

Following Snowden Around the World: International  
Comparison of Attitudes to Snowden's Revelations about the  
NSA/GCHQ

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## **Abstract**

**Purpose** A survey of the attitudes of students in eight countries towards the revelations of mass surveillance by the US' NSA and the UK's GCHQ has been described in an introductory paper and seven country-specific papers (The People's Republic of China and Taiwan are combined in a single paper). This paper presents a comparison of the results from these countries and draws conclusions about the similarities and differences noted.

**Design/methodology/approach** A questionnaire was deployed in Germany, Japan, Mexico, New Zealand, the People's republic of China, Spain, Sweden, and Taiwan. The original survey was in English, translated into German, Japanese and Chinese for relevant countries. The survey consists of a combination of likert scale, yes/no, and free-text responses. The results are quantitatively analysed using appropriate statistical tools and the qualitative answers are interpreted (including, where appropriate, consolidated into quantitative results).

**Findings** There are significant differences between respondents in the countries surveyed with respect to their general privacy attitudes and their willingness to follow Snowden's lead, even where they believe his actions served the public good.

**Research limitations/implications** Due to resource limitations, only university students were surveyed. In some countries (Germany and New Zealand) the relatively small number of respondents limits the ability to make meaningful statistical comparisons between respondents from those countries and from elsewhere on some issues.

**Social implications** Snowden's actions are generally seen as laudable and having had positive results, among the respondents surveyed. Such results should give pause to governments seeking to expand mass surveillance by government entities.

**Originality/value** There have been few surveys regarding attitudes to Snowden's revelations, despite the significant press attention and political actions that have flowed from it. The context of attitudes to both the actions he revealed and the act of revelation itself is useful in constructing political and philosophical arguments about the balance between surveillance activity for state security and the privacy of individual citizens.

**Keywords** Edward Snowden, privacy, state surveillance, social impact

# 1 Introduction

In June 2013, *The Guardian* in the UK and *The Washington Post* in the US began publishing internal electronic documents from the US' signals intelligence (SIGINT) organisation the National Security Agency (NSA), provided to them by Edward Snowden who had obtained the documents while employed as a systems administrator at the NSA for contractor Booz Allen Hamilton. As they have done previously, the NSA and other parts of the US government generally will not confirm or deny the validity of the documents, however on 21st June 2013, the US Department of Justice charged Snowden with violating the Espionage Act. The activities detailed in the documents included activity undertaken by the NSA and its main SIGINT partner the UK's Government Communications Headquarters (GCHQ), and with the SIGINT agencies of three former British colonies (Canada, Australia and New Zealand), as well as joint activities with similar agencies in other countries such as Germany's Bundesnachrichtendienst (BND).

In 2014, the Pew Research Center (Madden 2014) undertook the first of a number of surveys of US citizens' attitudes to Snowden and the documents he revealed. In particular, they asked questions such as whether respondents believed that Snowden's revelations had served or harmed the public good, whether Snowden should be prosecuted or not. Inspired by these surveys, a group of academics at Meiji University in Tokyo developed a pilot survey deployed in Japan and Spain using students as the primary research population (for reasons of resource constraints) and conducted follow-up interviews. The results of this pilot survey are presented in Murata, Adams and Lara Palma (2017). Having revised the survey after analysis it was deployed with the cooperation of local academics in Mexico, New Zealand, Spain and Sweden (in English), and in translation in Japan and Germany. With the aid of graduate students studying in Tokyo, it was also translated into Chinese and deployed in Taiwan (using traditional Chinese characters) and the People's Republic of China (using simplified Chinese characters). The choice of countries was a combination of deliberation and pragmatism. The following countries had suitable resources available: New Zealand was chosen as a Five Eyes member; Germany, Spain and Sweden provide an EU perspective; Mexico provides a US neighbouring perspective as well as a Spanish-influenced culture outside Spain; and Japan, China and Taiwan provide a South East Asian viewpoint.

This paper presents a comparison of the results from these different countries, to supplement the papers reporting on each country (China and Taiwan were presented in a single paper with a number of pair-wise comparisons included). References to the results from specific countries in the paper use three-letter codes: the People's Republic of China (the PRC (CHN)); Germany (DEU); Spain (ESP); Japan (JPN); Mexico (MXC); New Zealand (NZL); Sweden (SWE); Taiwan (TWN).

The surveys were mostly identical, barring translation, but did include some localisation. In particular, questions regarding respondents' awareness of the existence and role of the NSA, GCHQ, FBI and CIA were supplemented with questions regarding appropriate local equivalent agencies, such as the BND in Germany whose joint activities with the NSA were the subject of a great deal of press attention in that country.

### *1.1 Analytical Approaches*

Much of the data from the surveys consists of likert scale responses, usually on a four option scale. For all such questions, respondents could skip any question they did not wish to answer, either giving an explicit “I do not wish to answer this question” response, or by simply not selecting an answer. For those questions requesting an evaluation or opinion in response, a “no opinion” box was also shown separately (to the right hand side of the “opinion-exposing” answers to avoid the well-known problem of median answers). The answers varied depending on the question, including zero-to-positive indications from “none” to “a lot” or negative/positive evaluations “disagree a lot” through to “agree a lot”.

These likert scale responses are then analysed using continuous statistical approaches to answer questions about their relationship to respondents’ attributes or other answers. While not a universally accepted approach (Kuzon 1996) it is quite common and if done appropriately is accepted by many as a robust approach (Labowitz 1967; Norman 2010). In particular the use of likert scale responses in this paper are primarily used for explanatory purposes and to show relationships between attributes/responses, and are not used as numerical input data for further analyses.

The following abbreviations for statistical terms are used in presenting quantitative analyses: S.D.: Standard Deviation; M: Mean; S.E.: Standard Error; D: (average) Difference; CI: Confidence Interval; t: t-test result.

Sample sizes varied considerably between countries with New Zealand being the smallest at 61 and Germany next smallest at 76. Japan had by far the largest number of respondents at 1581, with the People’s Republic of China being next at 315. In this international comparison paper individual responses will usually be given as appropriate percentages, either of the total number of respondents for that country or of respondents to a particular question. In other cases an average score will be given based on a common assignment of ordinal values to likert scale responses.

### *1.2 Social Background of the Study Countries*

Most of the countries studied can be reasonably regarded as having had an authoritarian government within living memory, but most are now moderately democratic. Sweden and New Zealand have long democratic histories, albeit a colonial one in New Zealand. Japan and Germany have been regarded as democratic since the 50s. Taiwan, a colony of Japan from the late nineteenth century until the end of the second world war, was then subject to the military rule of the mainland China-exiled Kuomintang until 1987, with the first presidential election only happening in 1996. The PRC remains a one-party state. Spain was a military dictatorship from 1939 to 1975 with a transition to a democratic government through to 1981. Mexico was a one-party state from 1929 until the mid-80s. A gradual introduction of multi-party elections from the 70s through to the 90s finally led to the election of a president from an opposition party in 2000, although democracy there remains very limited and fragile. Most respondents (most being under 25) in most countries except the PRC, therefore, have not had direct personal experience of life under an authoritarian regime, although for many the residual effects of such regimes may well be significant.

### 1.3 Roadmap of Paper

This paper first considers respondents' general privacy attitudes, then knowledge of Snowden's revelations. Evaluation of Snowden's actions are then presented, followed by respondents' willingness to emulate Snowden or not. In most sections quantitative analysis of answers to one and two-sided likert-scale and yes/no questions is presented first, followed by qualitative analysis of free-text responses on open-ended questions asking for respondents' explanation of their answers on the other types of question. Some overall Conclusions and a Further Work section finish things off.

## 2 General Privacy Attitudes

### 2.1 Quantitative Analysis of Privacy Attitudes

Without being given a specific definition of the right to privacy, respondents were asked to evaluate both the importance of the right to privacy and their level of understanding of the right to privacy. Possible answers were "Prefer not to answer"; "Not important at all" (0); "Not so important" (1); "Important" (2); "Very important" (3) for the importance question and "Prefer not to answer"; "Don't understand at all" (0); "Hardly understand" (1); "Understand" (2); "Understand very well" (3) for the understanding question. Numeric interpretations for the following analysis are given in brackets. "Prefer not to answer" responses were ignored in statistical calculations.

Very few respondents in any country regarded the right as "Not important at all" (None in Germany, Mexico, New Zealand, Spain, Sweden, and Taiwan, one (of 315) in the PRC, five (of 1851) in Japan), and fewer than 10 "Not so important". There are some striking differences in the strength of the evaluation between "Important" and "Very important" as can be seen from Figure 1.

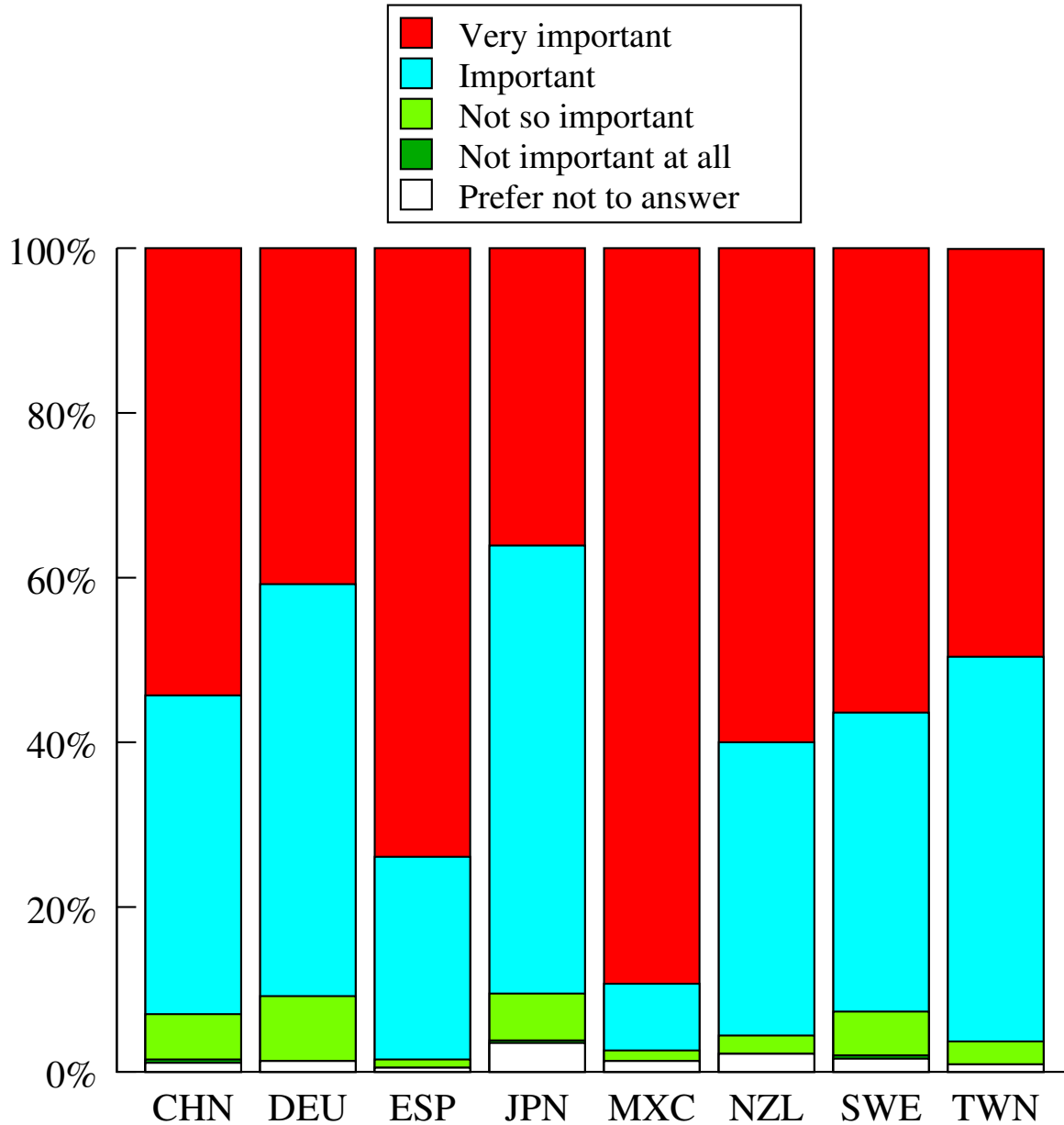
The mean values of respondents' answers on the importance of the right to privacy in each country were compared using a Welch test which indicated that there were at least some statistically significant differences at the one percent level (adjusted  $F(7, 346.806) = 58.769, p < 0.01$ ). Post-hoc multiple pair-wise comparisons were then undertaken to identify the pairs which had significant differences. As the answers within each country were not generally homogenous, Tamhane's T2 test was adopted instead of Tukey's test which requires homogeneity. The pairwise comparisons are shown in Table 1.

In addition to asking respondents for their evaluation of the importance of the right to privacy, they were asked to report their own perception of their understanding of that right ("Don't understand at all"; Hardly Understand; Understand; Understand very well). The results of their answers are shown in Figure 2.

Again, a Welch test on all countries' data showed that there existed some statistically significant differences at the one percent level ( $F(7, 330.588) = 71.439, p < 0.01$ ) The same pairwise analysis was thus applied to this question to identify which countries had statistically significant differences regarding respondents' understanding of the right to privacy, again by assigning numeric values to the answers, computing a mean value and comparing means. The results are shown in Table 2.

Since the Snowden revelations were related to government surveillance, the survey asked respondents to evaluate the threats to their privacy posed by for-profit, not-for-profit and governmental or-

**Figure 1: Is Your Right to Privacy Important?**



ganisations. Comparing the for-profit and government sector responses using paired samples t-tests, it was found that respondents from the PRC, Japan, and Taiwan, were statistically more concerned about for-profit than government invasion of privacy at  $p < 0.01$ , while in Sweden a difference was found that was significant at the five percent level. In the other countries there was no statistically significant difference in concerns between the two sectors at the five percent level. See Table 3 for details.

In addition to questions about various for-profit organisations and government agencies, respondents were asked to rate the threats to their privacy posed by non-profit organisations and individuals. A separate question asked them to rate the privacy risks posed by various technologies. In each of

**Table 1: Pairwise Country Comparison of Importance of Privacy (Difference of Means)**

	CHN	DEU	ESP	JPN	MXC	NZL	SWE
DEU	0.154	_____	_____	_____	_____	_____	_____
ESP	-0.246**	-0.400**	_____	_____	_____	_____	_____
JPN	0.179**	0.025	0.425**	_____	_____	_____	_____
MXC	-0.405**	-0.559**	-0.159**	-0.584**	_____	_____	_____
NZL	-0.104	0.258	0.142	-0.283*	0.322*	_____	_____
SWE	-0.037	-0.191	0.209**	-0.216**	0.368**	0.067	_____
TWN	0.015	-0.138	0.261**	-0.164	0.421**	0.119	0.052

\*\* ) significant difference at  $p < 0.01$       \* ) significant difference at  $p < 0.05$

Positive: top row country had a higher mean; Negative: the left column country had the higher mean

**Table 2: Pairwise Country Comparison of Understanding of Privacy (Difference of Means)**

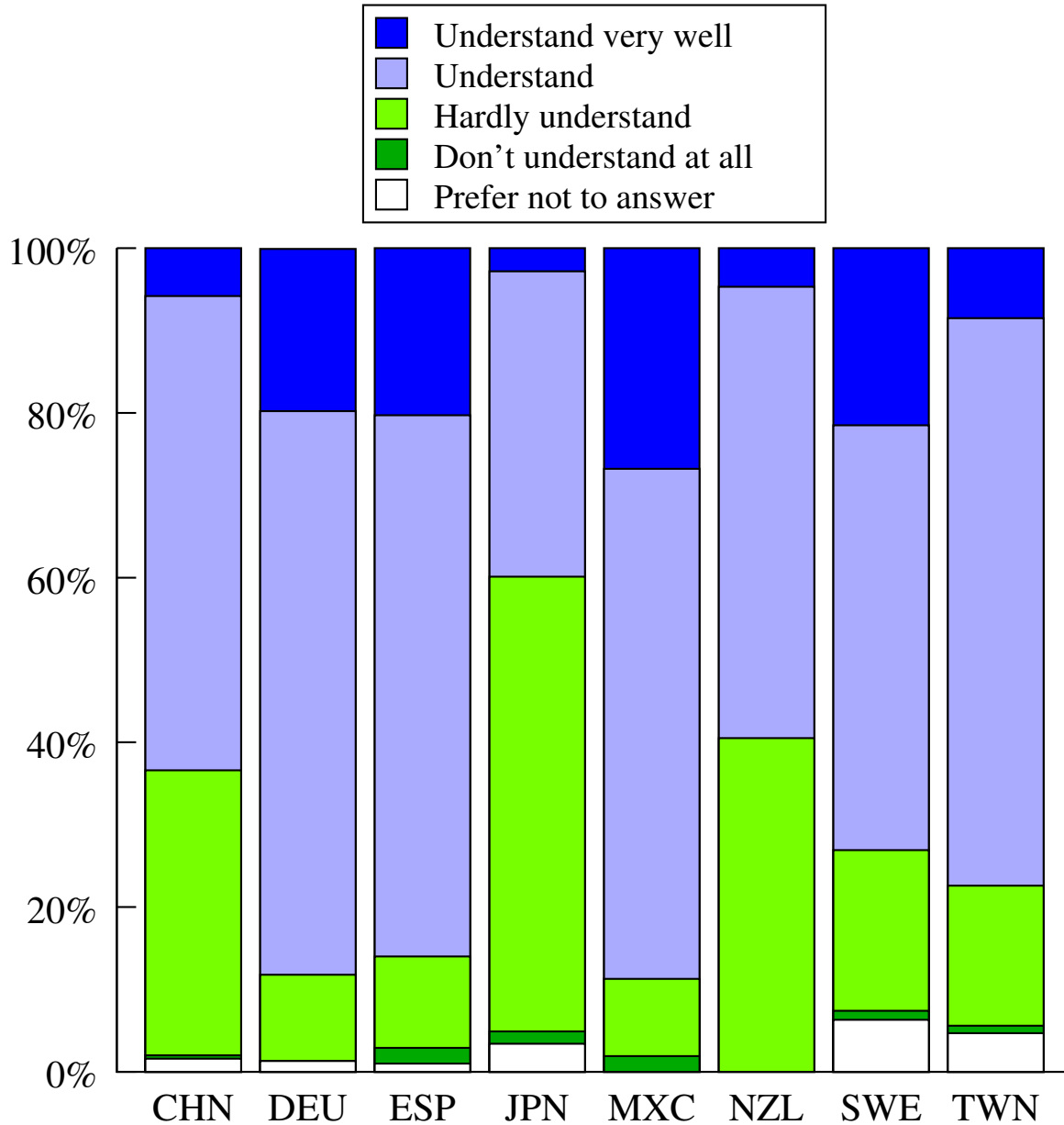
	CHN	DEU	ESP	JPN	MXC	NZL	SWE
DEU	-0.394**	_____	_____	_____	_____	_____	_____
ESP	-0.342**	0.040	_____	_____	_____	_____	_____
JPN	0.272**	0.665**	0.626**	_____	_____	_____	_____
MXC	-0.438**	-0.044	-0.084	-0.709**	_____	_____	_____
NZL	0.057	0.450**	0.411**	-0.215	0.595**	_____	_____
SWE	-0.300**	0.093	0.054	-0.572**	0.138	-0.357*	_____
TWN	-0.191	0.202	0.163	-0.463**	0.246*	-0.248	0.109

\*\* ) significant difference at  $p < 0.01$       \* ) significant difference at  $p < 0.05$

Positive: top row country had a higher mean; Negative: the left column country had the higher mean

the country-specific papers, these organisations and technologies are listed in ranks according to their mean privacy threat. In order to produce an overall ranking for these organisations/technologies a normalised mean score has been calculated for each country (taking the relative mean privacy risk amongst respondents for a particular organisation/technology and subtracting the mean score for all organisations/technologies respectively). This normalised mean has then been used to create the ranking of privacy threats across all countries for organisations in Table 4 and technologies in Table 5. It should be noted that while the same organisations were listed in all the surveys, there were some country-specific differences in technologies due to some countries making use of technology such as automated road tolls which are unknown in others. Table 5 lists only those 15 technologies asked about in all countries.

**Figure 2: How Well Do You Understand What the Right to Privacy Is?**



### 2.2 Qualitative Analysis of Privacy Attitudes

Respondents from the PRC and Taiwan mentioned personal security, the right to a private life, dignity, autonomy and freedom as key elements of the importance of the right to privacy. Financial risk was also a key response, particularly in Taiwan.

In Germany, the right to privacy was defined or regarded as important as both a fundamental right, a pre-requisite for personal freedom/freedom of choice, and a need for people to be able to maintain a personal space free from surveillance, with safety/security. This ties in with Germany's historic authoritarian regimes of Nazism and Communism. The importance of privacy is enshrined



**Table 3: Pairwise t-tests For-Profit (FP) and Government (G) Mean Privacy Concern**

		CHN	DEU	ESP	JPN	MXC	NZL	SWE	TWN
FP	M	2.097	2.033	1.974	1.710	1.624	1.769	1.790	1.976
	S.E.	0.037	0.063	0.044	0.018	0.054	0.105	0.049	0.048
G	M	1.351	1.935	1.867	1.185	1.706	1.753	1.673	1.716
	S.E.	0.050	0.093	0.062	0.847	0.073	0.137	0.067	0.071
Stats	D	0.746	0.099	0.107	0.526	-0.082	0.160	0.116	0.261
	S.E.	0.056	0.080	0.060	0.020	-0.071	0.121	0.053	0.071
	t	(273) 13.339	(73) 1.236	(202) 1.818	(1448) 27.756	(153) -1.161	(47) 0.129	(183) 2.185	(101) 3.680
	p	< 0.01	> 0.1	> 0.05	< 0.01	> 0.1	> 0.1	< 0.05	< 0.01

**Table 4: Ranked List of Means of Privacy Threat of Groups**

	CHN NM	DEU NM	ESP NM	JPN NM	MEX NM	NZL NM	SWE NM	TWN NM	Ave NM
Internet Co.	0.73	1.12	0.96	0.71	0.69	0.80	1.01	0.62	0.83
Telco./ ISP	0.65	0.48	0.59	0.32	0.43	0.31	0.52	0.38	0.46
Secret service	-0.38	0.61	0.47	-0.23	0.42	0.39	0.68	0.09	0.26
Software Co.	0.15	0.48	0.20	0.11	-0.08	0.06	0.36	0.03	0.16
Other for-profit	0.28	-0.09	0.05	0.19	-0.05	0.00	0.39	0.25	0.13
System Integ.	0.14	-0.04	-0.04	0.07	-0.14	-0.10	0.04	0.28	0.03
Law G. A.	-0.43	0.09	0.23	-0.30	0.38	0.06	0.16	-0.06	0.02
Hardware Co.	0.03	0.14	0.17	-0.01	0.00	-0.23	-0.22	-0.09	-0.03
Other G. A.	-0.38	0.10	0.05	-0.28	0.05	-0.03	-0.05	-0.06	-0.07
Unknown Individ.	-0.07	-0.36	-0.27	0.08	0.21	-0.19	-0.33	-0.04	-0.12
Part-known Individ.	-0.07	-0.42	-0.46	0.04	-0.27	-0.21	-0.39	-0.25	-0.25
Health org.	-0.16	-0.13	-0.46	-0.31	-0.46	-0.14	-0.50	-0.15	-0.29
Education inst.	0.12	-0.60	-0.47	-0.12	-0.37	-0.17	-0.62	-0.14	-0.30
Other non-profit	-0.26	-0.64	-0.55	-0.30	-0.31	-0.29	-0.52	-0.22	-0.39
Well-known Individ.	-0.43	-0.75	-0.65	-0.03	-0.49	-0.31	-0.62	-0.54	-0.48
All (M)	1.75	1.67	1.63	1.46	1.46	1.63	1.43	1.73	

in the current German constitution and the negative effects of government intrusion into the private lives of citizens is a key element in German education. The few who regarded the right to privacy as unimportant mostly regarded it as a lost cause in the modern era, or failed to see any harm to themselves from privacy invasions.

**Table 5: Ranked List of Means of Privacy Threat of Technologies**

	CHN NM	DEU NM	ESP NM	JPN NM	MEX NM	NZL NM	SWE NM	TWN NM	Ave NM
Smart phone	0.51	0.83	0.75	0.75	0.54	0.76	0.73	0.49	0.67
Social media services	0.57	0.39	0.24	0.40	0.17	0.67	0.69	0.56	0.46
Online shopping	0.64	0.46	0.45	0.39	0.32	0.26	0.31	0.53	0.42
GPS	0.16	0.70	0.37	0.53	0.56	0.46	0.21	0.28	0.41
Online payments	0.59	0.30	0.59	0.33	0.31	0.32	0.13	0.68	0.41
PC	0.29	0.28	0.27	0.67	0.26	0.62	0.25	0.27	0.36
Online auction	0.47	0.04	0.13	0.39	0.09	-0.16	-0.08	0.46	0.17
CCTV	-0.05	0.41	-0.04	0.10	0.13	0.33	0.06	0.11	0.13
Online games	0.18	0.00	0.03	0.15	-0.04	-0.23	-0.23	0.22	0.01
Smart card	-0.64	0.04	-0.40	-0.11	-0.12	-0.37	-0.14	-0.47	-0.28
RFID	-0.39	-0.35	-0.43	-0.34	-0.25	-0.39	-0.27	-0.38	-0.35
Personal body monitor	-0.45	-0.75	-0.56	-0.57	-0.06	-0.38	-0.39	-0.58	-0.47
Home vid. game	-0.60	-0.51	-0.29	-0.51	-0.32	-0.51	-0.49	-0.69	-0.49
Home Automation	-0.67	-0.56	-0.81	-0.64	-0.48	-0.45	-0.60	-0.52	-0.59
Portable vid. game	-0.69	-0.73	-0.42	-0.46	-0.35	-0.76	-0.70	-0.77	-0.61
All (M)	1.72	1.86	1.67	1.53	1.45	1.56	1.50	1.61	

As noted above, Japanese respondents had the lowest level of self-evaluation of their understanding of the right to privacy. The explanations they offered for the right and its importance were primarily drawn from specific ideas of damage from privacy invasion, such as monetary/physical/mental issues, both for themselves and for their associates (friends, family, co-workers) reflecting the more group-oriented attitudes to rights highlighted in other work on Japanese privacy concepts (Adams, Murata and Orito 2009; Luther and Radovic 2012). A small minority mentioned the right to privacy as important for the maintenance of civil liberties and personal autonomy.

In Mexico, the vast majority indicated that the right to privacy is important, and the key themes of their free-text responses included privacy as a fundamental right, concerns about misuse and the related concept that personal security requires good privacy (the argument put forward by Solove (2011)), the right to a personal life and the right to autonomy.

In New Zealand, control over the dissemination of personal information featured strongly, but not quite the same. Safety/Security concerns were also significant. A modest number identified it as a fundamental human right, with some links to its necessity as an enabling right for democracy. The sole respondent in New Zealand who felt that the right to privacy was unimportant felt that sharing and connectivity was more important than privacy.

Spanish respondents gave Freedom, personal choice (autonomy), security and control as their main reasons for valuing the right to privacy.

Amongst Swedish respondents key themes included privacy as a fundamental right, the right to a personal life, control/consent over the use of personal information. Other issues mentioned included personal security/safety and concern about misuse. A minority mentioned the necessity of privacy for well-being or the importance of privacy for democracy.

Most countries included respondents who regarded the right to privacy as unimportant. Some wrote that they had nothing to hide and therefore nothing to fear, a common line used by politicians about government surveillance (Solove 2011). Others regarded privacy as a failed concept in a world with Facebook and government databases.

### 3 Knowledge of Snowden’s Revelations

The survey first asked respondents if they had heard about Snowden’s revelations or not. If they indicated that they had, they were asked to evaluate their level of knowledge: “little”; “not much”; “a fair amount” or “a lot”. Tables 6 and 7 shows the original percentages and numbers for the separate questions. Figure 3 shows the spread of answers as a percentage of respondents (ignoring those who preferred not to answer), interpreting the original answer as “nothing” and recalculating the percentages for the second questions as appropriate.

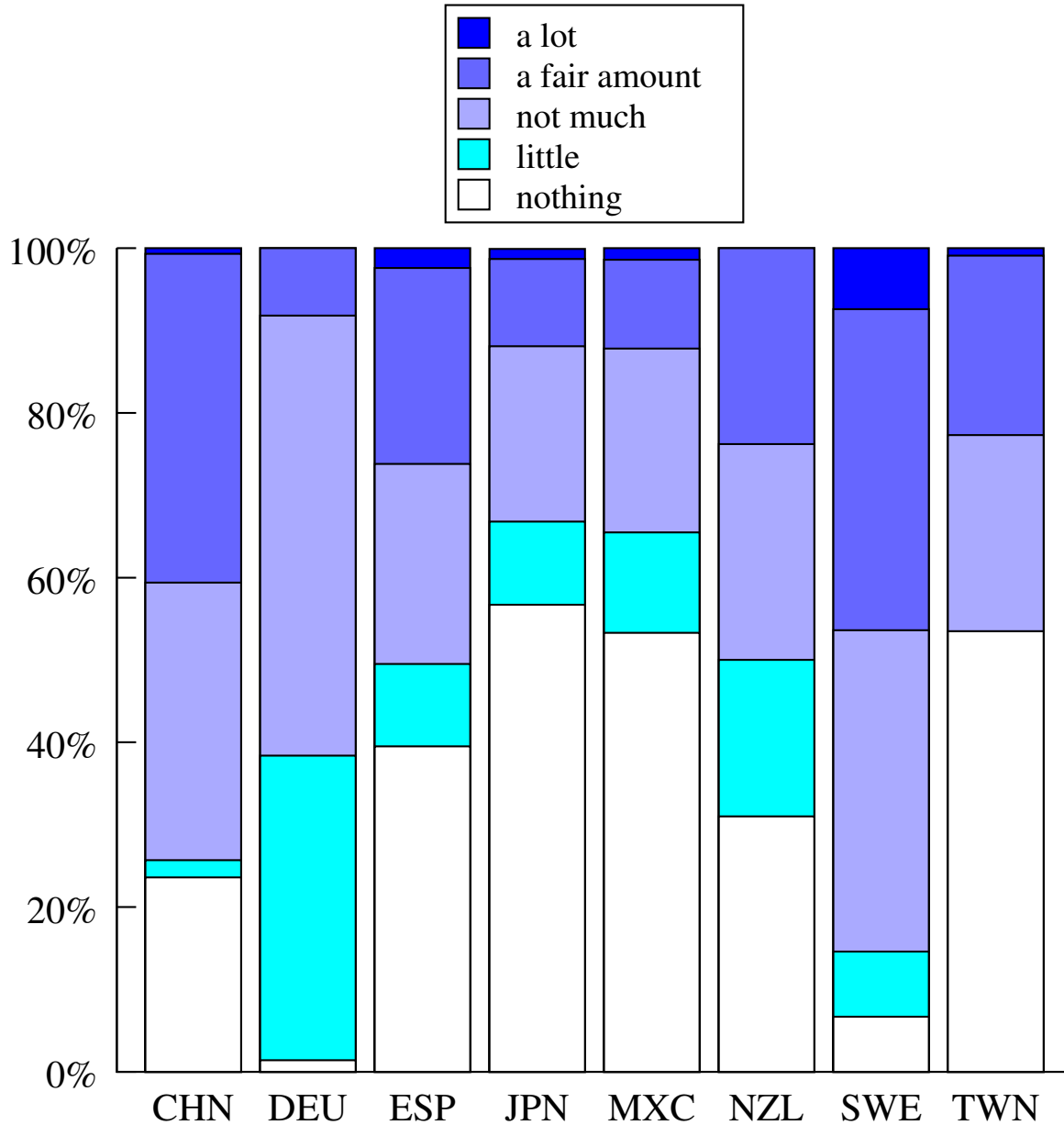
**Table 6: Had You Heard about Snowden’s Revelations?**

		CHN	DEU	ESP	JPN	MXC	NZL	SWE	TWN
yes	%	76.4	97.4	59.3	43.8	46.7	70.7	94.2	46.5
	No.	188	74	121	662	70	29	179	47
no	%	23.6	2.6	40.7	56.2	53.3	29.3	5.8	53.5
	No.	58	2	83	851	80	12	11	54

**Table 7: How Much Have You Heard about Snowden’s Revelations?**

		CHN	DEU	ESP	JPN	MXC	NZL	SWE	TWN
Little	%	2.7	36.5	15.8	23.5	26.1	27.6	9.0	0.0
	No.	5	27	19	156	18	8	16	0
Not much	%	44.1	55.4	42.5	49.3	47.8	37.9	37.9	51.1
	No.	82	41	51	327	33	11	67	24
A fair amount	%	52.2	8.1	38.3	24.4	23.2	34.5	44.1	46.8
	No.	97	6	46	162	16	10	78	22
A lot	%	1.1	0.0	3.3	2.7	2.9	0.0	9.0	2.1
	No.	2	0	4	18	2	0	16	1

**Figure 3: How much do they know about Snowden’s revelations?**



As can be seen from these various presentations, there is wide variation between countries on the self-reported knowledge of Snowden’s revelations amongst respondents. Germany and Sweden are outliers in having very few who had not heard about them at all (DEU: 2/76(2.6%); SWE 11/190 (5.8%)). Nowhere did more than 10% of the respondents report knowing “a lot” about the revelations, with Sweden having the largest such group (15/190 (7.9%)). It should be noted that not all respondents who indicated that they had heard about Snowden’s revelations answered the question regarding their amount of knowledge, for example 179 Swedish respondents replied that they had heard of the revelations but only 176 gave an evaluation of their level of knowledge.

## 4 Evaluation of Snowden’s Actions

In their 2014 survey of US citizens’ attitudes to the Snowden revelations the Pew Research Center reported that most young Americans regarded Snowden as having served the public interest (Desilver 2014): “57% of 18- to 29-year olds said the leaks have served rather than harmed the public interest...”. A similar question was asked in these surveys, with a slightly more fine-grained response set for serve/harm the public good “a lot” or “to an extent”. In addition, respondents were asked for their free-text answers to “Why do you think Snowden determined to make those revelations?”. In this section, first a quantitative analysis of the harm/help the public good question is presented, followed by a qualitative analysis of the free text answers.

### 4.1 Quantitative Analysis of Respondents’ Evaluation of Snowden’s Actions

Figure 4 shows the similar evaluation (at a more fine-grained response level) for these international surveys.

The evaluation of Snowden’s actions was allocated to a five point scale (-2=“Harmed it a lot”; -1=“Harmed it to some extent”; 0=“No opinion”; +1=“Served it to some extent”; +2=“Served it a lot”). These analyses considered only those who gave an evaluation (the survey also gave respondents two options for not expressing an opinion: “prefer not to answer” and not selecting any answer). The mean evaluation, given in Table 8, for all countries in these surveys was positive, though quite variable in the strength of that positivity (as can also be seen from figure 4).

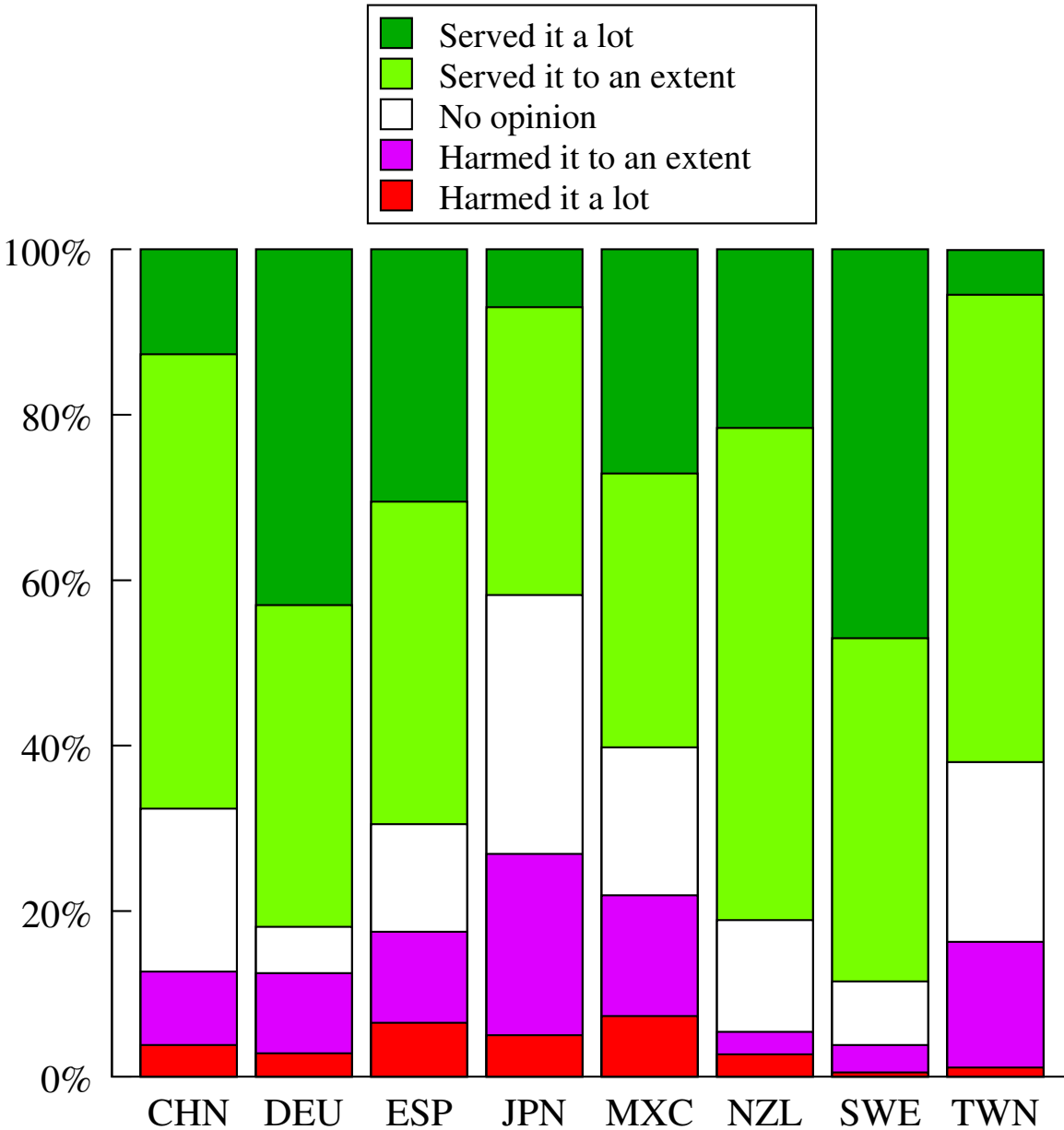
**Table 8: Mean scores for “Did Snowden Serve or Harm the Public Good?”**

	CHN	DEU	ESP	JPN	MXC	NZL	SWE	TWN
Mean	0.64	1.10	0.76	0.17	0.58	0.95	1.31	0.50
S.E.	0.065	0.125	0.026	0.026	0.100	0.139	0.059	0.089
N	213	72	200	1510	151	37	183	92
S.D.	0.945	1.064	1.187	1.010	1.235	0.848	0.796	0.858

As Levene’s test for homogeneity of variances indicated that the variance within each country was not demonstrably homogenous (Levene statistic (7, 2450) = 9.263,  $p < 0.01$ ), a Welch test was applied to these means to check for the existence of statistically significant differences. This showed that there is at least one pairwise comparison with a difference significant at the one percent level (adjusted  $F(7, 305.244) = 55.596$ ,  $p < 0.01$ ). Post-hoc pairwise comparisons, again using Tamhane’s T2 test, give the results shown in Table 9.

Sweden is clearly an outlier in this, having a higher mean evaluation score for Snowden’s actions than the PRC, Spain, Japan, Mexico and Taiwan, all at a one percent significance level. Japan is the outlier in the other direction, having a lower mean than all the other countries, at a five percent significance level compared to Taiwan and a one percent significance level for all the others. This fits with an intuitive reading of Figure 4.

Figure 4: Did Snowden Serve or Harm the Public Good?



#### 4.2 Qualitative Analysis of Respondents' Evaluation of Snowden's Actions

Respondents in all surveys were asked why they believed that Snowden had made his revelations. Very few in any country believed he had done so for his own benefit or on behalf of a foreign power. Those who did indicate such self-interest varied between ascribing financial gain or self-aggrandisement. Many repeated Snowden's own assertions that he had made in the few direct press interviews he had given before the survey was conducted (which was after the release of the documentary *Citizenfour* (Poitras and Wilutzky 2014) but before the fictionalised account of *Snowden* (Borman, Kopeloff, Schulz-Deyle, Sulichin and Stone 2016)). These included: informing US citizens, and people world-

**Table 9: Pairwise Country Comparison of Evaluation of Snowden’s Actions (Difference of Means)**

	CHN	DEU	ESP	JPN	MXC	NZL	SWE
DEU	-0.459*	_____	_____	_____	_____	_____	_____
ESP	-0.122	0.337	_____	_____	_____	_____	_____
JPN	0.469**	0.928**	.590**	_____	_____	_____	_____
MXC	0.056	0.514*	0.177	-0.413**	_____	_____	_____
NZL	-0.307	0.151	-0.186	-0.776**	-0.363	_____	_____
SWE	-0.673**	-0.214	-0.551**	-1.142**	-0.729**	-0.366	_____
TWN	0.138	0.597**	0.260	-0.330*	0.083	0.446	0.811**

\*\* ) significant difference at  $p < 0.01$       \* ) significant difference at  $p < 0.05$

Positive: top row country had a higher mean; Negative: the left column country had the higher mean

wide, of the threats to their privacy posed by the NSA’s surveillance; following an ethical imperative; and defending democracy.

## 5 The Impact of Snowden’s Revelations

In terms of their reactions to Snowden’s revelations, a majority of respondents in all countries except Japan and Taiwan reported that they have changed their communication practices after hearing about Snowden (among those who had heard about them). Even in Taiwan, which had a fairly small sample size, approximately half (22 out of 47) of the respondents who had heard about Snowden’s revelations had changed their practices. In Japan, by contrast, only a quarter (23.41%; 155 of 662) who had heard about Snowden’s revelations reported that they had consciously changed their communication practices.

A Chi-squared test confirms that Japan differs from all the other countries at a  $p < 0.01$  level on this point (see Table 10). These results from Japan are more in line with those of the Pew Research Center regarding Americans’ reactions to Snowden. In that survey of a broadly representative group of Americans only 34% reported changing their online communications behaviour in response to the Snowden revelations (Rainie and Madden 2015).

Given that Snowden’s revelations concerned the fact that government secret service agencies (particularly of the US but also of a number of other countries in the survey) were engaged in mass surveillance of their citizens and residents, the relative concern of respondents who had heard about Snowden’s revelation before the survey (the “Heard Group”) and those who had not (the “not Heard Group”) regarding the privacy threats from secret services and law enforcement agencies was considered. In Germany, only 1 of 73 respondents had not heard of Snowden’s revelations before taking the survey and so this comparison could not be performed. Only in Japan was a statistically significant corre-

**Table 10: Result of Chi-square test about Reactions in Web Communication**

Country	Changed?		Statistics		
	Have changed	Haven't changed	$\chi^2(1)$	p	$\phi$
JPN	155	489			
CHN	112	73	87.557	<.01	-0.325 (p<0.01)
DEU	45	28	46.027	<.01	-0.253 (p<0.01)
ESP	69	48	58.081	<.01	-0.276 (p<0.01)
MXC	49	18	71.409	<.01	-0.317 (p<0.01)
NZL	16	12	15.473	<.01	-0.152 (p<0.01)
SWE	101	71	75.709	<.01	-0.305 (p<0.01)
TWN	22	24	12.706	<.01	-0.136 (p<0.01)

lation detected between knowledge of Snowden's revelation and privacy concern about government agencies.

**Note for reviewer: Analysis included here in full for review purposes. If published, the final paper will refer readers to the already-accepted-for-publication Japanese country analysis paper for the details.**

(a) Those who had heard about Snowden's revelations reported feeling more at risk of privacy invasion in their online activity than the group who had not heard. The average score of answers to Q6 (Do you feel that your use of the Internet involves taking risks with your privacy?) from the "Heard" group (2.06, S.E.=.026) exceeded that of the "not Heard" group (1.95, S.E.=.021), with a statistically significant difference at the one percent level (D=0.11, 95% CI [0.042, 0.170];  $t(1407.717) = 3.322$ ,  $p < 0.01$ ).

(b) Respondents in the "Heard" group were on average more concerned about privacy risk from government agencies than those in the "not Heard" group, all at a one percent significance level as shown below:

- *Law Enforcement Government Agencies*

Heard: M=1.23, S.E.=0.038; Not Heard: M=1.10, S.E.=0.031; D=0.131, 95% CI [0.038, 0.230];  $t(1205.34) = 2.656$ ;  $p < 0.01$

- *Secret Service Government Agencies*

Heard: M=1.31, S.E.=0.039; Not Heard: M=1.17, S.E.=0.033; D=0.140, 95% CI [0.040, 0.243];  $t(1214.851) = 2.748$ ;  $p < 0.01$



- *Other Government Agencies*

Heard: M=1.26, S.E.=0.037; Not Heard: M=1.13, S.E.=0.031; D=0.130, 95% CI [0.027, 0.227];  
 $t(1213.451) = 2.651; p < 0.01$

Given that Japan was also an outlier in the low percentage of respondents who had heard about Snowden’s revelations before the survey, this is perhaps indicative of a correlation between those who are more concerned about government surveillance being more sensitive to news concerning such activities than a causative effect of Snowden’s revelations generating privacy concern.

## 6 Willingness to Emulate Snowden’s Actions

Although purely hypothetical questions are of course difficult for respondents to answer and when faced with the reality, many might choose differently, the following questions help us to build a view of the attitudes to state surveillance amongst young people: “If you were an American and were faced with a similar situation to Snowden, do you think you would do what he did?” (QUS) and “If you were faced with a similar situation to Snowden in your home country, i.e. you found out that your own government’s intelligence agency was conducting similar operations to those of the NSA and GCHQ, would you, as a citizen or a do what he did?” (QL) . In particular they provide an interesting point of comparison between countries as to how strongly young people feel about such government activities.

### 6.1 Quantitative Analysis of Respondents’ Willingness to Follow Snowden

The basic results for the US and local hypotheticals are shown in Table 11 and Figure 5.

**Table 11: “yes”% to QUS/QL**

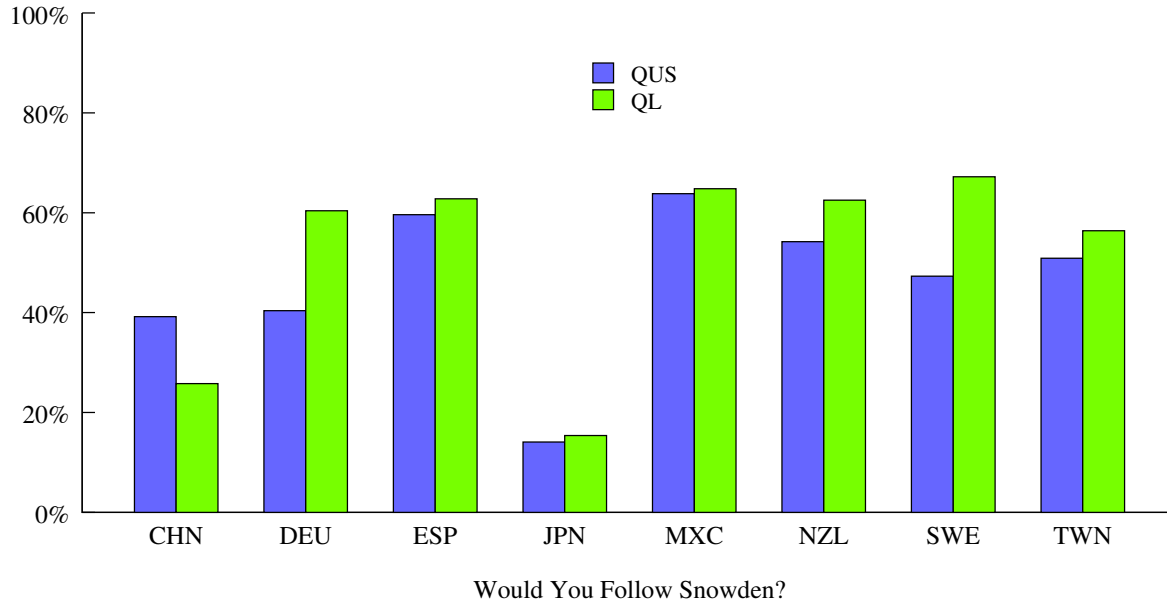
	CHN	DEU	ESP	JPN	MXC	NZL	SWE	TWN
QUS	39.2	40.4	59.6	14.1	63.8	54.2	47.3	50.9
QL	25.8	60.4	62.8	15.4	64.8	62.5	67.2	56.4

For the US hypothetical, a significant majority (at the one percent level) of Mexican respondents and (at the five percent level) of Spanish respondents indicated they would emulate Snowden. Among Chinese and Japanese respondents a significant majority (at the one percent level) indicated that they would *not* emulate Snowden. In all other countries there was no statistically significant majority either way.

These results were mirrored in the local hypothetical variants (for this one the Spanish tendency to emulate Snowden had a higher one percent significant level as well) except that in the case of Sweden there was also a statistically significant majority (at the one percent level) in favour of emulating Snowden if faced with a Swedish equivalent scenario.

For each country, the answers to these two questions were checked for consistency using a Chi-square test. In most countries there was no statistical difference between the answers to the two questions. However, in Sweden and the PRC there was a difference significant at the one percent level, in

**Figure 5: “yes”% to QUS/QL**



opposite directions. In Sweden, respondents were more likely to emulate Snowden in the hypothetical Swedish case (Chi-square test for independence QUS/QL: Chi-square (1) = 10.656,  $p < 0.01$ ). In the PRC, respondents were less likely to emulate Snowden in the hypothetical Chinese case (Chi-square (1) = 7.314,  $p < 0.01$ ).

In addition to the relationships between willingness to emulate Snowden in the US or local situation, the relationship between respondent’s evaluation of Snowden’s actions and their willingness to emulate him in the hypothetical US or local situations was also evaluated. The numeric score assigned to evaluations of Snowden’s actions given in section 4 was again used to provide quantitative analysis.

In all countries, the mean evaluation of Snowden’s actions among those who indicated that they would emulate Snowden was more positive than among those who indicated that they would not (in both the US and local hypothetical versions). However, in only a few cases was the difference statistically significant (according to a t-test using the answer to the evaluation of Snowden’s actions as the test variable and the answer to the emulation question as the grouping). For the US hypothetical Spanish respondents had a significant correlation between their evaluation of Snowden’s actions and their willingness to emulate him ( $p < 0.05$ ). Japanese, Mexican and Swedish respondents were correlated at the one percent significance level ( $p < 0.01$ ). For the local hypothetical Spain again showed a five percent significance of correlation ( $p < 0.05$ ), while Japan, Mexico and Sweden had a correlation significant at the one percent level ( $p < 0.01$ ). The sample sizes and distributions made tests on the German, Taiwanese and New Zealander respondents uncertain.

## 6.2 *Qualitative Analysis of Respondents' Willingness to Follow Snowden*

Given the generally positive view of Snowden's reasons for making his revelations and of the impact on the public good, free-text responses to the questions asking for explanations as to why respondents would follow Snowden's lead or not are interesting.

In most cases respondents who would not follow Snowden but who had a positive view of his intent and the results of his actions admitted that they would not do so out of fear. This ties in with the results in the Chinese and Swedish cases, where there is a statistically significant difference between willingness to emulate in the US and the local variants of the question. Chinese respondents were more fearful of the reaction of their own government than the US. In particular, their fear that not only would they, but also their family and friends, be subject to severe punishment, was mentioned by many respondents. In Sweden, however, respondents placed far more trust in the Swedish government to uphold their human rights in becoming whistleblowers, than in a just response from the US government. The unwillingness of Japanese respondents to emulate Snowden was explained by their lack of willingness to jeopardise their own comfortable situation, even if they believed that it was the ethical course of action.

A small number across different countries mentioned weighing personal honour more strongly against a public benefit — for example giving weight to an oath of confidentiality that they felt Snowden would have had to take before working at the NSA.

Those who indicated that they would follow Snowden gave similar answers to their indicated belief about Snowden's reasons: informing people about government abuse of power, warning people about their lack of privacy, maintaining democracy, ethical imperatives, etc.

## 7 **Conclusions**

Government are fairly well trusted (and statistically significantly more trusted than the private sector in respect of privacy) in the three South-East Asian countries (Japan, the PRC and Taiwan), while in all the others there was no significant difference. This is an interesting result given that the PRC is an authoritarian regime, Taiwan has only recently moved into a relatively democratic system and Japan has been relatively democratic for over half a century. See Table 3 for the details — note that this Table reports levels of concern, so a lower mean indicates a higher level of trust.

Information and understanding about Snowden's revelations varies considerably with respondents in the PRC, Germany and Sweden indicating a higher level of knowledge than elsewhere. In the PRC, where much of the news is state controlled or heavily state influenced, it seems likely that the government there sees the revelations about US surveillance of its own (and others') citizens as a useful normalising factor for its own online surveillance and censorship regime. The revelations that the mobile phone of the German Chancellor (head of government) had been under surveillance by the US, an allied country, is one of the reasons why the Snowden revelations have received so much press coverage there. Both the former Nazi and East German (GDR) histories of heavy use of surveillance to oppress the population have also led to strong distrust of government surveillance systems (Flaherty

1989). Despite its democratic history Sweden has a history of public scepticism towards government dataveillance (Flaherty 1989; Lundin 2015), while the high profile criminal court case against Julian Assange, head of the Wikileaks organisation which published the confidential US government material released by Chelsea Manning, has probably increased press interest in the similar issue of Snowden's revelations. It appears that the lack and poor quality of information about Snowden available in Japan makes people unconsciously more worried about their privacy but unable to do anything about those concerns.

The university students surveyed in this project were generally sympathetic to Snowden, believing his motives to be to serve the public good and that his actions had indeed served it. While many in most countries would be willing to follow Snowden, there were significant differences, explained in free-text answers mostly by a combination of generally willingness to sacrifice one's own interests compared to the expected reaction of governments.

## **8 Further Work**

These surveys represent a significant international snapshot of attitudes to privacy and surveillance across a broad range of countries. Further statistical analyses of these results is expected to demonstrate other interesting factors.

In addition to the privacy attitudes analysed in this and the country-specific papers, there are further useful studies that can be done with this aspect, some of which are in process.

In addition, these papers have so far only looked at the results regarding Snowden's actions whereas the full survey also asked about Chelsea Manning's release of US military and diplomatic information via Wikileaks.

Once the core research team has conducted their analyses, the raw survey data will be made available online for other researchers to investigate.

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