



Department Name
Data & Analytics

Laan op Zuid 45
3072 DB Rotterdam

Contact
Dailinh Nguyen
Data Scientist

M +316 18 60 69 52
d_nguyen@belastingdienst.nl

Date
14-10-2020

memo

Statistical Analysis of the Customs Integrity Perception Survey

Introduction

Late 2019 and early 2020 a Customs Integrity Perception Survey (CIPS) was conducted in 10 WCO Member administrations participating in the WCO's Anti-Corruption and Integrity Promotion (A-CIP) Programme for Customs.

The questions in the CIPS are based around the ten key factors of the *WCO Revised Arusha Declaration*. These key factors are

Leadership & Commitment
Regulatory Framework
Transparency
Automation
Reform & Modernization

Audit & Investigation
Code of Conduct
Human Resource Management
Morale & Organizational Culture
Relationship with the Private Sector

The results from this survey have been used under the Programme directly on national levels by the participating administrations to assess in a quantitative way how Customs officials and private sector stakeholders perceive the level of integrity within Customs administration and operations.

In total, over 450,000 data points were collected from more than 6,000 Customs officials and Private Sector responding to the survey across the 10 participating countries. Separate to the country-level analysis the WCO A-CIP Programme engaged with Dutch Customs to use aggregate, anonymized data from all surveys to perform a statistical analysis to explore trends or patterns across the data collected. More specifically, the following research questions have been answered:

- Which key factors of the *WCO Revised Arusha Declaration* does the data show a possible direct link to a decrease in corruption?
- How can Customs organisations improve their relationship with the private sector?
- Is there a difference in experience, perception and effect of corruption on women and men?

Analysis Methodology

An answer to abovementioned research questions has been found by estimating the relation between specific questions from the survey and what the perception is from respondents of how well Customs administrations perform on the ten key factors.

These specific questions revolve around how respondents would react to instances of corruption and how safe they would feel reporting them.

To perform such a quantitative analysis, first some preparations have been made on the data. Most questions in the survey require a response ranging from "*Strongly disagree*" to "*Strongly agree*" or from "*Never*" to "*Always*". We have to quantify the qualitative answers by assigning values to the possible answers ranging from 1 to 5. Next the responses for each respondent are aggregated over the answers per key factor. This procedure results in a key factor score. A higher key factor score indicates that the respondent has a more positive attitude on how Customs administration deals with the respective key factor.

Next, regression analysis has been used to estimate which key factors have a significant effect on certain question. Specifically, for customs officials we have estimated which key factors have a significant effect on the likelihood to report corrupt colleagues and clients. For private sector employees we have estimated which key factors have a significant effect on their likelihood to pay a bribe or fee, when asked by customs officials, or how they would rate their experience with an integrity investigation led by customs internal investigations.

To see if there is a difference in experience, perception and effect of corruption on women and men, we have focussed on certain questions dealing with following procedures and regulations, reporting suspected instances of corruption and feeling safe enough to do so. *T-tests* have been used to see if there is a significant difference in how men and women answer these questions.

Which key factors of the WCO Revised Arusha Declaration does the data show a possible direct link to a decrease in corruption?

We have found that the key factors *Transparency*, *Audit & Investigation* and *Human Resource Management* had the most visible influence on the likelihood of Customs officials committing integrity breaches. Taking a closer look at the questions for these key factors makes this apparent. These questions deal with issues such as transparency about (deviations from) customs procedures, proper investigation of- and actions against reports of corruptness and fair merit-based remuneration, recruitment and promotion. Customs organizations can decrease corruption by improving on these key areas.

How can Customs organisations improve their relationship with the private sector?

The results of the statistical analysis have shown that when private sector employees have a more positive opinion about how Customs organisations deal with certain key factors, their relationship will be better. The *Transparency* key factor is found to be important again, like it was for Customs officials. Furthermore private sector employees find it important to have a code of conduct when dealing with customs administration. It has also been found that private sector employees have a higher opinion on dealing with Customs administrations when achieving a high integrity standard is a high priority for them. Lastly, it is important that the private sector knows what the procedures to report instances of corruption are, that they feel safe enough to do so and that they feel it is possible to not comply when customs officials request for the payment of bribes.

Is there a difference in experience, perception and effect of corruption on women and men?

In this research it is found that men and women have some significant differences in how they experience corruption. Female Customs officials are less likely to report

when they suspect their colleagues of corruption, even though they do not feel significantly more unsafe to do so than their male counterparts. This could indicate that women have a higher sense of group-identity and are less likely to go against the grain. Female private sector employees do feel more unsafe to report instances of corruption. However, they do not report these instances at a significantly different rate, indicating that they have a similar sense of morality.

Despite these differences between men and women, there seem to be more similarities between their experiences than not.

For both private sector employees and Customs officials we found no significant differences between genders for how often procedures and rules are complied with. Furthermore, it is found that both genders feel the same level of responsibility to achieve high integrity standards.



Customs Administration of the
Netherlands
Tax and Customs Administration

Statistical analysis CIPS

Dailinh Nguyen



Contents

- › CIPS
- › Research Question
- › Methodology
- › Results
- › Conclusions



CIPS

- › Customs Integrity Perception Survey
- › Survey questions designed around ten key factors
 1. Leadership & Commitment
 2. Regulatory Framework
 3. Transparency
 4. Automation
 5. Reform & Modernization
 6. Audit & Investigation
 7. Code of Conduct
 8. Human Resource Management
 9. Morale & Organizational Culture
 10. Relationship with the Private Sector



CIPS – Question series example (1)

Questions Factor Leadership & Commitment:

- › In general, achieving a high level of integrity is considered a priority within the administration.
- › My direct supervisor(s) sets a positive example when it comes to integrity.
- › The customs administration's top management sets a positive example when it comes to integrity.
- › My role and expected behaviours within customs administration are clear.
- › I know the procedure to report integrity violations in my customs administration.
- › I feel encouraged by my supervisor(s) to report integrity violations.
- › My supervisor is taking action to promote integrity.



CIPS – Question series example (2)

› Possible responses:

Strongly disagree
Somewhat disagree
Don't know / refusal
Somewhat agree
Strongly agree
No reply

Never
Sometimes
Don't know / refusal
Often
Always
No reply



CIPS - Respondents

- › Respondents

Customs officials: 3019

Private sector employees: 2793

- › Ten participating countries

Afghanistan

Ethiopia

Ghana

Liberia

Mali

Mozambique

Nepal

Sierra Leone

Tanzania

Tunisia



CIPS – other variables

- › Experience: 0-5, 6-15, 16+ years
- › Leadership: yes, no
- › Sex: Male, Female, Other



Research Question

1. Which factors contribute to a decrease in possible integrity breaches?
2. How can we improve our relationship with the private sector?



Methodology - Defining integrity breaches (1)

Customs officials questionnaire:

Question Q6d: Imagine the following scenario. You suspect that a colleague accepts money from business to ignore procedures. How would you react? Multiple answers are possible.

Option 1: Do nothing

Option 2: Talk to the colleague about his/her behavior

Option 3: Report immediately to direct supervisor

Option 4: Report immediately to internal investigation body

Option 5: Report immediately to external investigation body

Option 6: Don't know / refusal



Methodology - Defining integrity breaches (2)

Define new variable

"*Report Colleague*" with possible values:

Yes , *No* , *Missing*

Option 1: Do nothing

Option 2: Talk to the colleague about his/her behavior

Option 3: Report immediately to direct supervisor

Option 4: Report immediately to internal investigation body

Option 5: Report immediately to external investigation body

Option 6: Don't know / refusal



Methodology - Defining integrity breaches (3)

Customs officials questionnaire:

Question 6e: Imagine the following scenario. A client offers you money or a gift to speed up the customs process or to release goods without the proper documents. How would you react?

- › *You refuse and report the incident*
- › *You ignore the question and process according to the procedures without reporting the incident*
- › *Don't know / refusal*
- › *You accept the money or the gift*



Methodology - Defining integrity breaches (4)

Define new variable

"*Report Client*" with possible values:

Yes , *No*, *Missing*

- › *You refuse and report the incident*
- › *You ignore the question and process according to the procedures without reporting the incident*
- › *You accept the money or the gift*
- › *Don't know / refusal*



Methodology - Defining integrity breaches (5)

Private sector questionnaire:

Question 10d: Imagine the following scenario. You are asked by a customs official to pay a fee to speed up the customs process. How would you react?

- › *Don't know / refusal*
- › *You ignore the question and ask for your case to be processed according to the procedures*
- › *You pay the fee*
- › *You refuse*
- › *You refuse and report the incident*



Methodology - Defining integrity breaches (6)

Define new variable

"Pay Fee" with possible values:

Yes , *No*, *Missing*

- › *Don't know / refusal*
- › *You pay the fee*
- › *You ignore the question and ask for your case to be processed according to the procedures*
- › *You refuse*
- › *You refuse and report the incident*



Methodology - Defining relationship with private sector

Private sector questionnaire

Question 6b: My experience of this integrity investigation led by customs internal investigations was positive.

Strongly disagree 1

Somewhat
disagree 2

Don't know /
refusal 3

Somewhat agree 4

Strongly agree 5

No reply Missing



Methodology - Regression analysis (1)

What is regression analysis?

- › Estimate effect of explanatory variables X on explained variable Y
- › Testing on model results can show which variables X have a *significant* effect on outcome variable Y



Methodology - Regression analysis (2)

Use regression analysis to estimate what has influence on

For customs officials:

- › Likelihood to report colleague
- › Likelihood to report client

For private sector employees:

- › Likelihood to pay fee
- › Client satisfaction



Methodology - Regression analysis (3)

Use explanatory variables

- › 10 key factors
- › Experience
- › Leadership
- › Sex



Methodology – Modelling key factor responses (1)

- › Give numerical values to questionnaire responses

Strongly disagree	1
Somewhat disagree	2
Don't know / refusal	3
Somewhat agree	4
Strongly agree	5
No reply	Missing

Never	1
Sometimes	2
Don't know / refusal	3
Often	4
Always	5
No reply	Missing



Methodology – Modelling key factor responses (2)

- › Take the average of response values for the questions in every key factor, to form factor scores
- › Higher factor scores mean that respondent has a more positive attitude towards key factor



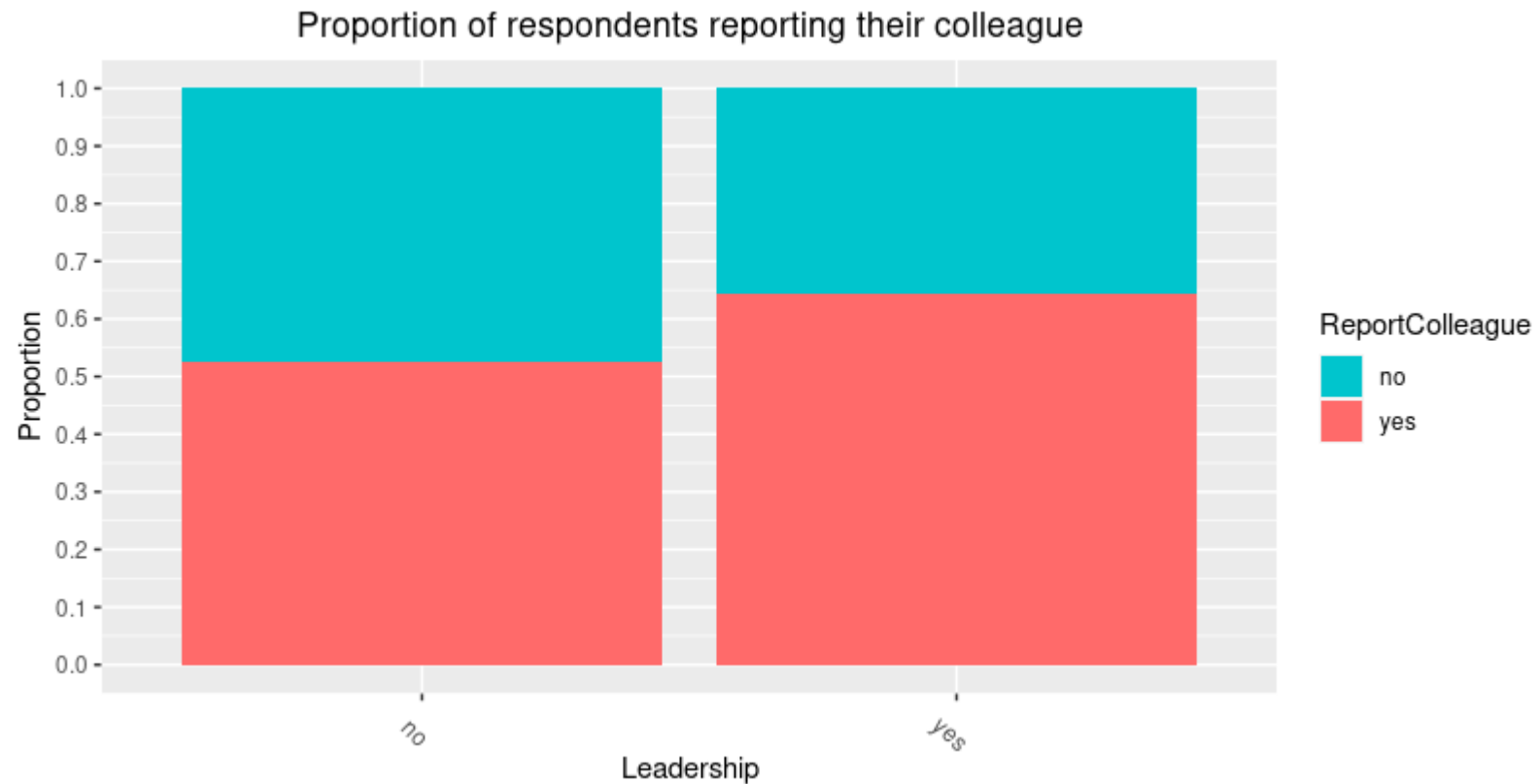
Results – Reporting colleague (1)

Significant variables

- › Sex
- › Experience
- › Leadership
- › Regulatory Framework
- › Audit & Investigation
- › Human Resource Management
- › Question 7b: Is there a sanction system in case customs officials breach the code of conduct?

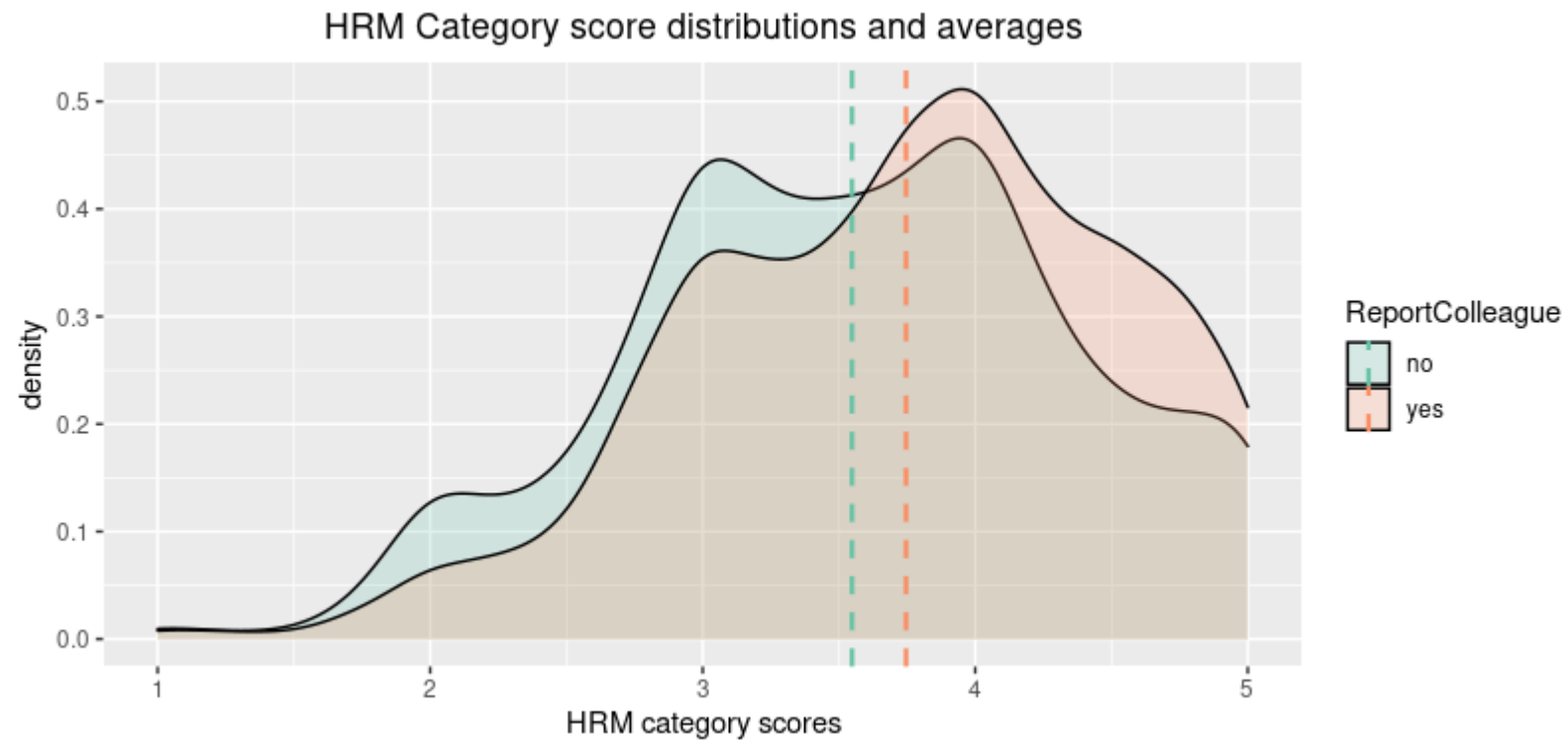


Results – Reporting colleague (2)



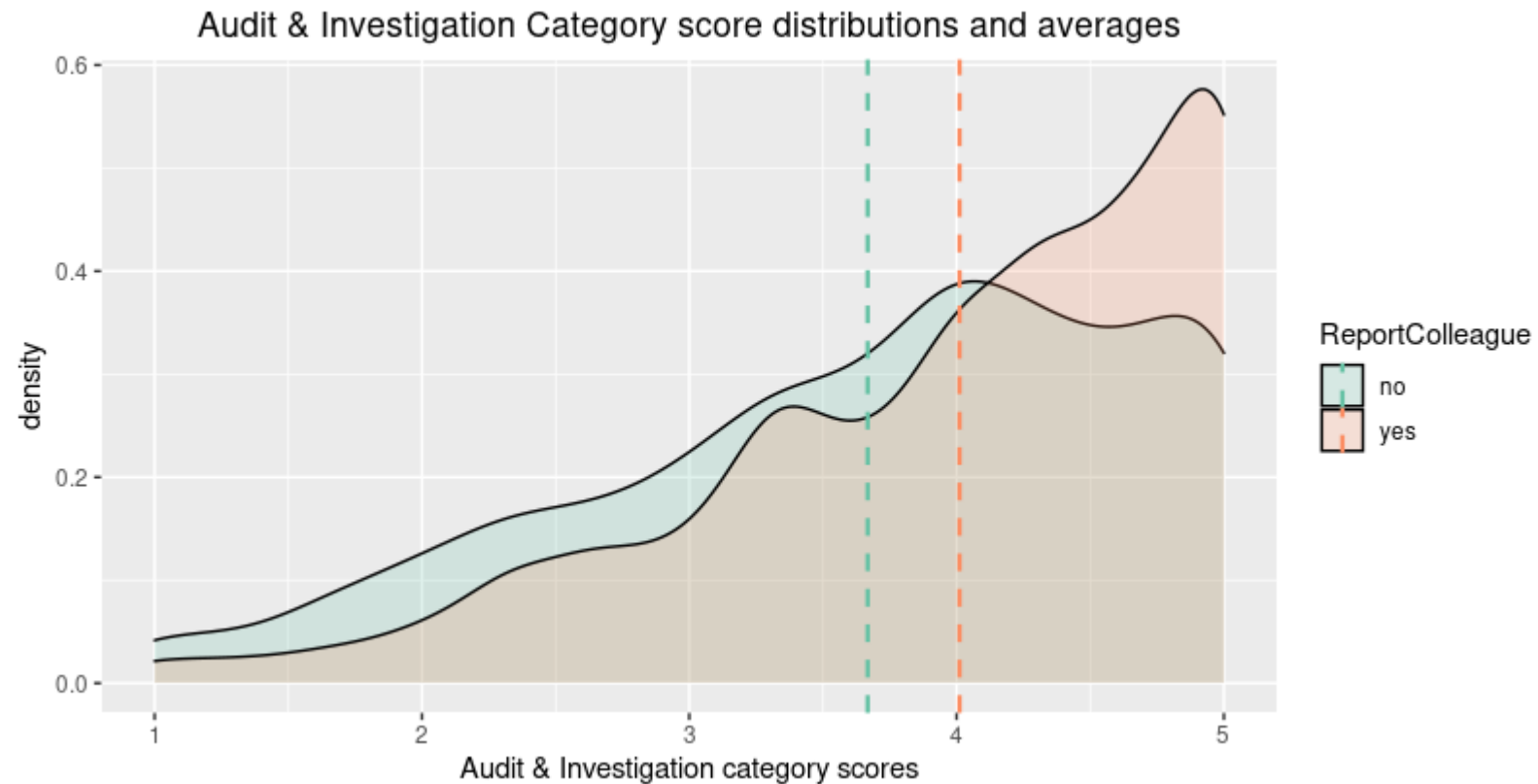


Results – Reporting colleague (3)





Results – Reporting colleague (4)





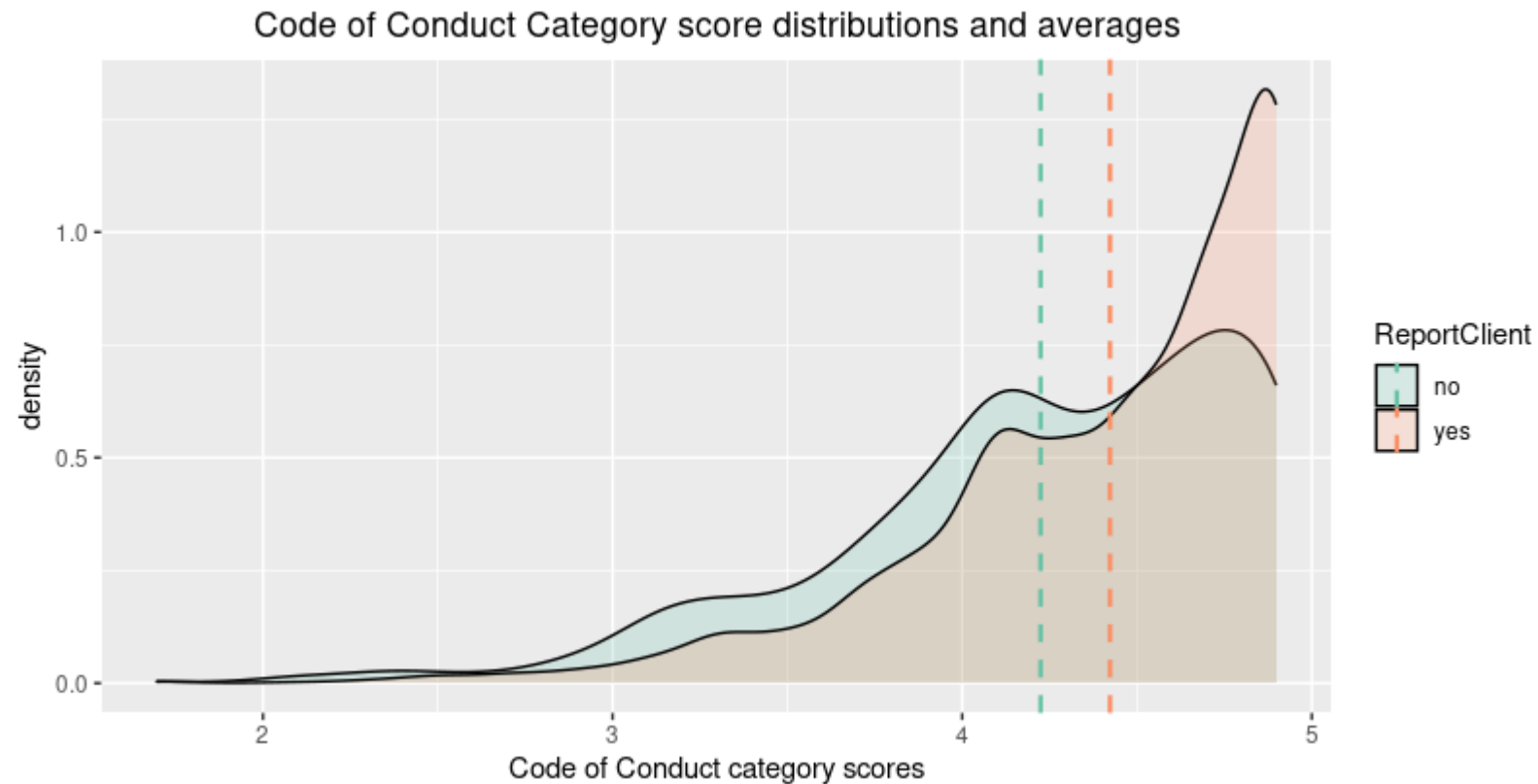
Results – Reporting Client (1)

Significant variables

- › Leadership
- › Leadership & Commitment
- › Reform & Modernization
- › Audit & Investigation
- › Code of Conduct
- › Human Resource Management
- › Morale & Organizational Culture
- › Question 7b: Is there a sanction system in case customs officials breach the code of conduct?



Results – Reporting Client (2)





Results – Reporting Client (3)





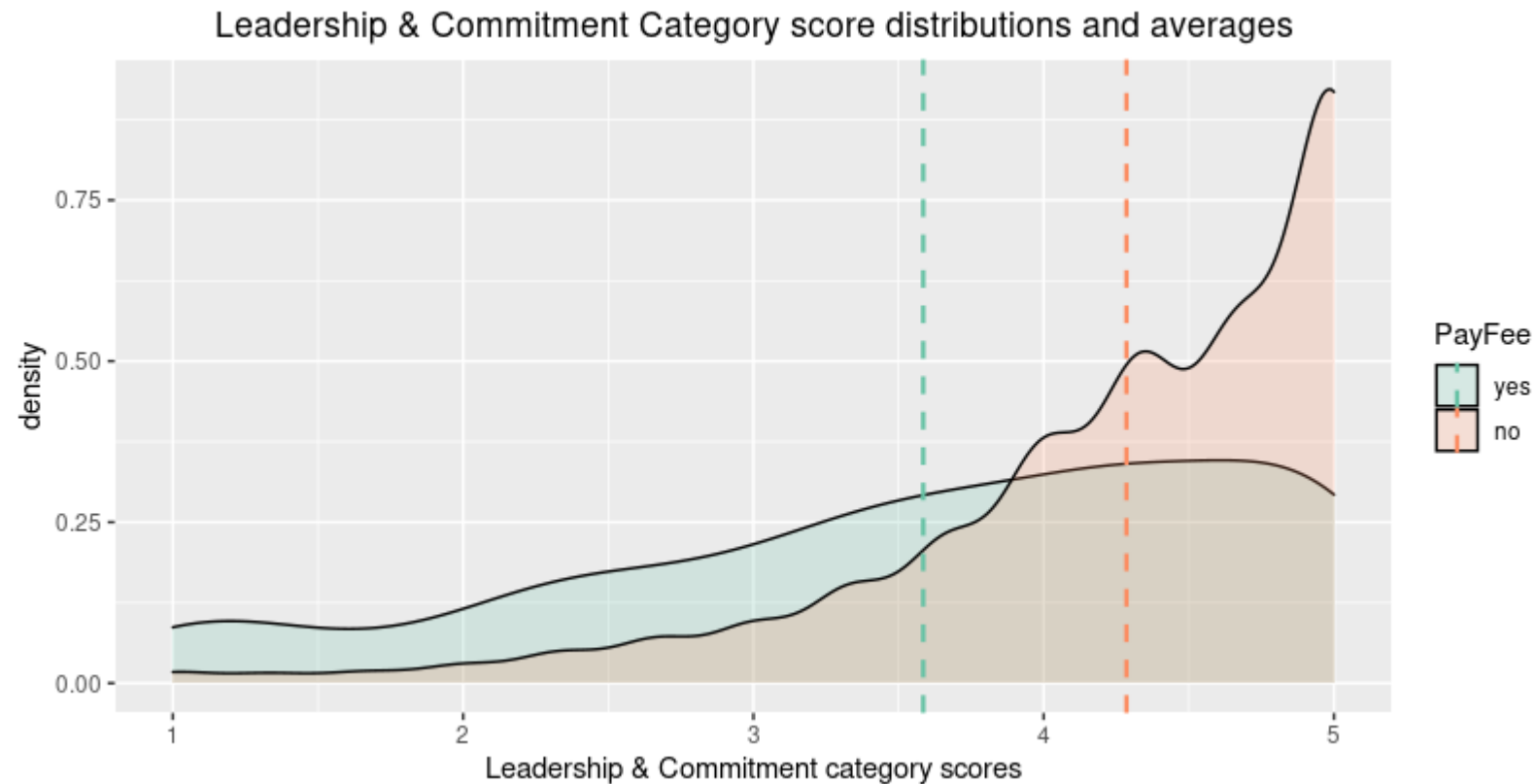
Results – Pay Fee/Private Sector (1)

Significant variables

- › Leadership & Commitment
- › Regulatory Framework
- › Transparency
- › Relationship with the Private Sector

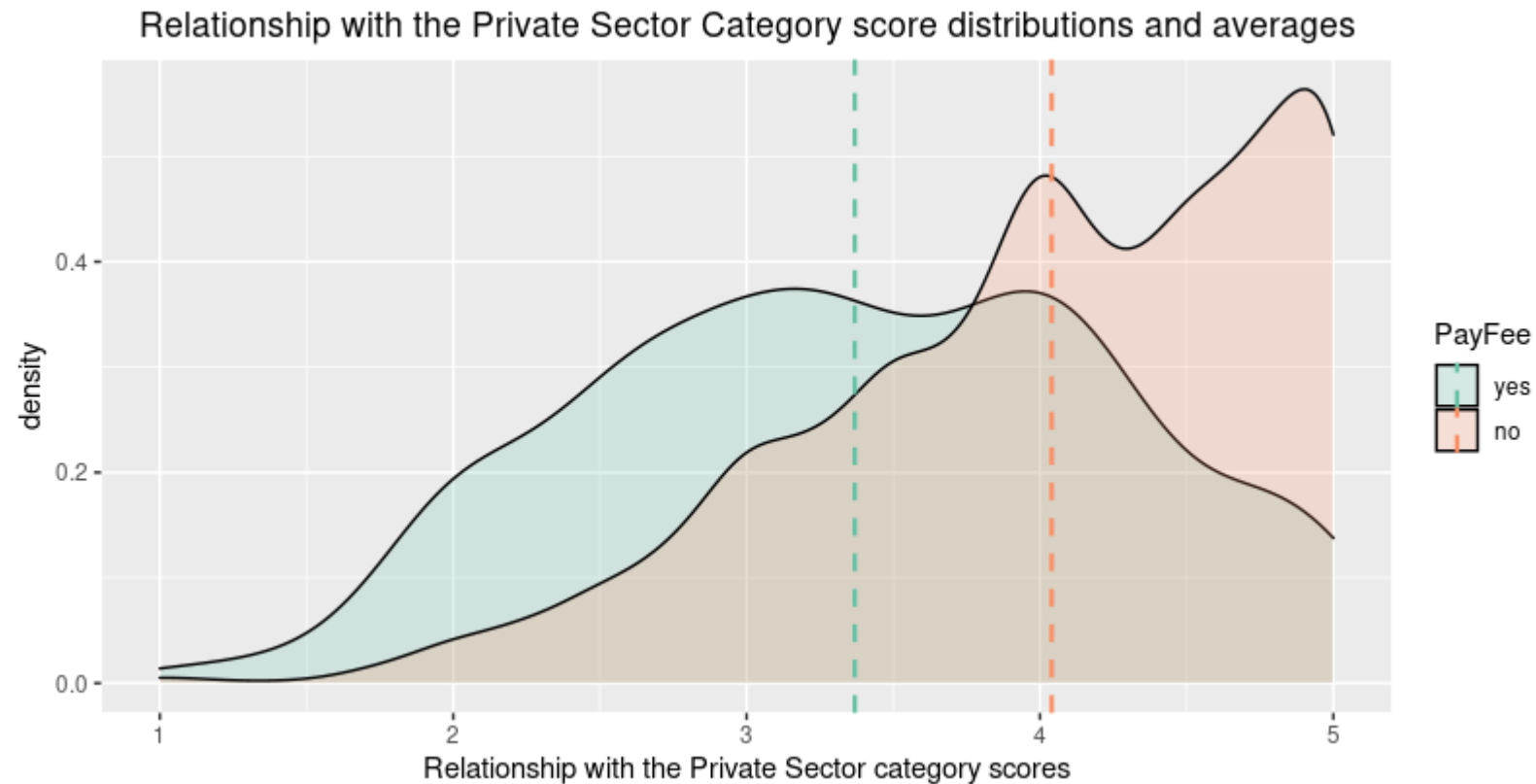


Results – Pay Fee/Private Sector (2)





Results – Pay Fee/Private Sector (3)





Results – Client satisfaction (1)

Significant variables

- › Leadership & Commitment
- › Automation
- › Reform & Modernization
- › Code of Conduct
- › Morale & Organizational Culture
- › Relationship with the Private Sector



Conclusions

- › The opinion of customs officials on key factors *Audit & Investigation* and *Human Resource Management* are significant factors on the likelihood of them committing integrity breaches in both models
- › Key factors *Leadership and Commitment* and *Relationship with Private Sector* are influential in both models for the private sector