# **Online Deliberation Platform Guide for Policy Makers**

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#### Introduction

The NUS Online Deliberation platform was developed by NUS Online Deliberation Project team under the supervision of Associate Professor Weiyu ZHANG. It was used to allow Singaporeans to discuss specific policies regarding Singapore.

For the purpose of the research project, we created six different instances of the platform with roughly two hundred registered users on each platform. The six instances differ in terms of level of moderation (low vs, high) and composition of participants (mainly those who agree vs. mainly those who disagree vs. mixture of agree, disagree, and neutral). The same issues were discussed simultaneously on the six platforms:

- 1. Singapore's Fertility Issue week 1
- 2. Foreign Workforce in Singapore week 2
- 3. Immigration: New Citizens in Singapore week 3

The six platforms are the same in terms of usage and this guide will present how to use the platforms and the exclusive policy makers page on the platforms.

#### **Basic Demographics of All Participants (N = 509)**

#### Descriptive Statistics

	Ν	Minimum	Maximum	Mean	Std. Deviation
age age	509	21	77	38.88	11.431
Valid N (listwise)	509				

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	285	56.0	56.0	56.0
	2 Female	224	44.0	44.0	100.0
	Total	509	100.0	100.0	

#### gender Gender

race	Race
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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Chinese	439	86.2	86.2	86.2
	2 Malay	28	5.5	5.5	91.7
	3 Indian	31	6.1	6.1	97.8
	4 Other	11	2.2	2.2	100.0
	Total	509	100.0	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Primary	2	.4	.4	.4
	3 Lower Secondary	6	1.2	1.2	1.6
	4 Secondary	58	11.4	11.4	13.0
	5 Post-secondary (Non- tertiary): General & Vocational	43	8.4	8.4	21.4
	6 Polytechnic Diploma	104	20.4	20.4	41.8
	7 Professional qualification and other diploma	39	7.7	7.7	49.5
	8 University first degree	199	39.1	39.1	88.6
	9 University postgraduate diploma/degree	57	11.2	11.2	99.8
	97 Others, please specify	1	.2	.2	100.0
	Total	509	100.0	100.0	

## Q6 What is your highest education level?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 HDB 1 or 2 room	9	1.8	1.8	1.8
	2 HDB 3 room	72	14.1	14.1	15.9
	3 HDB 4 room	172	33.8	33.8	49.7
	4 HDB 5 room / Executive / HUDC	156	30.6	30.6	80.4
	5 Executive Condo / Private Condo / Apartment	78	15.3	15.3	95.7
	6 Landed Property	17	3.3	3.3	99.0
	97 Others, please specify	5	1.0	1.0	100.0
	Total	509	100.0	100.0	

#### Q7 May I know what is your housing type?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 No working person / Retiree household	9	1.8	1.8	1.8
	2 Below \$1,000	5	1.0	1.0	2.8
	3 \$1,000 - \$1,999	22	4.3	4.3	7.1
	4 \$2,000 - \$2,999	33	6.5	6.5	13.6
	5 \$3,000 - \$3,999	43	8.4	8.4	22.0
	6 \$4,000 - \$4,999	41	8.1	8.1	30.1
	7 \$5,000 - \$5,999	39	7.7	7.7	37.7
	8 \$6,000 - \$6,999	52	10.2	10.2	47.9
	9 \$7,000 - \$7,999	37	7.3	7.3	55.2
	10 \$8,000 - \$8,999	44	8.6	8.6	63.9
	11 \$9,000 - \$9,999	26	5.1	5.1	69.0
	12 \$10,000 - \$10,999	58	11.4	11.4	80.4
	13 \$11,000 - \$11,999	8	1.6	1.6	81.9
	14 \$12,000 - \$12,999	16	3.1	3.1	85.1
	15 \$13,000 - \$13,999	7	1.4	1.4	86.4
	16 \$14,000 - \$14,999	13	2.6	2.6	89.0
	17 \$15,000and above	38	7.5	7.5	96.5
	99 Refuse to answer	18	3.5	3.5	100.0
	Total	509	100.0	100.0	

Q8 How much is your familys gross monthly household income from work?

## Q8b What is your current occupation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Full-time worker	382	75.0	75.0	75.0
	2 Part-time worker	30	5.9	5.9	80.9
	3 Self-employed / Business owner	27	5.3	5.3	86.2
	4 Full-time student	24	4.7	4.7	91.0
	5 Retired	7	1.4	1.4	92.3
	6 Full-time home-maker or housewife	17	3.3	3.3	95.7
	7 Unemployed	19	3.7	3.7	99.4
	97 Other	3	.6	.6	100.0
	Total	509	100.0	100.0	

# Signing In

Upon clicking on one of the link, the following page should appear:

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< > C III (http://lm1.onlinedeliberation.org/entry	/signin?Target=discussions		$\odot$	2	
+ Save to Mendeley					
Online Deliberation v1.01LM - O					
	Dear Participants, our discussion forum closed at 11:00pm on May 25, 2016. We will send you a link via email to complete a post survey questionnaire. Thereafter we will send you a reward redemption letter based on your participation on the online labform and the completion of the post survey questionnaire. On behalf of the Online Deliberation Project Team, we sincerely thank you for your kind contribution to our online deliberation study.				
	Sign In Why Are You Here? Username				
	Password Forgot?	]			
	✓ Keep me signed in Sign In				

On this page, you will be prompted to input your Username and Password.

## **Discussions and Visualizations**

On the next page, you should see something similar to this:

Menu 🖬 Recent Dis	cossions - Onlin X 1+		*	-	
> C #	http://im1.onlinedeliberation.org/discussions			O	9   1
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	Dear Participants, our discussion forum closed at 11:00pm on May 25, 2016. We will send you a link via	· · · · · ·			
	email to complete a post survey questionnaire. Thereafter we will send you a reward redemption letter based on your participation on the online platform and the completion of the post survey questionnaire.		-		
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	our online deliberation study.	RECENT POPULAR			
		We the citizen of Singapore,			
		Singapore Dy 161925 May 25			
	Recent Discussions	1 of the foremost reasons cou			
		In Immigration : New Citizens in Singapore Dv 468625 May 25			
	Singapore's Fertility Issue	Everyone says "Vote wineby"			
	Amountment Courd 54 PL - 477 views 118 comments Most recent by 485714 May 11	In Immigration : New Citizens in			
	Immigration : New Citizens in Singapore	Singapore By 468625 May 25			
	Ound 83 PL - 486 views 219 comments end Most recent by 161925 May 25	yes and they're still looking In Immigration : New Citizens In			
	Foreign Workforce in Singapore	Singapore By 876742 May 25			
	Guard 66 Pt 554 views 192 comments www Host recent by 665436 May 18	I think these few years there			
		In Immigration : New Otizens in Singapore By 518810 May 25			
		MORE			

On this page, you are free to browse through any discussion. Each discussion starts with a graph that either gives a brief summary of the discussion made by the moderators (on platforms hm1, hm2 and hm3) or presents all the first layerposts of a discussion (lm1, lm2 and lm3).

For more information about how an ordinary user can use the platform, please refer to the help page

on the platform, by clicking on

e sta	policymaker	START POSTING		۵	a	٠
			-	Prefer	ences	
			•	Help Sign O	ut	

Please note that policy makers cannot edit or change any of the posts and graphs. If you want to make changes, you need to log in as moderators.

#### **Policy Makers Page**

More importantly, we developed a specific page for Policy Makers to download posts and perform some analyses on the posts. To access this page, simply locate the "**Policy Makers**" tab on the upper part of any page of the platform:

			6	START POSTING!	
Online Deliberation v1.01LM - Copy	Policy Makers	Home	24	policymaker 0 🛛 🖓	\$

- ø × > C III (http://lm1.onlinedeliberation.org/moderation < ○ 3 (1) Save to Mendeley Online Deliberation v1.01LM - Copy ø • Search Dear Participants, our discussion forum closed at 11:00pm on May 25, 2016. We will send you a link via email to complete a post survey questionnaire. Thereafter we will send you a reward redemption letter based on your participation on the online platform and the completion of the post survey questionnaire. On behalf of the Online Deliberation Project Team, we sincerely thank you for your kind contribution to our online deliberation study. Welcome Policy Makers! This page provides tools to extract data from our platform. Our platform allows you to download any posts from our platform. Note that each post also contains additional information, such as sentiment and emotion analysis. Sentiment and emotion analysis indicate whether a given post has a positive, negative or mixed content. The emotion analysis quantifies the following different emotions extracted from the text of the post: Anger Anger
Disgust
Fear
Joy
Sadness Each sentiment and emotion is rated on a scale from 0 to 1. A score of 0 suggests that the emotion of sentiment is not strongly present in the post, whereas a score of 1 suggests a very strong presence of the emotion/sentiment You may use the following links for an easier navigation: Download Posts Matching Specific Criteria Download Posts from one User or a Set of Users Download Posts from a Specific Discussion. This option will also perform Keyword and Concept Extraction Download Doots Matching Charife Criteria

After clicking on the link, you should see the following page:

From here, you can perform three different operations as highlighted on the picture above.

1. Download all the post matching a set of specific criteria

- 2. Download all the posts from a specific user or from a group of users
- 3. Download all the posts from a specific discussion

If you choose option 1 and 2, downloading posts will also perform a sentiment and emotion analysis. The third option performs a keywords and concept extraction. All these features are provided using the Alchemy API (http://www.alchemyapi.com/), now part of IBM Watson.

### **Sentiment Analysis**

The sentiment analysis tells whether a given post is overall negative, positive, neutral or shows mixed feelings. The scores given are between 0 and 1 (for positive posts) or 0 and -1 (negative). A score closer to 1 or -1 shows a stronger sentiment.

#### **Emotion analysis**

The emotion analysis will assess the presence of five different emotions within a post. Once again, the scores are between 0 and 1, with 1 showing a strong presence of an emotion and 0 showing the absence of it.

The five supported emotions are:

- 1. Anger
- 2. Disgust
- 3. Fear
- 4. Joy
- 5. Sadness

# **Keywords and Concepts Extraction**

Ultimately, our system can also extract a list of keywords and concepts. A **Keyword** is a word or small phrase extracted from the text of a discussion, while a **Concept** is an abstract summary of a discussion with a list of words. Concepts are usually a higher level description of Keywords.

#### Performing a Search on Specific Criteria

If you click on the "Download Posts Matching Specific Criteria" link, you will be able to input values for different criteria.

You may search for posts according to the following criteria:

- 1. Age of the poster
- 2. Gender of the poster
- 3. Ethnic group
- 4. Work/occupation
- 5. Education level
- 6. Housing type
- 7. Income
- 8. Specific discussion
- 9. Containing a list of specific terms or words
- 10. Posted in a specific time interval
- 11. From specific users

All these criteria are optional. For each criterion, you may select multiple values.

#### Example:

Let us select all the posts from Chinese Females who are 50 years old and plus.

Age between 50 and	
⊖ Male,	
From the following ethnic group(s):	
Chinese	
Malay	
Indian	
Others	

Note: all the other criteria should NOT have any selected values if you only want to search for the above group. You can now click on "Download". If you want to change your selection criteria, simply click on "Reset".

Download	Reset
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After clicking on Download, your computer will download a file containing the results of the search. It can be opened with Excel.



The file should look like this:

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14																				
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16	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	C Executive	Polyechni	2	Foreign W		279 258	neutral	0	0	0.298059	0.370226	0.09524	F 0.1
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18	3	3 539023	5	6 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	2	Foreign W		281 162	negative	-0.76152	0	0.169151	0.587399	0.385808	6 0.0
19	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	2	Foreign W		282 204	positive	0.775021	0	0.272385	0.19303	0.275708	6 0.1
20	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	C Executive	Polyechni	2	Foreign W		283 278	positive	0.558227	0	0.330608	0.10535	0.279099	1
21	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	2	Foreign W		284 243	negative	-0.92388	0	0.132285	0.156471	0.028199	0.0
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23	3	3 539023	5	5 T	Full-time	Chinese	Below \$1	LEXecutive	Polyechni	2	Foreign W		286 0	negative	-0.87068	0	0.196319	0.329673	0.06511	. 0.0
24	3	3 539023	5	5 T	Full-time	Chinese	Below \$1	C Executive	Polyechni	2	Foreign W	2	307 306	negative	-0.84101	0	0.187032	0.093046	0.357774	. 0.
25	3	3 539023	5		Full-time	chinese	Below \$1	C Executive	Polyechni	2	Foreign W		308 259	neutrai	0 00440	0	0.253451	0.113032	0.125334	0.4
20	3	3 539023	5	D T e 4	Full-time	Chinese	Below \$1	C Executive	Polyechni	2	Foreign W		309 0	negative	-0.23419	1	0.4725	0.57592	0.221484	0.0
27		5 559025	5	0 I 6 4	Full-time	Chinese	Below \$1	CExecutive	Polyechni	2	Immigrati		510 0	negative	-0.49404	0	0.313032	0.516075	0.190803	0.0
28	3	5 539023	5	5 I c 4	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati		317 310	neutral	0	0	0.303054	0.211152	0.081708	0
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31	2	3 539023	5	6 f	Full-time	Chinese	Below ¢1	CExecutive CExecutive	Polyechni	2	Immigrati		203 222	neutral	0.526704	0	0.220509	0.331207	0.556991	1 0.4
37	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	C Executive	Polyechni	3	Immigrati		300 303	neutral	0	0	0.589748	0.307331	0 127423	0.1
32	2	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	2	Immigrati		395 364	nositive	0.329699	1	0.228779	0.572196	0.301593	0.0
34	3	3 539023	5	6 f	Full-time	Chinese	Below \$1	Executive	Polyechni	3	Immigrati		396 0	positive	0 726217	0	0 345447	0.411662	0.452492	0.
35	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	(Executive	Polyechni	3	Immigrati		101 398	positive	0.530048	0	0.13099	0.108347	0.301343	0.
36	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	Executive	Polyechni	3	Immigrati	- 2	102 397	positive	0.335859	0	0.158974	0.544038	0.150243	0.1
37	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati		103 378	negative	-0.06939	1	0.377505	0.433614	0.302365	i 0.
38	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati		404 351	positive	0.513529	0	0.294302	0.451268	0.243459	0.0
39	3	3 539023	5	6 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati	4	105 326	positive	0.696228	0	0.327337	0.5153	0.070307	0
40	3	3 539023	5	5 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati	4	106 320	neutral	0	0	0.210745	0.441745	0.117583	0.:
41	3	3 539023	5	6 f	Full-time	Chinese	Below \$1	CExecutive	Polyechni	3	Immigrati	4	107 347	negative	-0.7019	0	0.306145	0.568115	0.388072	2 0.0
42	9	9 485714	5	2 f	part-time	Chinese	\$5000-\$5	9 HDB 5 roo	Secondary	4	Singapore		27 13	negative	-0.69108	0	0.366364	0.262565	0.176314	4 0.1
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Re	ady 🎦																	00% (-)-		(+

The first part of the file is a summary of your research (note: the max age is set by default at 255, and the default time interval is the largest possible).

The second part contains the data themselves.

Each line is a post. The first nine columns contain information about the user who posted:

- UserID is a unique ID that is used by our system
- UserName is the name of the user on the platform that other people can refer to
- Age is the age
- Gender can have three values: f (female), m (male) and u (undefined)
- Job is the occupation or current work
- Ethnicity is one of the four possible ethnicities: Chinese, Malay, Indian, Other
- Income is an income range in SGD
- Housing is the type of house the poster lives in
- Education is the highest level of education achieved

The next two columns give information about a specific Discussion

- DiscussionID is a unique ID that identifies each discussion
- DiscussionName is the title of the discussion

The next two columns give information about the Post itself

- CommentID is a unique identifier for a Post
- ParentCommentID is the name of the parent comment (as our platform features tree-based hierarchies)

The next three columns are the results of the sentiment analysis:

- SentimentType is either positive, neutral or negative
- SentimentValue is the sentiment score (between -1 and 1, as explained in the Sentiment Analysis section)
- SentimentMixed indicates whether this posts shows mixed feelings (value of 1) or not (value of 0)

The next five columns contain the emotion analysis. Each shows the intensity of each of the five considered emotions. See Emotion analysis section for more details.

Ultimately, the last CommentBody column contains the text of the post itself.

#### Search by Keywords

Let us now consider that you want to find every post from a Chinese lady older than 50 years old and that contains either Singapore OR Singaporeans.

Simply go back on the Policy Makers page and find the "With posts containing" subsection.

Set the value of the next fields to:

With posts containing:	
at least one of the following keywords	~
singapore singaporeans	

If you want to select the posts containing BOTH terms, change the value to "all the following keywords".

#### Download Posts from one User or a Set of Users

You may also want to download all the posts from either one specific user or a group of users that you noticed on the platform. To do so, simply go back to the Policy Makers page, and click on the "Download Posts from one User or a Set of Users" link.

You will see a large table containing information about every registered users on the platform.

UserID	UserName	Age	Gender	Job	Education	Housing	Income	Last Active	Comments	Download posts
1	admin	18	u					9:18PM	5	$\checkmark$
2	System	18	u					-	0	
3	tester	18	u					March 11	0	
4	429140	32	m	Unemployed	Secondary	HDB 4 room	\$1000- \$1999	May 4	0	

To download all the posts from a user, simply click on the small checkbox in the 'Download Posts" column. In that example, I only choose to download the posts from "admin". Note that the download button is at the end of the table!

After clicking on download, an Excel file will be available, with a structure similar to the one under the search by criteria section. The columns are the same, please refer to the Performing a Search on Specific Criteria section.

#### **Download Posts from a Specific Discussion**

Finally, you may also want to automatically extract the keywords of a specific discussion. To do so, please go back to the main page and click on the "Download Posts from a Specific Discussion" link.

You may choose a specific discussion:

Download Posts from a Specific Discussion
Select one discussion from which you want to extract the keywords and concepts: Keywords can only be extracted from ONE specific discussion.
You can only select ONE DISCUSSION at a time! Keywords are words extracted from the text, while concepts are abstract descriptions/summaries of the discussion.
In discussion:
Foreign Workforce in Singapore
Download Reset

In that example, I am downloading the "Foreign Workforce in Singapore" Discussion".

The result is once again an Excel file. The second part of the file contains the posts of the discussion.

More importantly, the first part contains a list of concepts with their relevance. The relevance score is between 0 and 1 and reflects the confidence of the system that this specific concept is actually present in the discussion.

7	Concept	Relevance
8	Old age	0.95858
9	Middle age	0.898632
10	Wage	0.669176
11	Singapore	0.656758
12	Working class	0.573507
13	Want	0.557806
14	Employment	0.524451
15	You Got It	0.516707
10		

In this case, it seems that "old age" is the most relevant concept present in the discussion (0.95 relevance), while Employment (0.52) is deemed less relevant.

Warning: This tool is currently offered as a trial function as it has limitations (e.g., a long discussion will not be processed by the system; concepts may be incorrect in some cases as well, an example being the "You Got It" concept above).