

A Systematic Analysis of Data Protection Regulations

Supplementary Material (Main Artifact)

HICSS 58 Anonymous Submission

Principles	
Lawfulness	
Regulation	Definition
GDPR [1][2][3][4]	Being lawful depends on consent, contract of performance, legal obligation, vital interests of individuals, public interest, and legitimate interest.
CCPA/CPRA	NA*
CPA	NA*
CTDPA	NA*
UCPA	NA*
VCDPA	NA*
IPA	NA*
LGPD [5]	Processing of personal data shall only be carried out with consent, legal or regulatory obligation, processing and shared use of data necessary for the execution of public policies provided in laws or regulations, carrying out studies by research entities, execution of a contract, regular exercise of rights in judicial, administrative or arbitration procedures, protecting the health, legitimate interest and protection of credit.
PIPL [6][7]	"The principles of legality, propriety, necessity, and sincerity shall be observed for personal information handling." Processing of personal data shall only be carried out with consent, the performance of the contract, legal obligations, public health incidents or emergencies, public interest, utilization of publicly available personal information, and other circumstances provided in laws and administrative regulations.
PIPA [8][9]	A personal information controller shall collect and use personal information lawfully, fairly, and under some circumstances, namely consent, legal obligations, legal obligation of a public institution, performance of a contract, vital interest, and legitimate interest.
APPI [10]	Handling personal information is allowed under the circumstances, namely, consent, legal obligations, and vital interest.
PIPEDA [11]	Collection, use, or disclosure of personal information is allowed when the knowledge and consent of the individual is taken. It is also allowed when consent is not possible due to different impediments.
PDPA [12]	Processing of personal data shall only be carried out with consent, legal obligation, legitimate interest, public interest, vital interest, the performance of a contract, and other aspects under the First and Second Schedules of PDPA.
The Privacy Act 1988 [13]	The personal information may only be collected by fair and lawful means and must be reasonably necessary for the APP entity's functions and activities. It is allowed under some circumstances, namely, consent, when there is a suspect that unlawful activity, to locate a person who is reported as missing or for the purposes of a confidential alternative dispute resolution process.

*The data privacy laws in the USA allow undertakings to process information without any legal basis, as a rule. Exceptionally, they may bring forward some legal requirements for a number of cases.

Table 1: Comparison Aspects of Laws, Principles-Lawfulness

Principles	
Fairness	
GDPR [2][14]	The data subject must be informed about the processing operation and its purposes, the existence of profiling, and the consequences of such profiling.
CCPA/CPRA [15]	A business shall inform consumers at or before the collection of data with the categories and the collection purpose of the personal data. Also, whether this data is shared or sold.
CPA [16][17]	Data controllers shall inform consumers of a privacy notice, which includes the category of personal data, purpose, category of personal data that is shared with third parties, category of third parties, as well as how and where consumers may exercise their rights. Also, consumers shall be informed about targeted advertising and how to opt-out of such processing.
CTDPA [18]	A controller shall inform consumers with a clear and meaningful privacy notice, which includes the category of personal data processed, the purpose of processing, how consumers may exercise their rights, and the contact information of the controller. Also, the categories of shared data, if there are any third parties and the category of third parties.
UCA [19]	A controller shall provide consumers a privacy notice that includes the categories of personal data processed, the purpose of processing, how consumers may exercise their rights, and the existence of third parties. Also, consumers shall be informed about targeted advertising and how to opt-out of such processing.
VCDPA [20]	Controllers must provide consumers a privacy notice which includes the categories of personal data, the purpose of processing, the existence of third parties, and targeted advertising, as well as how consumers may exercise their consumer rights.
IPA [21]	A controller shall provide consumers a privacy notice that includes the categories of personal data processed, the purpose of processing, the existence of third parties, as well as how consumers may exercise their rights. If a controller engages in targeted advertising, it also shall clearly be disclosed with the manner in which a consumer may exercise the right to opt out of such activity.
LGPD [22]	The data subject has the right to access the specific purpose of the processing, the type and duration of the processing, identification, and contact information of the controller, information regarding the shared use of data, and the purpose and responsibilities of the agents that will carry out the processing, and their rights.
PIPL [23][24][25]	The rules for handling personal information, purpose, method, and scope of handling shall be disclosed. When PI handlers use personal information to conduct automated decision-making, the transparency of the decision-making and the fairness and justice of handling results shall be guaranteed. They may not engage in unreasonable differential treatment of individuals in trading.
PIPA [8][9][26]	A personal information controller shall collect personal information lawfully and fairly to the minimum extent necessary and inform a data subject when obtaining consent about the purpose of the collection and use of personal information, particulars of personal information to be collected, and the period for retaining and using personal information.
APPI [27][28][29]	A personal information handling business operator shall promptly inform a principal of the utilization purpose or disclose it to the public.
PIPEDA [30][31][32]	The organization shall document the purposes for which personal information is collected and be open about the policies and practices with respect to the management of personal information.
PDPA [33][34]	An organization must inform the purpose of collection, use, or disclosure of the personal data on or before collecting it. Also, any other purposes of the use or disclosure of the personal data of which the individual has not been informed must be disclosed.
The Privacy Act 1988 [35]	APP entities shall manage personal information in an open and transparent way. A privacy policy about the management of personal information must be clearly expressed and be up-to-date and shall contain the kinds of personal information that the entity collects and holds, how the entity collects and holds the information, and the purposes for which it is held, used, and disclosed. As well as how an individual may access personal information and the existence of third countries.

Table 2: Comparison Aspects of Laws, Principles-Fairness

Principles	
Transparency	
GDPR [2][36][37]	Individuals must be informed about which personal data is collected from them, why it is collected, and how it will be used.
CCPA/CPRA [15]	A business shall inform consumers at or before the collection of data with the categories and the collection purpose of the personal data also whether this data is shared or sold.
CPA [16][17]	Data controllers shall inform consumers with a clear and meaningful privacy notice, which includes the category of collected and processed personal data, purpose, category of personal data that is shared with third parties, category of third parties, as well as how and where consumers may exercise their rights.
CTDPA [18]	A controller shall inform consumers with a privacy notice, which includes the category of the personal data, the purpose of processing, how consumers can exercise their rights, including how a consumer may appeal a controller's decision with regard to the consumer's request, and contact information of the controller.
UCA [19]	A controller shall provide consumers with a clear privacy notice, which includes the categories of personal data processed, the purpose of processing, how consumers may exercise their rights, the categories of personal data that the controller shares with third parties, if any, and the categories of third parties.
VCDPA [20]	Controllers must provide consumers with a reasonably accessible, clear, and meaningful privacy notice which includes the categories of personal data processed, the purpose of processing, the categories of personal data that is shared with third parties, if any, the categories of third parties if any, as well as how consumers may exercise their consumer rights.
IPA [21]	A controller shall provide consumers a privacy notice that includes the categories of personal data processed, the purpose of processing, the existence of third parties, as well as how consumers may exercise their rights. If a controller engages in targeted advertising, it also shall clearly be disclosed with the manner in which a consumer may exercise the right to opt out of such activity.
LGPD [38][39]	Processing of personal data shall be done with transparency, which guarantees to the data subjects clear, precise, and easily accessible information about the carrying out of the processing and the respective processing agents, subject to commercial and industrial secrecy.
PIPL [23][25]	The principles of openness and transparency shall be observed in the handling of personal information, disclosing the rules for handling personal information and clearly indicating the purpose, method, and scope of handling.
PIPA [9][40]	A personal information controller shall inform a data subject about the purpose of the collection and use of personal information, particulars of personal information to be collected, the period for retaining and using personal information, the right to deny consent, and the disadvantage affected by the denial of consent, existence of the third party.
APPI [27][28]	A personal information handling business operator shall promptly inform a principal of the utilization purpose or disclose it to the public.
PIPEDA [30][41][31][32]	The organization shall document the purposes for which personal information is collected in order to comply with the openness principle and be open about its policies and practices with respect to the management of personal information.
PDPA [33][34]	An organization must inform the purpose of collection, use, or disclosure of the personal data on or before collecting it. Also, any other purposes of the use or disclosure of the personal data of which the individual has not been informed must be disclosed.
The Privacy Act 1988 [42][43][35][44]	APP entities shall manage personal information in an open and transparent way. Privacy policy about the management of personal information must be clearly expressed and be up-to-date and shall contain the kinds of personal information that the entity collects and holds, how the entity collects and holds the information, and the purposes for which it is held, used, and disclosed.

Table 3: Comparison Aspects of Laws, Principles-Transparency

Principles	
Purpose Limitation	
GDPR [2][45]	Personal data must be collected for specific, explicit, and legitimate purposes and not further processed in a manner that is incompatible with those purposes.
CCPA/CPRA [15]	"A business shall not collect additional categories of personal data or use personal data collected for additional purposes without providing the consumer with consistent notice."
CPA [46][17]	"The data controller shall specify the express purposes for which personal data are collected and processed, and it shall not be processed for any further purposes other than expressly listed." Personal data can only be processed when processing is necessary, reasonable, and proportionate to the specific purpose.
CTDPA [18]	A controller shall not process personal data for purposes that are not necessary to or compatible with the disclosed purposes unless the consumer's consent is taken.
UCPA	NA
VCDPA [20]	A controller shall not process personal data for reasonably not necessary or compatible with the disclosed purpose for which such personal data is processed as disclosed to the consumer. If the controller obtains the consumer's consent, then processing is allowed.
IPA [47]	Personal data shall be processed to the extent that is reasonably necessary and proportionate to the purpose listed in this section. It shall be adequate, relevant, and limited to what is necessary in relation to the specific purposes listed.
LGPD [38]	Processing personal data shall be done with purpose and adequacy principles, which state the processing is done for legitimate, specific, and explicit purposes of which the data subject is informed, with no possibility of subsequent processing that is incompatible with these purposes. Also, the purposes communicated to the data subject shall be compatible with the processing.
PIPL [48]	"Personal information handling shall have a clear and reasonable purpose and shall be directly related to the handling purpose, using a method with the smallest influence on individual rights and interests."
PIPA [8][49][50]	The personal information controller shall specify the purposes for which personal information is processed, process personal information in a manner compatible with the purposes for which the personal information is processed, and shall not use it beyond such purposes.
APPI [51][10]	A personal information handling business operator shall specify the purpose of utilizing the personal information as explicitly as possible and shall not handle personal information beyond the necessary scope to achieve a utilization purpose specified without obtaining in advance a principal's consent.
PIPEDA [30][52]	"Personal information shall not be used or disclosed for purposes other than those for which it was collected, except with the consent of the individual or as required by law."
PDPA [53]	"An organization may collect, use, or disclose personal data about an individual only for the purposes that a reasonable person would consider appropriate in the circumstances and that the individual has been informed."
The Privacy Act 1988 [54]	"If an APP entity holds personal information about an individual that was collected for a particular purpose, the entity must not use or disclose the information for another purpose, with some exceptions."

Table 4: Comparison Aspects of Laws, Principles-Purpose Limitation

Principles	
Data Minimization	
GDPR [2][55][56]	"Personal data shall be collected in adequate, relevant, and limited to what is necessary in relation to the purposes for which they are processed."
CCPA/CPRA [15]	"A business' collection, use, retention, and sharing of a consumer's personal information shall be reasonably necessary and proportionate to achieve the purposes for which the personal information is collected."
CPA [17]	"A controller's collection of personal data must be adequate, relevant, and limited to what is reasonably necessary in relation to specified purposes."
CTDPA [18]	"A controller shall limit the collection of personal data to what is adequate, relevant, and reasonably necessary in relation to the disclosed purposes."
UCPA	NA
VCDPA [20]	"A controller shall limit the collection of personal data to what is adequate, relevant, and reasonably necessary in relation to the purposes for which such data is processed, as disclosed to the consumer."
IPA [47]	Personal data shall be processed to the extent that is "reasonably necessary and proportionate to the purpose listed in this section". It shall be "adequate, relevant, and limited to what is necessary in relation to the specific purposes listed in this section."
LGPD [38]	Processing personal data shall be done with the necessity principle, which states the "limitation of the processing activity to the minimum necessary for the accomplishment of its purposes, with the comprehensiveness of the relevant data, proportional and not excessive in relation to the purposes of the data processing."
PIPL [48]	"Personal information handling shall have a clear and reasonable purpose and shall be directly related to the handling purpose, using a method with the smallest influence on individual rights and interests."
PIPA [57]	"A personal information controller shall collect the minimum personal information necessary to attain the purpose. The burden of proof that the minimum personal information is collected shall be borne by the personal information controller."
APPI [10]	"A business operator handling personal information shall not handle personal information about a person (...) beyond the scope necessary for the achievement of the Purpose of Utilization."
PIPEDA [31]	"The collection of personal information shall be limited to that which is necessary for the purposes identified by the organization.", "Both the amount and the type of information collected shall be limited to that which is necessary to fulfill the purposes identified."
PDPA	NA
The Privacy Act 1988 [58]	"The entity must not collect personal information unless the information is reasonably necessary for or is directly related to one or more of the entity's functions or activities."

Table 5: Comparison Aspects of Laws, Principles-Data Minimization

Principles	
Accuracy	
GDPR [2]	"Personal data shall be accurate and, where necessary, kept up to date; every reasonable step must be taken to ensure that personal data that are inaccurate, having regard to the purposes for which they are processed, are erased or rectified without delay."
CCPA/CPRA	NA
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD [38]	The 'quality of the data' principle guarantees to the data subjects the accuracy, clarity, relevancy, and updating of the data in accordance with the need and for achieving the purpose of the processing.
PIPL [59]	"The handling of personal information shall ensure the quality of personal information and avoid adverse effects on individual rights and interests from inaccurate or incomplete personal information."
PIPA [8]	"The personal information controller shall ensure personal information is accurate, complete, and up to date to the extent necessary in relation to the purposes for which the personal information is processed."
APPI [60]	"A personal information handling business operator shall strive to keep personal data accurate and up to date within the scope necessary to achieve a utilization purpose. Also, he/she shall delete the personal data without delay when such utilization has become unnecessary."
PIPEDA [61]	"Personal information shall be as accurate, complete, and up-to-date as is necessary for the purposes for which it is to be used.", "Information shall be sufficiently accurate, complete, and up-to-date to minimize the possibility that inappropriate information may be used to make a decision about the individual."
PDPA [62]	"An organization must make a reasonable effort to ensure that personal data collected by or on behalf of the organization is accurate and complete if the personal data is likely to be used by the organization to make a decision that affects the individual or is likely to be disclosed by the organization to another organization."
The Privacy Act 1988 [63]	"An APP entity must take such steps to ensure that the personal information that the entity collects is accurate, up-to-date, and complete."

Table 6: Comparison Aspects of Laws, Principles-Accuracy

Principles	
Storage Limitation	
GDPR [2][1][64][55]	Storage limitation indicates that personal data shall not be kept longer than is necessary for the purposes for which the personal data are processed in a form that permits identification.
CCPA/CPRA [15][65][66][67]	A business shall not retain a consumer's personal information or sensitive personal information for no longer than is reasonably necessary for that disclosed purpose.
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD [68]	"Personal data shall be deleted following the termination of their processing within the scope and technical limits of the activities."
PIPL [69][70]	Personal information handlers shall delete personal information when the handling purpose has been achieved, or it is no longer necessary to achieve the handling purpose with some other provisions. Also, personal information retention periods shall be the shortest period necessary to realize the purpose of personal information handling.
PIPA [71]	A personal information controller shall destroy personal information without delay when the personal information becomes unnecessary owing to the expiry of the retention period if retention is not mandatory by other statutes.
APPI [72]	Businesses handling personal information must endeavor to delete personal data without delay if they no longer require it.
PIPEDA [52]	"Organizations shall develop guidelines and implement procedures with respect to the retention of personal information. These guidelines shall include minimum and maximum retention periods.," "Personal information that is no longer required to fulfill the identified purpose shall be destroyed, erased, or made anonymous."
PDPA [73]	"An organization must cease to retain its documents containing personal data as soon as it is reasonable to assume that the retention is no longer necessary for legal or business purposes or that the purpose for which that personal data was collected is no longer being served by retention of the personal data."
The Privacy Act 1988 [74]	"If an APP entity holds personal information about an individual and no longer needs the information for any purpose for which the information may be used or disclosed, then the entity must take steps to destroy the information or to ensure that the information is de-identified."

Table 7: Comparison Aspects of Laws, Principles-Storage Limitation

Principles	
Integrity, Confidentiality and Availability	
GDPR [2][75]	Data controllers and processors have to ensure a level of security with the ability to ensure the ongoing confidentiality, integrity, and availability of processing systems and services.
CCPA/CPRA	NA*
CPA	NA*
CTDPA [18][76]	"A controller shall establish, implement, and maintain reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data."
UCA [19]	"A controller shall establish, implement, and maintain reasonable administrative, technical, and physical data security practices to protect the confidentiality and integrity of personal data."
VCDPA [20]	"A controller shall establish, implement, and maintain reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data."
IPA [21]	"A controller shall adopt and implement reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data."
LGPD [77]	"Processing agents shall adopt security, technical, and administrative measures able to protect personal data from unauthorized accesses and accidental or unlawful situations of destruction, loss, alteration, or communication on any type of improper or unlawful processing."
PIPL [78]	Personal information handlers shall adopt specific measures to prevent unauthorized access as well as personal information leaks, distortion, or loss.
PIPA [79]	Every personal information controller shall take such technical, managerial, and physical measures to ensure safety so that the personal information may not be lost, stolen, divulged, forged, altered, or damaged.
APPI [80]	A personal information handling business operator shall take necessary steps to prevent leakage, loss, or damage of its handled personal data.
PIPEDA [81]	Personal information shall be protected against loss or theft, as well as unauthorized access, disclosure, copying, use, or modification. Organizations shall protect personal information regardless of the format in which it is held.
PDPA [82]	"An organization must protect personal data in its possession or under its control by making reasonable security arrangements to prevent unauthorized access, collection, use, disclosure, copying, modification or disposal, or similar risks and the loss of any storage medium or device on which personal data is stored."
The Privacy Act 1988 [83]	"An APP entity that holds personal information must take such steps as are reasonable in the circumstances to protect the information from misuse, inference, and loss. Also, protect them from unauthorized access, modification, or disclosure."

*CCPA/CPRA: Although CCPA/CPRA did not make a distinct reference to the integrity, confidentiality, and availability requirements as compared to the other laws, "reasonable security procedures and practices" would be considered to be the CCPA/CPRA equivalent of such requirements [67].

*CPA: Controllers and processors are mandated to implement appropriate technical and organizational measures to ensure a level of security appropriate to the risks. However, it is not explicitly mentioned that integrity, confidentiality, and availability must be provided by controllers [46][84].

Table 8: Comparison Aspects of Laws, Principles-Integrity, Confidentiality, and Availability

Principles	
Accountability	
GDPR [2]	The accountability principle states that controllers are responsible for and be able to demonstrate that they are in compliance with the regulation.
CCPA/CPRA	NA*
CPA	NA*
CTDPA	NA*
UCPA	NA*
VCDPA	NA*
IPA	NA*
LGPD [38][85][86]	"The controller and processor shall demonstrate the adoption of measures that are efficient and capable of proving compliance with the rules of personal data protection, including the efficacy of such measures."
PIPL [87][88]	"Personal information handlers shall bear responsibility for their personal information handling activities and adopt the necessary measures to safeguard the security of the personal information they handle."
PIPA [89]	The Minister of the Interior and Safety may request materials like goods and documents from a personal information controller where any violation of the act is found, suspected, or reported or a civil complaint thereon received.
APPI	NA*
PIPEDA [90][91]	"An organization is responsible for personal information under its control and shall designate an individual or individuals who are accountable for the organization's compliance." An organization is responsible for personal information that has been transferred to a third party for processing.
PDPA [92][33]	"An organization is responsible for personal data in its possession or under its control. The organization must develop and implement policies and practices that are necessary for the organization to meet the obligations of the organization under the PDPA."
The Privacy Act 1988 [42][93][94]	"An APP entity must take such steps to implement practices, procedures, and systems relating to the entity's functions or activities that will enable the entity to deal with inquiries or complaints from individuals about the entity's compliance with the Australian Privacy Principles. Also, the Commissioner may conduct an assessment of whether personal information held by an APP entity is being maintained and handled in accordance with the APP."

*The principle of "Accountability" is not an explicit requirement under the USA data privacy laws, but they recognize that the primary entity collecting data is ultimately responsible for the obligations.

*APPI: A personal information handling business operator shall maintain a record of processing activities and implement appropriate measures to comply with data privacy and security. In that sense, accountability is partly covered [95].

Table 9: Comparison Aspects of Laws, Principles-Accountability

Controller and Processor	
Defining the Data Controller	
GDPR [96]	"The data controller means the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data."
CCPA/CPRA [67]	A business collects consumers' personal information, determines the purposes and means of the processing of consumers' personal information, does business in the State of California, and meets certain criteria.
CPA [97][17]	"A controller is a person who determines the purposes for and means of processing personal data and shall take reasonable measures to secure personal data."
CTDPA [98]	"A controller is an individual or legal entity that determines the purpose and means of processing personal data."
UCPA [99]	"A controller is a person doing business in the state who determines the purposes and the means by which personal data are processed. "
VCDPA [100]	"A controller is a natural or legal person who, alone or jointly with others, determines the purpose and means of processing personal data."
IPA [101]	"A controller is a person who, alone or jointly with others, determines the purpose and means of processing personal data."
LGPD [102]	"A controller is a natural person or legal entity of either public or private law in charge of making decisions regarding the processing of personal data."
PIPL [103]	"A personal information handler refers to organizations and individuals that, in personal information handling activities, autonomously decide handling purposes and handling methods."
PIPA [104]	"A personal information controller is a public institution, legal person, organization, or individual that processes personal information directly or indirectly to operate the personal information files as part of its activities."
APPI [105]	There is no definition for either a data controller or data processor under the APPI. A personal information handling business operator is a person providing a personal information database for use in business.
PIPEDA [106]	There are no distinctions between data controllers and data processors. PIPEDA applies to all organizations engaged in commercial activities and does not apply to public bodies.
PDPA [107]	"An organization is any individual, company, association, or body of persons, corporate or unincorporated, whether or not formed or recognized under the law of Singapore or resident or having an office or a place of business in Singapore."
The Privacy Act 1988 [108]	There are no distinctions between data controllers and data processors. The privacy act provides an "APP entity" concept, which includes private organizations, such as individual, body corporate, partnership, and unincorporated associations.

Table 10: Comparison Aspects of Laws, Controller and Processor-Defining Data Controller or Synonyms

Controller and Processor	
Defining the Data Processor	
GDPR [96]	"The data processor means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller."
CCPA/CPRA [67]	"A service provider is a person who processes personal information on behalf of a business and who receives from or on behalf of the business consumer's personal information for a business purpose pursuant to a written contract."
CPA [97][84]	"A processor is defined as a person who processes personal data on behalf of a controller with a binding contract."
CTDPA [98]	"A processor is an individual or legal entity that processes personal data on behalf of a controller."
UCPA [99]	"A processor is a person who processes personal data on behalf of a controller."
VCDPA [100]	"A processor is a natural or legal entity that processes personal data on behalf of a controller."
IPA [101]	"A processor is a person that processes personal data on behalf of a controller."
LGPD [102]	"A processor is a natural person or legal entity of either public or private law that processes personal data in the name of the controller."
PIPL [109]	An entrusted party processes personal information on behalf of a personal information handler.
PIPA [110]	The outsourcer is a legal entity or person that processes personal information on behalf of the personal information controller.
APPI [105]	There is no definition for either a data controller or data processor under the APPI. A personal information handling business operator is a person providing a personal information database for use in business.
PIPEDA [106]	There are no distinctions between data controllers and data processors. PIPEDA applies to all organizations engaged in commercial activities and does not apply to public bodies.
PDPA [107]	"A data intermediary is an organization that processes personal data on behalf of another organization but does not include an employee of that other organization."
The Privacy Act 1988 [108]	There are no distinctions between data controllers and data processors. The privacy act provides an "APP entity" concept, which includes private organizations, such as individual, body corporate, partnership, and unincorporated associations.

Table 11: Comparison Aspects of Laws, Controller and Processor-Defining Data Processor or Synonyms

Controller and Processor	
Assigning a Data Protection Officer	
GDPR [111][112][113]	A data protection officer is a person with expert knowledge of data protection law and assists the controller and processor in monitoring internal compliance with the regulation.
CCPA/CPRA	NA
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD [102]	"A data protection officer is a person named by the controller and processor to act as a channel of communication between the controller, the subjects of such data, and the National Data Protection Authority (ANPD)."
PIPL [114]	A personal information protection officers are responsible for supervising personal information handling activities as well as adopting protection measures.
PIPA [115]	"A personal information controller shall assign a privacy officer who comprehensively takes charge of personal information processing."
APPI	NA
PIPEDA [32][91]	Organizations are required to designate an individual or individuals who are accountable for the organization's compliance with applicable laws.
PDPA [92]	"An organization must designate one or more individuals to be responsible for ensuring that the organization complies with the PDPA and makes available to the public the business contact information."
The Privacy Act 1988	NA*

*The Privacy Act 1988: There are no requirements for DPO under the Privacy Act 1988, but it is recommended in the Guidelines.

Table 12: Comparison Aspects of Laws, Controller and Processor-Assigning a DPO in certain circumstances

Controller and Processor	
Binding Contract between Controller and Processor	
GDPR [116]	If the controller decides to work with a processor, the controller and processor shall have a contract that is binding on the processor with regard to the controller.
CCPA/CPRA [67]	"Service providers can process personal information on behalf of the business for a business purpose pursuant to a written contract."
CPA [84]	Controllers and processors shall collaborate with a binding contract under CPA. The contract draws boundaries in which way the processor can handle personal data and what responsibilities the processor will have against the controller.
CTDPA [76]	"A controller and processor must have a contract that is legally binding and clearly sets forth instructions for processing data, the nature and purpose of processing, the type of data subject, the duration of the processing, and the rights and obligations of parties."
UCA [117]	"Before a processor performs processing on behalf of a controller, the processor and controller shall enter into a contract that clearly sets forth instructions for processing personal data, the nature and purpose of the processing, the type of data subject, duration of the processing, the parties' rights and obligations."
VCDPA [118]	"A controller and processor must have a contract that shall be binding and clearly set forth instructions for processing data, the nature and purpose of processing, the type of data subject to processing, the duration of processing, and the rights and obligations of both parties."
IPA [119]	"A controller and processor must have a contract that shall be binding and clearly set forth instructions for processing data, the nature and purpose of processing, the type of data subject to processing, the duration of processing, and the rights and obligations of both parties."
LGPD [120][121]	The processor shall carry out the processing according to the instructions provided by the controller, and processors are jointly liable for damages caused by the processing when they have not followed the controller's lawful instructions.
PIPL [109]	"Where personal information handlers entrust the handling of personal information, they shall conclude an agreement with the entrusted person, which includes the time limit, the handling method, categories of personal information, protection measures, as well as rights and duties of both sides."
PIPA [122]	"A personal information controller shall undergo paper-based formalities stating the following when outsourcing personal information processing to a third party.", "A personal information controller shall disclose the details of the outsourced work and entity that processes personal information under an outsourcing contract."
APPI	NA
PIPEDA	NA
PDPA	NA
The Privacy Act 1988	NA

Table 13: Comparison Aspects of Laws, Controller and Processor-Binding Contract between Controller and Processor

Controller and Processor	
Keeping Record of Data Processing Activities	
GDPR [123]	In order to comply with the regulation, the controller or processor shall maintain records of processing activities under its responsibility.
CCPA/CPRA	NA*
CPA	NA
CTDPA	NA*
UCPA	NA
VCDPA	NA*
IPA	NA
LGPD [124]	"The controller and the processor shall keep records of personal data processing operations carried out by them, especially when based on legitimate interest."
PIPL [125]	Personal information handlers shall record the handling situation in certain cases, at least three years long.
PIPA	NA*
APPI [95][126]	It requires maintaining a record only for certain transfers of personal information.
PIPEDA	NA*
PDPA	NA*
The Privacy Act 1988	NA*

*CCPA/CPRA: *CPPA has record-keeping activities for consumer requests and how it responds to them. There are no provisions for record-keeping for personal data processing activities CPRA/CPPA [127].

*CTDPA: *CTDPA has provisions for record-keeping, but it is not actually for processing activities. It is related to deleting personal data when a consumer exercises his/her right [128].

*VCDPA: *Record-keeping activity is mentioned when complying with the request to delete a consumer's personal data. However, there are no provisions for keeping a record of data processing activities under VCDPA [129].

*PIPA: *No explicit requirement for keeping a record of processing activities, but it does require data handlers to manage and store log-in records, which document the access to a data processing system by 'personal data handlers' for at least one year [130].

*PIPEDA: *No explicit requirement for keeping a record of processing activities, but it requires keeping and maintaining a record of every breach of security safeguards involving personal information under its control [131].

*PDPA: *No explicit requirement for keeping a record of processing activities, but it requires organizations to preserve a copy of personal data that has been requested from an individual, and the organization refused to provide that personal data [132].

*The Privacy Act 1988: *No explicit requirement for keeping a record of processing activities, but it is mentioned that an entity could consider keeping a record of the steps taken to comply with APP 1.2 to demonstrate that personal information is managed in an open and transparent way [93].

Table 14: Comparison Aspects of Laws, Controller and Processor-Keeping Record of Processing Activities

Controller and Processor	
Data Breach Notifications	
GDPR [96][133][134]	As soon as the controller becomes aware of the data breach, it shall be notified to the supervisory authorities within a certain amount of time. Also, based on the risk of possible consequences of the breach, the controller may also be needed to inform data subjects about it.
CCPA/CPRA	NA*
CPA	NA*
CTDPA	NA*
UCPA	NA*
VCDPA	NA*
IPA	NA*
LGPD [135]	"The controller must communicate to the national authority and to the data subject the occurrence of a security incident that may create risk or relevant damage to the data subjects."
PIPL [136]	"Where a personal information leak, distortion, or loss occurs, personal information handlers shall immediately adopt remedial measures and notify the departments fulfilling personal information protection duties and responsibilities and the individuals with the relevant information."
PIPA [137]	A personal information controller shall, based on the scale of personal information, notify the data subjects and responsive supervisory authority with relevant information without delay when he/she becomes aware their personal information has been divulged.
APPI [72]	A personal information handling business operator shall report to the Personal Information Protection Commission and principals when there is a leakage, loss, or damage and other situation concerning the insurance of security of its handled personal data as there is a large possibility of harming an individual's rights and interests with exceptions.
PIPEDA [138]	An organization shall report to the Commissioner any breach of security safeguards involving personal information under its control if it is reasonable in the circumstances to believe that the breach creates a real risk of significant harm to an individual. Also, the organization shall notify an individual of any breach of security safeguards involving the individual's personal information unless it is not prohibited by law.
PDPA [139]	An organization must notify the Commission as soon as is practicable, but in any case, no later than three calendar days. Also, the organization must notify each affected individual affected by a notifiable data breach in any manner that is reasonable in the circumstances.
The Privacy Act 1988 [140][141]	When an APP entity is aware that there is a data breach, the entity must prepare a statement that includes the relevant information. Then, give a copy of that to the commissioner. Also, the entity must take such steps to notify the individuals to whom the relevant information relates.

*The states of the USA have separate laws for data breaches, so it is not defined under the given legislation.

Table 15: Comparison Aspects of Laws, Controller, and Processor-Data Breach Notifications

Controller and Processor	
Providing Safeguards for International Data Transfers	
GDPR [142]	If there is no adequacy decision from the commission, the controller or processor shall take measures to handle the lack of data protection in a third country with appropriate safeguards for the data subject.
CCPA/CPRA	NA
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD [102][143]	International data transfer is allowed to the countries or international organizations that provide a level of protection of personal data that is adequate to the provisions of LGPD. If not, the controller or processor shall take measures to handle the lack of data protection in a third country with appropriate safeguards for the data subject.
PIPL [144][145][146]	When it is truly necessary to provide personal information abroad, a security assessment shall be undertaken. Relevant authorities may be requested to support and assist with security assessment. Personal information handlers shall meet some conditions for international data transfer.
PIPA [147][26]	A personal information controller shall not enter into a contract for the cross-border transfer of personal information in violation of the PIPA. Also, the Government shall establish relevant policy measures so that the rights of data subjects may not be infringed on owing to the cross-border transfer of personal information.
APPI [148]	A personal information handling business operator, unless certain exceptions apply, must obtain the individual's consent before transferring personal data to a third party located in a foreign country. The operator is required to ensure that the third party implements actions equivalent to those required by the APPI for handling personal data.
PIPEDA [90]	"An organization is responsible for personal information in its possession or custody, including information that has been transferred to a third party for processing. The organization shall use contractual or other means to provide a comparable level of protection while the information is being processed by a third party."
PDPA [149]	"An organization must not transfer any personal data to a country or territory outside Singapore except in accordance with requirements prescribed under the PDPA to ensure that organizations provide a standard of protection for personal data transferred that is comparable to the protection under the PDPA."
The Privacy Act 1988 [150]	Before an APP entity discloses personal information to the overseas recipient, the entity must take such steps as are reasonable in the circumstances to ensure that the overseas recipient does not breach the APP. Some of the allowed circumstances are when the recipient of the information is subject to a law or binding scheme that has the effect of protecting the information in a way that is substantially similar to the way in which the APP.

Table 16: Comparison Aspects of Laws, Controller and Processor-Providing Safeguards for International Data Transfers

Controller and Processor	
Conducting a DPIA for High-Risk Activities	
GDPR [151]	Data protection impact assessment is needed when a type of processing is likely to result in a high risk to the rights and freedoms of natural persons. The controller shall carry out an assessment of the impact of the envisaged processing operations on the protection of personal data.
CCPA/CPRA [152]	Businesses that process consumers' personal information present a high risk to consumers' privacy, are required to perform a cybersecurity audit on an annual basis and submit to the CCPA on a regular basis a risk assessment with respect to their processing of personal information.
CPA [153]	A controller shall not process personal information if it presents a heightened risk of harm to a consumer without conducting and documenting a data protection assessment. Some of those risks are, for example, targeted advertising, profiling, selling personal data, and processing sensitive data.
CTDPA [76][154]	A controller must conduct and document a data protection assessment for the controller's processing activities that present a heightened risk of harm to a consumer. Those risks might be the processing of personal data for the purpose of targeted advertising, the sale of personal data, the processing of personal data for the purpose of profiling, or the processing of sensitive data.
UCA	NA
VCDPA [155]	A controller shall conduct and document a data protection assessment when processing personal data for the purpose of targeted advertising, the sale of personal data, and the processing of personal data for profiling presents a reasonably foreseeable risk. Also, when processing sensitive data and any kind of processing that presents a heightened risk of harm to consumers.
IPA	NA
LGPD [102][39][156]	The national authority may request the controller a data protection impact assessment that contains the description concerning the proceedings of the personal data processing that could pose risks to civil liberties and fundamental rights, as well as measures, safeguards, and mechanisms to mitigate said risk.
PIPL [125][157]	Personal information handlers shall conduct a personal information protection assessment in advance in certain cases like handling sensitive personal information, using personal information to conduct automated decision-making, other personal information handling activities with a major influence on individuals, and some more cases.
PIPA [158]	"A personal information controller shall proactively endeavor to conduct a privacy impact assessment if a breach of personal information of data subjects is highly probable in operating the personal information files."
APPI	NA
PIPEDA	NA
PDPA	NA*
The Privacy Act 1988 [159]	"When an agency proposes to engage in an activity or function involving the handling of personal information about the individuals and the Commissioner considers that the activity or function might have a significant impact on the privacy of individuals, the Commissioner may direct the agency to give the Commissioner a privacy impact assessment about the activity or function."

*PDPA: No explicit requirement for conducting a DPIA for high-risk activities, but it is recommended under PDPC's Guide to Data Protection Impact Assessments.

Table 17: Comparison Aspects of Laws, Controller and Processor-Conducting a DPIA for High-Risk Activities

Controller and Processor	
Security Requirements	
GDPR [75]	While processing the personal data of the data subjects, the controllers and processors shall implement appropriate security measures like pseudonymization and encryption to ensure a level of security.
CCPA/CPRA [15][160]	"A business shall implement reasonable security procedures and practices appropriate to the nature of the personal information to protect the personal information from unauthorized or illegal access, destruction, use, modification, or disclosure."
CPA [84][17]	"The controllers and processor must take reasonable measures to secure personal data during both storage and use from unauthorized acquisitions. They have to ensure a level of security appropriate to the risk."
CTDPA [18]	"A controller must establish, implement, and maintain reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data appropriate to the volume and nature of the personal data."
UCPA [19]	"A controller must establish, implement, and maintain reasonable administrative, technical, and physical data security practices designed to protect the confidentiality and integrity of personal data and reduce reasonably foreseeable risks of harm to consumers relating to the processing of personal data."
VCDPA [20]	"A controller shall establish, implement, and maintain reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data. Such data security practices shall be appropriate to the volume and nature of the personal data"
IPA [21]	"A controller shall adopt and implement reasonable administrative, technical, and physical data security practices to protect the confidentiality, integrity, and accessibility of personal data. Such data security practices shall be appropriate to the volume and nature of the personal data."
LGPD [38][77][161]	"Processing agents shall adopt security, technical and administrative measures able to protect personal data from unauthorized accesses and accidental or unlawful situations of destruction, loss, alteration, communication or any type of improper or unlawful processing."
PIPL [78][162]	Personal information handlers shall adopt corresponding technical security measures such as encryption, de-identification, etc., to prevent unauthorized access as well as personal information leaks, distortion, or loss.
PIPA [8][79]	Every personal information controller shall take technical, managerial, and physical measures to ensure safety so that personal information may not be lost, stolen, divulged, forged, altered, or damaged. Also, the personal information controller shall endeavor to process personal information in anonymity, if possible.
APPI [80]	"A personal information handling business operator shall take necessary and appropriate action for the security control of personal data, including preventing the leakage, loss, or damage of its handled personal data."
PIPEDA [81]	"Personal information shall be protected by security safeguards appropriate to the sensitivity of the information." The methods of protection shall include physical measures such as locked filing cabinets and restricted access to offices, organizational measures like security clearances and limiting access on a "need-to-know" basis, and technological measures like the use of passwords and encryption.
PDPA [82]	"An organization must protect personal data in its possession or under its control by making reasonable security arrangements to prevent unauthorized access and the loss of any storage medium or device on which personal data is stored."
The Privacy Act 1988 [83]	"The entity must take such steps as are reasonable in the circumstances to protect the information from misuse, interference, and loss. Also, from unauthorized access, modification, or disclosure. "

Table 18: Comparison Aspects of Laws, Controller and Processor-Security Requirements

Right of Data Subject	
Right to Opt Out of Specific or All Processing	
GDPR [163]	Data subjects have the right to object and restrict the processing of their personal data unless there are no legitimate grounds for the processing that override the interests, rights, or freedoms of natural persons.
CCPA/CPRA [164]	A consumer has the right to direct the business, not to sell their personal information. Also, if the consumer is under sixteen, businesses shall not sell their data without consent from the data subject if the subject is between thirteen and sixteen, else from the parent or guardian of the subject.
CPA [165]	"A consumer has the right to opt out of the processing of personal information that is used for targeted advertising, profiling, or the sale of their personal data."
CTDPA [128]	"A consumer has the right to opt out of the processing of personal data for different purposes. For example, targeted advertising, the sale of personal data, and profiling in furtherance of solely automated decisions."
UCPA [166]	"A consumer has the right to opt out of the processing of the consumer's personal data for the purposes of targeted advertising and the sale of personal data."
VCDPA [129]	"A consumer has the right to opt out of the processing of personal data for purposes of targeted advertising, sale of their personal data, and profiling."
IPA [167]	"A consumer has the right to opt out of the sale of his/her personal data."
LGPD [168][169]	Data subjects can revoke their consents anytime, and they may request from controller anonymization, blocking, or deletion of unnecessary or excessive data or data processed in noncompliance with the provisions of the LGPD.
PIPL [170]	"Individuals have the right to know and the right to decide relating to their personal information, and have the right to limit or refuse the handling of their personal information by others, unless laws or administrative regulations stipulate otherwise."
PIPA [171]	"A data subject has the right to suspend the processing of, and to request a correction, erasure, and destruction of such personal information."
APPI [126]	A principal may demand of a personal information handling business operator a utilization of cease or deletion of retained personal data when there are violations of specific articles of the APPI.
PIPEDA	NA*
PDPA	NA*
The Privacy Act 1988 [172]	If an organization uses or discloses information about an individual for the purpose of direct marketing, the individual may request not to receive direct marketing communications. Also, when an organization uses or discloses information about an individual for the purpose of facilitating direct marketing by other organizations, individuals may request the organization not to use or disclose relevant information.

*PIPEDA and PDPA There is no explicit requirement, but an individual may withdraw consent at any time, subject to legal or contractual restrictions and reasonable notice.

Table 19: Comparison Aspects of Laws, Right of Data Subjects, Right to Opt-out Specific or All Processing

Right of Data Subject	
Right to Access	
GDPR [173]	A data subject shall have the right of access to personal data which have been collected concerning him or her and to exercise that right easily and at reasonable intervals in order to be aware of and verify the lawfulness of the processing.
CCPA/CPRA [15][174][175]	A consumer has the right to request the categories and specific pieces of personal information from a business that are collected from them.
CPA [165]	"A consumer has the right to confirm whether a controller is processing personal data concerning the consumer and to access the consumer's personal data."
CTDPA [128]	"A consumer shall have the right to confirm whether or not a controller is processing the consumer's personal data and access such personal data, unless such confirmation or access would require the controller to reveal a trade secret."
UCPA [166]	"A consumer has the right to confirm whether a controller is processing the consumer's personal data and accessing the consumer's personal data."
VCDPA [129]	"A consumer has the right to confirm whether or not a controller is processing the consumer's personal data and accessing such personal data."
IPA [167]	"A consumer has the right to confirm whether a controller is processing the consumer's personal data and to access such personal data."
LGPD [169]	The data subject, at any time and by means of request, has the right to access the data.
PIPL [170]	Individuals have the right to know their personal information.
PIPA [171]	A data subject has the right to request access to personal information.
APPI [29]	"A principal has the right to demand a personal information handling business operator disclosure of retained personal data."
PIPEDA [176]	"The individual shall be informed of the existence, use, and disclosure of his/her personal information upon request and shall be given access to that information."
PDPA [177]	"On request of an individual, an organization must, as soon as reasonably possible, provide the individual with personal data about him/her that is in the possession or under the control of the organization."
The Privacy Act 1988 [178]	"If an APP entity holds personal information about an individual, the entity must, on request by the individual, give the individual access to the information."

Table 20: Comparison Aspects of Laws, Right of Data Subjects, Right to Access

Right of Data Subject	
Right to Erasure	
GDPR [179]	The data subject shall have the right to have his or her personal data erased and no longer processed where the personal data are no longer necessary in relation to the purposes for which they are collected.
CCPA/CPRA [180]	"A consumer shall have the right to request that a business delete any personal information about the consumer which the business has collected from the consumer."
CPA [165]	"A consumer has the right to delete personal data concerning the consumer."
CTDPA [128]	"A consumer shall have the right to delete personal data provided by, or obtained about, the consumer."
UCPA [166]	"A consumer has the right to delete the consumer's personal data that the consumer provided to the controller."
VCDPA [129]	"A controller shall comply with an authenticated consumer request to exercise the right to delete personal data provided by or obtained about the consumer."
IPA [167]	"A controller shall comply with an authenticated consumer request to delete personal data provided by the consumer."
LGPD [169]	The data subject, at any time and by means of request, has the right to deletion of personal data processed with the consent of him/her.
PIPL [70]	Personal information handlers shall delete personal information when the individual revokes his/her consent.
PIPA [171]	A data subject has the right to request an erasure and destruction of personal information.
APPI [95]	A principal may demand that a personal information handling business operator make a deletion in regard to the contents of the retained personal data.
PIPEDA [176]	When an individual successfully demonstrates the inaccuracy or incompleteness of personal information, the organization shall amend the information as required, which includes correction, deletion, and addition.
PDPA	NA
The Privacy Act 1988	NA

Table 21: Comparison Aspects of Laws, Right of Data Subjects, Right to Erasure

Right of Data Subject	
Right to Data Portability	
GDPR [181]	The data subject is allowed to receive personal data concerning him or her, which he or she has provided to a controller in a structured, commonly used, machine-readable, and interoperable format, and to transmit it to another controller.
CCPA/CPRA [65]	A consumer can receive personal data free of charge from the business within 45 days of receipt of the individual's request, and the consumer can transmit the information from one entity to another without problems.
CPA [165]	"A consumer has the right to obtain personal data in a portable and, to the extent technically feasible, readily usable format that allows the consumer to transmit the data to another entity."
CTDPA [128]	"A consumer shall have the right to obtain a copy of the consumer's personal data processed by the controller, in a portable and, to the extent technically feasible, readily usable format that allows the consumer to transmit the data to another controller without hindrance."
UCA [166]	A consumer has the right to obtain a copy of his/her data that is provided to the controller in a format that is portable, readily usable, and allows the consumer to transmit the data to another controller without impediment, where the processing is carried out by automated means.
VCDPA [129]	"A consumer has the right to obtain a copy of his/her personal data that he/she previously provided to the controller in a portable and, to the extent technically feasible, readily usable format that allows the consumer to transmit the data to another controller without hindrance, where the processing is carried out by automated means."
IPA [167]	A consumer has the right to obtain a copy of his/her personal data that was previously provided to the controller in a portable and readily usable format that allows the consumer to transmit the data to another controller without hindrance, where the processing is carried out by automated means.
LGPD [169]	The data subject, at any time and by means of request, has the right to portability of the data to another service provider or product provider by means of an express request, pursuant to the regulations of the national authority, and subject to commercial and industrial secrets.
PIPL [182]	"Individuals have the right to consult and copy their personal information from personal information handlers." The personal information handler shall provide it in a timely manner and provide a channel to transfer it.
PIPA	NA
APPI	NA
PIPEDA	NA
PDPA	NA*
The Privacy Act 1988	NA

*PDPA Currently, PDPA does not contain any provisions on the right of data subjects to data portability. However, the Personal Data Protection Bill would introduce a data portability obligation, which has yet to come into effect.

Table 22: Comparison Aspects of Laws, Right of Data Subjects, Right to Data Portability

Right of Data Subject	
Right Against Automated Decision Making	
GDPR [183]	The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.
CCPA/CPRA [184]	A consumer has an opt-out right with respect to businesses' use of automated decision-making technology, which includes profiling.
CPA [165][97]	Profiling is defined as any form of automated processing of personal data to evaluate, analyze, or predict personal aspects concerning an individual's economic situation, health, personal preferences, etc. On the other hand, consumers have the right to opt out of the processing for the purpose of profiling.
CTDPA [128]	"A consumer has the right to opt out of the processing of personal data for purposes of profiling in furtherance of solely automated decisions that produce legal or similarly significant effects concerning the consumer."
UCPA	NA
VCDPA [129]	"A consumer has the right to opt out of the processing of personal data for purposes of profiling in furtherance of decisions that produce legal or similarly significant effects concerning the consumer."
IPA	NA
LGPD [185]	"The data subject has the right to request for the review of decisions made solely based on automated processing of personal data affecting his/her interests, including decisions intended to define her/her personal, professional, consumer, and credit profile or aspects of his/her personality."
PIPL [25]	"Individuals have the right to refuse that personal information handlers make decisions solely through automated decision-making methods."
PIPA	NA
APPI	NA
PIPEDA	NA
PDPA	NA
The Privacy Act 1988	NA

Table 23: Comparison Aspects of Laws, Right of Data Subjects, Right Against Automated Decision Making

Right of Data Subject	
Right to Correct	
GDPR [186]	The data subject shall have the right to obtain from the controller without undue delay the rectification of inaccurate personal data concerning him or her. Taking into account the purposes of the processing, the data subject shall have the right to have incomplete personal data completed, including by means of providing a supplementary statement.
CCPA/CPRA [187]	"The consumer has the right to request a business to correct inaccurate personal information.", "Businesses shall disclose the consumer's right to request correction of inaccurate personal information."
CPA [165]	"A consumer has the right to correct inaccuracies in the consumer's personal data, taking into account the nature of the personal data and the purposes of the processing of the consumer's personal data."
CTDPA [128]	"A consumer has the right to correct inaccuracies in consumer's personal data, taking into account the nature of the personal data and the purposes of the processing."
UCPA	NA
VCDPA [129]	"A consumer has the right to correct inaccuracies in his/her personal data, taking into account the nature of the personal data and the purposes of the processing of the consumer's personal data."
IPA	NA
LGPD [169]	"The data subject, regarding the data subject's data being processed by the controller at any time and by means of request, has the right to correction of incomplete, inaccurate, or out-of-date data."
PIPL [188]	"Where individuals discover their personal information is incorrect or incomplete, they have the right to request personal information handlers correct or complete their personal information."
PIPA [171]	The data subject has the right to correction of personal information.
APPI [95]	A principal may demand that a personal information handling business operator make a correction in regard to the contents of the retained personal data.
PIPEDA [176]	An individual shall be able to challenge the accuracy and completeness of the information and have it amended as appropriate, which involves the correction, deletion, and addition of information.
PDPA [132]	"An individual may request an organization to correct an error or omission in the personal data about the individual that is in the possession or under the control of the organization."
The Privacy Act 1988 [189]	When the individual requests the entity to correct the information, the entity must take such steps as are reasonable in the circumstances to correct that information.

Table 24: Comparison Aspects of Laws, Right of Data Subjects, Right to Correct

Right of Data Subject	
Opt-in Right for Minors	
GDPR [190]	The processing of the personal data of a child can be lawful where the child is at least sixteen years old. It has exceptions the consumer's parent affirmatively authorizes.
CCPA/CPRA [164]	The business shall not sell or share the personal information of the consumer if the consumer is under sixteen years old. There are exceptions when the consumer is between thirteen and sixteen years old and consents to the sale or sharing of personal information, or the consumer's parent or guardian when the consumer is less than thirteen years old consents to the sale or sharing of the personal information.
CPA [17]	When a controller wants to process personal data concerning a known child, first consent from the child's parent or lawful guardian has to be taken.
CTDPA [18]	A controller shall not process sensitive data concerning a consumer without obtaining the consumer's consent, in the case of the data concerning a known child. Also, the controller shall not process the personal data of a known child for targeted advertising or sell his/her personal data without consent when the customer is between thirteen and sixteen years of age.
UCPA [191][19]	A controller must have verifiable parental consent to comply with the Children's Online Privacy Protection Act (COPPA), which is a federal state legislation in the USA. Also, a controller shall not process sensitive data collected from a consumer who is a known child without following COPPA.
VCDPA [100][192][20]	A controller shall not process sensitive data concerning a known child without complying with federal-level legislation Children's Online Privacy Protection Act (COPPA).
IPA [101][21]	The personal data collected from a known child is categorized as sensitive data. A controller shall not process sensitive data concerning a known child, without complying with the federal Children's Online Privacy Protection Act (COPPA).
LGPD [193]	"The processing of children's personal data shall be done with specific and highlighted consent given by at least one of the parents or the legal representative."
PIPL [194][195]	Personal information of minors under the age of fourteen is categorized as sensitive personal data. Where personal information handlers handle the personal information of minors under the age of fourteen, they shall obtain the consent of the parent or other guardian of the minor. Also, personal information handlers shall formulate specialized personal information handling rules for minors.
PIPA [196]	"When it is required to obtain consent pursuant to the PIPA to process personal information of a child under 14 years of age, a personal information controller shall obtain the consent of his/her legal representative."
APPI	NA*
PIPEDA	NA*
PDPA [197]	If the organization has reason to believe that the minor (under age 18) does not have sufficient understanding to consent on their own behalf, the consent of the minor's legal guardian or parent shall be obtained.
The Privacy Act 1988	NA

***APPI:** There are no provisions under APPI related to the opt-in right for minors, but the secondary legislation based on APPI provides that business owners need to obtain consent from a person who has parental responsibility if the business owner needs to process personal information of minors aged below 18.

***PIPEDA:** There are no explicit requirements under PIPEDA, but the PIPEDA Fair Information Principle states that consent from a parent or guardian shall be obtained for individuals unable to provide meaningful consent themselves (anyone under the age of 13).

Table 25: Comparison Aspects of Laws, Right of Data Subjects, Opt-in Right for Minors

Right of Data Subject	
Right to Redress	
GDPR [198][199][200]	Each data subject shall have the right to an effective judicial remedy where he or she considers that his or her rights under GDPR have been infringed as a result of the processing of his or her personal data in non-compliance with this regulation.
CCPA/CPRA [201]	It allows consumers to seek statutory damages for data breaches.
CPA	NA
CTDPA	NA
UCA [202]	"The attorney general may recover actual damages to the consumer when there is a violation."
VCDPA	NA
IPA	NA
LGPD [121]	"The controller or the processor that, as a result of carrying out their activity of processing personal data, causes material, moral, individual, or collective damage to others in violation of legislation for the protection of personal data is obligated to redress it."
PIPL [203][88][204]	"Where the handling of personal information infringes upon personal information rights and interests and results in harm, and personal information handlers cannot prove they are not at fault, they shall bear compensation and take responsibility for the infringement." Also, in this case, responsive authorities may file a lawsuit with a People's Court according to the law.
PIPA [171]	"A data subject has the right to appropriate redress for any damage arising out of the processing of such personal information in a prompt and fair procedure."
APPI	NA
PIPEDA [205]	"The Court may, in addition to any other remedies it may give, award damages to the complainant, including damages for any humiliation that the complainant has suffered."
PDPA [206]	"A person who suffers loss or damage directly as a result of a contravention by an organization or a person has the right of action for relief in civil proceedings in a court."
The Privacy Act 1988 [207]	The Federal Court or the Federal Circuit and Family Family Court of Australia may order an entity to compensate a person for loss or damage, including injury to the person's feelings or humiliation, when the entity is found guilty. It enforces the entity to perform any reasonable act or carry out any reasonable course of conduct to redress the loss or damage suffered by the person.

Table 26: Comparison Aspects of Laws, Right of Data Subjects, Right to Redress

Legal Basis						
Regulation	Consent	Legitimate Interest	Performance of Contract	Legal Obligation	Vital Interest	Public Interest
GDPR [1]	X	X	X	X	X	X
CCPA/CPRA						
CPA						
CTDPA						
UCPA						
VCDPA						
IPA						
LGPD [102][5][39][208]	X	X	X	X	X	X
PIPL [6]	X		X	X	X	X
PIPA [9]	X	X	X	X	X	
APPI [10]	X			X	X	NA*
PIPEDA [41]	X					
PDPA [209][210][211][212][213][214]	X	X	X	X	X	X
The Privacy Act 1988 [13]	X					

* The USA legislation system allows undertakings to process information without any legal basis as a rule. Exceptionally, They may bring forward some legal requirements for a number of cases.

***APPI/Public Interest:** Although it is mentioned that it is allowed to collect and process personal information in cases in which there is a special need to enhance public hygiene or promote fostering healthy children, it does not explicitly cover the public interest, and it has an additional requirement that it is difficult to obtain data subject consent.

Table 27: Comparison Aspects of Laws, Legal Basis

Enforcement	
Administrative Fines for Non-compliance	
GDPR [215][216]	In order to strengthen the enforcement of the rules of the regulation and force controllers and processors to follow the rules, penalties, including administrative fines, are imposed. Those fines vary based on the infringements.
CCPA/CPRA [217][218]	When there is a violation of the law, the violator will be liable for an administrative fine based on some circumstances.
CPA	NA*
CTDPA	NA*
UCPA [202]	The attorney general is an enforcement body of UCPA and has the power to recover for each violation an amount not to exceed \$7,500.
VCDPA [219]	The attorney general is a supervisory authority under VCDPA, and he/she can initiate an action against the controller to restrain any violations of this act and civil penalties of up to \$7500 for each violation.
IPA [220]	The attorney general is a supervisory authority under IPA and he/she can initiate an action in the name of the state and may seek an injunction to restrain any violations of this chapter and civil penalties of up to \$7500 for each violation.
LGPD [221]	Data processing agents that commit infractions of the rules are subject to administrative sanctions like warning, from simple fines up to two percent of a private legal entity revenue to 50 million BRL (approx. €9,404,946) per infraction, daily fines, blocking of the personal data, deletion of the personal data, and more.
PIPL [222]	The supervisory authority may order correction, confiscate unlawful income, and impose a fine of not more than 50 million Yuan (approx. 6,500,000 €), or 5% of annual revenue. It may also suspend related business activities, cancel corresponding administrative licenses or cancel business licenses.
PIPA [137][223]	A person shall be subject to an administrative fine not exceeding fifty, thirty or ten million won (10 million won is around 7200 €) based on the type of the violation.
APPI [224][225][226]	The person who violates the act shall be punished by imprisonment or a fine based on which part is violated. The amount of the fine is from 500,000 yen (approx. 3326 €) to 100 million yen.
PIPEDA [227]	For offenses punishable on summary conviction, fines do not exceed \$10,000, and for indictable offenses, fines do not exceed \$100,000 under PIPEDA.
PDPA [228]	The Commission may require the organization or person to pay a financial penalty of up to SGD 1 million (approx. €650,000) in case of violation of the PDPA.
The Privacy Act 1988 [229]	When an entity contravenes the Privacy Act, is a serious interference with the privacy of an individual, or the entity repeatedly does an act or engages in a practice that is an interference with the privacy of one or more individuals, may be fined up to \$2,500,000 if a person, or \$50,000,000 if a body corporate.

*CPA: There is no explicit requirement for administrative fines, but they are addressed under the Colorado Consumer Protection Act, not the Colorado Privacy Act (CPA).

*CTDPA: There is no explicit requirement for administrative fines, but they are addressed under the Connecticut Unfair Trade Practices Act, not CDTA.

Table 28: Comparison Aspects of Laws, Enforcement-Administrative Fines in Case of Non-compliance

Enforcement	
Personal Liability	
GDPR	NA
CCPA/CPRA	NA
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD	NA
PIPL [222]	Where the provisions of the PIPL are violated, the directly responsible person in charge and other directly responsible personnel are to be fined between 100,000 and 1 million Yuan. Also it may also be decided to prohibit them from holding positions of director, supervisor, high-level manager or personal information protection officer for a certain period.
PIPA [223]	A person shall be subject to an administrative fine not exceeding fifty, thirty, or ten million won (10 million won is around 7200 €) based on the type of the violation.
APPI [224][225][226]	The person who violates the act shall be punished by imprisonment or a fine based on which part is violated. The amount of the fine is from 500,000 yen (approx. 3326 €) to 100 million yen.
PIPEDA	NA
PDPA [228]	The Commission may require the organization or person to pay financial penalties up to SGD 1 million (approx. €650,000) in case of violation of the PDPA.
The Privacy Act 1988 [229]	When the entity does an act or engages in a practice that is a serious interference with the privacy of an individual or doing these acts repeatedly, the amount of penalty for a contravention by a personal is up to \$2,500,000.

Table 29: Comparison Aspects of Laws, Enforcement-Personal Liability

Enforcement	
Supervisory Authorities	
GDPR [230]	Supervisory authorities are independent organizations that are responsible for enforcing data protection regulations and ensuring that controllers and processors comply with the regulations. Those authorities have the power to investigate organizations when suspected and impose sanctions and penalties for non-compliance.
CCPA/CPRA [217][231]	There is an administrative authority that enforces the law and has administrative power, authority, and jurisdiction behind it. The agency investigates possible violations and protects the fundamental privacy rights of natural persons with respect to the use of their personal information.
CPA [232]	The attorney general and district attorneys are the supervisory authority to check compliance.
CTDPA [154]	The Attorney General can conduct an investigation as a supervisory authority, and the controller shall make the data protection assessments available to the Attorney General.
UCPA [202]	UCPA authorizes the Office of the Attorney General to take enforcement action and impose penalties. An attorney general may initiate enforcement against a controller or processor for a violation of UCPA.
VCDPA [155]	The attorney general shall have exclusive authority to enforce the provisions of the VCDPA and may request that the controller disclose any data protection assessment that is relevant to an investigation conducted by the Attorney General.
IPA [220]	The attorney general shall have exclusive authority to enforce the provisions of the IPA, and the attorney general has the power to issue a civil investigative demand whenever he/she has reasonable cause to believe that any violation of this chapter.
LGPD [102][233]	"National authority is a body of the public administration that is responsible for supervising, implementing, and monitoring compliance with this Law in all national territories."
PIPL [234]	There are three different supervisory authorities that are responsible for supervision, implementation, and monitoring compliance: The state cybersecurity and informatization department, State Council departments, and County-level responsibilities determined by relevant State provisions.
PIPA [235]	The Personal Information Protection Commission (PIPC) is the independent supervisory authority responsible for making data privacy investigations and recommendations while administering and enforcing the PIPA nationwide.
APPI [236]	The Personal Information Protection Commission may require personal information handlers to submit necessary information or material relating to the handling of personal information to the extent necessary to implement the provision under the regulation. Also, the PIPC may inquire about the handling of personal information or inspect a book, document, and other properties.
PIPEDA [237]	"The Commissioner may, on reasonable notice and at any reasonable time, audit the personal information management practices of an organization if the Commissioner has reasonable grounds to believe that the organization has contravened the provisions."
PDPA [238]	The Personal Data Protection Commission is responsible for the administration of the PDPA. The PDPC has the power to issue to stop the collection, use, or disclosure of personal data in contravention. Also, it has the power to destroy personal data collected in contravention of the PDPA.
The Privacy Act 1988 [239]	The Commissioner has the power to do all things necessary or convenient to be done for or in connection with the performance of the relevant functions.

Table 30: Comparison Aspects of Laws, Enforcement-Supervisory Authority to Check Compliance

Enforcement	
Private Right of Action	
GDPR [199]	When the data subject considers that his/her rights under the regulation have been infringed as a result of the processing of his/her personal data in non-compliance with the regulation, he/she has the right to an effective judicial remedy.
CCPA/CPRA [201]	Individuals may institute a civil action against businesses in case of violation and can claim to recover damages and remedy under this regulation.
CPA	NA
CTDPA	NA
UCPA	NA
VCDPA	NA
IPA	NA
LGPD [169][121]	"Lawsuits for compensation for collective damages, pursuant to the terms of the lead sentence of this article regarding liability, may be filed collectively in court, subject to the provisions of related legislation."
PIPL [203][88][204]	Where personal information handlers reject individuals' requests to exercise their rights, individuals may file a lawsuit with a People's Court according to law. Also, when personal information handlers violate the provisions of this law and infringe on the rights and benefits of many individuals, responsive authorities may file a lawsuit with a People's Court according to law.
PIPA [240]	The specified organizations, such as consumer groups and non-profit, non-governmental organizations, are granted the ability to file a class-action lawsuit in case of data breaches.
APPI [241]	Principals may file a lawsuit for violation of the APPI. It specifically addresses scenarios in which a lawsuit is filed in connection with the rights to disclosure, correction, and cease utilization.
PIPEDA [91]	"Organizations shall inform individuals who make inquiries or lodge complaints of the existence of relevant complaint procedures." A complainant may apply to the Court for a hearing in respect of any matter in respect of which the complaint was made.
PDPA [206]	"A person who suffers loss or damage directly as a result of a contravention by an organization or a person has a right of action for relief in civil proceedings in a court."
The Privacy Act 1988	NA

Table 31: Comparison Aspects of Laws, Enforcement-Private Right of Action

Thresholds	
Compliance Requirements Based on Thresholds	
GDPR [123]	Organizations with fewer than 250 employees are not subject to keeping a record of processing activities under GDPR.
CCPA/CPRA [67]	Businesses are the main subjects that have to comply with regulations under CCPA/CPRA. There are different thresholds to define a company as a business, such as annual gross revenue in a year, number of personal data sold, and percentage of revenue coming from selling personal information.
CPA [46]	If the controller controls or processes one hundred thousand or more personal data during the calendar year, then it has to comply with CPA. Likewise, it has to comply if the controller derives revenue or receives a discount on the price of goods or services from the sale of personal data and processes or controls twenty-five thousand consumers and more.
CTDPA [242]	The Act applies to persons who control and process one hundred thousand or more personal data, excluding the personal data controlled or processed for the purpose of completing a payment transaction, or which controls and processes the twenty-five thousand or more personal data and derived more than twenty-five percent of their gross revenue from the sale of personal data.
UCPA [191]	The UCPA applies to any controller or processor who has an annual revenue of twenty-five hundred thousand or more. Also, a controller or processor controls or processes a hundred thousand or more personal data of consumers during a calendar year. Another criterion is a controller or processor who derives over 50% of the gross revenue of the entity from the sale of personal data and controls or processes twenty-five thousand or more personal data of consumers.
VCDPA [192]	The VCDPA applies to persons that control or process a hundred thousand or more consumers' personal data in a calendar year or control or process twenty-five thousand consumers' personal data and derive over fifty percent of gross revenue from the sale of personal data.
IPA [243]	The IPA applies to persons that control or process a hundred thousand or more consumers' personal data in a calendar year or control or process twenty-five thousand consumers' personal data and derive over fifty percent of gross revenue from the sale of personal data.
LGPD	NA
PIPL	NA
PIPA	NA
APPI	NA
PIPEDA	NA
PDPA	NA
The Privacy Act 1988 [244]	Small businesses which have \$3 million or less annual turnover are not covered by the Privacy Act 1988

Table 32: Comparison Aspects of Laws, Enforcement-Compliance Requirements based on Thresholds

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