

# User Language ID

## Survey Methods and Results

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2019-2020

# Executive summary

- ∴ We identified the most frequent tax-related terms on PIT pages and built a survey to assess user comprehension of these terms
- ∴ Users self-reported their understanding of each term. This portion of the study was a success
- ∴ We attempted to grade the accuracy of user-submitted definitions for each term. This portion of the study was flawed.
- ∴ We then performed a preliminary qualitative analysis of the user-submitted definitions to reveal insights and content recommendations, as well as broader agency content implications

# Rationale

- ∴ Lack of plain language is a persistent usability and accessibility issue in almost every channel and product offered by CRA
- ∴ The Personal Income Tax Optimization Project intended to optimize key task-related web content
- ∴ We decided that this project would be an apt opportunity to pilot new tools for investigating how users interpret our written content
- ∴ Our idea was simple: What tax-related terminology do users struggle with the most?

# Overview of methods

- ∴ Identify the most frequently-used tax-related terms on the top 40 PIT pages (by traffic)
- ∴ Develop a survey to determine users' self-reported level of comprehension for these terms
- ∴ Explore how users define these terms in their own words, and how closely that matches the CRA's intended meaning

# Method: Identifying difficult terms

- ∴ Identified top 40 PIT pages (analytics)
- ∴ Used a [word frequency counter](#) to list most frequent uncommon words
- ∴ Collated results to determine frequency of all words across all pages
- ∴ Removed common English words, pared down to list of 9 most common CRA-centric terms

# Method: Terms identified

1. Income
2. Return
3. Claim
4. Schedule
5. Report (verb)
6. Commonlaw
7. Slip
8. Credit
9. Benefit

# Method: Creating the survey

- ∴ Created survey to explore user understanding of these top 9 terms. Posted on Canada.ca
- ∴ Survey listed 1 word from list of top 9 CRA-centric terms, and asked users to choose one of the following options:
  - I know what this word means
  - I recognize this word, but I don't know what it means
  - I don't recognize or know this word
- ∴ If users clicked “I know what this word means”, a free-text entry box appeared and asked them to define the term in their own words

# Method: Creating the survey

## 1. **an income** (*in the tax context*)

- ☒ I know what this word means
- ☐ I recognize this word, but I don't know what it means
- ☐ I don't recognize or know this word

**an income** (*in the tax context*)

This word means:



# Method: Data collected for each word

- ∴ Participants could select one of:
  - ∴ I know what this word means
  - ∴ I recognize this word, but I don't know what it means
  - ∴ I don't recognize or know this word
  
- ∴ For each response of “I know what this word means”, there were also qualitative data collected:
  - ∴ Users submitted a definition of the word in their own words

# Method: Analysis plan

1. Describe users' self-reported understanding of each term based on survey responses.
2. Assess the accuracy of each user-submitted definition by grading it against a formal definition

# Method: Analysis (Self-reported understanding)

- Survey responses were analyzed descriptively, showing the various levels of self-reported understanding for each word, for example:



# Method: Analysis (Accuracy of user definitions)

- ∴ These user-submitted definitions were then graded for accuracy using 5 point Likert scale
  - The variance between 3 analysts' grades was calculated
  - Items with high variance were re-coded by all three analysts together to ensure consistency

## **RATING SCALE**

- 1 - Completely wrong
- 2 - Mostly wrong
- 3 - Equally wrong and correct
- 4 - Mostly correct
- 5 - Completely correct

N - Invalid response

# Method: Analysis (Accuracy of user definitions)

∴ A team of three analysts:

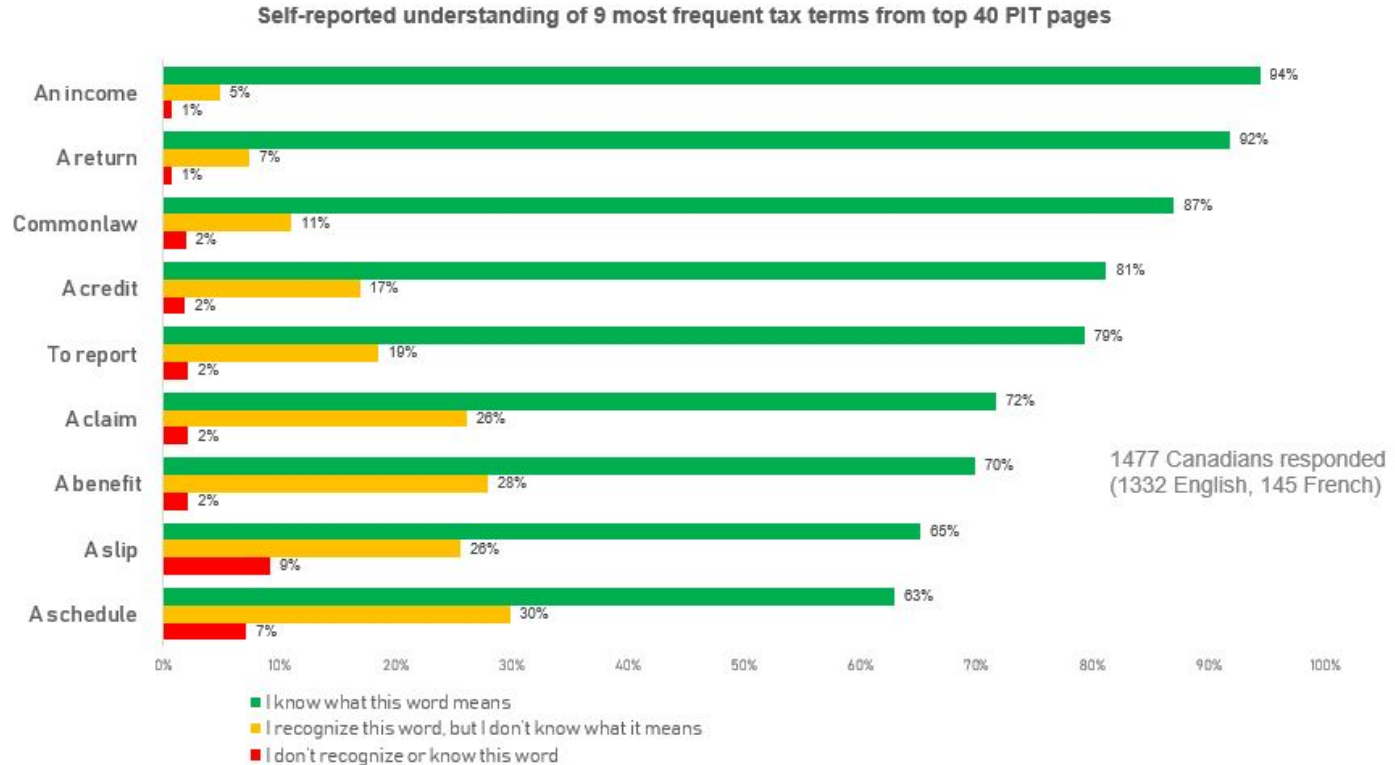
- Agreed on the definitions for each word (esp. words that had no official CRA or GoC definition)
- Did a preliminary review of data and agreed on coding norms for certain types of responses
- Coded the first 300 responses for each word.

∴ Definitions were established using

- Whenever possible, [TermiumPLUS](#)
- Some terms were not defined in TermiumPLUS
- In those cases, we used reputable online dictionaries (e.g. Merriam-Webster and Oxford)

# Overall Results

# Results: Self-reported understanding



# Results: Self-reported understanding

- ∴ Users self-reported their understanding of these terms
  - The term with the highest rate of “I know what this word means” was ‘[income](#)’, with a 94% rate of self-reported understanding
  - The term with the lowest rate of self-reported understanding was ‘[schedule](#)’, with 63% of respondents reporting “I know what this word means”
- ∴ N.B.: These are self-reported ratings and reflect what users *think* they understand. Actual rates of understanding may differ



# Results: Analysis overview, revisited

- : Use the survey self-reported understanding to describe what proportion of users understand a given term
- : Assess the accuracy of each user-submitted definition by grading it against a formal definition
  - We uncovered several issues that prevented this analysis from being performed properly

# Results: Accuracy of user definitions

<b>Terminology</b>	<b>% of users who said 'I know what this word means'</b>	<b>Average accuracy of response</b>	<b>Variance between each analyst's ratings (Avg. standard deviation)</b>
income	94.4%	4.5	0.5
return	91.8%	2.9	0.7
claim	71.7%	3.1	0.8
schedule	63.0%	3.2	0.5
report	79.3%	3.9	0.7
commonlaw	87.0%	4.2	0.6
slip	65.2%	3.8	0.7
credit	81.2%	3.9	1.0
benefit	69.9%	3.3	0.7

# Results: Accuracy of user definitions, adjusted

Terminology	% of users who said 'I know what this word means'	Average accuracy of response	Variance between each analyst's ratings (Avg. standard deviation)
income	94.4%	4.5	0.4
return	91.8%	2.9	0.3
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credit	81.2%	4.2	0.3
benefit	69.9%	3.4	0.5

# Limitations of Accuracy Analysis

# Limitations of accuracy analysis

- ∴ The original intent was to analyse the definitions submitted by users, to see how closely they matched the intended CRA's definition
- ∴ However, several limitations impacted our ability to score the accuracy of user-submitted:
  - Survey provided little context for each term
  - Lack of formal repository of CRA terms and clear definitions
  - Lack of consistency in how CRA uses some terms

# Limitation: Survey design

- ∴ Content contributes greatly to comprehension. Compare:
  - Define the term “schedule” in the tax context
  - Define the term “schedule” in this phrase: ‘Complete Schedule 1 to calculate your federal tax’

# Limitation: Survey design

- ∴ Users were provided very little context for each word.
- ∴ This may have impacted the quantitative findings as it may have caused users to over- or under-report their understanding (though this shortcoming is acknowledged in self-reported data)
- ∴ This also impacted the qualitative findings. Each user was free to define each word using their own unique context for the word.

**However:** As a proof-of-concept for a new tool, this survey was light-weight and quick to complete. Longer phrases with more context would greatly reduce the number of willing respondents

# Limitation: Lack of proper CRA dictionary

- ∴ Various CRA and GoC resources were consulted to help determine a formal definition of each word.
- ∴ CRA resources were used, but they were inadequate:
  - [FAB-RMD Lexicon](#)
  - [FAB-FAD Lexicon](#)
  - [Writing Guide for the CRA](#)
  - [CRA Glossary](#)
  - [Terminology decisions](#)
  - [SimplySaid](#)



# Limitation: Lack of proper CRA dictionary

- ∴ The most reliable resource was [TermiumPLUS](#), but it was not CRA-specific
  - Some terms were not defined in TermiumPLUS
  - In those cases, we used reputable online dictionaries (e.g. Merriam-Webster and Oxford)
- ∴ This was highly problematic as the analysts had no official CRA definitions for any of the terms being evaluated.
- ∴ Many words also have multiple meanings, e.g. credit, benefit, commonlaw, schedule, claim.

# Limitation: Inconsistent use of terms by CRA

- ∴ Not only was there no official CRA definition for these terms, the CRA itself uses some of these terms in multiple ways.
- ∴ E.g.: credit
  - Most commonly used to mean a tax credit
  - However, it is also used in the MyAccount account summaries to indicate balances owing to the user:
- ∴ It is also used in the MyAccount account summaries to indicate balances owing.

These multiple contexts of use for certain terms made analysis far more difficult, as we had to consider multiple different possible correct answers based on how CRA has used the term.

# Limitation: Impact on analysis

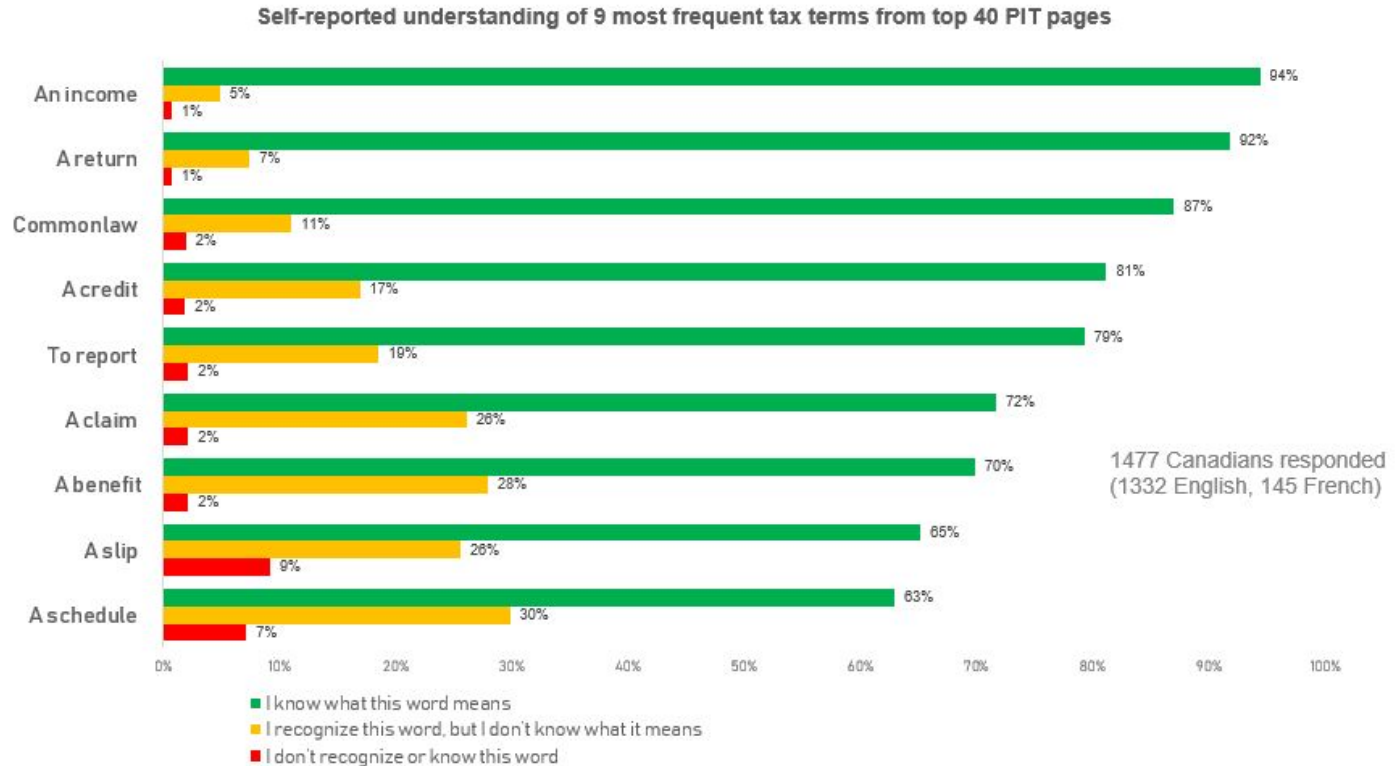
- ∴ These limitations reduced the validity of our qualitative analyses:
  - The survey design resulted in variable answers for the user-submitted definitions
  - There was no formal CRA definition for any of these terms, making evaluation of user definitions more difficult
  - CRA itself uses certain terms in many different ways, further complicating the analysis
- ∴ Due to these limitations, the quantitative “accuracy analysis” portion of this study is deemed invalid
- ∴ However: Several key insights can still be gleaned from a qualitative analysis of the user-submitted

# Method: Analysis overview

1. Use the survey self-reported understanding to describe what proportion of users understand a given term
2. **We couldn't do this:** Assess the accuracy of each user-submitted definition by grading it against a formal definition
3. **Instead we did this:** Perform a qualitative analysis of the user-submitted definitions to highlight user difficulties with terms and reveal content design insights

# Preliminary Qualitative Insights

# Results: Self-reported understanding

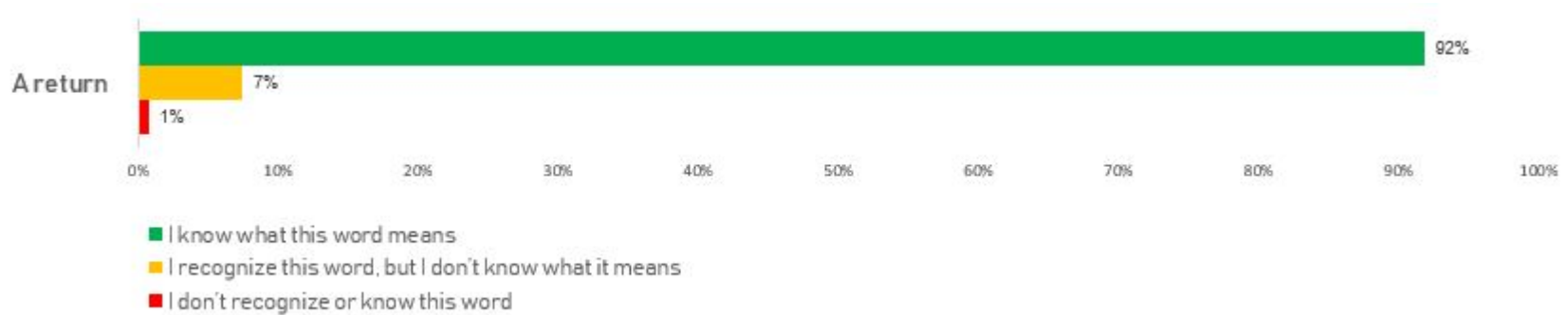


# Income



- Most user-submitted definitions were fairly accurate:
  - *"source of cash flow"*
  - *"sum of all wages, rents, investments, pensions, any earnings"*
  - *"The money I earn"*
- Some were less so:
  - *"money paid for a service rendered"*
  - *"amount of money you pay off each pay cheque"*
  - *"money you owe"*

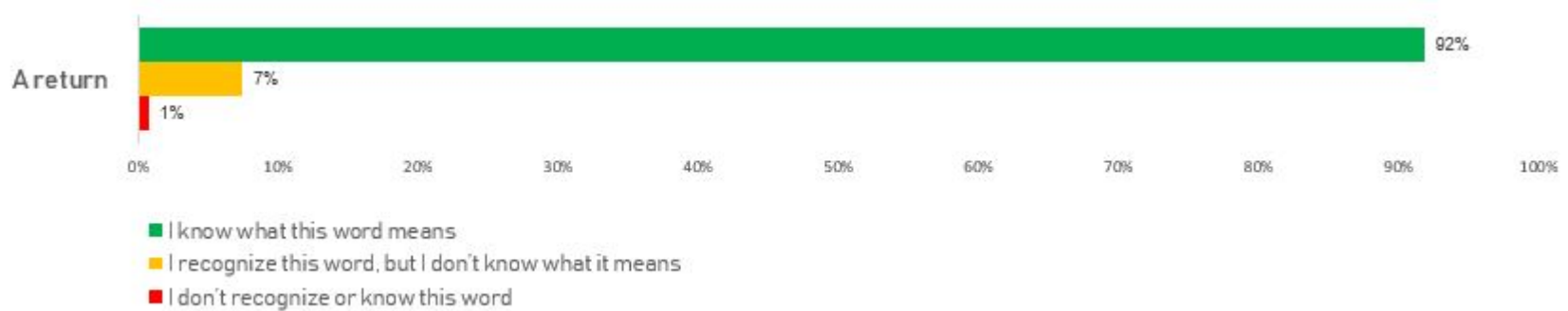
# Return



- Many user-submitted definitions were fairly accurate:
  - *“filing income on form for government from previous year*
  - *“the paperwork filed with the CRA to record and report income, credits, transactions, etc.*
  - *“filing of income and expenses detail for the tax year.*
- Some defined it as a “return on investment”
  - *“money you make from investments*
  - *“monies received from an investment*



# Return



- And some confused it with a tax refund
  - *"the amount of taxes you receive back based on income"*
  - *"money returned to you, as the tax contributor."*
  - *"when funds are returned to a person who pays taxes from their pay check"*
  - *"refund"*
  - *"the money you get back after filing taxes"*

# Commonlaw



- Commonlaw refers to a de facto partnership
  - *“two adults living at the same address for at least a year (in a romantic way).”*
  - *“living with spouse for more than a year but not legally married”*
  - *“partners that live as a couple with out the paper work of a marriage”*

# Commonlaw



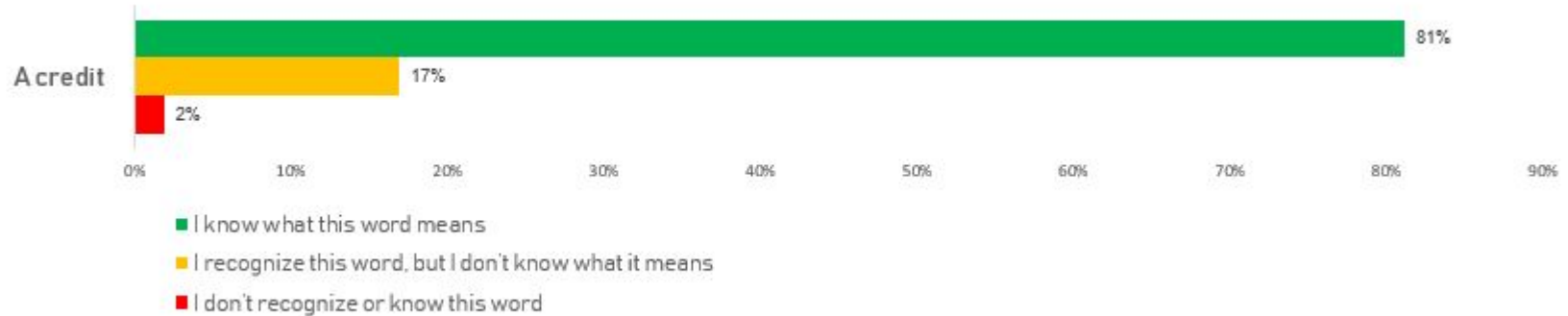
- ...but the length of time was not consistently known
  - *“a couple outside of marital status who claim taxes as a couple. Usually together 6 months or more.*
  - *“a person with whom you are in a conjugal relationship and live together for approximately more than 5yrs*
  - *“living in the same residence in a relationship with a person for 3 months and above*
  - *“living with a partner in the same residence for at least 2 years*

# Commonlaw



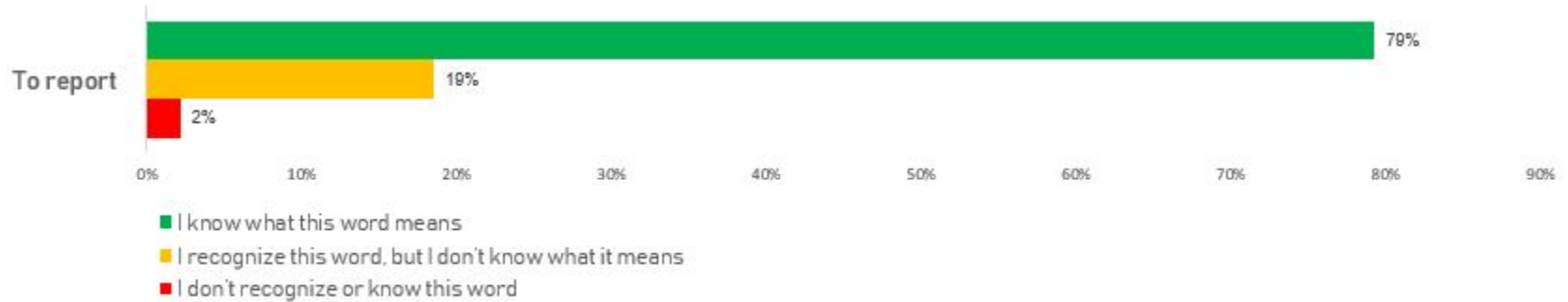
- Commonlaw also refers to the [legal system](#):
  - *Laws that are not actually written but have been used before*
  - *a legal principle honoured through practice as opposed to resulting from legislation*
  - *Canadian legal system*
  - *accepted practice that has been set via legal rulings*

# Credit



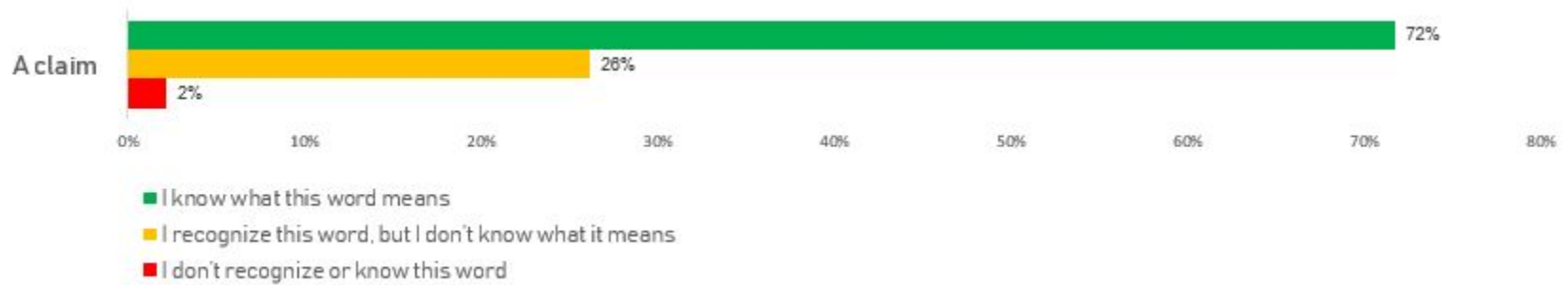
- Generally, respondents knew a credit was a way to get something back from the CRA
  - *Something the government gives you to deduct the amount you owe on your income.*
  - *amount of money that can be put towards a liability*
- Many participants defined “credit” as a balance owing to them from CRA
  - *Tax return calculated from tax filed*
  - *Money that I have overpaid*
  - *When you have paid too much tax and they give it back to you. Should happen more.*

# To report



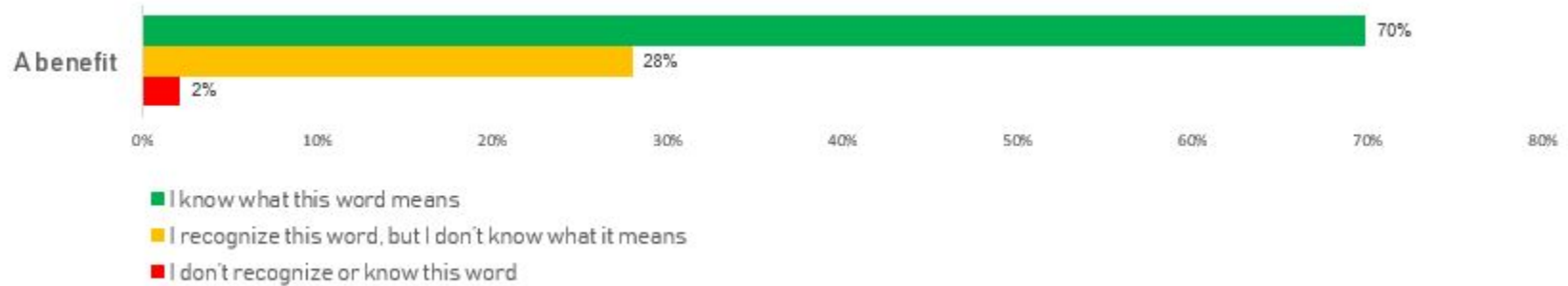
- Generally, respondents understood that this meant telling the CRA about their finances
  - “file information with the CRA, income or deductions, taxes payable, etc.
  - “to list one’s income and other information
- Some definitions were not tax-specific
  - “to declare
  - “to tell
  - “to inform

# Claim



- Thorough definitions weren't very common:
  - *"to state that you are in a situation that gives you the right to ask for a reduction in your income tax as in claim a dependent, claim medical expenses.*
  - *"something that reduces the amount of income tax that needs to be paid*
- Generally, however, respondents understood that they were getting something from the government:
  - *"an expense that you receive a tax break on i.e. medical*
  - *"a value to reduce net income*

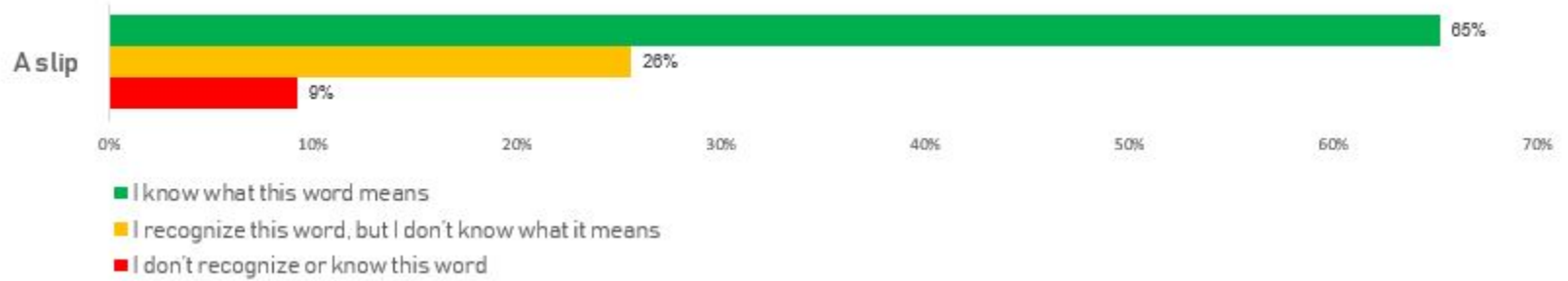
# Benefit



- Some respondents interpreted this as work benefits:
  - *“taxable benefits are benefits provided to employees that the employer has to add to the employee's income each period to determine the total amount of income that is subject to source tax deductions*
- Others defined it using major federal benefits as examples
  - *“money given to you for a particular reason, i.e. disability*
  - *“CCB, OAS, CPP, disability*
  - *“Child benefits*

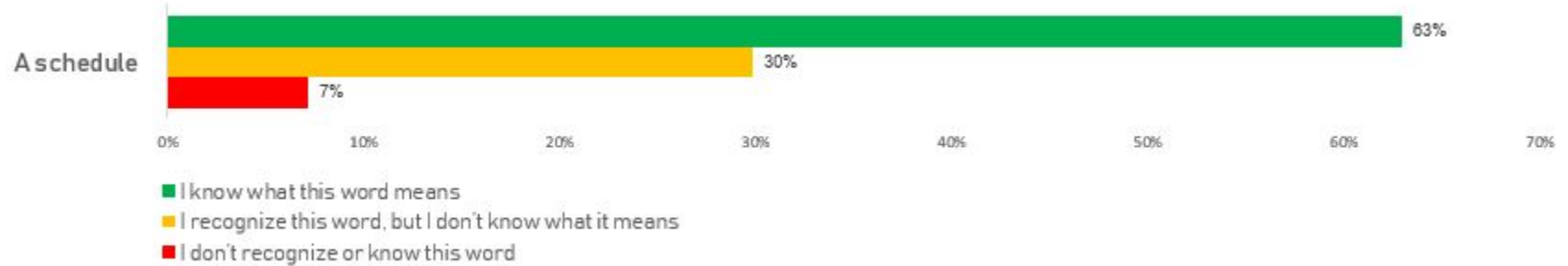


# Slip



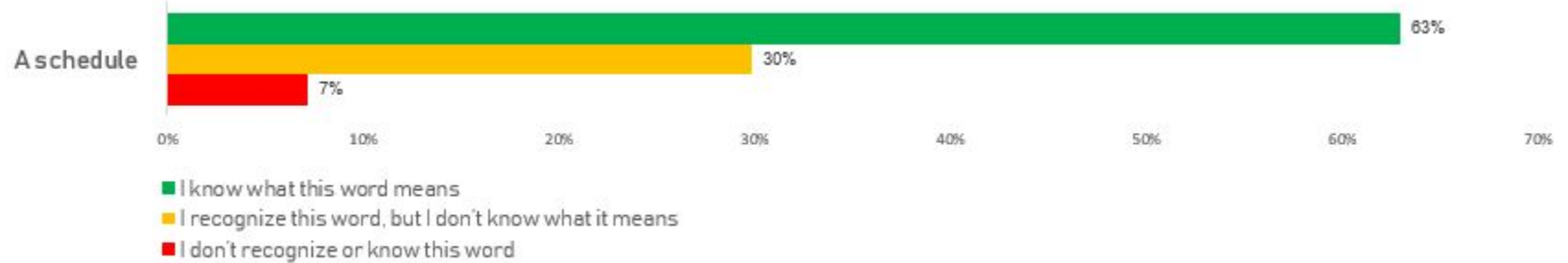
- Respondents generally knew it's a piece of paper
  - *"an information paper showing income, cpp deductions, etc."*
  - *"receipt"*
  - *"a pay stub"*
- However, many had to use examples to define the term:
  - *"T4s and such"*

# Schedule



- Many respondents understood that it was a tax form of some sort:
  - *“a supplementary document in my return where the details are recorded e.g. schedule 4 is for investment income*
  - *“a particular form, such as for rental or royalty income*
  - *“it’s sort of a sidebar document on a return that usually deals with a specific scenario, like for fishing income.*

# Schedule



- Others understood that 'schedule' referred to the timing of tax payments, or even less accurate definitions:
  - *"in my case, it is the schedule (deadlines and amounts) for me to pay my tax instalments."*
  - *"to arrange a plan or form a list"*

# Key Insights

# Key Insights

1. Respondents often relied on examples to define terms: Credit, benefit, and schedule
2. Terms that also have a general, non-tax meaning are easily confused, e.g., return, schedule, claim
3. Certain terms were easily confused with each other
  - The difference between credit and benefit was often misunderstood, and respondents would often define one as the other
  - Return was often confused with refund
4. Some respondents apologized when they were unable to define terms, while a small number of others were frustrated by the survey
  - Complex language affects our users' confidence and trust in CRA. Taxpayers should not feel bad for misunderstanding the tax system they are forced to navigate

# Possible Solutions

# Possible solutions

1. Adopt plain language wherever possible
  - This will minimize the impact of complex terminology by reducing the difficulty of surrounding content
2. For terms that cannot be changed, provide a plain language definition in situ
  - Could be provided in parentheses, tooltip, or even parallel plain language content (two columns)
3. Create an agency-wide lexicon for all terms, and all of their various usages. Eventually, this could become a public-facing resource

## Appendix: Web Pages used to determine survey terms



# Website analytics

## Top 10 personal income tax pages (visits 2018)

1. Lines 330 and 331 – Eligible medical expenses you can claim on your tax return – 780,000
2. How to get a copy of your notice of assessment – 690,000
3. Refunds – 608,000
4. How to change your address – 590,000
5. Deductions, credits, and expenses – 440,000
6. Tax slips – 370,000
7. How to change your return – 370,000
8. T4 Statement of remuneration paid – 340,000

# Website analytics, continued

## Top Deductions, credits, and expenses pages (visits 2018)

1. Caregiver amount – 300,000
2. All deductions, credits, and expenses – 250,000
3. Line 323 – Your tuition, education , and textbook amounts – 240,000
4. Northern residents deductions, meal and travel expenses – 220,000
5. Line 364 – Public transit amount – 200,000
6. Line 303 – Spouse or common-law partner amount – 180,000
7. Line 305 – Amount for an eligible dependant – 175,000

# Website analytics, continued

## Top Income pages (visits 2018)

1. Get a copy of your tax slips – 210,000
2. Personal income – 170,000
3. T4A Statement of Pension, Retirement, Annuity, and Other Income – 145,000
4. Principal residence and other real estate – 145,000
5. Line 117 - Universal child care benefit (UCCB) – 140,000
6. Line 101 - Employment income – 105,000
7. Amounts that are not taxed – 95,000
8. Line 130 – Scholarships, fellowships, bursaries, study grants, and artists' project grants (awards) – 75,000
9. T4E Statement of employment insurance and other benefits – 75,000

# Website analytics, continued

## Top downloads (2018)

1. Disability tax credit certificate
2. 5000G General Income Tax and Benefit Guide
3. 5000-S1 T1 General – Schedule 1 – Federal Tax
4. Statement of Business or Professional Activities
5. Federal Worksheet
6. T1 Adjustment request
7. Authorizing or Cancelling a Representative
8. T1 General 2017 Income Tax and Benefit Return
9. Declaration of Conditions of Employment
10. Address Change Request