Chapter 12
Cross-Cultural Privacy Differences

Yao Li

Abstract As many technologies have become available around the world and users increasingly share personal information online with people and organizations from different countries and cultures, there is an urgent need to investigate the cross-cultural differences in users' privacy attitudes and behaviors in the use of these technologies. Such investigation is important to understand how users in different cultures manage their information privacy differently and to inform the privacy design for technologies that are used globally. This chapter covers major cross-cultural differences that have been reported in privacy research. Specifically, it briefly reviews the concept of culture, discusses the cross-cultural differences in privacy management, and recommends design implications on privacy design in the international context.

12.1 Introduction

Although ample research has shown that national culture influences users' privacy attitudes and behaviors in their interaction with technologies, most privacy studies and designs do not sufficiently take these cultural differences into account. Identifying such cross-cultural differences is important to inform the privacy design for technologies that are used across countries and to understand individual differences in privacy management. As more and more technologies, such as social media, shopping websites, and mobile apps, have become available worldwide, users are interacting with individuals and organizations across country boundaries. Thus, cross-cultural studies in privacy research have become increasingly important and popular in the recent decade.

While privacy regulation exists in almost every culture, the specific behavioral and psychological mechanisms that people use to regulate privacy boundaries are

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culturally unique. Since the 1960s, when privacy mostly concerned physical access to an individual's surroundings and private space, researchers had found that people in different cultures are universally aware and capable of regulating physical privacy, but their specific psychological and behavioral mechanisms vary from culture to culture [1]. For example, the Mehinacu (a tribal group in central Brazil) lived together in a small circular plaza, but used secret paths and clearings in the woods around to escape from others [2]. The Javanese families (an ethnic group native to the Indonesian island of Java) lived in unfenced homes, but they would shut people out with a wall of etiquette, such as hiding their emotional feelings [3]. A case study of Chinese families in Malaysia showed that these families maintained separation by means of cultural practices, such as strong taboos for entering others' sleeping areas, separate storage and cooking areas in different parts of the communal kitchen, and clarification of relationship status among the elderly and young, between men and women [4]. Another culture, the Ngadju Dayaks of Borneo who resided in multifamily units, maintained separate sleeping areas and possessions, ate at different times, and had strong norms against intrusion [5]. These examples illustrate how physical privacy is a culturally pervasive process that allows people to make themselves more or less accessible to others. Yet, they also demonstrate the cultural specificity of physical privacy regulation.

In the information age, the culturally distinct privacy regulatory mechanisms in users' interaction with technologies have frequently been brought up in research and news. For example, users in Western countries treat medical history as highly sensitive data compared with Eastern countries [6]. Another example is the recent launch of the General Data Protection Regulation (GDPR) in the European Union (EU) on data protection and privacy. This law significantly strengthens EU users' control over their personal data while establishing strong penalties for businesses that do not comply [7] (for a more comprehensive overview of privacy regulation, see Chap. 18). Many companies and websites changed their privacy policies and features prior to GDPR's implementation. This shows that data privacy regulatory practices differ between European countries and other countries, suggesting that multinational organizations should take cross-cultural differences into account when running technology business globally.

Based on these discussions, investigation into the concrete cross-cultural differences in users' privacy attitudes and behaviors is most warranted. Such investigation will enhance our understanding about what cultural differences exist and how such differences shape users' interaction with privacy systems. More importantly and practically, it will inform the privacy design for technologies that are used across the world. As many technologies still adopt the "one-size-fits-all" privacy design in different countries, such investigation will shed light on how to go beyond the "one-size-fits-all" privacy approach [8].

12.2 How to Study Culture

In this section, I will introduce the concept of national culture, including its definition, measurement, and influences. Culture is defined as the "collective programming of the mind that distinguishes the members of one group from others" [9]. This programming influences patterns of thinking which are reflected in people's everyday perception of various aspects of life and in the way people behave [9]. Culture is a collective concept, thus commonly used for tribes, nations, and organizations. Researchers have been highly interested in studying various aspects of country-level cultural differences, as they highlight the differences between national populations [9–11]. Although there are considerable variations among individuals in the same country, research has shown that people in the same national culture exhibit certain differences when compared with other nations [12, 13].

12.2.1 Cultural Dimensions

Many cross-cultural studies, not only in privacy but also in other domains, apply cultural dimensions to characterize national cultures, rather than other measures, such as country and language. This is because cultural dimensions are conceptual constructs that can depict the underlying patterns of how people live in different countries. These dimensions offer a way for us to classify the complex patterns of culture. Additionally, cultural dimensions explain human behaviors better than other measures, such as country and language. For example, one study has demonstrated that compared to country of residence and language, cultural dimensions are better predictors of privacy decisions in terms of prediction accuracy and variance explained [6].

Among the various country-level cultural dimensions, the majority relates the dichotomy of individualism versus collectivism [14–16]. Collectivistic cultures emphasize that groups (i.e., family, tribe, country) bind and mutually obligate individuals, whereas individualistic cultures assume that individuals are independent of one another [13, 14]. Researchers find that individualism is more prevalent in industrialized Western countries, whereas collectivism prevails in East Asian countries [17].

Researchers have also discovered other dimensions that can describe country-level cultural differences. One highly influential framework that captures these dimensions is Geert Hofstede's six dimensions of culture [9]. Aside from individualism, he also proposed power distance, masculinity, long-term orientation, uncertainty avoidance, and indulgence as cultural dimensions. Hofstede's dimensions are the result of a factor analysis at the level of country means of a comprehensive survey instrument, aiming at identifying systematic differences in national cultures. Hofstede's dimensions were first developed in the 1960s and 1970s at IBM and later enhanced by two new dimensions. Ninety-three countries have meanwhile

been scored along each of these dimensions. Various studies validated the model by including other respondent groups such as students, managers, and pilots. Hofstede's most recent model identifies the following six cultural dimensions:

- **Power distance (PDI)** is the degree to which the less powerful members of a society accept and expect that power is distributed unequally. A high score of PDI indicates that people accept a hierarchical order.
- **Individualism (IND)** is defined as a preference for a loosely knit social framework in which individuals are expected to take care of only themselves and their immediate families. Low individualism is collectivism.
- **Masculinity (MAS)** represents a preference in society for achievement, heroism, assertiveness, and material rewards for success. Such a society is more competitive. Its opposite, femininity, stands for a preference for cooperation, modesty, caring for the weak, and quality of life.
- **Long-term orientation (LTO)** describes how a society maintains some links with its own past while dealing with the challenges of the present and future.
- **Uncertainty avoidance (UAI)** is the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity.
- **Indulgence (IDL)** stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Its opposite is restraint.

In recent years, researchers have developed new dimensions that add to or reconceptualize Hofstede's dimensions. For example, Schwartz proposed dimensions such as harmony and embeddedness [11]. House et al. proposed dimensions such as assertiveness, humane orientation, and performance orientation [10]. While there are still debates about the comprehensiveness of these dimensions, they indeed facilitate our understandings about country-level cultural differences [18].

12.2.2 Cultural Differences in Behaviors

A great amount of cross-cultural research in psychology and social science has compared various aspects of behaviors among individuals with different cultures, especially between individualistic and collectivistic cultures [14–16]. One of the common approaches is to measure individual's cultural backgrounds through questionnaires and to correlate this assessment with their behaviors. Many researchers employ existing cultural questions, such as Hofstede's [9] and Triandis's [19] lists to ask participants to rate how much they agree with certain culture-related statements. Another common approach involves efforts to prime cultural values before participants perform certain behaviors. This approach usually happens in laboratory settings, where the priming techniques attempt to temporarily focusing participants' attention on different cultural values.

Regardless of the approach used to study cultural differences in behaviors, the majority of researchers have found that behaviors differ between individualists

Table 12.1 Summary of cultural differences in behaviors

Cultural differences in behaviors		
	Individualism	Collectivism
Self-concept	Defined through uniqueness and personal achievement	Defined by social roles
Social relationships	Interact with different groups and strangers; free to move to other groups	In-group over out-group relationships; stay permanently with in-groups
Attribution style	Decontextualized attribution	Contextualized attributions
Communication style	Direct; goal oriented; concern with message clarity	Indirect; concern about a target's feelings and self-presentation

and collectivists. For example, in the context of self-concept, collectivists tend to understand their self-identities based on social roles and endeavors; harmony in in-group relationships contributes to their life satisfaction [20]. In individualistic cultures, people tend to define their identities through uniqueness and personal achievement rather than social roles [21]. They feel more than collectivists that self-esteem contributes to their life satisfaction [20]. In social relationships, people in collectivistic cultures favor in-group relationships (family, friends, etc.) over out-group relationships (strangers) [22] and interact more frequently with in-group members [23]. While individualists also feel close to in-group members, they interact with more groups and expect to have more freedom to decide which groups to belong to [24]. They treat different in-group relationships in a similar manner [25] and have greater willingness to trust others—including strangers—and greater ease in their interaction with strangers [26]. In terms of attribution style, individualists are person focused and engage in more decontextualized causal reasoning, while collectivists engage in more contextualized and situated reasoning [14]. Individualists find relational and contextual information less informative or compelling than collectivists, even when contextual influences are made salient [14]. For example, individualistic adults explain behavior and outcomes more in terms of dispositions, whereas collectivists focus more on situations in describing the behavior of both themselves and others [27]. These major cultural differences in behaviors are summarized in Table 12.1.

12.2.3 Cultural Differences in Perceptions

In different cultures, some concepts can be measured in a conceptually similar manner, while other concepts may not. For example, shame and guilt are negative affect on the Positive and Negative Affect Schedule (PANAS). While they are considered as negative emotions in individualistic cultures, in collectivistic cultures, shame and guilt are somewhat positive and represent self-reflection and self-improvement instead of sheer wrongfulness [28, 29]. To examine whether

people in different cultures interpret the same concepts in a conceptually similar way, researchers should perform *measurement invariance tests* in cross-cultural studies. Measurement invariance refers to a statistical property of measurement to indicate whether the same concept is measured similarly or differently across different groups. Violations of measurement invariance may preclude meaningful interpretation of measurement data.

Performing measurement invariance tests in cross-cultural studies is an important step before making cultural comparisons, including comparisons of privacy attitudes and behaviors, as different cultures may have different interpretations about the concept of privacy due to local cultural norms and practices. For example, in one study [30] that compared privacy management strategies across the USA, Singapore, and Korea, researchers found that participants in these three countries have different understandings about the meanings and the levels of information control strategies. Here I will provide the specific steps to conduct measurement invariance tests in cross-cultural studies. These steps are based on the work in [30, 31].

12.2.3.1 Step 1: Define a Factor Model Based on the Items in a Questionnaire

The measurement invariance tests start with specifying a confirmatory factor analysis (CFA). In many cross-cultural studies, concepts (in measurement models represented by latent factors) are usually measured through a number of items or statements that are rated by participants from different cultural groups through questionnaires. Researchers then conduct the measurement invariance tests on the collected ratings to these items or statements. The CFA tests whether the items in a questionnaire measure what the researcher wants to measure, as expressed in a latent factor model. Thus, in Step 1, a factor model is built and tested using CFA. This is done to ensure an overall fit of the proposed factor model.

12.2.3.2 Step 2: Configural Invariance

Next, the same factor model needs to be run separately in each cultural group. The parameters of these factor models will be completely independent from each other, but the factor structures are kept the same. This set of models is called the configural model. Validating the statistical fit of these models in each group can inform us of the configural invariance, which means whether the same factor structure is valid in each cultural group. If configural invariance is validated in this step, it means that the measured concepts have the same factor structure in the tested groups (i.e., countries). If the groups have different factor structures, then the measured concepts lack configural invariance, suggesting that group comparison cannot be conducted and that the factor model should be re-examined in each of the groups.

12.2.3.3 Step 3: Metric Invariance

In this step, the factor model should again be run separately in each group, but this time, the factor loadings should be held equal between the groups, while all other parameters are still allowed to differ between groups. This set of models is called the metric model. The metric model should be compared with the configural model in Step 2 to see if they are *not* significantly different. A lack of significant difference ensures metric invariance, which indicates that the groups attribute the same meaning to the factor. Consequently, these groups can be compared in terms of their path coefficients in a subsequent structural model.

If metric variance is not validated (i.e., the metric model is significantly different from the configural model in Step 2), then the groups may vary in terms of the relative importance of certain items in the factor model. The researchers are then advised to examine the specific content of the items that caused the invariance to understand how the perception of the factor differs between the groups. Factor loadings of these items can be freed to reinstate metric invariance; this produces a model that has *partial* metric invariance. If the number of freed items does not exceed 20% of the total number of parameters in the factor model, a path coefficient comparison of between-country causal models can still be achieved.

12.2.3.4 Step 4: Scalar Invariance

In the fourth step, the factor model should again be run in each group separately, but now both the loadings and the intercepts are constrained to be equal across groups. This set of models is called the scalar model. The scalar model should be compared with the metric model in Step 3 to see if they are *not* significantly different. A lack of significant difference ensures scalar invariance, which implies that both the meaning of the construct (the factor loadings) and the comparative baseline levels of the underlying items (intercepts) are equal across groups. Consequently, the groups can be compared on their scores on the latent variable.

Again, if the scalar model is significantly different from the metric model in Step 3, it means that two groups have disagreement on the meaning of the factors and that some differences in item scores may exist between the groups that go beyond differences reflected in the factors. The researchers are then advised to examine the specific content of the items that caused the invariance to understand why these items might differ between groups beyond their contribution to the factor score. The intercepts of these items can be freed to reinstate metric invariance; this produces a model that has partial scalar invariance. Again, the number of freed parameters should not exceed 20% of the total number of parameters in the factor model.

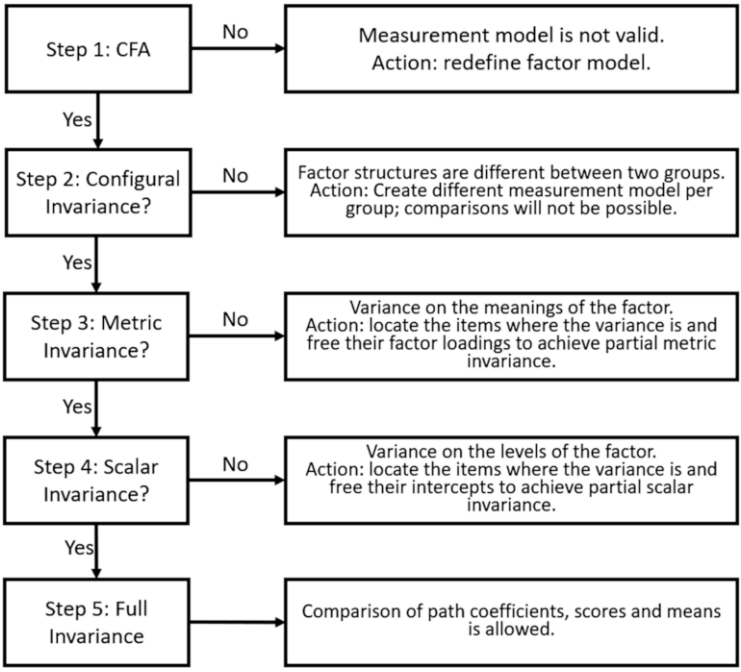

Fig. 12.1 Flowchart of measurement invariance tests

12.2.3.5 Step 5: Full Invariance

In this step, the factor model should again be run across all groups, but this time the factor loadings, intercepts, and residual variances should be held equal across groups. These models should be compared with the scalar model in Step 4 to see if they are *not* significantly different. If they are not different, the model has full invariance, which indicates that the latent factor is measured identically across groups, meaning that the groups can be combined into a single CFA. While full invariance rarely happens, the process of testing for full invariance can help us understand how factors work differently in different cultural groups.

The five steps are summarized in the following flowchart (Fig. 12.1).

12.3 Cross-Cultural Privacy Differences in Social Media

In this section, I will describe the major cross-cultural differences that have been found in privacy research in the context of social media, as social media is an important platform to study in privacy studies. Chapter 7 in this book will provide

more comprehensive discussion about privacy on social media. In this section, I mainly address the cultural aspects of social media privacy.

Social media has become a global phenomenon in the last decade. Sites like Facebook, Twitter, and Instagram reach users worldwide and impact the social lives of large and diverse populations from different parts of the world. For example, as of April 2019, Facebook has 300 million users in India, making it the leading country in Facebook use over the USA, and another 100 million users spread across countries like Brazil, Indonesia, Mexico, the Philippines, Vietnam, Thailand, Turkey, and the UK [32]. Instagram is available in more than 100 countries across Asia, Europe, Africa, and North and South America. Social media users from different parts of the world have different backgrounds, expectations, norms, and experiences shaped by the cultural values where they grow up. Therefore, since many popular social media platforms have become available around the world, and since individual users' social networks increasingly include contacts from different cultures, investigations of cultural differences are needed to support privacy management for international users.

According to prior research, it was generally believed that users in individualistic cultures exhibit higher privacy concerns towards online information sharing on social media and adopt more privacy protective behaviors than in collectivistic cultures. For example, many studies reported that users in individualistic countries like the USA were highly concerned with their online privacy and aware of personal information collection on social media [33–35]. Individualistic users had the higher lack of trust in the SNS system and operator [35]. They expected more control over their information sharing [33]. They would adopt more protective self-presentation to manage their information on social media [36]. Their perceived effectiveness of privacy settings had a stronger effect on privacy control [37]. On the contrary, collectivistic users tended to be less concerned with their privacy on social media. They tended to share more information, which was largely driven by the social influence of information sharing and reciprocity in the online community [38, 39]. The group norms have a stronger effect on social rewards and privacy control under high collectivism [37]. Thus, if the members of users' social group or users' online community disclosed a lot, users would be highly likely to follow the norms. Moreover, collectivistic users were more willing to share information with a high level of intimacy, such as their personal lives and photos [36, 40]. In addition to individualism and collectivism, some studies focus on other dimensions of national cultures. For example, users in a culture with a high tendency to avoid uncertainty, such as Korea and Germany, have greater privacy concerns and awareness on social media [33, 41, 42]. They are more likely to perceive the negative outcome and impression damage from social media information sharing.

However, some recent studies have shown that cross-cultural differences in social media privacy should consider the specific information sharing context. In certain situations, collectivistic users are *not* found to be less concerned about privacy as in previous research; in those situations, they may perceive *higher* privacy risks and concerns than individualistic users. We cannot assume that users in collectivistic

Table 12.2 Summary of cross-cultural differences in social media information sharing

	Individualistic countries (e.g., the USA)	Collectivistic countries (e.g., CN)
Unknown audience	✓ Same school ✓ Friends of friends ✓ Same SNS group	✓ Friends of friends ✓ Those who share interesting posts
Known audience	✓ Employer ✓ Schoolmates ✓ Colleagues	✓ Schoolmates ✓ Acquaintance ✓ Teacher
Collective privacy	✓ Less concern about the negative impact of one's information sharing on others' privacy	✓ More concerns about the negative impact of one's information sharing on others' privacy
Privacy management strategies	✓ Individual-level privacy management strategies (corrective and information control strategies)	✓ Group-level privacy management strategies (collaborative strategies)

cultures are indiscriminately insensitive to information privacy. I will elaborate the cultural differences shown in Table 12.2 in detail in the next few sections.

12.3.1 Cultural Differences in Sharing with Different Social Relationships

Aside from group privacy, collectivistic users tend to be more cautious when sharing information with weak ties. In this section, I will describe the cultural differences when users share information with different online social relationships. These differences are found in a survey study across the USA, China, and Korea [43]. Figures 12.2 and 12.3 show how collectivism is associated with users' social information disclosure, i.e., status updates, relationship, and photos, to different types of online social relationships. In Fig. 12.2, highly collectivistic users tend to be more cautious about sharing social information with those who are from the same social network groups (green line) or the same school (orange line) than individualistic users. In Fig. 12.3, highly collectivistic users are shown to share less with colleagues (blue line) and employers (yellow line) than individualistic users. In both figures, sharing information with people who have no commonalities, who are from the same city, or who are local merchants is least acceptable for both collectivistic and individualistic users.

These findings are echoed by several other recent studies showing that collectivistic users control their privacy boundary with different online social relationships more tightly than individualistic users [44]. It is found that collectivistic users primarily use social media to maintain their existing relationships [45, 46]. Most of their online social networks tend to be close friends [40, 47]. Collectivistic

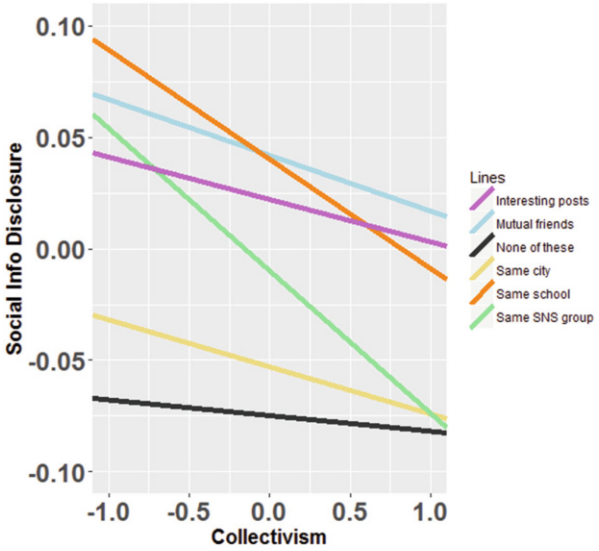

Fig. 12.2 Comparison of different types of unknown relationships

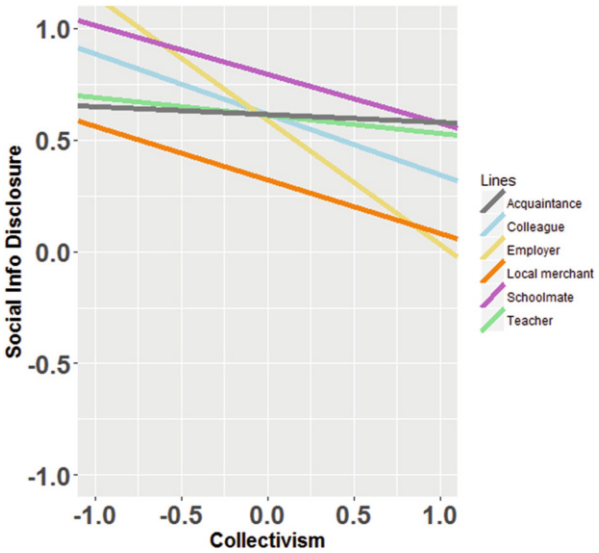

Fig. 12.3 Comparison of different types of known relationships

users also prefer to interact with offline connections belonging to the same social groups in the social media [40]. Such relationships are more likely to be their in-group members with whom they can share private information without any specific privacy boundary issues [40]. It is also easier for collectivistic users to seek social

support and commitment from these close ties. Thus, they have greater trust in their online social networks [38]. Strangers and weak ties are either less likely to be part of their online social networks or are restricted from accessing to their online information sharing. Collectivistic users have higher desire to control the visibility of their information and to use anonymous or pseudonymous identities on social media [35].

12.3.2 Cultural Differences in Collective Privacy Management

The findings in this section are from several studies. The cultural differences in interpretations of the collective privacy management strategies are mainly taken from Cho et al.'s work [30], in which they perform a large survey study to gauge how social media users adopt collective privacy management strategies in three different countries: the USA, Singapore, and Korea. The cultural differences in perceptions of group privacy are mainly taken from James et al.'s work [48] and Li et al.'s work [43]. Again, both of these studies apply surveys to measure participants' perceptions about group privacy in several different countries.

12.3.2.1 Cultural Differences in Interpretations of Collective Privacy Management Strategies

Privacy management on social media involves not only individual effort but also collective processes within a group of users. However, little cross-cultural privacy literature focuses on collective privacy management. Cho et al.'s work systematically examines cultural differences in collective privacy management strategies [30]. Through a survey of Facebook users from the USA, Singapore, and Korea, this study first shows that social media users in different countries interpret the same collective privacy management strategies in different ways. For example, participants in Singapore have different understandings about information control strategies: the factor loadings for two items in information control strategies in Singapore were substantially higher than those in the USA and Korea. This might be a result of their sensitivity to self-censorship as Singaporean social media users live in a more authoritarian society with higher surveillance.

12.3.2.2 Cultural Differences in Perceptions of Others' or Group Privacy

Additionally, studies show that collectivistic users are more concerned with others' privacy and group privacy than individualistic users [48]. Compared with threats to individual privacy, users with a collectivistic cultural orientation are more likely to perceive others as being susceptible to information exposure as a result of their own Facebook activity [48]. They are more concerned whether their personal information

sharing would cause negative impact on others' privacy and well-being. Moreover, users in individualistic countries rely more strongly on privacy management strategies at the individual level, such as corrective and information control strategies, to prevent personal privacy loss, while users in collectivistic countries adopt more group-level privacy management strategies, such as collaborating with each other on privacy protection and negotiating about each other's privacy boundary. This might be because collectivistic cultures place much emphasis on the good of the collective, such as their social groups and other types of in-groups. People in collectivistic cultures consider themselves as part of a group and value group welfare over their own interest. Thus, they are more concerned with the privacy protection of the group and seek more cooperation and coordination with their group members.

12.3.3 Design Implications

Generally, it is suggested that multinational social media providers should take users' cultural backgrounds into account during the privacy design process. Specifically, I make the following detailed suggestions.

12.3.3.1 Invest More Effort to Support Collective Privacy Management in Collectivistic Countries

Users in collectivistic cultures tend to be more sensitive to others' privacy and group privacy. The privacy systems in collectivistic countries should emphasize collaborative privacy management to coordinate privacy management experience between users and their online social networks. For example, privacy design can inform users of the risk their information sharing might bring to their social networks' privacy. Features like notification among users' social networks should be enabled to facilitate users to communicate with their social networks about the group privacy norms.

12.3.3.2 Differentiate Considerations in Audience Control in Different Cultures

Social media providers should focus on different factors in audience control features in different countries. It is a common practice that social media platforms provide audience control features for users to limit the people who can access to their information, such as Facebook's friend list and Google+'s circles. However, most existing audience control features are not differentiated between different cultures. Users in different cultures have different information sharing preferences with their social relationships: for instance, compared to individualistic users, collectivistic users expect more restrictive boundary regulation with their weak ties, such as

employers, colleagues, and people in the same school or same social network group. Privacy designs in collectivistic countries, such as China and Korea, should therefore enable more audience control features to restrict these weak ties.

Individualistic users, on the other hand, are more open to interact with and disclose information to certain weak ties, such as people in the same social network group. They also feel comfortable to share social information with their employers. Social media platforms in individualistic countries should thus provide more opportunities for users to expand their social networks to include these relations through features like suggesting friends based on social group participation or based on professional networks. However, individualistic users feel relatively more reluctant to share with teachers. This type of relationship should thus less often be recommended as a suggested friendship, and existing relationships of this type should generally be more controlled for individualistic users.

12.3.3.3 Provide More Privacy Support to Protect Others' Privacy in Collectivistic Countries

Users' online information sharing may unexpectedly reveal others' private information. Some users will be willing to protect others' privacy by anonymizing and obscuring others' information, while some users may not even be aware of the risks exposed to others' privacy as a result of their own information sharing. In collectivistic countries, users are shown to be more sensitive to violations of others' privacy and more likely to perceive the severity of bringing negative impact on others' privacy and well-being due to their own information sharing. This is partially related with the cultural norms in promoting collective interests in collectivistic cultures. Thus, social media in collectivistic cultures should reinforce such norm commitment.

12.3.3.4 Secure Individual Privacy in Individualistic Countries

Users in individualistic cultures tend to be more sensitive to personal privacy loss. Therefore, individual-level privacy protections, such as corrective privacy management and information control, should be highlighted and enhanced. For example, based on current corrective and control features on social media, future privacy designs can incorporate more granular options for users to control their information flow and correct inappropriate information sharing. Also, privacy designs can intelligently inform users of the potential privacy loss they may experience after sharing information, so that the action of correcting can happen earlier.

Additionally, in individualistic cultures, while users are less sensitive to their violations to others' privacy as personal interests are more important, they may care about personal privacy being impacted by others' information sharing. Thus, social media in individualistic cultures should enhance features to inform the users who

are negatively impacted by others' information sharing. More importantly, impacted users should be granted with more control over their personal information in others' shared content. For example, users should be granted the ability to remove their personal information in others' sharing.

12.4 Cross-Cultural Privacy Differences in Users' Information Disclosure to Organizations

As organizations increasingly conduct business globally, concerns with online data collection by organizations have extended beyond a single culture. As people in different cultures develop different values and norms, their perceptions of privacy and regulatory practices are intertwined with their cultural values and norms. Consequently, countries in different parts of the world have different regulations and policies regarding the use of consumers' personal information. Therefore, in a global market where personal data can be collected and transmitted across country borders, it is important that information privacy must be considered in an international context.

Generally, users' privacy attitudes and behaviors about information disclosure to organizations have significant grounding in their cultural values. First, individualism has a positive association with information privacy concerns [49–51]. People in individualist societies perceive higher privacy risks when disclosing personal information to shopping websites [52]. This is because individualism is associated with a strong desire for private life, freedom, and independence from others. Consequently, individuals in individualistic societies are more likely to be concerned about their personal territories and potential privacy intrusion and are thus reluctant to disclose personal information [52, 53]. They also adopt more protective behaviors, such as securing sensitive personal information [49, 54]. On the other hand, users in societies that place a high value on collectivism tend to be less sensitive to privacy concerns [55, 56]. They appear to trust data collection entities more and are more willing to share information with these entities [49, 53].

Uncertainty avoidance is another cultural value that is significantly associated with users' privacy attitudes towards personal data collection. For instance, studies have shown that uncertainty avoidance has a negative relationship with privacy concerns [49]. People in societies with a greater tendency to avoid uncertainty will perceive higher privacy risk from online information sharing and are thus less willing to disclose personal information [52, 57].

Based on these general associations between cultural values and privacy attitudes/behaviors that are well studied in previous privacy literature, a recent study discovers more concrete cross-cultural differences in users' privacy decision-making when they are asked to disclose information to organizations [6]. This study presents results from a large-scale online survey across eight countries to collect participants' responses in different data collection scenarios. In the scenarios,

Table 12.3 Summary of cross-cultural differences in disclosing personal data to organizations

	Individualistic countries (e.g., the USA)	Collectivistic countries (e.g., CN)
Usage purpose	✓ Customization	✓ Autonomously make decisions ✓ Customization
Value exchange	✓ Saving time or money ✓ Unique or compelling value	✓ Benefit the community ✓ Saving time or money ✓ Unique or compelling value
Entities	✓ Paid service ✓ Existing relationship	✓ Government
Collection methods	✓ Through computer	✓ Through mobile
Attitude	✓ Third-party accountability for data collection increases its acceptability	✓ Third-party accountability for data collection decreases its acceptability

participants were informed of whom collects their data (data collection entities), for what purpose the data is collected (usage purpose), how the data is collected (collection methods), and what values participants can get from the data collection (value exchange). Participants were then asked whether they would agree to share personal data in the scenarios (acceptability). The study shows several concrete cross-cultural differences, which are summarized in Table 12.3 to depict how users in different cultures would react in different scenarios.

12.4.1 Cultural Differences in Data Collection Entities

Figure 12.4 shows that users with different levels of individualism prefer to disclose personal information to different types of entities. People in collectivistic cultures such as China and India are relatively more accepting of data collection performed by the government than people in individualist cultures such as the USA and Canada. Data collection by users' employers is also better accepted in collectivistic cultures. People in individualist cultures are relatively more accepting of data collection when they either pay for or already have an existing relationship with the service provider. Foreign service providers are not well accepted in most of the countries.

12.4.2 Cultural Differences in Usage Purpose

Figure 12.5 shows that the probabilities of acceptability decrease more strongly in individualistic countries than in collectivistic countries when the usage purpose changes from "as I agreed" to "to autonomously make decisions for me" or "to customize the options presented to me." "To autonomously make decisions for me"

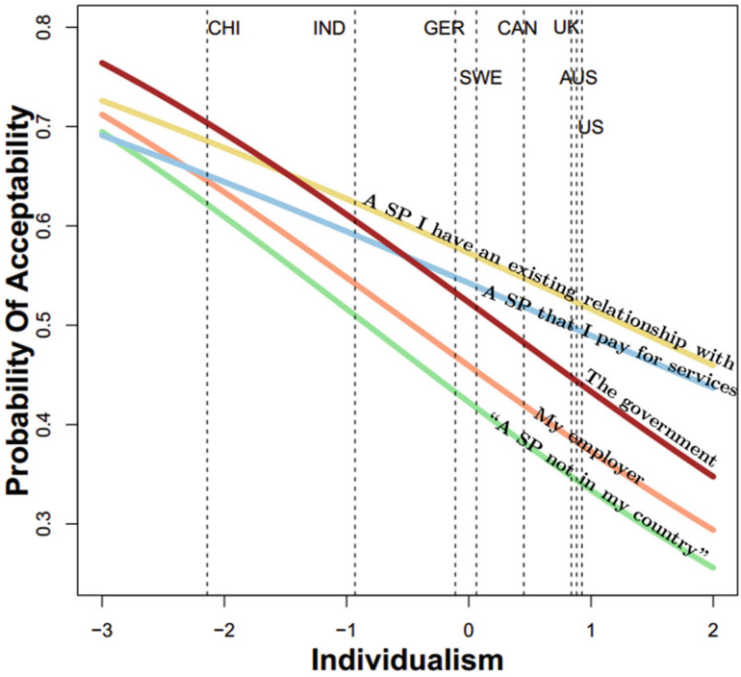

Fig. 12.4 Country comparison of acceptability in different data collection entities. SP stands for service provider

is the least acceptable usage purpose in individualistic countries, indicating that users in individualistic countries value autonomy. In collectivistic countries, such as China, "to autonomously make decisions for me" or "to customize the options presented to me" are equally accepted. "As I agreed" is the most acceptable usage purpose in all the countries.

12.4.3 Cultural Differences in Collection Methods

Collection methods describe how the data is collected by organizations. Table 12.4 describes the odds ratios of accepting data collection through mobile devices or computers. While the odds of sharing my info through mobile devices are generally lower than one, they are increasing in collectivistic countries, such as India and China, but decreasing in individualistic countries, such as the USA and Canada. This indicates that users in individualistic countries are more willing to provide personal information through computers than users in collectivistic countries.

In Table 12.5, the odds of sharing my photo or video image in public space are larger in individualistic countries, while the odds of sharing at work are larger in

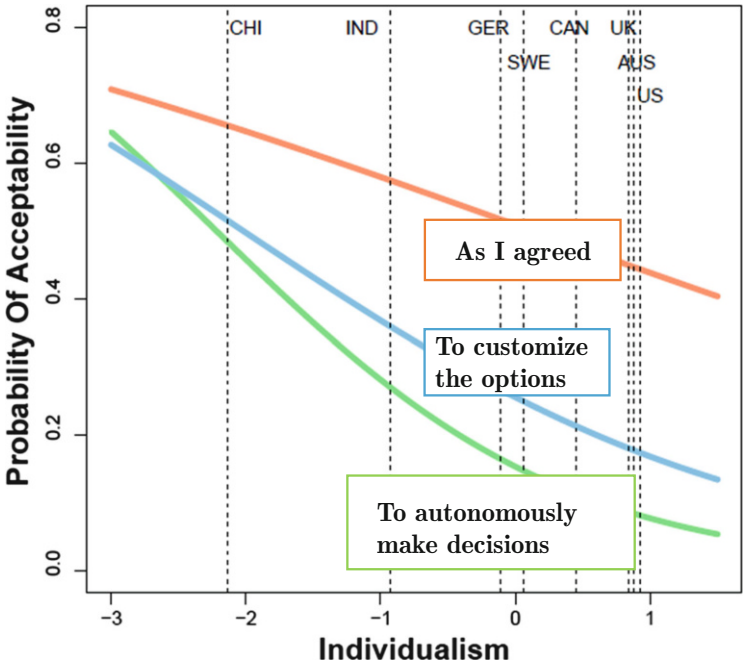

Fig. 12.5 Country comparison of acceptability in different usage purposes of data collection

Table 12.4 Comparing data collection through mobile devices and through computers

Collection methods	Relative odds of sharing my information through mobile devices, as compared to through computers				
	USA	Canada	Germany	India	China
Bank account number	0.701	0.730	0.764	0.818	0.904
Government issued ID	0.824	0.842	0.865	0.900	0.953
Medical history	0.570	0.616	0.674	0.771	0.938

Table 12.5 Comparing image collection in public space, at work, and at home

	Collection methods				
Compared to at home, odds of sharing my photo or video image	USA	Canada	Germany	India	China
	In public space				
	1.394	1.356	1.313	1.252	1.167
	At work				
	1.348	1.369	1.394	1.432	1.490

collectivistic countries. This indicates that when the data type is a photo or video image, users in individualistic countries are relatively more accepting if it is taken in public, while users in collectivistic countries accept it more at work.

12.4.4 Cultural Differences in Value Exchange from Data Collection

Value exchange refers to what value users can obtain from personal data sharing. As shown in Fig. 12.6, "saves me time or money" and "a unique or compelling value" are appealing values from data collection in both individualistic and collectivistic countries. However, "benefits the community" is more acceptable in collectivistic countries and less acceptable in individualistic countries. This indicates that users in individualistic countries cannot be swayed by benefits to the community.

12.4.5 Cultural Differences in Third-Party Accountability

Figure 12.7 describes the cultural differences in users' perception of third-party accountability—how much users regard third parties to be responsible for personal data collection. In individualistic countries, when users' perception that a third party is accountable for personal data collection increases, their acceptance of data collection generally increases as well. But in collectivistic countries, the perception of third-party accountability tends to decrease data collection acceptability. This

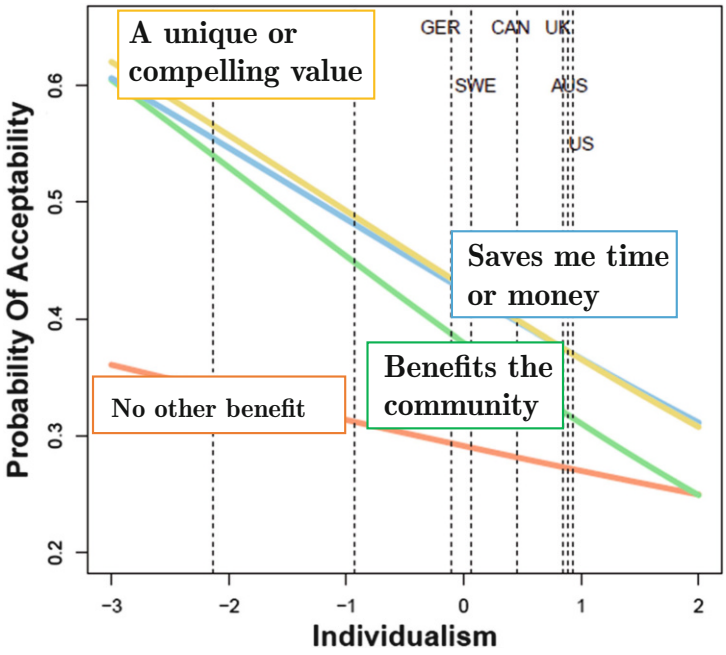

Fig. 12.6 Country comparison of acceptability in different value exchanges of data collection

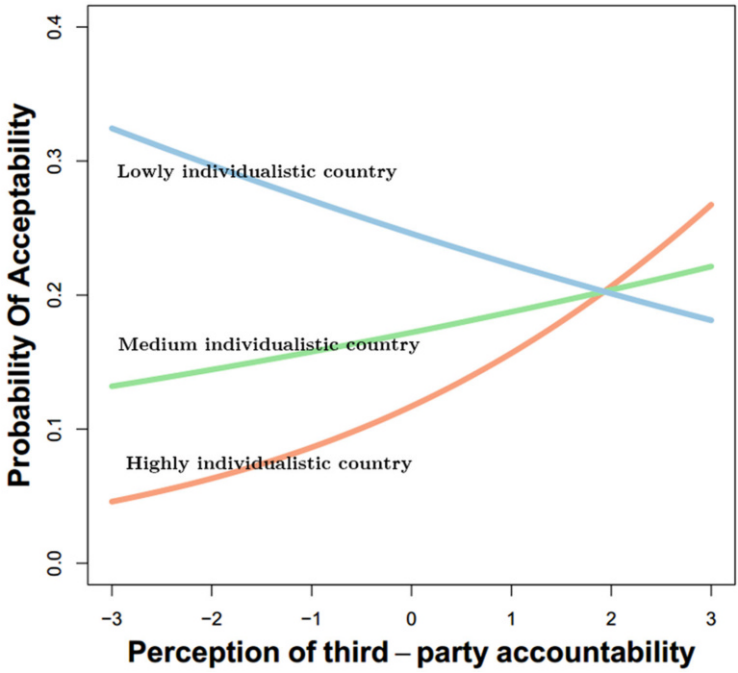

Fig. 12.7 Country comparison in third-party accountability of data collection

indicates that the attitudes towards third-party accountability regarding personal data collection have different consequences for the acceptability of data collection in different cultures. Even if users in collectivistic countries increasingly believe that third parties should be accountable for their personal data, they still find it less acceptable to disclose. In contrast, people in individualist societies are more likely to accept the data collection if the third parties establish formal agreement on the accountability regarding personal data collection, arguably because they are more comfortable with contract-based relations.

12.4.6 Design Implications

Based on the cross-cultural differences in users' data collection by organizations, we can see that users' acceptance of personal data collection is different in different cultures, even given the same data collection entities, data usage purposes, collection methods, values they can obtain from the data collection, and third-party accountability. Generally, organizations, especially organizations that operate globally, should consider users' cultural backgrounds and countries when collecting

personal data and when designing privacy features to allow users to control their personal data flow. Specifically, I make the following suggestions.

12.4.6.1 Customize Data Collection Strategies in Different Countries

Users in different countries have different preferences regarding the collection of personal data. For example, users in individualist countries may find it acceptable to disclose personal data to a service provider that they pay for or have an existing relationship with. The same may be less acceptable in collectivistic countries though. Thus, service providers should take this into account when establishing privacy policies. Similarly, users in individualist countries may find it more acceptable to share their information through a computer, while users in collectivistic countries are more comfortable sharing through a mobile device. Previous work [58] has found that perceived usefulness is more important in Western culture while perceived ease of use is more important in Eastern culture. This finding may give rise to an explanation, namely, that users in individualistic countries may find computers more useful and more suited to control the disclosure of personal data, while users in collectivistic countries may view mobile devices as easier to use in data sharing. Thus, multinational organizations may need to tailor their data collection methods to different cultures in an effort to make users feel more comfortable.

12.4.6.2 Enable Different Options in Different Countries to Control Personal Data Flow

Multinational organizations can incorporate users' cultural background as an additional factor to consider in providing privacy support. For example, a site or app can determine users' country based on their IP address and use the cultural values related to the approximate location of this IP address. Combining situational cues and cultural considerations, they can then recommend customized options to users that are tailored to their specific cultural background and situation. The details of how to design user-tailored privacy support are more comprehensively covered in Chap. 16 in this book.

12.4.6.3 Differentiate Relationships Between Privacy Perceptions and Privacy Decisions in Different Cultures

The links between privacy perceptions and decisions are culturally different. Certain beliefs (e.g., third-party accountability) have opposite effects between individualistic and collectivistic cultures. This cultural variability of attitudinal effects may be related to the existence of the privacy paradox [59] (i.e., the surprisingly weak link between privacy attitudes and behaviors). It also warns practitioners that designs, policies, or technical interventions that are created to increase the acceptability of

disclosure by countering such beliefs in one culture may be completely counterproductive when implemented in another culture. For example, informing users that third-party companies are accountable for the collection, access, and use of personal data in individualistic countries like the USA will make them more likely to disclose. But such intervention will have a counterproductive effect in collectivistic countries like China.

12.5 Conclusions

In this chapter, I describe a number of cross-cultural differences that exist in interpersonal privacy management on social media and consumers' management of personal data collection by organizations. Compared with the general associations between national cultures and privacy attitudes/behaviors found in previous literature, the more concrete investigation presented in this chapter of how users' privacy decision-making differs in different situations in different cultures can generate many specific design implications for privacy systems, data collection strategies, and privacy regulatory mechanisms in the international context.

Future work should continue this investigation into more concrete cross-cultural differences in users' privacy attitudes and behaviors. For example, besides different types of online social networks, there might be other factors that play an important role in privacy management on social media, such as the specific content and mood in information sharing and individual personalities. These factors may act differently in different cultures.

Second, most cross-cultural privacy studies compare privacy attitudes and behaviors at the country level. However, there are some variations in cultural values within the same country. Some people in individualistic countries may exhibit collectivistic characteristics or vice versa. Different generations and ethnic groups may have different cultural orientations. Different regions within a country may hold different traditions. Future work can further differentiate cultural groups within a country to explore the cultural differences in privacy management.

Third, emerging technologies have been increasingly available around the world, such as Internet of Things (IoT), smart devices, and augmented reality and virtual reality. For example, this book contains a chapter focusing on the details of IoT privacy (Chap. 11). Examination of the cross-cultural privacy differences in users' interaction with these emerging technologies will be necessary. The data sharing context of these technologies may be different in different countries. The cultural norms and practices may also vary from that of social media and other online systems (Chap. 5 discusses the development of privacy norms more specifically). Thus, I call for more investigation into the cross-cultural privacy differences on different technological platforms.

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