know it’s against the law not to report employee withholding monthly?”
Self-image	Appeals to employers’ desire to be good to their employees	“Your timely filings helped the government do XX last year”
Timing/Salience	Provide timely reminder on/around the due date	“This is just a friendly reminder that your employee withholdings information is due to RS on the 15 th ”
Social Norms	Appealing to employers’ desire not to stand out and be doing the same as other businesses	“Did you know that X out of X employers file their withholding reports on time?”

Timing: These messages will be delivered either through a letter or email to selected employers who are identified as being non-compliant with reporting their employee withholdings information to the RS. These reminders will be sent out, so they arrive just prior to the 15th of the month (reporting deadline).

STUDY DESIGN

The overall design for this pilot will be a quantitative three-arm RCT overlaid with a case-crossover design (where each participant acts as their own control). Two arms will be the experimental groups, one will receive an email, and the other letter reminders. Within each experimental arm, business will be randomly assigned to receive one of the four BI messages. The third arm will be the control group.

Target Population: Businesses that have a history of late reporting, defined as being late (more than 5 days past the 15th deadline), or inconsistent (missed at least one month), in their reporting of employee tax withholdings in the past six months are eligible to participate.

Sampling and Recruitment: The RS will identify a sampling frame of all eligible businesses. Employers who have not reported any employment income in the past six months will be eliminated to ensure only active businesses are selected. Standard sample size calculations will be performed to identify the number of participants per study arm to be recruited. From the sampling frame, an eligible person will be randomly assigned to one of three study arms. Either oversampling, or sampling with replacement, techniques will be used to ensure that the correct number of respondents per group are recruited.

Recruitment will take place using multiple methods (e.g., letters, emails) to enroll businesses. Selected participants will be told that the RS needs their help in beta-testing the system prior to formal rollout. Enrolled businesses will be granted special access and periodically asked their feedback on how this reporting mechanism compares to the previous. Any mention of the BI interventions will only be framed as additional features.

Non-Response: Businesses that refuse to participate or do not respond to requests will have available data collected from them (e.g., type of business, size, geographic location, number of employees, years of operation, etc.) and analyzed at the end of the study to account for non-response bias.

Study Logistics: The investigatory time will last four months. The first month will be the baseline month. During this month all participants will be granted access to a pilot web-portal where will be asked to register all employees (name, address, tax ID, etc.) and log in their tax withholding information (salary, job type, tax liability, etc.). For the next three months, participants will be asked to complete their monthly employee salary and withholding information as normal. For a person in the two experimental study arms, either letters or email will be sent as reminders to complete the online form prior to the 15th of the month. The message will be randomly assigned.

Data Collection: Data collection for each business will include basic publicly available data on employer size, location, and type. The timelessness of reporting will be logged in, as well as the type of message, and medium in which they received this message, will also be collected. Finally, to test any effects in this information accrued by using the new web-portal, historical data will be tracked from old filings for each business going back six months prior to baseline.

Analysis Plan: A variety of analytic techniques will be used to present findings. Initially, descriptive statistics will be conducted to describe all variables of interest. As a case-crossover design is suggested along with an RCT, the working group may analyze changes in reporting behavior prior to-and after-the use of the web-portal for all participates to capture any benefits of the system alone. Additionally, the effects of the individual messages on reporting behavior will be analyzed by comparing results to control participants. Finally, other regression or machine learning-based techniques may be used to identify the characteristics of businesses where certain BI messages, or any message, had an effect on reporting behavior.

Incentives: It is recommended that enrolled businesses receive some type of incentive (in the form of a gift card to local stores) to encourage recruitment and retention. Incentives will be provided as compensation for beta-testing efforts only.

TIMELINE OF ACTIVITIES

BI experts anticipate it will take a total of five months to execute and analyze results from this study:

Month 1: Logistics

- Identify the number and RCT types of BI methods to be tested
- Develop a sampling strategy
- Work with RS IT and other departments to identify the best time to send messages (e.g., a week prior to the due date of the 15th, one message or multiple?)
- Craft recruitment materials (consent forms?) and identify retention strategies (i.e., incentives)

Month 2-4: Data Collection

- Finalize and complete any outstanding Month 1 activities
- Begin study and administer messages
- Manage recruitment and retention
- Implement intervention and randomize different methods and track results
- Conduct quality assurance check to ensure intervention methods are being implemented as stated in the protocol

Month 4-5 Activities: Analysis and Dissemination

- Obtain pre-intervention reporting data and merge with intervention results
- Analyze data for trends and relevant outcomes
- Present preliminary finding to the RS leadership, and other relevant stakeholders
- Incorporate any edits from relevant parties and create the final report with recommendations
- Implement agreed-upon recommendations

PRESENTING RESULTS AND RECOMMENDATIONS

After the analysis is completed results and recommendations will be presented to the RS and relevant stakeholders. Results will revolve around the most effective mediums for delivering reminder messages, as well as which particular message, or messages, were most effective at increasing compliance. BI experts will also present an ongoing evaluation plan to test future messages or replace ones that are determined to be no longer effective.

CONCLUSION AND NEXT STEPS

This research protocol – designed to help RS employees implement an inaugural BI pilot – should be used to guide practitioners through the steps required to develop and test robust behavioral interventions. This plan provides preliminary structure for implementing the intervention, but should always remain adaptable to accommodate for any structural or technological changes that may go-live during the design process.

After the successful implementation of this first series of pilots, the RS can then replicate this process to develop pilot programs meeting the needs of other RS priorities in coordination with additional RS departments.

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