Budget Argument Mining Dataset Using Japanese Minutes from the National Diet and Local Assemblies

Yasutomo Kimura (Otaru University of Commerce) Hokuto Ototake (Fukuoka University) Minoru Sasaki (Ibaraki University)
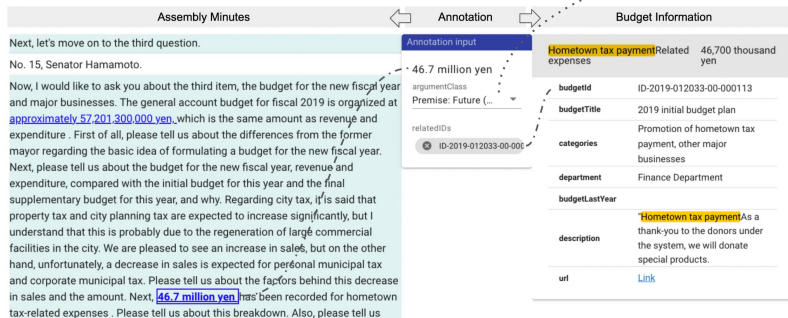
Purpose

- We attempt to develop a system that allows us to easily understand the background of a budget and the discussions that lead to the final budget of the national and local governments.
- Here, we design a budget argument mining task that identifies and links budget items and corresponding discussions in the minutes, which are made public by the national and local governments.

The following are the four contributions of this study.

- We propose a task to link a budget item to the related argumentative component in different language resources (minutes and budget information).
- We proceed the next higher data structure analysis by utilizing previous research. In this research, we automatically identify argumentative components, which includes MONEY expressions using NER.
- We unify data formats among multiple local governments (Otaru City, Ibaraki Prefecture and Fukuoka City).
- We develop a budget argument mining dataset, organize the shared task, and publish the dataset.
- https://github.com/poliinfo3/PoliInfo3-FormalRun-BudgetArgumentMining

Input

1. Budget Information
2. Minutes
(1) National Diet
(2) Local Assembly

Output

1. Argument Classification
2. Related IDs Linking

An example of Premise: Past

In terms of the amount reflected in the taxation for the fiscal year 2018, it is **approximately 45 million yen**.

An example of Premise: Future

The hometown tax-related expenses are estimated to be **46.7 million yen**.

An example of Premise: Other

Generally, the national model household for the levy limit, in terms of income, is even with pension **10 million yen**.

An example of Claim: Opinion

Free outpatient care at hospitals will support child-rearing.

An example of Not a monetary expression

However, the entire City of Otaru now has only **180,000 cubic meters**, so ...

The seven argument classes are:

1. Premise: Past and Decisions
2. Premise: Current and Future / Estimates
3. Premise: Other
4. Claim: Opinions, suggestions, and questions
5. Claim: Other
6. It is NOT a monetary expression.
7. Other

Table 2: Data format for National Diet minutes

Field name	Example
speechID	" T120105261X02520200608_002"
speechOrder	2
speaker	"麻生" (Chinese character)
speakerYomi	"あそう" (Japanese cursive syllabary)
speakerGroup	"Liberal Democratic Party"
speakerPosition	"Minister of Finance"
speakerRole	null
startPage	1
createTime	"2020-06-23 20:41:47"
updateTime	"2020-06-24 10:24:07"
speechURL	"https kokkai.ndl.go.jp"
speech	"The supplementary budget for .."
└ moneyExpressions	
└ moneyExpression	"459 billion yen"
└ relatedID	"R2-MHLW-BUDGET-02-... "
└ argumentClass	"Premise"

Table 3: Data format for local assembly minutes

Field name	Example
date	"2019-02-20"
localGovernmentCode	"011002"
localGovernmentName	"Otaru"
proceedingTitle	"First regular meeting"
url	"https://www. ... "
proceeding	
└ speakerPosition	"Chair"
└ speaker	"Suzuki"
└ utterance	"I admitted that ..."
└ moneyExpressions	
└ moneyExpression	"46.8 million yen"
└ relatedID	"ID-2019-012033-00-000001"
└ argumentClass	"Premise"

Table 1: Data format of budget information

Field name	Example
budgetId	"ID-2019-012033-00-000001"
budgetTitle	"Initial Budget Proposal"
typesOfAccount	"Childcare services"
department	"Social Welfare Department"
url	"https://www.city.otaru.lg.jp"
budgetItem	"Childcare centers in the city"
categories	"Children and child-rearing"
budget	"4,275 thousand yen"
budgetLastYear	null
description	"Activities to raise children in the ..."
budgetDifference	null

Table 5: Number of argumentClasses and relatedIDs in Training dataset

Year	National/local government	argumentClass								relatedID	
		Premise			Claim		Other	Not Money	Total	Non-empty	Count
		Future	Past	Other	Opinion	Other					
2019	Otaru City	23	84	15	18	0	0	4	144	31	38
	Ibaraki prefecture	26	80	39	0	0	0	2	147	5	13
	Fukuoka City	63	138	40	29	12	3	9	294	211	286
2020	National Diet	45	92	14	10	0	0	4	165	11	13
	Otaru City	4	55	9	16	0	0	1	85	16	17
	Ibaraki prefecture	21	70	31	3	0	0	4	129	12	12
	Fukuoka City	78	103	64	22	11	3	3	284	64	83
	Total	260	622	212	98	23	6	27	1,248	350	462

Table 6: Number of argumentClasses and relatedIDs in Test dataset

Year	National/local government	argumentClass								relatedID	
		Premise			Claim		Other	Not Money	Total	Non-empty	Count
		Future	Past	Other	Opinion	Other					
2019	Otaru City	43	74	49	9	2	1	12	190	18	20
	Ibaraki prefecture	5	3	25	1	0	0	0	34	1	1
	Fukuoka City	8	13	13	1	2	0	3	40	3	3
2020	National Diet	11	25	4	21	0	0	4	65	1	1
	Otaru City	31	53	25	9	0	1	4	123	21	26
	Ibaraki prefecture	2	8	21	0	0	0	3	34	2	2
	Fukuoka City	1	20	8	1	0	0	4	34	1	5
	Total	101	196	145	42	4	2	30	520	47	58