

## **Data Privacy Transparency in the Admission and Registration at Iloilo Science and Technology University Miagao Campus**

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### **Abstract**

Higher Education Institutions in the Philippines take initiatives to comply with the data privacy act. Among others, transparency principle is observed in their different processes. To provide additional literature on data privacy research, this study was conducted. This covered the assessment of Iloilo Science and Technology University's data privacy implementation, particularly on the transparency principle. It focused on the registration and admission process in Miagao Campus. A 15-item questionnaire, in which items were extracted from the toolkit prepared by the National Privacy Commission, was prepared by the researcher for data gathering. The prepared questionnaire was distributed to the 30 employees and 480 students, identified through quota sampling method. The data were analyzed using mean, standard deviation, one-way ANOVA, Scheffe, and Pearson's correlation. Although significant difference was found when students were grouped according to department and year level, their level of awareness on the data privacy implementation was "good". Also, employees' perception was "good". Direct and strong, significant relationship was found between students' awareness and employees' perception.

**Keywords:** data collection, data processing, data privacy, admission data, college enrolment

## 1. Introduction

Higher Education Institutions (HEIs) in the Philippines are classified as (a) private institutions, (b) state universities and colleges (SUCs), or (c) local universities and colleges (LUCs). Any of these HEIs is under the supervision of the Commission on Higher Education (CHED) as stipulated in the Higher Education Act of 1994 (RA7722). Their regulations are detailed in the CHED Memorandum Order (CMO) No. 40, s. 2008.

As academic institutions, they are required to adhere to the admission requirements and rules of registration as specified in Article XVIII of CMO 40, s. 2008. Among the requirements are the personal information. But with the existing privacy law in the Philippines, it is a must that HEI stake the necessary measures so that the pertinent rules and regulations in the implementation of RA 10173 are being complied with. Matters on the said law is mandated to the National Privacy Commission (NPC). Accordingly, it released the NPC Privacy Toolkit, with its 3rd edition made available in May 2018. Among the contents of the publication is the Privacy Impact Assessment (PIA) to ensure privacy.

With the availability of the aforesaid toolkit, institutions must take initiative relevant to the data privacy law implementation. ISAT U Miagao Campus as a state university needs to adhere to the law in relation to its programs and processes that require collection of personal data, such as on the registration and admission of students. Moreover, Smith et al. (2011) as cited in Pelteret and Ophoff (2016) recognized the need of further research on data privacy areas such as on privacy awareness and demographic differences, despite the availability of several completed studies.

Hence, this study was conducted to determine students' awareness and employee's perception on the data privacy implementation at ISAT U Miagao Campus during registration and admission. Specifically, this study aimed to answer these questions: (i) what is the students' level of awareness on the data privacy implementation when taken as a whole and when grouped according to department and year level, (ii) what is the employees' perception on the data privacy implementation, (iii) is there a significant difference on students' level of awareness on data privacy implementation when grouped according to department and year level, and (iv) is there a significant correlation between the students' level of awareness and employees' perception on the implementation of data privacy?

## 2. Review of Literature

There are certain theories relevant to data privacy. Each person owns her or his information as viewed in the ownership-based interpretation theory, while the reductionist interpretation theory considers the value of informational privacy since it safeguards from undesirable consequences due to breach. In the restricted access theory, privacy on information is realized if once can restrict or limit other people from obtaining personal information; while in the control theory, one's privacy entails control on information and that personal choice is significant. In Restricted Access/Limited Control (RALC) theory, control is being differentiated to privacy, that is, while privacy focuses on the protection, control justifies privacy and its management (Pelteret et al., 2016).

### 2.1 Data Privacy Law and Practices

Privacy is at stake in today's world where information and data are vital. Hence, every country has corresponding law to ensure data privacy. In the Philippines, the pertinent data privacy law was approved in August 2012. In August of 2016, the published IRR were promulgated pertaining the provisions of the act. Correspondingly, a privacy toolkit was made available with its 3rd edition published in May 2018.

Basically, the toolkit contains three (3) chapters, covering: (a) data privacy threats for the Data Protection Officer (DPO) to watch out for, (b) data privacy accountability and compliance pillars integrating the means of addressing the threats, and (c) data processing system registration framework. Among the relevant activities is the privacy impact analysis. This comes with an instrument to test the consistency on the data privacy principles of any project, program, or means for collecting personal information (NPC, 2018).

Certain provisions were used in research, such that of Tanate-lazo and Cabonero (2021) who found that library stakeholders showed great knowledge and skills of the law, but insufficient knowledge and little practice on some provisions in terms of library services were observed. It is sad to know that aside from lack of awareness, time constraints and budget (Ching et al., 2018) as well as resource constraints and wait-and-see attitude (Pitogo, 2019) hinder compliance by some government institutions.

There were also research studies on privacy issues with other processes. Bala (2022) discovered difference between teachers' and students' perspective on certain challenges and ethical issues in conducting research. In South Africa, some medical companies had unsecure websites or missing privacy policy and sharing of certain personal information to third parties

was revealed (da Veiga et al., 2017). For a better view of possible cross-disciplinary studies on information privacy, Pelteret et al. (2016) presented a transdisciplinary view illustrating concerns and influencing factors among consumers and organizations as well as issues that affect the former via the latter.

During the Covid-19 pandemic, the monitoring on the spread of illness and disease has been considered as epidemiological/disease surveillance, which seems invasive. The pandemic raised issues not only on health, but also on privacy. It could put privacy on the map and/or might lead to privacy intrusion (Pandit, 2020). Indeed, confidentiality and security seem difficult to keep in today's era (Bala, 2022). A difficulty in preparing new rules of technological privacy is expected for future generations; hence, proactive approach rather than reactive is necessary to handle the emerging issues (Sharma, 2020).

## *2.2 Data Privacy and Security Initiatives*

Recognizing issues on privacy, certain initiatives were made. In South Africa, Swartz (2019) proposed a privacy governance framework to reinforce privacy protection. Moreover, it was designed to enhance the reputation of an organisation, foster a privacy culture, as well as ensure adherence to regulatory requirements on privacy. While, Abdullah (2020) proposed a framework, developed within Forrester's playbook, to protect information of customers.

In 2018, Yasaweerasinghelage et al. presented an approach on privacy-preserving data analytics systems for predicting their performance attributes, by using techniques on architectural performance simulation and modelling. While, applying the anonymous trust/reputation model, Wu et al. (2019) presented a holistic solution for a privacy-aware and trustworthy mobile crowdsensing. In this, a trusted third party is not needed. It includes a series of protocols for users to contribute their data, invoke tasks, and gain rewards without being identified.

Varying security initiatives were undertaken. To address issues on identity homogeneity and background attack, Lohiya and Ragha (2012) proposed a hybrid approach that employed randomization and K-anonymity methods. This entails difficulty to attackers in identifying pattern of data and further protects private data with better accuracy. For cloud computing, Sharma et al. (2019) proposed multi-level encryption model. On database breaches, biometrics are vital for privacy protection and security assurance (Jayanthilladevi et al., 2020).

In 2018, Khan et al. contributed to issues on the Internet of Things (IoT) technology. They presented an ecosystem on privacy of electronic products or devices which are IoT-enabled, covering its entire lifecycle. Although IoT entails convenience, it can present threats and consequently violates the privacy of consumers if they are not decommissioned properly. Related study was conducted by Visoottiviseth et al. (2021), in which they developed a toolkit to assess vulnerabilities on smart home devices.

### **3. Research Methodology**

As to the scope, this study employed the descriptive research while quantitative as to the data used (DiscoverPhDs, 2020).

#### *3.1 The Respondents and the Sampling Method*

This study involved a total of 510 respondents. They were determined through quota sampling method. A total of 480 or equivalent to 12% of the officially enrolled students during the 1<sup>st</sup> semester, academic year 2022-2023, comprising of 30 students per year level for each of the four departments, namely, Computer Studies, Education, Hospitality and Business Management, and Industrial Technology were considered. In addition, 30 employees or equivalent to 37% of the teaching and non-teaching personnel assigned in the registration and admission process were involved.

#### *3.2 Instrumentation and Data Collection Method*

For the instrumentation, the researcher prepared a 15-item questionnaire with statements extracted from the NPC toolkit, specifically on the PIA covering the transparency principle, to measure the students' awareness and employees' perception. For the students, the items were phrased in the first-person point of view, while third-person point of view for the employees. Each item was answerable by extremely aware (weight of 5), moderately aware (weight of 4), somewhat aware (weight of 3), slightly aware (weight of 2), and not at all aware (weight of 1). To validate the reliability of the questionnaire, the Cronbach's alpha was utilized. Performing the test with the students' responses, the obtained Cronbach's alpha value was 0.957, while 0.955 with the employees' responses. For demographic profile of the students, the department and year level were included in the instrument.

The data collection transpired in September 2022. Only the willing students and employees were given the questionnaire until the desired number of respondents were

achieved. Majority of the respondents were given the instrument via face-to-face, while some were reached through online platform. Instructions that include the purpose of the study were given prior to the distribution.

### 3.3 Data Analysis and Interpretation

For the descriptive analysis, standard deviation and mean were used to describe the students' level of awareness when taken as a whole and when grouped according to department and year level. The same tools were used to describe the employees' perception. The level of awareness and perception were based on the following scale arbitrarily assigned by the researcher: "poor" for a mean range of 1.00-2.00, "fair" for a mean range of 2.01-3.00, "good" for a mean range of 3.01-4.00, and "very good" for a mean range of 4.01-5.00.

For the inferential analysis, one-way ANOVA was utilized to ascertain the difference on students' level of awareness on the data privacy implementation when grouped according to department and year level. The post hoc test used was Scheffe. While Pearson's correlation was employed to ascertain the correlation between the students' level of awareness and employees' perception. The 0.05 level of significance was set in the tests.

## 4. Results

### 4.1 Level of Awareness of the Students

The students' level of awareness on the data privacy implementation when taken as a whole and when grouped according to department and year level are presented in Table 1.

Table 1 Students' level of awareness.

Category	Mean	SD	Interpretation
Entire Group	3.70	0.82	Good
Department			
Computer Studies	3.72	0.72	Good
Education	3.99	0.70	Good
Industrial Technology	3.48	0.90	Good
Hospitality & Bus. Mgt.	3.62	0.87	Good
Year Level			
Fourth	3.75	0.68	Good

Third	3.56	0.98	Good
Second	3.91	0.65	Good
First	3.59	0.89	Good

When taken as an entire group ( $3.70 \pm 0.82$ ), the level of awareness was “good”. When grouped according to the department, students under the Computer Studies ( $3.72 \pm 0.72$ ), Education ( $3.99 \pm 0.70$ ), Industrial Technology ( $3.48 \pm 0.90$ ), and Hospitality and Business Management ( $3.62 \pm 0.87$ ) had “good” level of awareness. As to the year level grouping, fourth year ( $3.75 \pm 0.68$ ), third year ( $3.56 \pm 0.98$ ), second year ( $3.91 \pm 0.65$ ), and first year ( $3.59 \pm 0.89$ ) students had “good” level of awareness.

#### 4.2 Perception of the Employees

Table 2 presents the employees’ perception. It shows that the employees’ perception ( $3.43 \pm 0.85$ ) on the data privacy implementation was “good”.

Table 2 Employees’ perception.

Category	Mean	SD	Interpretation
Employee	3.43	0.85	Good

#### 4.3 Difference in the Levels Awareness

Table 3 shows the difference on the students’ level of awareness on the data privacy implementation when grouped according to their department and year level.

Table 3 Difference on students’ level of awareness as to department and year level.

Category	F	p-value	Interpretation
Department	8.736	0.000	Significant
Year Level	4.755	0.003	Significant

A significant difference ( $F(3,476)=8.736, p=0.000$ ) on the students’ level of awareness when grouped according to department was observed. A post hoc test, using Scheffe showed that the difference on the level of awareness was between students under the Education ( $3.99 \pm 0.70, p=0.000$ ) and Industrial Technology ( $3.48 \pm 0.90$ ) departments. Also,

there was a significant difference ( $F(3,476)=4.755, p=0.003$ ) on their level of awareness if students were grouped according to their year level. A post hoc test, using Scheffe indicated that the difference on the level of awareness was between the second year ( $3.91 \pm 0.65, p=0.013$ ) and third year ( $3.56 \pm 0.98$ ) students as well as between the second year ( $3.91 \pm 0.65, p=0.023$ ) and first year ( $3.59 \pm 0.89$ ) students.

#### 4.4 Relationship between Awareness and Perception

Table 4 presents the correlation between students' level of awareness and employees' perception on the data privacy implementation. It shows that there was a direct and strong, significant relationship ( $r=0.843, p=0.000$ ) between them.

Table 4 Relationship between students' awareness and employees' perception.

Category	r	p-value	Interpretation
Students & Employees	0.843	0.000	Significant

### 5. Discussion and Recommendation

On the one hand, the “good” level of awareness on the data privacy implementation among students implies that they are aware of the nature, purpose, and extent of the processing, as well as the risks and safeguards involved in the processing of their personal data. Also, it means that they are conscious of their rights to be informed, object, access, correct, file a complaint, damages, data portability, and for erasure and blocking, as well as how these rights can be exercised. Moreover, it denotes that they recognize the existence of personal data management policy available for public review, as well as the corresponding steps for them to inquire on the personal data it holds and the purpose of the collection, usage, and disclosure. In addition, it confirms their knowledge of the personal information controller and the particulars of the data protection officer. On the one hand, it proves that the administration and management of ISAT U Miagao Campus had taken initiatives to adhere to the existing law on data privacy, proving that it is consistency with the transparency principle.

On employees' “good” perception of the data privacy implementation, it reveals their confidence on being responsible PIP or PIC in the registration and admission process. It may construe personal belief on their contribution to adhere to the transparency principle.

Moreover, it manifests their assurance that students comply with the enrolment requirements without compromising their right to data privacy.

As to the difference in the students' level of awareness among the departments and year levels, it means that the levels of awareness of the students were not the same, as supported by the unequal computed mean values. Specifically, students under the Education department had higher level of awareness than those students under the Industrial Technology department. It may be construed that since the former would soon-to-be educators, they may have felt the need to be more aware about laws, particularly on data privacy. Furthermore, second year students had higher level of awareness than either of the third year and first year students. This seems to be unexpected with the third year since they had longer years of stay in the University. Although it is not covered in this study, the pandemic that caused the need to shift the delivery mode of several services might be a factor on this. It requires a different study to validate this matter.

The direct and strong, significant correlation between the students' level of awareness and employees' perception on the data privacy implementation means that as the latter gets higher (or lower) so is the former, and vice versa. It implies that the confidence of the PIP or PIC on the data privacy compliance is related to the data subject's awareness of the data privacy implementation. Despite the good awareness and perception on the data privacy implementation, the administration and management must keep with their effort to adhere to the data privacy law and comply with the corresponding rules. Consequently, the highest level of awareness may be achieved.

This study was limited to covering the transparency principle; hence, further studies are encouraged to include other aspects as well as an assessment of other processes. A qualitative approach is recommended to be able to validate the accuracy of the responses through their narratives and reactions. The survey method employed in this study is constrained by the respondents' honesty in answering the questionnaire. Further initiatives, such as using ICT to ensure data privacy and security are also recommended.

## References

- Abdullah, H. (2020). Proposition of a framework for consumer information privacy protection. 2020 International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems, 1-6.

- Bala, R. (2022). Challenges and ethical issues in data privacy: Academic perspective. *International Journal of Information Retrieval Research*, 12(2), 1-7.
- Ching, M.R.D., Fabito, B.S., & Celis, N.J. (2018). Data privacy of 2012: A case study approach to Philippine government agencies compliance. *Journal of Computational and Theoretical Nanoscience*.
- Commission on Higher Education. (2008). Manual Regulations for Private Higher Education (CMO 40, s. 2008) [Online]. Available: <https://ched.gov.ph/wp-content/uploads/2017/10/CMO-No.40-s2008.pdf> (August 2, 2022)
- Data Privacy Act of 2012. R. A. 10173 (2012) [Online]. Available: <https://www.privacy.gov.ph/data-privacy-act/> (August 3, 2022).
- da Veiga, A., Vorster, R., Pilkington, C., & Abdullah, H. (2017). Compliance with the protection of personal information act and consumer privacy expectations: A comparison between the retail and medical aid industry. *2017 Information Security for South Africa*, 16-23.
- DiscoverPhDs. (2020). Types of research [Online]. Available: <https://discoverphds.com/blog/types-of-research> (August 16, 2022)
- Higher Education Act of 1994 (Phil.).
- Implementing Rules and Regulations of Republic Act No. 10173, Known as the “Data Privacy Act of 2012” (NPC) (Phil.).
- Jayanthilladevi, A., Sangeetha, K., & Balamurugan, E. (2020). Healthcare biometrics security and regulations: Biometrics data security and regulations governing PHI and HIPAA act for patient privacy. *2020 International Conference on Emerging Smart Computing and Informatics*, 244-247.
- Khan, W.Z., Aalsalem, M.Y., & Khan, M.K. (2018). Five acts of consumer behavior: A potential security and privacy threat to Internet of Things. *2018 IEEE International Conference on Consumer Electronics*, 1-3.
- Lohiya, S., & Ragah, L. (2012). Privacy preserving in data mining using hybrid approach. *2012 Fourth International Conference on Computational Intelligence and Communication Networks*, 743-746.
- National Privacy Commission [NPC]. (2018). NPC privacy toolkit: A guide for management and data protection officers (3<sup>rd</sup> ed.)

- Pandit, C., Kothari, H., &Neuman, C. (2020). Privacy in time of a pandemic. 2020 13th CMI Conference on Cybersecurity and Privacy (CMI) - Digital Transformation - Potentials and Challenges(51275), 1-6.
- Pelteret, M., &Ophoff, J. (2016). A review of information privacy and its importance to consumers and organizations. *Informing Science: The International Journal of an Emerging Transdiscipline*, 19, 277-301.
- Pitogo, V. (2019). National government agency's compliance on data privacy act of 2012: A case study. *International Conference on Electronics Representation and Algorithm*.
- Sharma, S. (2020). *The future of data privacy. Data Privacy and GDPR Handbook*. USA: John Wiley & Sons.
- Sharma, Y., Gupta, H., &Khatri, S.K. (2019). A security model for the enhancement of data privacy in cloud computing. 2019 Amity International Conference on Artificial Intelligence, 898-902.
- Swartz, P. Da Veiga, A., &Martins, N. (2019). A conceptual privacy governance framework. 2019 Conference on Information Communications Technology and Society,1-6.
- Tanate-Lazo, R.J.C., &Cabonero, D.A. (2021). Philippine data privacy law: Is it implemented in a private university library, or not? *Library Philosophy and Practice (e-journal)*.
- Visoottiviseth, V, Khengthing, T., Kesorn, K., &Patcharadechathorn, J. (2021). ASPAHI: Application for security and privacy awareness education for home IoT devices. 2021 25<sup>th</sup> International Computer Science and Engineering Conference, 388-393.
- Wu, H., Wang, L, Xue, G. Tang, J., &Yang D. (2019). Enabling data trustworthiness and user privacy in mobile crowdsensing. *IEEE/ACM Transactions on Netowirking*, 27(6),2294-2307.
- Yasaweerasinghelage, R., Staples, M. Weber, I., &Paik, H.Y. (2018). Predicting the performance of privacy-preserving data analytics using architecture modelling and simulation. 2018 IEEE International Conference on Software Architecture, 166-16609.

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