

Protecting Personal Medical Information: Asian Perspectives

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Abstract—In order to tackle the issue of privacy concern over the personal information management system, this paper begins with the gathering of views on information privacy and how culture has influenced among several Asian countries including India, Thailand, Japan, China and Malaysia. In accordance to the culture dimension theory of Hofstede, it attempts to reveal the perception and concern of several Asian countries towards the privacy of their personal medical information. The previous studies found that Asian communities have a distinctive concept in perceiving the value of information privacy, which is completely unique from the description set by western countries. The findings are considered as valuable and usable in designing the patient's electronic medical record (EMR) system in hospital information system (HIS) with the incorporation of privacy preservation elements.

Index Terms—Information privacy culture, privacy concern, personal medical information, hospital information system.

I. INTRODUCTION

In this decade where data are mostly managed by computers and digitally stored, the discussion on the subject of information privacy is becoming inevitable. In recent years, information privacy has been widely debated, disputed and become a popular topic among the personal information management system researches. The rapid advancement of technology in Asia has triggered much public concern over the safety of their personal information being collected, regardless by the government or private sector. This study endeavors to assess the trend and concern among Asian people specifically over their personal medical information as compared against the established privacy pattern among the westerners. Personal medical or health information that is being collected in the hospital is becoming one of the major concerns among citizen. This statement was emphasized based on the survey findings in the evaluation of the public concern in developed western countries with regards to their personal medical or health information. [1]-[8].

Nevertheless, according to [9], people have complex relationship with the social norms whereby it differs from one place to another and has a dynamic correlation with technology. Several methods can be applied in observing this trend including the review of information privacy or data protection law that is being practiced [10]-[13], the policies

established or simply the culture value in that particular country [14]-[19]. Certain researchers prefer to observe the patient's personal information under the management of the government and commercial sectors from the public perspective. It is essential to protect the privacy of patient's medical information in order to gain the trust from the public and improve the quality of health care provided by hospital. If the authority fails to preserve the privacy of the patient's medical information, it allows numerous unwanted crimes to ensue and subsequently jeopardize the patients' reputations such as stolen identity incidents or impairment of employment record. However, there is lack of research ever conducted over the privacy of personal information in Asian countries.

Hence, this paper attempts to reveal the perception and concern of several Asian countries and how their culture have given the influence towards personal medical or health information privacy in the hospital information system (HIS). This paper proceeds with Section II in reviewing the information privacy definitions and various Asian concepts. The Section III will be followed to conclude this study.

II. ASIAN INFORMATION PRIVACY CONCEPT

Milberg *et al.* [20] suggested the possibility of individuals in different countries would exhibit different levels of concern regarding information privacy at a given point of time. This statement is derived from the facts produced by Westin [21] that societies do value privacy in some form, but the expression of the privacy varies significantly across cultures. Culture is capable in affecting the notion of privacy as far as to what extend it needs or deserve protection and the level of its importance [22], [23]. This observation by Westin was strengthened by the Bellman *et al.* [17] study which investigates in the differences of international privacy concern based on the culture theory of Hofstede [24], [25]. According to studies by Hofstede [26], [27] on culture dimension, Asian countries commonly are categorized under large 'power distance' societies and 'collectivism' dimension. Power distance can be described as the way the society deals with the fact that people are unequal, including in power and wealth. It involves not only those in the high echelon of power and control but also those at the bottom of the power hierarchy. Those countries which have high power distance index (PDI) tend to accept the class divisions within society. People have their own shelters and accept this inequality without further questions. In 'collectivist' societies, people are belonged to an 'in-group' that takes care of each other in exchange for loyalty. This culture is apparent usually among close, long-term commitment and relationship, such as between family members, extended family or among

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members of an organization. The loyalty often overrides and is paramount in most of societal rules and regulations. Any offence among its members will deliver embarrassment to the group and result in loss of face.

These two terms; 'power distance' and 'collectivism' are among the five of Hofstede culture dimensions that are included in our study of Asian information privacy culture. Bellman *et al.* [17], [18] and Milberg *et al.* [20], [28] then found the significant influence between these culture values with information privacy concerns. People from countries with relatively higher scores on PDI have indicated lower levels of overall concern about information privacy and unauthorized access [17]. On the same note, Milberg *et al.* [28] unveiled that people in high 'individualism' countries, which means low in 'collectivism' exhibit higher levels of concern for information privacy. On the other hand, people in 'collectivism' countries have low concerns towards their information privacy. The statement are supported by the findings from several studies, which stated that personal information privacy control in Asia Pacific is relatively complex due to the diversity in cultures, types of governments, differences in legislation and variety of business practices [13], [16], [23], [29].

The study by Wang and Jin [30] proved that based on the samples from the US, China and India, the US is an individualistic society by nature [31]. Americans put more emphasis on their personal privacy, as compared to the Chinese and Indian, which both are categorized under 'collectivist' society. Asian countries are known to have various styles and unique values in their cultures, which represents the identity of each race. According to Kennedy *et al.* [12], Asian countries face huge obstacles in enacting the law for privacy and data protection due to the inevitable influence of culture, social customs and values, economies and government policy. Instead of accepting privacy as fundamental right of every individual as in Europe and United States, privacy is still considered a foreign subject matter in some Asian cultures. This paper is interested to highlight some views toward information privacy among several Asian countries such as India, Japan, Thailand and Malaysia which will eventually be able to validate the above cultural theory.

In India, the Indian culture suggests that interpersonal relationship plays an important role in the Indian society [32] and is capable in bringing major influence in public lifestyles and its attitude about privacy [23] if compared against the western modern society. The relationship with extended relative is very important and highly valued. Due to this fact, the concept of preserving individual's information privacy seems to overcome the boundary of their priority value. Furthermore, their interpersonal privacy management may not favor the nature of consumer privacy preservation concept that involves with third parties and organizations [31]. Although the development of computer technology in India is impressive, the positive influence in terms of privacy concern level is absorbed more slowly in India as compared with western countries [23]. Based on Hofstede studies, India is categorized under collectivist society with lower individualism index (IDV) and higher PDI, which means that they entrust and have faith in other people in contrast with individual in individualistic societies such as in western

countries [24]-[27]. These findings by Hofstede were substantiated by Kumaraguru and Cranor studies [23], which concluded that the Indian society has less concern and low awareness on their information privacy protection, as compared with Americans. The Indians have the inclination to believe that their personal information will not be misused and completely oblivious of the possibility of the personal information trading among companies, including their personal medical information. They have the attitude of willingness to share and trust the business organizations and government in handling their personal medical information.

Japan is the most developed country in Asia and possess unparalleled technological advancement in the region. Their robust economy, extraordinary technologies development, modernization in lifestyles and views may be influenced much from the west albeit the Japanese have different worldviews on their world [33]. This development however may not reflect the former or genuine Japanese culture and views towards privacy as it has been reported that the privacy concept is a relatively recent development in Japanese culture [34]. Generally, many recent studies stated that privacy awareness among the Japanese is comparatively low [35]. Japan's society also has been categorized as 'collectivist'. It is also termed as 'groupism' society, which is reported to have only little sensitivity towards the rights of privacy [36], [37]. Regardless of this, the Japanese still consider their personal medical information as sensitive. Even though their medical conditions are shared with superiors and subordinates (in a limited way), that is only for health conditions and its treatment. Those reports on permanent physical disabilities, mental state, or other illnesses which are difficult to be treated or healed are considered taboo, highly private and quite shameful [34], [38]. However, Adams and Murata [34] argued that Japanese consciousness towards information privacy has already been associated with their culture for quite some time. Nevertheless, the failure of social norms has forced the adoption of information privacy law in order to protect their personal information but is certainly not because of the new trend influenced by the west. Murata [37] also criticized the relevance of information privacy concept as described by Westin in the digital data management technologies. He suggested a revision of information privacy concept to be conducted in the new world of digital information.

Thailand is also classified as a 'collectivism' society, a naturally non-confrontational type of people. The concept of information privacy in western worldview is considered foreign and not applicable to the Thai social reality. Kitiyadisai [29] explained that the term of privacy may bring negative impression, in the sense that the loss of privacy would bring shame, disrespect or loss of face in public. Privacy for the Thais connotes as being private with the extended family in the same household, where family members share routine activities in daily life, including cooking, eating and sleeping. The events and personal information are used to be shared with each other without involving any outsiders. It is really apparent that the concept of 'individualistic' privacy as embraced by the westerners is not suitable to be practiced within the Thai culture. Buddhism being a national religion in Thailand also plays an effective role in shaping the tradition of the Thais and on how they

perceived their rights on privacy. For a Buddhist, the right of privacy and protection is considered as man-made since the rights of ownership of land, water, lake, trees, natural resources and even our own bodies are reckoned as illusory, yet it is still acceptable as requirement in operating at this realm of existence.

In China, the term privacy traditionally renders different meaning to the Chinese as opposed to the western description. 'Privacy' can be understood as illicit secret, selfish, conspiratorial behavior [39] or hidden facts [12] and it does not have much value attached. Only recently did China recognize the concept of privacy rights based on the description of the west. Nevertheless, the policing and monitoring practices of the Chinese government against the internet traffic mainly to combat political foes and other offending conducts are widely reported. A survey which was conducted by the China Youth Social Centre showed that most of respondents (88.8%) realized that they have experienced unauthorized use or other mishandling of their personal data and majority of them (98.9%) believed that legislation concerning personal data protection was necessary [12].

From cultural standpoint, Malaysia is reported to have the highest PDI value of 104 as compared with other countries [40]. This rationalized that Malaysian society is best characterized as the hierarchical societal class where every individual already accepts his or her place in the society without any further justification required. As a typical subordinate in an organization, Malaysian people are the kind of people who expect to be told what to do. Usually, the ideal leader for them is a benevolent autocrat. The score for individualistic level is only 26, which makes them belong to a collectivistic society. It also indicates that the loyalty for long term commitment to family, extended family or extended relationship is inevitable. This can also be an attribute for the delay in enacting as well as enforcing their Personal Data Protection Act (PDPA, 2010). The authority may deduce that the public is still indifferent to the need of protecting their information privacy rights.

In terms of protecting the personal health information privacy, one of the Malaysia Hospital Information System's developer teams from the Ministry of Health (MOH) admitted that as a Malaysian culture, the public rarely argue and dispute the government policies and have doubts on how their personal information are being handled [41]. These preliminary findings are in accordance to Hofstede [40]. However, the preliminary survey by Lallmahamood [42] among the Malaysian internet users indicated that majority (94.2%) of respondents have expressed their concern on the privacy of their personal information over the internet, which make it similar with the number stated by Westin in US [43]. This study is also supported by the Sarabdeen article [44], which claimed that users' concern over their information privacy were able to influence the successful implementation of the electronic health information. In Malaysia's scenario, the contradiction between the stances of the Ministry of Health Malaysia with the public opinion exists, even though the public usually do not file their complaint directly with the authority. This further reinforces that in a high PDI country,

individuals accept their place without further justification, although they may not agree with the actions imposed by the government.

III. CONCLUSION

After scrutiny of the above mentioned studies, it indicates that the trend of awareness towards information privacy protection is increasing and gaining momentum nowadays, with the availability of internet that makes the world a borderless village. People are becoming more concern and knowledgeable with the transmissions of information from various source all over the world. The government therefore needs to undertake surveys to obtain accurate and valid opinions from the public and after which revise their policies and regulation in line with the requirements of public. Based on these several examples of privacy concept and practice in Asian countries, a comprehensive study warrants to be conducted in order to investigate the synchronization of the government policies with the public requirements. Although there are many studies concerning personal health information in United States, Canada, European countries and India [43], [45]-[56], there have been no similar studies ever carried out in Malaysia. Lallmahamood [42] had actually conducted a survey on privacy concern in Malaysia, but mainly focused on concerns over the Internet privacy and not specifically on personal health or medical information handled by government's hospital information system (HIS).

This study is immensely valuable in providing a guideline for developing and implementing a HIS successfully based on the public requirement especially in handling their personal medical information. Since the personal medical information is owned and provided by the public or patient, their opinion on the way of information is handled must not be discounted. This paper only reports a part of the study, which concentrates more on the privacy culture and public personal information privacy concern. A broader aspect of information protection has been designed to ensure the comprehensiveness of the research, such as law, ethics and technology.

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