Incidents: User dissatisfaction analysis

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# incident – satisfaction rating: data source

116021 incident tickets for the last 365 days:

* 102769 incidents without survey response
* 13252 incidents with survey response (of which 1456 dissatisfied responses)

The incident tickets are limited to those reported by users and exclude those that are auto-generated.

Satisfaction rating = 1 (dissatisfied) - … - 5 (very satisfied)

Satisfaction rating 1 and 2 are regarded as ‘dissatisfied’.

Satisfaction rating 0 corresponds with incident tickets without a survey response.

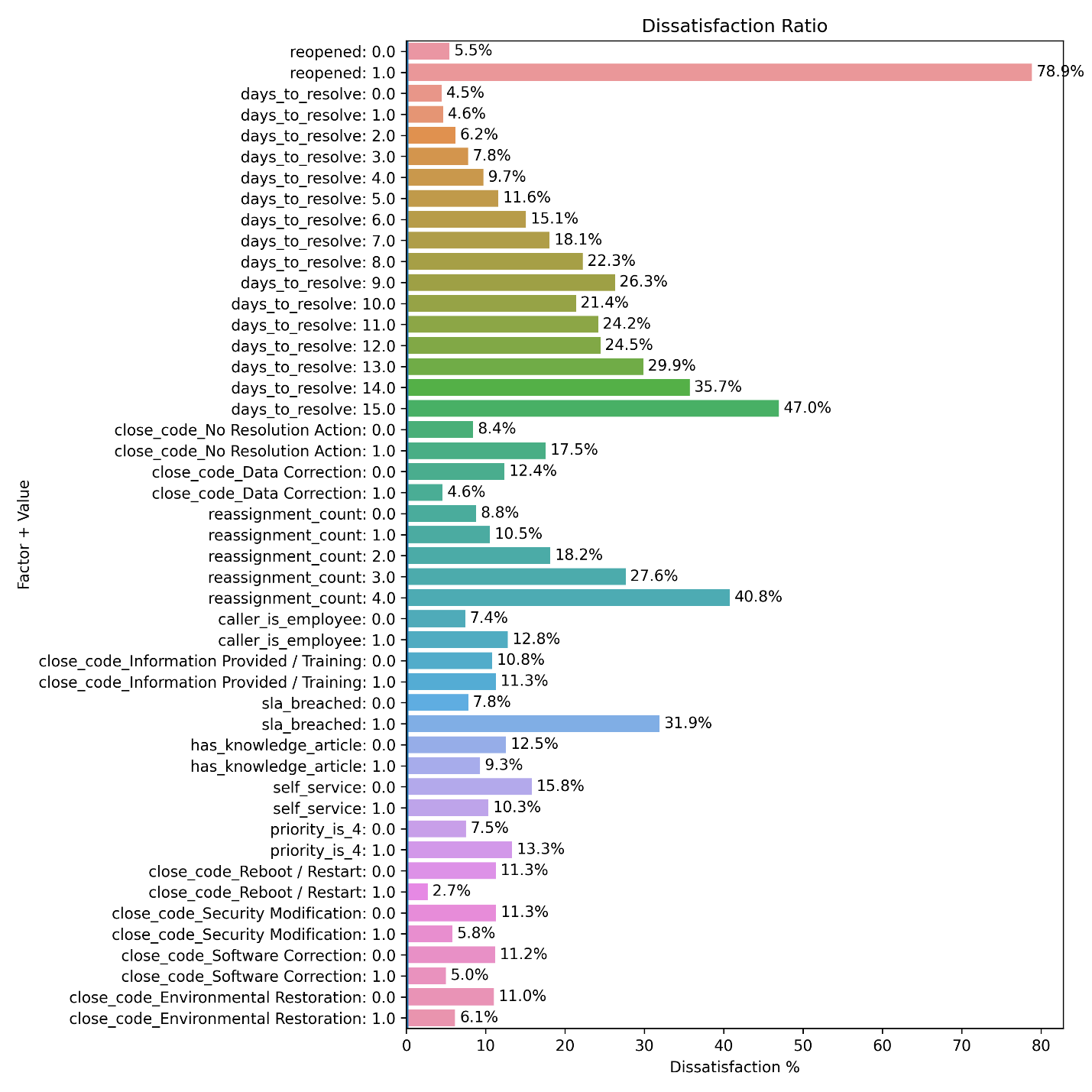
# Questions

1. Can the 'dissatisfied' responses be correlated with specific ticket attributes?

2. Can the ratio of 'dissatisfied' responses be predicted (modelled) based on specific attributes?

3. What is the predicted satisfaction ratio for tickets that don't have a survey response?

# Correlation of 'dissatisfied' responses with ticket attributes



Notes:

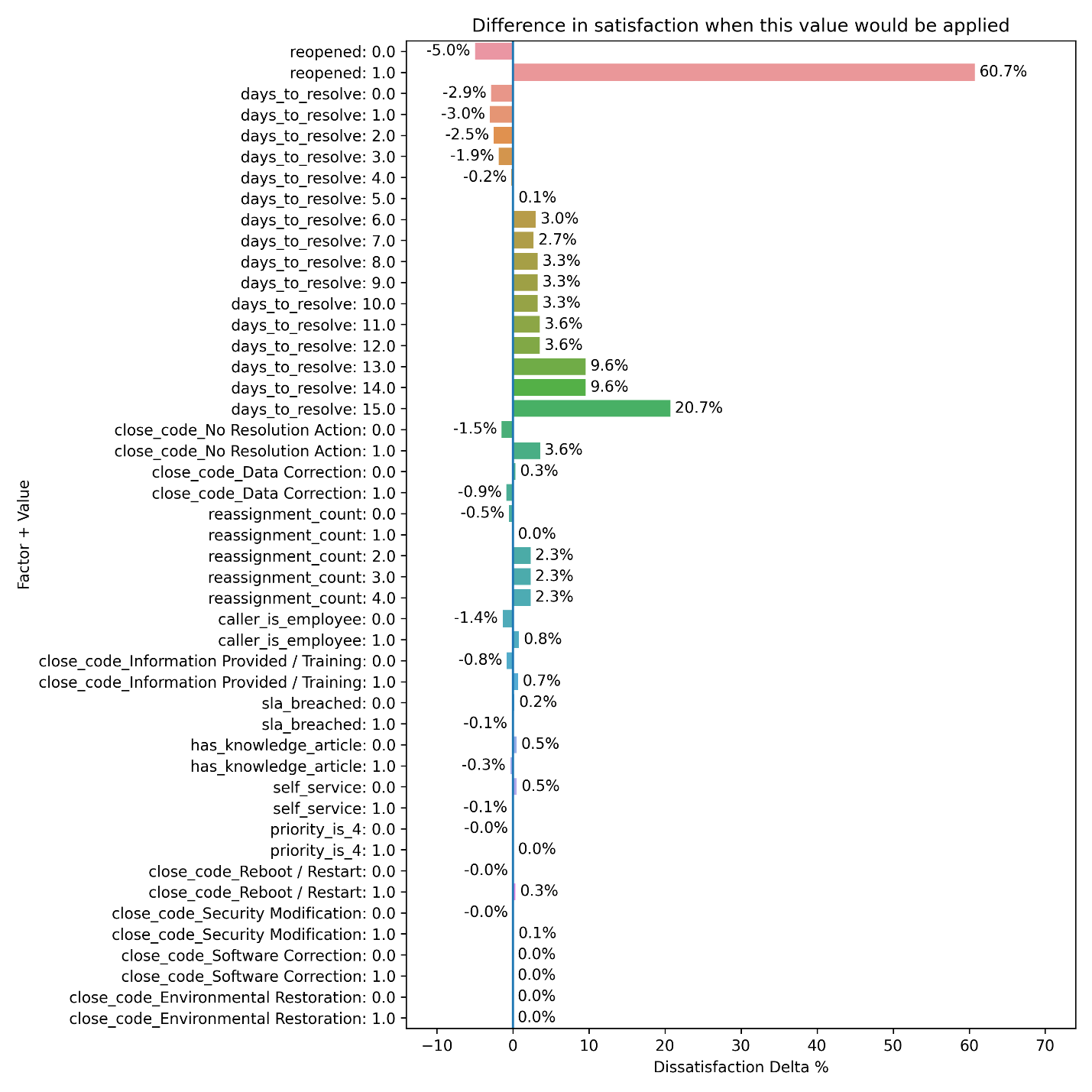
* The attributes have been sorted from strong to weak correlation with the dissatisfaction% by applying the chi2 statistic.
* Ticket reassignment counts > 4 have been set to 4 given the low number of occurrences
* Days to resolve > 15 have been set of 15 given the low number of occurrences and variability
* Priority 1, 2 and 3 have been set to priority\_is\_4 = 0 given the low volume of Priority 1 and 2
* Priority 4 has been set to priority\_is\_4 = 1

Observations:

* The strongest dissatisfaction is expressed by users who had to reopen their incident tickets or for whom the ticket was not resolved.
* The dissatisfaction ratio increases with the number of days to resolve the incidents.
* Many other attributes correlate with the dissatisfaction ratio.

# predicted (modelled) ratio of 'dissatisfied' responses

The different attributes on the prior page have been correlated with the dissatisfaction rating by means of a DecisionTree model. The following graph depicts how the overall dissatisfaction ratio would increase or decrease if the given attribute-value combination would be enforced.



The decision tree model reveals 3 primary attributes:

* reopened by user
* resolution timeline
* close code ‘no resolution’.

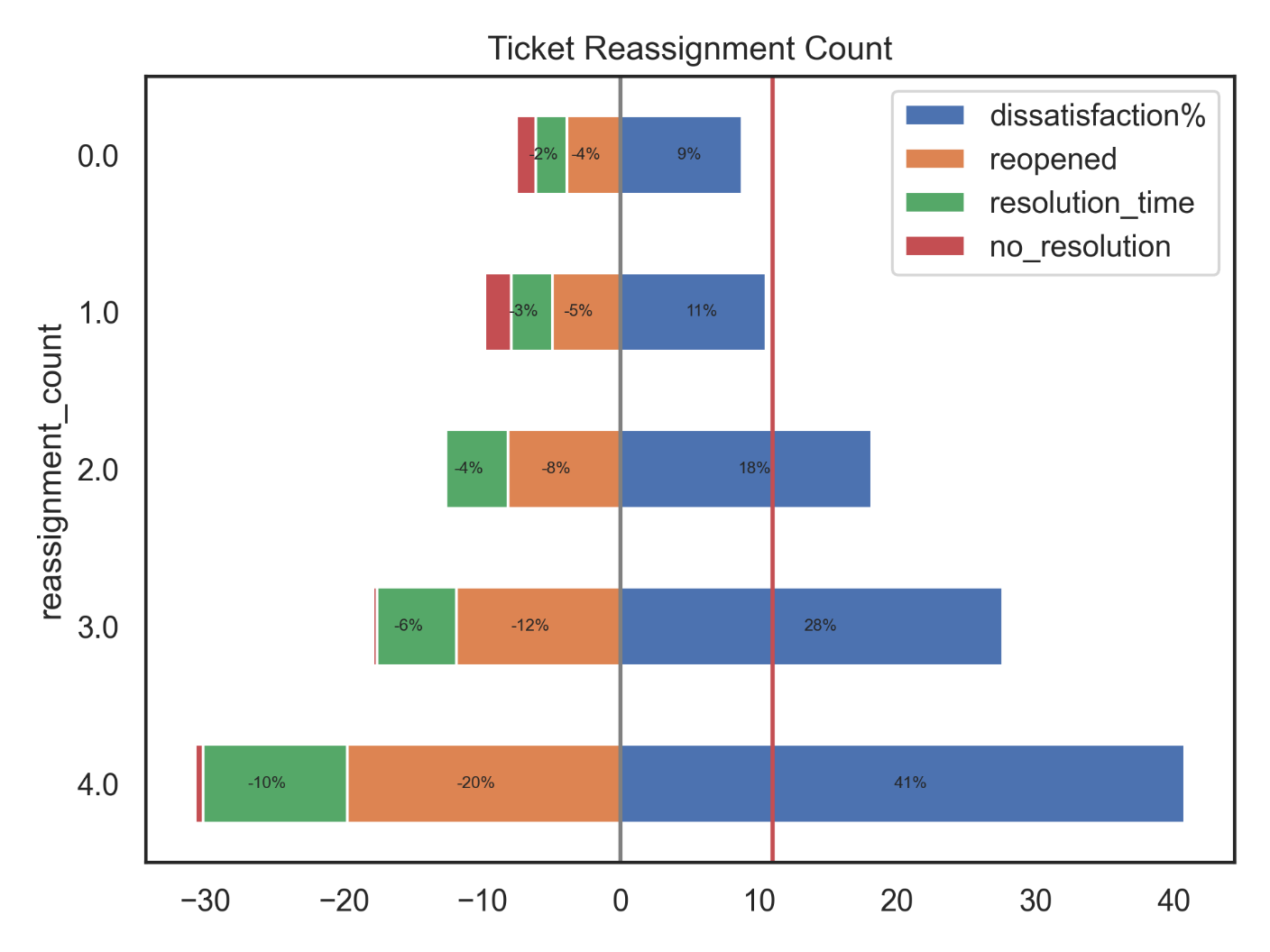
# Correlation of other attributes with primary attributes

## Ticket reassignment

Tickets are reassigned when passed between different team members or groups.

The dissatisfaction ratio increases with the number of ticket reassignments.

The negative values depict the effect of the primary factors.

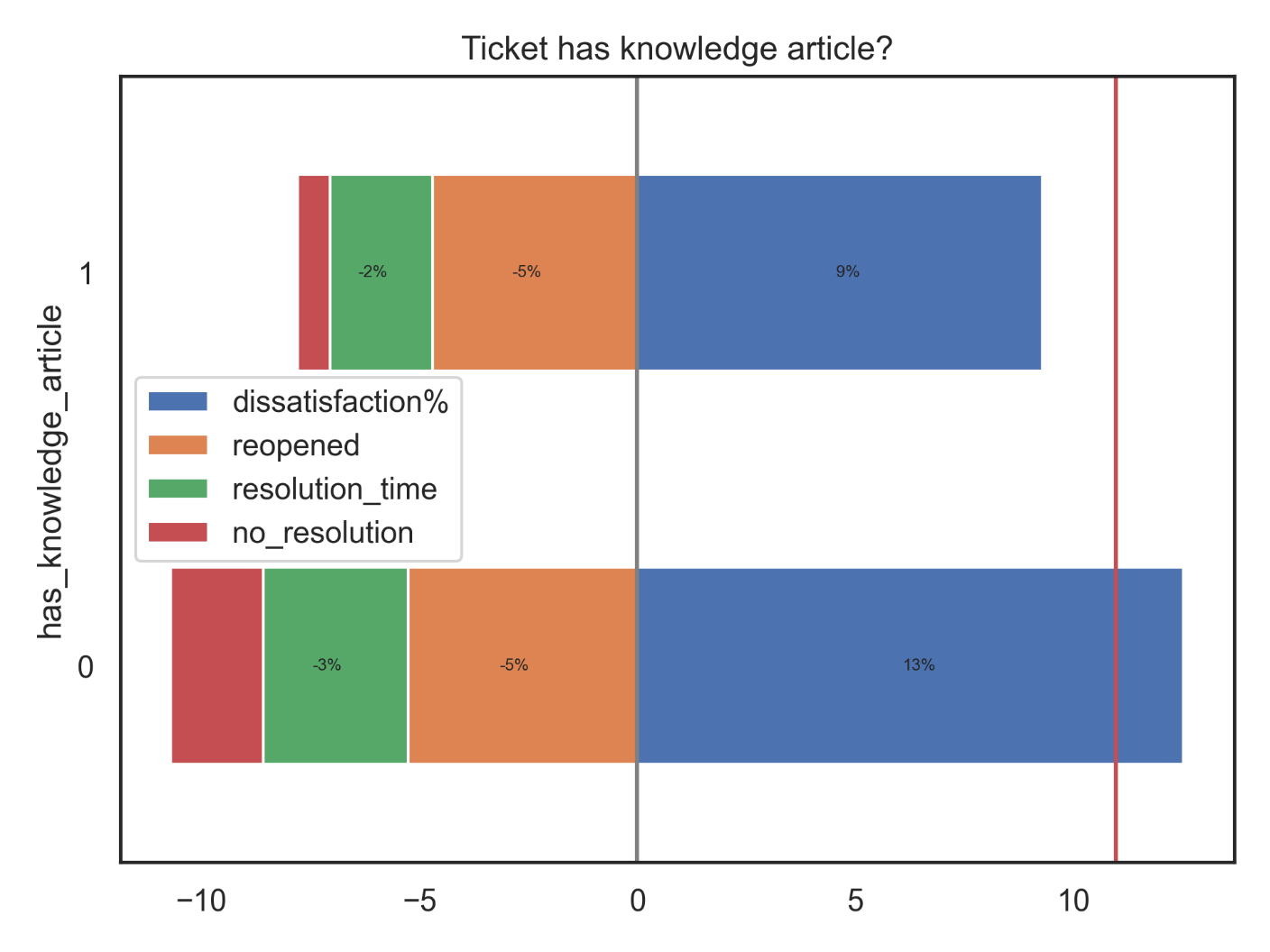


Observations:

* Higher reassignment counts result into longer resolution timelines
* Reopened tickets lead to more reassignments

## Knowledge articles

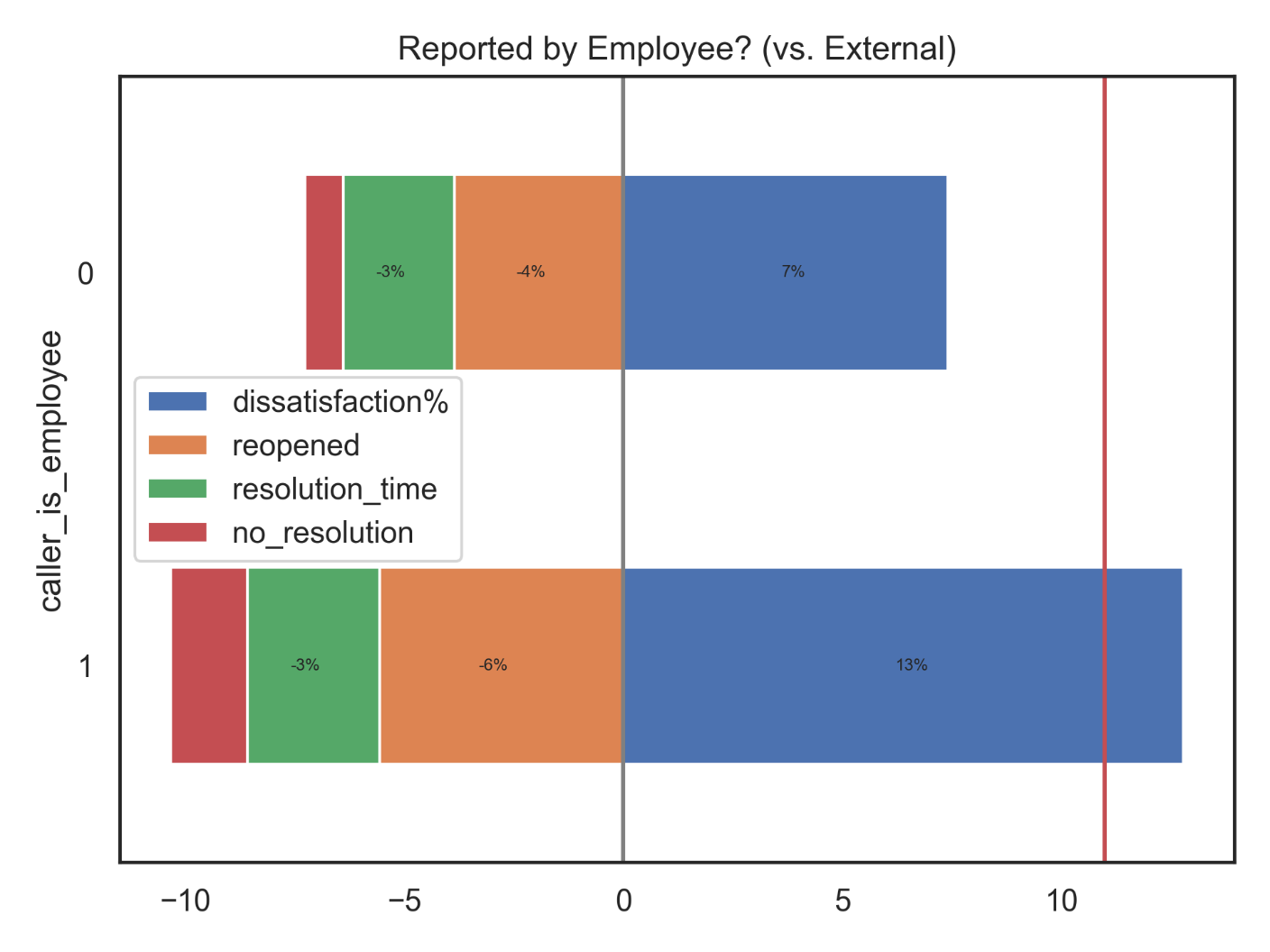
Knowledge articles describe how recurrent tickets can be resolved. These articles are attached to the tickets that made use of them.



Observations:

* Knowledge articles reduce the resolution timeline
* Knowledge articles lead to less tickets with ‘no resolution’
* Knowledge articles lead to fewer reopened tickets

## Employee versus external



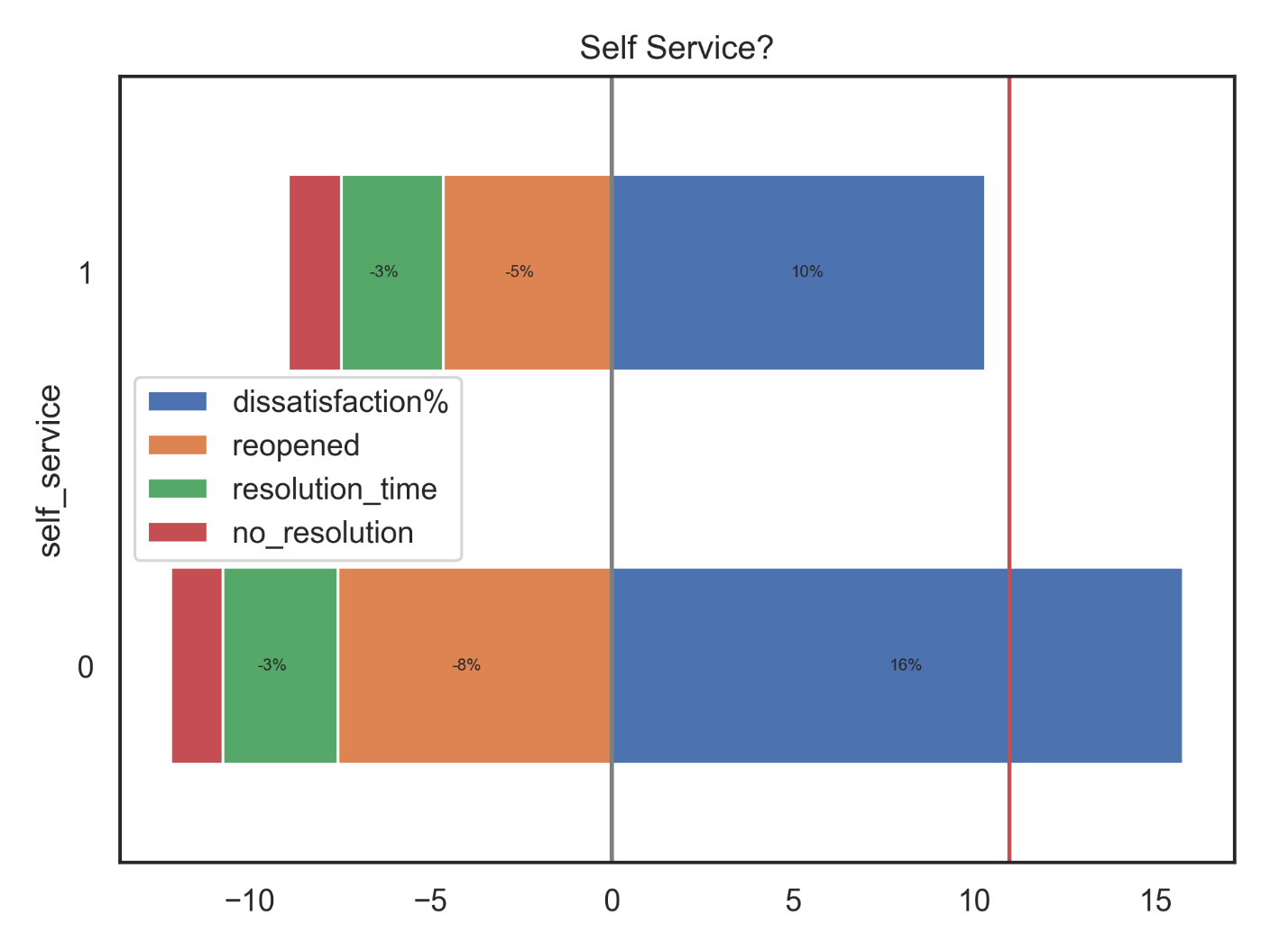
Observations:

* Employees are keener to express their dissatisfaction in the satisfaction survey
* Employees reopen their incidents more frequently

## Self-service tickets

Self-service tickets are entered by the users themselves.

Other tickets are entered by service desk agents (upon a call or chat).



Observations:

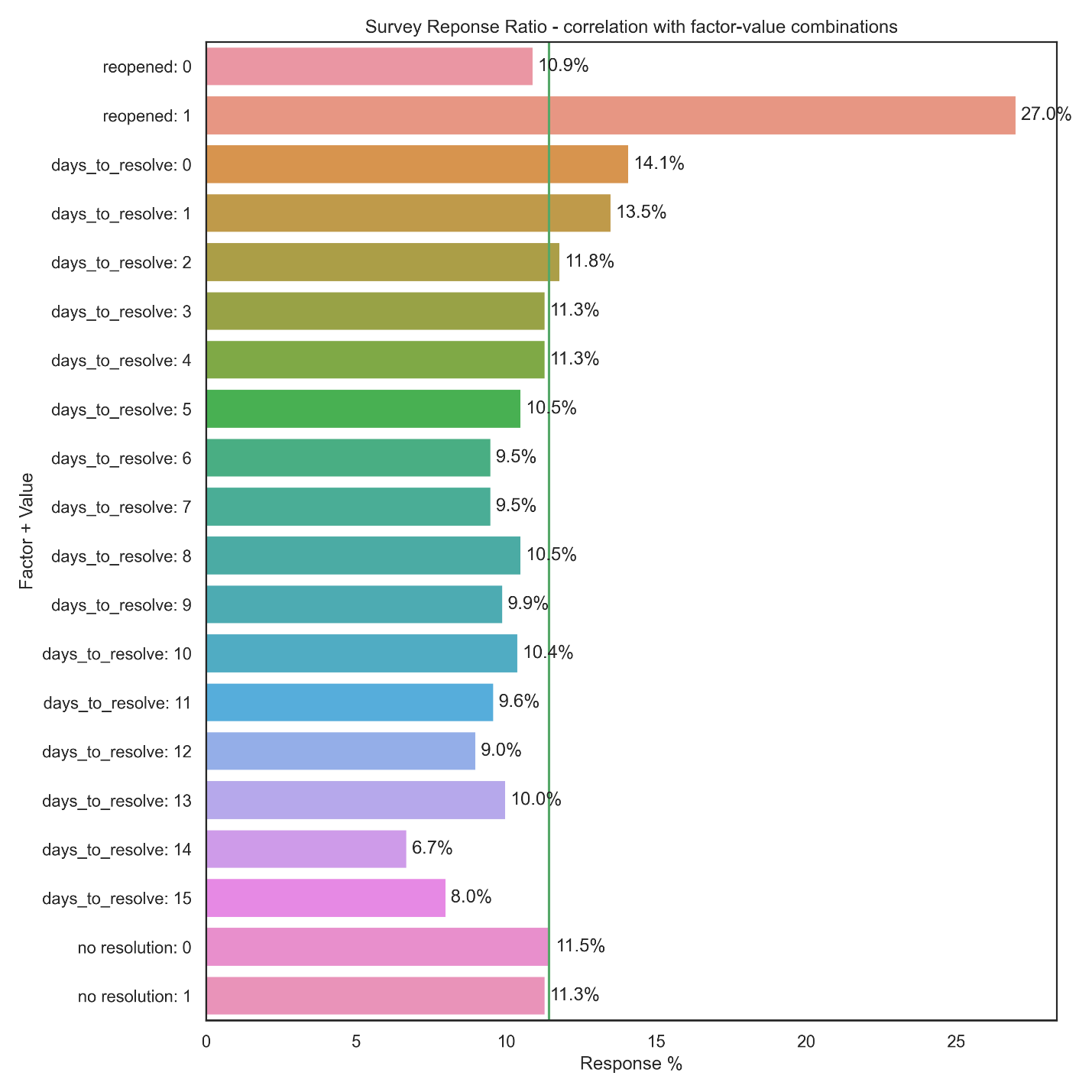
* Tickets entered by the service desk are re-opened more frequently (leading to dissatisfaction)
* Tickets entered by the service desk result in a reduced satisfaction

Remaining questions:

* Are the tickets entered by the service desk of higher complexity?
* Are the tickets entered by the service desk missing essential information because of which their resolutions are suboptimal?

# Tickets without survey responses

Survey response ratios: differences per primary factor:

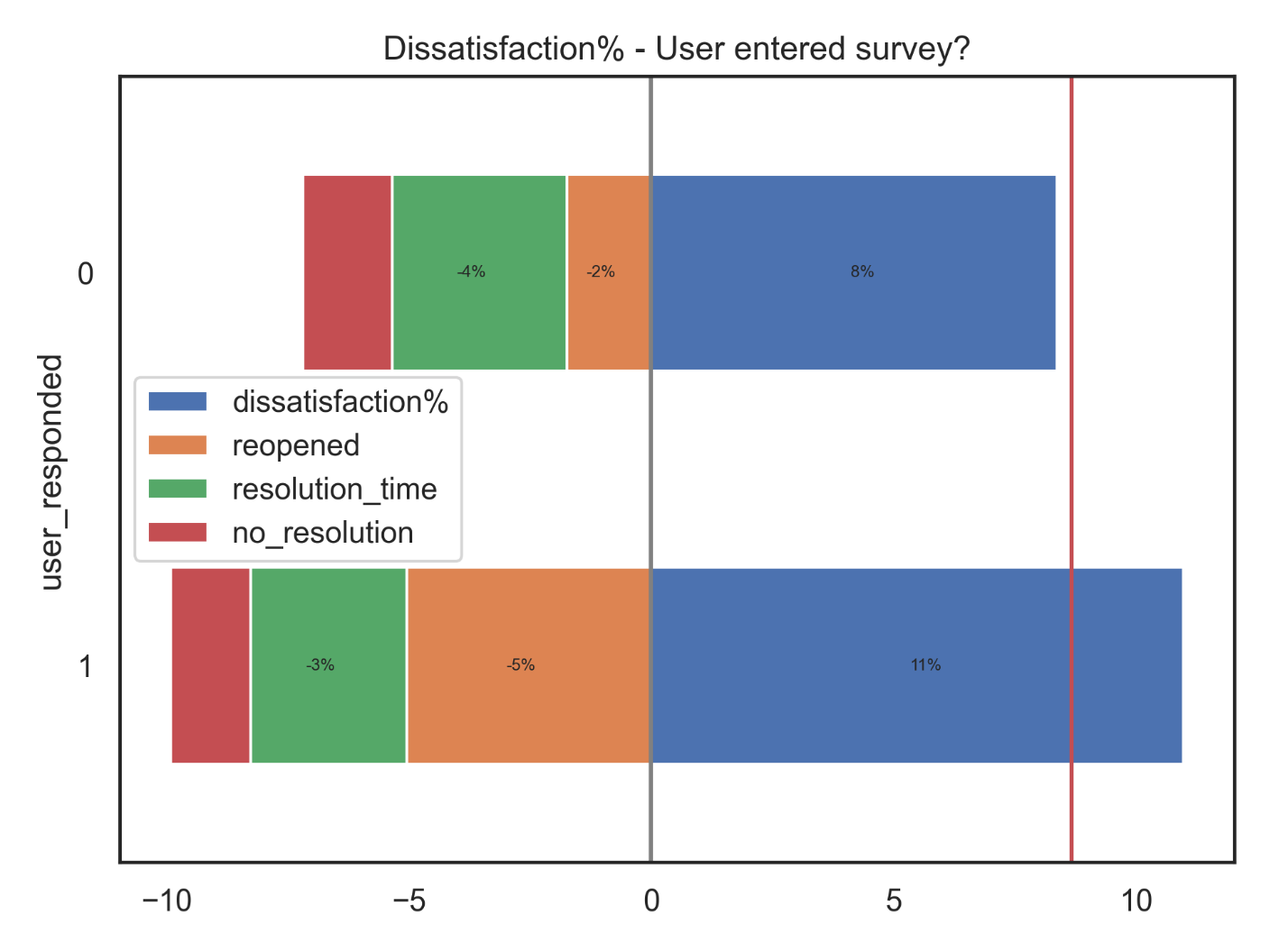


Observations:

* Users who reopened their incident tickets more often respond to the survey to express their dissatisfaction
* Users more often respond to the survey to express their satisfaction when a resolution is provided with 2 days.

# Dissatisfaction% for tickets without survey response

When the model is applied to calculate the expected dissatisfaction% for tickets that have and don’t have a survey response:



Observations:

* Tickets with a survey response have a higher dissatisfaction ratio because users who reopened a ticket tend to enter the survey response to express their dissatisfaction
* Tickets with short resolution times have more survey responses. The resolution time is not a differentiator.
* The overall dissatisfaction ratio (8.6%) is less than what could be expected from the dissatisfaction ratio derived from the survey responses (11.0%).