

Impact of Culture on Data Privacy and Security in Online Learning Systems in Japan – A Survey

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ABSTRACT

Data privacy protection and security are critical challenges that affect online learning systems in grade school as well as higher education globally. This is especially important as online learning systems often hold valuable records which may have a negative effect on a student's life if not secured properly or leaked to malicious actors. It is important to analyze how students interact with online learning systems and the perceptions they have regarding data privacy and security to build online learning systems that properly protect the students' records and data as well as improve online learning systems that are currently in use. Cultural norms in different parts of the world, such as the East Asian nation of Japan, may also affect the perceptions of students in such regions regarding data privacy. The objective of this paper is to explore how Japanese cultural values impact student perceptions of data privacy and security in the context of online learning systems to improve data privacy practices and security measures within the cultural context of Japan by reviewing related literature and utilizing a quantitative survey with optional short response with a small sample of university students from Japan being recruited through convenience sampling.

General Terms

Security, Data Privacy, Human Factors, Education, Cultural Studies

Keywords

Data Privacy, Japan, Cultural Values, Online Learning Systems, Information Security, Personal Data Protection, Student Perceptions, Higher Education, Survey Research

1. INTRODUCTION

A cultural norm that is very prevalent in the Asia-Pacific Region today is Collectivism. Collectivism is the idea that the collective is greater than the individual and that the individual should conform rather than stand out, which contrasts with Individualism which argues the opposite. Collectivism has been a core component of several philosophies originating in the Far East, including Confucianism and Buddhism, which encourages individuals to lose their individuality and abstract from their desires [1]. Another cultural norm that affects cultures in the Far East is filial piety, a concept that advocates a set of moral norms that encourage respect and care for one's parents and elders [2]. This is a concept that is associated with Confucianism and is very prevalent in Eastern Asia. The concept of 'Confucian Humility' is also a deeply rooted virtue in East Asian societies [3]. In Japan, it is valued as a strategy to maintain social harmony and research through implicit humility measurement with Japanese undergraduate students has shown that it is a trait in positive psychology linked to personal well-being, especially in collectivist cultures Moreso than Individualistic cultures, such as that of the United States [4].

The degree that these cultural norms affect societies in the Far East also is different from country to country and among administrative units in those countries. For example, the differences between cultural norms and traditions of China and Japan are largely due to history and economic growth, which impacted China first due to its much older history and then Japan, which was influenced by Chinese practices [5]. In many aspects China has a greater emphasis on harmony, rooted in yin-yang philosophy, while in certain aspects, Japan prioritizes frugality and simplicity due to western influences. Another example is how Koreans consider humility to be a crucial aspect of excellent character, to a greater extent compared to the Chinese and Japanese [3]. Within Japan, there are regional differences in Collectivism, with northern and central prefectures being more collectivist, while urbanized areas and the frontier region of Hokkaido had more individualist cultures, although still more collectivist than Western nations like the United States [6].

Modern geopolitical problems that affect the countries of the Far East also affect cultural norms and influence perceptions related to data privacy. For example, South Korea and Japan have aging populations with declining birth rates, which is projected to have an impact on the economies of those countries and cause a shortage of workers needed to sustain many industries [7]. This problem is also leading to a shortage of Information Technology and Cybersecurity professionals in those countries. This shortage of IT professionals is one of the reasons why Japan has been left behind in many ways compared to other countries, such as flawed web applications and older website designs [9]. While this is not always something that affects data security, as there are cultural influences, the shortage of Technology workers certainly does not help. To combat this, the Japanese government is setting up Vocational Schools to reduce the shortage of Cybersecurity professionals in the country [8].

2. RELATED WORK

There are many articles that explore the impact of Japanese culture on Data Privacy. The first article is "The Japanese sense of Information Privacy" by Adams, Murata, and Orito (2009) and concludes that there are significant differences in Western and Japanese conceptions of privacy due to collectivist elements in Japanese society [10]. For examples, there is greater societal trust in Japanese institutions compared to western institutions, thus enforcement of modern privacy laws in Japan is less stringent. Murata and Orito also have written a similar article called "Privacy Protection in Japan: Cultural Influence on the Universal Value" that argues that western-centric understandings of privacy as an individual right do not fully align with Japanese perspectives [11]. Relating to that concept, "The Right to be Forgotten—The EU and Asia Pacific Experience (Australia, Indonesia, Japan and Singapore)" by Marco Rizzi explores how those differences in understandings of privacy as an individual right influence legal policies across

several countries pertaining to the right of the individual to have their data completely erased [12]. The article "Human-centric Data Protection Laws and Policies: A Lesson from Japan" by Shohei Yamaguchi, analyzes Japan's data protection framework and presents it as a model of human-centric legal policy that other countries can use as an example and learn from [13]. According to the article, Japan's laws show a data protection model that seeks harmony between individual privacy and collective good, reflecting the author's collectivist perspective and the greater trust in Japanese institutions. The article "Perspectives on Privacy, Information Technology, and Company/Governmental Surveillance in Japan" by Catherine Luther and Ivanka Radovic also highlights how the Western idea of privacy as an individual right is not deeply rooted in Japanese tradition [14].

There is also related literature that focuses on perceptions regarding data privacy in the context of learning systems. The article "Privacy Concerns of Student Data Shared with Instructors in an Online Learning Management System" by Monika Blue Kwapisz, Avanya Kohli, and Prashanth Rajivan explores privacy concerns related to student data shared with instructors in online learning systems in the United States and how addressing these concerns requires a human-centered-design approach [16]. Another article, "Young Children's Use of Personalized Technologies: Insights from Teachers and Digital Software Designers in Japan" by Natalia Kucirkova, Yuichi Toda, and Rosie Flewitt, investigates how personalized technologies are integrated into early childhood learning in Japan and focuses on the cultural contexts that influence the usage of such technologies and privacy considerations that arise [15]. The study highlights that there is a need for more robust legal policies that are tailored to educational technologies regarding data privacy and how Japan's current data protection framework is lacking. The article "The Privacy Consciousness of Undergraduate Students: Comparison Between Turkey and Japan" by Dilek Öztürk, Gülcan Eyüboğlu, Zehra Göçmen Baykara, Naoki Tabata, and Hirokazu Sato, uses surveys and interviews to compare how cultural contexts shapes the attitudes of undergraduate students in Turkey and Japan regarding privacy consciousness [16]. The article notes how Turkish students are more open to sharing personal information on social media and other online systems despite being more distrustful of institutions while Japanese students tend to adopt more privacy protective measures. A similar article, "Students' Perception Toward Personal Information and Privacy Disclosure in E-Learning" by Fang Yang and Shudong Wang, is a study that examines the perceptions of students regarding privacy in online learning systems from East Asian countries [18]. This study revealed that most of the students had a nuanced perspective regarding privacy online, as they had genuine concerns regarding the protection of their data but supported their teachers using such data for educational purposes, reflecting the greater societal trust of institutions in East Asian cultures.

3. PROPOSED APPROACH

The proposed approach and methodology for the research was to utilize a quantitative survey that had an optional short response section with a small sample of university students (<10) from Japan that were recruited via convenience sampling from through the author's connections at Sophia University in Tokyo, Japan. This will allow for better insights on how Japanese cultural values impact student perceptions of data privacy and security in the context of online learning systems. This data could be utilized to improve data privacy practices and security measures in online learning systems in Japan.

4. EVALUATION RESULTS

The survey was conducted between March 19 and April 22, 2025. The results of the survey provide insights into the usage of online learning platforms and privacy concerns that the students had regarding those online learning platforms. The respondents were between 18 and 27, with a majority being female and having a wide range of fields of study, including Humanities, Social Sciences, Engineering, etc. The respondents reported Moodle as the most commonly used online learning platform, followed by zoom. Most respondents expressed some concern regarding data security, with one reporting a previous privacy issue. The data from the survey revealed that Japanese cultural values, such as collectivism, influenced trust in online systems, with many respondents agreeing or strongly agreeing that those values shape their expectations. Despite frequent use of online platforms (daily or weekly), a significant portion of the respondents expressed that they prioritize privacy when interacting online. Here are the exact survey evaluation results:

Demographics (Q3 & Q4):

Age (Q3):

- 18-20: 50.0%
- 21-23: 16.7%
- 27 or older: 33.3%

Gender (Q4):

- Female: 75.0%
- Male: 25.0%

Field of Study (Q5):

- Humanities: 25.0%
- Social Sciences: 25.0%
- Engineering: 12.5%
- Other: 37.5%

Academic Year/Level (Q6):

- 2nd year undergraduate: 37.5%
- 3rd year undergraduate: 14.3%
- 4th year undergraduate: 12.5%
- Graduate student: 35.7%

Evaluations on Online Learning System Usage (Q7 & Q9):

Frequency of Online Learning System Usage (Q7):

- Daily: 62.5%
- Weekly: 12.5%
- Rarely: 12.5%
- Other: 12.5%

Platforms Used (Q9):

- Moodle: 75.0%
- Zoom: 25.0%

Data Privacy Concerns regarding Online Learning Systems (Q12 & Q13):

Concern level regarding data privacy in Online Learning Systems (Q12):

- Somewhat concerned: 57.1%

- Neutral: 14.3%
- Not very concerned: 28.6%

Personal Experience with Privacy Issues (Q13):

- No: 71.4%
- Yes: 28.6%

Cultural Influence and Privacy Expectations (Q15 & Q16):

Cultural Influence impacts privacy expectations (Q15):

- Agree: 71.4%
- Neutral: 14.3%
- Disagree: 14.3%

Privacy Importance (Q16):

- Very important: 42.9%
- Somewhat important: 42.9%
- Less important: 14.3%

The optional short response question that was included in the survey was ‘In your opinion, how can online learning systems better address data privacy concerns in Japan?’ (Q18) (Japanese: オンライン学習システムは、日本のデータプライバシーに関する懸念に対処するために、どのように改善できると思いますか?). The response from the student who answered this question was ‘氏名を教師のみに閲覧させるなど。同じ学科の人なら互いにおおく知っていると思うが、他学科/初対面だと氏名は知られたくない’. An English translation of their response is that the student would like name visibility in online learning systems restricted to instructors only since the student believed people in their department know each other well and the student would not like their name to be known to people from other departments or strangers.

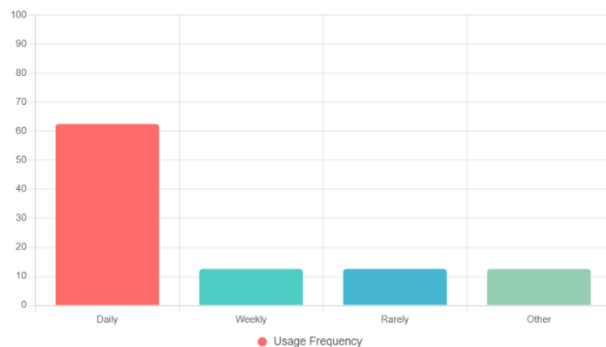


Fig 1: This chart shows how often respondents use online learning platforms

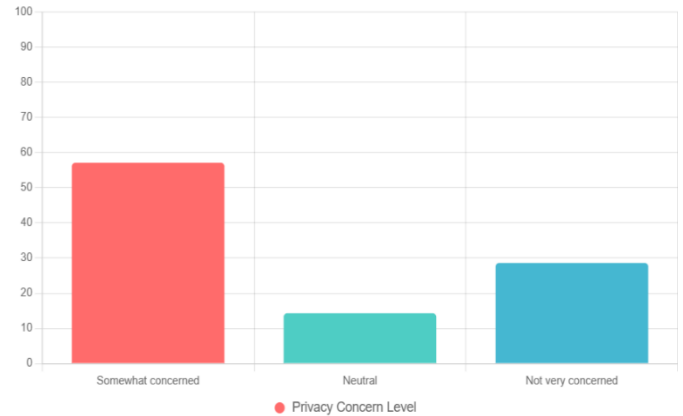


Fig 2: This chart illustrates the respondents' level of concern about data privacy in online learning systems

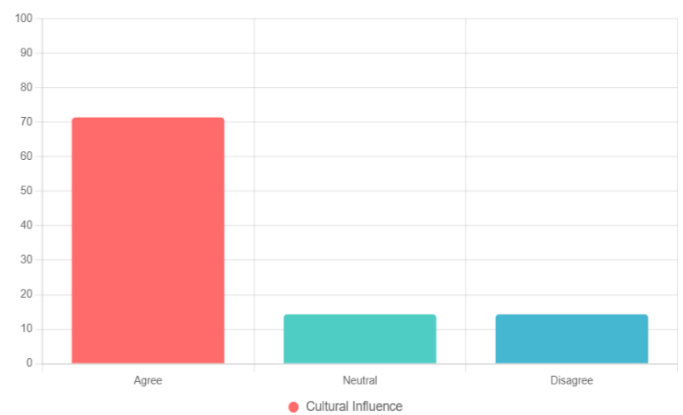


Fig 3: This chart depicts the extent to which respondents agree that Japanese cultural values impact their privacy expectations

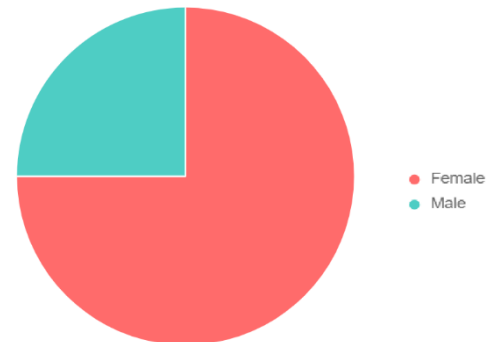


Fig 4: This chart shows the gender breakdown of the respondents

5. CONCLUSION & FUTURE WORK

The data that I collected via my research study explored the impact of Japanese culture on data privacy and security in online learning systems, particularly among young college students. The main contribution from this survey is revealing that in a small sample of university-level students, a large percentage from various age groups and academic levels seem to be somewhat concerned about data privacy in online learning systems and a majority agree that Japanese culture influences their privacy expectations in those learning systems. For future research on this topic, a larger-scale survey with a larger sample size could be conducted. This would allow for more conclusive results. A greater number of qualitative methods could also be

employed to get better insights into student perceptions. Policy recommendations could be created for educational institutions and policymakers in Japan to improve data security practices and online learning systems based off the findings.

6. REFERENCES

- [1] Roland, Gérard. "The Deep Historical Roots of Modern Culture: A Comparative Perspective." Working paper, University of California, Berkeley, 2010. <https://eml.berkeley.edu/~groland/pubs/Deephistoricalroots.pdf>.
- [2] Wang, Shudong, Fang Yang, and Minghui Xu. "A Cross-Cultural Study of Filial Piety and Palliative Care Knowledge: Moderating Effect of Culture and Universality of Filial Piety." *Frontiers in Psychology* 12 (2021): 787724. <https://doi.org/10.3389/fpsyg.2021.787724>.
- [3] Kim, Hyekyung. "Unveiling the True Nature of Confucian Humility in the Modern Context - A Methodological Proposal for Interdisciplinary Research Combining Cultural Psychology and East Asian Philosophy." *PhilArchive*, 2023. <https://philarchive.org/archive/KIMUTT-2>.
- [4] Nagai, Hayato, and Masako Ishii-Kuntz. "Humility and Life Satisfaction in Japan." *Sociological Studies* 22, no. 1 (2022): 61–71. https://www.jstage.jst.go.jp/article/shes/22/1/22_61/_pdf.
- [5] Li, Xiaowei. "A Comparative Study of Chinese and Japanese Folk Culture." *SHS Web of Conferences* 167 (2023): 02008. <https://doi.org/10.1051/shsconf/202316702008>.
- [6] Yamawaki, Natsuho. "Within-Culture Variations of Collectivism in Japan." *Journal of Cross-Cultural Psychology* 43, no. 8 (2011): 1191–1204. <https://doi.org/10.1177/0022022111428171>.
- [7] Kim, Hye Won, and Seockhoon Chung. "Demographic Transition in South Korea: Implications of Falling Birth Rates." *Clinical and Experimental Pediatrics* 67, no. 2 (2024): 67–74. <https://doi.org/10.3345/cep.2023.01599>.
- [8] Okubo, Hironobu. "Consideration of Issues and Countermeasures to Acquire Core Human Resources through Vocational Education to Improve Local Information Security in Japan." *Journal of Physics: Conference Series* 1516, no. 1 (2020): 012046. <https://doi.org/10.1088/1742-6596/1516/1/012046>.
- [9] Missbichler, Mirijam. "Why Japanese Websites Look So Different." *Medium*, February 23, 2023. <https://medium.com/@mirijam.missbichler/why-japanese-websites-look-so-different-2c7273e8be1e>.
- [10] Adams, Andrew A., Kiyoshi Murata, and Yohko Orito. "The Japanese Sense of Information Privacy." *AI & Society* 24, no. 4 (2009): 327–41. <https://doi.org/10.1007/s00146-009-0228-z>.
- [11] Orito, Yohko, and Kiyoshi Murata. "Privacy Protection in Japan: Cultural Influence on the Universal Value." *ResearchGate*, September 1, 2005. https://www.researchgate.net/publication/260021544_Privacy_Protection_in_Japan_Cultural_Influence_on_the_Universal_Value.
- [12] Rizzi, Marco. "The Right to be Forgotten—The EU and Asia Pacific Experience (Australia, Indonesia, Japan and Singapore)." *SSRN Electronic Journal*, 2019. <https://doi.org/10.2139/ssrn.3320860>.
- [13] Yamaguchi, Shohei. "Human-centric Data Protection Laws and Policies: A Lesson from Japan." *Computer Law & Security Review* 39 (2020): 105432. <https://doi.org/10.1016/j.clsr.2020.105432>.
- [14] Luther, Catherine, and Ivanka Radovic. "Perspectives on Privacy, Information Technology, and Company/Governmental Surveillance in Japan." *Studies in Social Sciences* 10, no. 3 (2012): 243–67. <https://doi.org/10.24908/ss.v10i3/4.4271>.
- [15] Kucirkova, Natalia, Yuichi Toda, and Rosie Flewitt. "Young Children's Use of Personalized Technologies: Insights from Teachers and Digital Software Designers in Japan." *Technology, Knowledge and Learning* 26, no. 3 (2021): 535–54. <https://doi.org/10.1007/s10758-020-09465-3>.
- [16] Kwapisz, Monika Blue, Avanya Kohli, and Prashanth Rajivan. "Privacy Concerns of Student Data Shared with Instructors in an Online Learning Management System." In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, Article 661, 1–16. New York: Association for Computing Machinery, 2024. <https://doi.org/10.1145/3613904.3642914>.
- [17] Öztürk, Dilek, Gülcan Eyüboğlu, Zehra Göçmen Baykara, Naoki Tabata, and Hirokazu Sato. "The Privacy Consciousness of Undergraduate Students: Comparison Between Turkey and Japan." *Florence Nightingale Journal of Nursing* 30, no. 3 (2022): 253–58. <https://doi.org/10.5152/FNJJN.2022.21296>.
- [18] Yang, Fang, and Shudong Wang. "Students' Perception Toward Personal Information and Privacy Disclosure in E-Learning." *TOJET: The Turkish Online Journal of Educational Technology* 13, no. 1 (2014): 207–16.