

RESEARCH ARTICLE

Compliance Theory: A Case Study Approach in Understanding Organizational Commitment

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Abstract: The Electronic Commerce (e-Commerce) Act of 2000 or Republic Act (RA) No. 8792 mandates all government agencies to transact business and perform government functions using electronic documents within two years from the date of its effectivity in June 2000. Unfortunately, only a handful of government agencies were ready to implement the said law in the year 2002 despite the availability of applicable information technology (IT) resources and appropriated budget. After 17 years, there is considerable improvement in the compliance with the said law, though there are still non-compliances of government offices that could not manage to be at par with leading compliant government offices. To understand the compliance behavior of an agency vis-a-vis the e-Commerce Act, I proceed in three steps. First, I adopted socio-economic theory on regulatory compliance. Next, I use process pattern matching as a qualitative approach to examine the compliance variables by comparing the case-based empirical patterns with the operational framework. And third, I statistically test the hypotheses that organizational commitment and the organizational maturity on the use of IT impact the level of compliance. I do this by using case study method by combining the qualitative and quantitative analyses of the compliance behavior of the Bureau of Internal Revenue and the Commission on Elections. Thus, this paper contributes to the theorization of regulatory compliance in understanding organizational commitment with electronic commerce and related laws involving the use of IT in the Philippine context with detailed elucidation of the variables influencing it.

Keywords: Compliance Theory, Organizational Commitment, Electronic Governance, Electronic Commerce, Information Technology

JEL Classification: O33

An Overview of the e-Commerce Act

The Republic Act No. 8792 or e-Commerce Act was signed into law by then President Joseph E. Estrada on June 14, 2000 with the “aim to facilitate domestic and international dealings, transactions, arrangements, agreements, contracts and exchanges, and storage of information through the utilization of electronic, optical, and similar medium, mode, instrumentality and technology to recognize the authenticity and reliability

of electronic documents related to such activities and to promote the universal use of electronic transaction in the government and general public (Section 3).” The principal authors of the law were Senators Blas F. Ople, Juan Flavio Velasco, Ramon Magsaysay, Jr., and Vicente Sotto III, and Representatives Leandro Verceles, Jr. and Marcial Punzalan, Jr.

The e-Commerce Act (2000) was basically patterned from the United Nations Commission on International Trade Law (UNCITRAL) Model Law on e-Commerce

(1996) to maintain uniformity and harmony with the other member-states of the United Nations. It was the decision of the UNCITRAL to formulate model legislation on e-Commerce as a response to the number of countries with outdated legislation governing communication and storage of information vis-a-vis the use of e-Commerce. Thus, there is a need for international coordination and harmonization of the government policies affecting e-Commerce. Early adapters of the said model law were Malaysia in 1997, Singapore in 1998, Korea and Australia in 1999, then the Philippines and India in 2000. Malaysia also enacted the Digital Signature Act, Computer Crimes Act, and Telemedicine Act in 1997 (Anil, 2001). On the other hand, the Philippines integrated the penalty for committing cybercrime act of hacking in Section 32 of RA 8792 due to the worldwide negative effect of the "I love You" virus on May 4, 2000 (Sosa, 2016), that is, a month before e-Commerce Law was enactment.

The Implementing Rules and Regulations (IRR) of the e-Commerce Act was digitally signed on July 14, 2000 during the plenary session of the Global Information Infrastructure Commission's Asia Regional Conference held in Makati City. A year later, acting on the Memorandum dated 18 June 2001 of the Committee on the Revision of the Rules of Court to Draft the Rules on e-Commerce Law, the Supreme Court issued A.M. No. 01-7-01-SC or otherwise known as the Rules on Electronic Evidence (REE, 2001) which took effect on August 1, 2001.

The salient features of the e-Commerce Act (2000) are the following:

- It gives legal recognition of electronic data messages, electronic documents, and electronic signatures (Sections 6 - 13); that is, an electronic document is the functional equivalent of paper-based documents and that an electronic signature is the same as the traditional penned signature. This is related to the Section 1 of REE as defined therein that the digital signature shall be admissible in evidence as the functional equivalent of the signature of a person on a written document.
- It allows the validity of electronic contracts (Sections 16 - 24).
- It mandates for the electronic implementation of transport documents to facilitate carriage of goods (Sections 25 - 26).
- It mandates all government agencies to transact business and perform their respective functions electronically within two years or before June 19, 2002 (Section 27).
- It mandates the implementation of RPWeb that intends to connect all government offices to the Internet and provide universal access to the public (Section 28).
- It empowers the DTI to supervise the development of e-commerce in the country (Section 29).
- It provides for the liability of a service provider (Section 30).
- It allows authorized parties to gain access to their electronic documents, electronic data messages, and electronic signatures and such shall not be shared with any other person (Sections 31 - 32).

After the deadline in 2002 as mandated by the law, the preliminary results on e-Commerce readiness of the top 20 government agencies in the country, covering 52 government departments/agencies, was presented to the public by the Management Information System Department of DTI during the Chief Information Officer Forum (CIOF) meeting on December 17, 2002 (Torres, 2002) as shown in Table 1. As both ranked number 1 by the DTI using the UN-ASPA Stages of E-Government Model (2001), only the Bureau of Internal Revenue (BIR) and the Bureau of Customs reached the Stage IV (i.e., Transactional Web Presence, users can conduct online transactions such as paying taxes through the bank). The rest of the agencies were either in Stage I (i.e., Emerging Web Presence, the agency has an official website), Stage II (i.e., Enhanced Web Presence, users can search and download data) or Stage III (i.e., Interactive Web Presence, users can use online facilities to download and/or submit forms). Notably, the Commission on Elections (Comelec) was not even listed. To date, the Philippines has not reached Stage V (a.k.a., Fully Integrated Web Presence) wherein the government provides all services through an integrated network of all agencies in a single central portal.

In 2003 and 2004, the endorsed e-Commerce projects, with corresponding e-Government (e-Gov) fund are shown in Table 2 and Comelec was one of the recipients of the said fund. On the other hand, Tables 3 and 4 are the endorsed projects in 2005 (Diaz de

Table 1. *Top 20 Government Agencies That Were e-Commerce Ready in 2002*

Rank	Department/Agency	Stage	Rank	Department/Agency	Stage
1	Bureau of Internal Revenue	IV	11	National Wages & Productivity Board	II
	Bureau of Customs	IV	12	Department of Social Welfare & Development	II
2	National Statistics Office	III	13	Board of Investments	II
	Trade & Investment Devt Corp of the Phils.	III		Bureau of Treasury	II
	Department of Energy	III		Cooperative Development Authority	II
	Land Transportn Franchising & Reg Board	III	14	Department of Tourism	III
	Technical & Skills Devt Authority	III	15	Philippine Health Insurance Corporation	III
	Dept. of Interior & Local Government	III	16	Air Transportation Office	II
3	Phil Convention & Visitors Corp	II	17	Provincial Government of Bulacan	II
	Social Security System	II	18	Employees' Compensation Commission	II
4	Department of Trade & Industry	III	19	Administration	II
5	Land Transportation Office	I	20	Philippine Coast Guard	I
6	Philippine Deposit Insurance Corp	III			
7	Department of Labor and Employment	III			
8	Philippine National Police	III			
9	Dept. of Public Works & Highways	II			
10	National Bureau of Investigation	III			

Rivera, 2004).

In 2005, the Joint Congressional Oversight Committee on e-Commerce Act, which was headed then by Sen. Manuel Roxas and Rep. Junie Cua, started monitoring the e-Gov projects closely by conducting regular meetings and generating regular State of Philippine e-Commerce Report. On November 5, 2005, a status report was produced covering e-Gov projects, including audit reports conducted by the Commission on Audit (Toral, 2005).

On October 25, 2006, the guidelines in implementing the e-Commerce Act (2000) on Electronic Payment and Collection System (ePCS) were signed as a Joint Department Administrative Order (JDAO) by the DTI and Department of Finance (DOF) or "DTI-DOF JDAO No.2" (2005). The ePCS would enable more government agencies to implement end-to-end e-commerce transactions as the JDAO prescribed policies, guidelines, and procedures in the adoption of ePCS in government transactions. The ePCS was expected to bring about more efficient and effective payment and collection services for the transacting clients and amongst the government offices.

Recent Developments

At present, the DTI website shows e-Commerce programs and projects accomplished throughout the years. It may be noted that the projects shown in Tables 2 to 4 are already completed except that of the Comelec. The latter's project, Comelec - Mega Pacific consortium deal (2006), was stopped by the Supreme Court on January 13, 2004 due to legal impediments in the contract and equipment supplied.

On the other hand, the ePCS remained stagnant until former President Benigno Aquino III signed Administrative Order No. 38 (AO-38) on May 13, 2013. The objective of AO-38 is to improve the country's World Bank ranking in ease of doing business (EoDB) out of the 190 economies. In its "Ease of Doing Business - Interim Assessment" report, the Asia-Pacific Economic Cooperation (APEC, 2011) noted that the Philippines started improving the EoDB at the central and local level when the DTI launched its 15-minute business registration program to attract more investors through simplification of the processes in registering businesses and issuing permits.

There was considerable improvement in ranking right after the signing of AO-38 in 2013 as shown in Table 5. Although got raised to 99th rank in 2016,

Table 2. *Endorsed Projects (2003/04 e-Gov Fund)*

Project	Cost (PhP,M)
1. BIR Computerization Projects	678.51
2. BOC Asycuda World Project	500.00
3. DTI Philippine Business Registry	175.76
4. DAP Knowledge Networking	168.74
5. NLP E-Library	166.77
6. DILG Integrated Local Gov. Portal	150.00
7. NCC E-Government Portal	150.00
8. NCC E-LGU	100.00
9. AMLC Txn Monitor'g & Analysis Sys.	100.00
10. TelOf Community E-Center	95.92
11. SEC i-Report	86.87
12. POEA E-OFW Link	72.92
13. CSC Porta for the Civil Service Corps	70.64
14. DBM E-Budget Implem. & BC	58.97
15. PMS Knowledge Mgt. Center	55.30
16. DSWD Online Transaction System	54.62
17. BFAD Automation Project	51.52
19. DOH Drug Test Operations and MIS	44.72
20. National Telehealth Network	43.11
21. NLRC Case Management System	41.46
22. FNRI E-Nutrition	30.51
23. PAGASA Inter.Climate Weather IN	25.90
24. OES Governance Monitoring Sys.	10.00
25. COMELEC Automated Election Sys.	800.00

the Philippines is still lagging Singapore, Malaysia, Thailand, and Vietnam in the Association of Southeast Asian Nations (ASEAN) but slightly ahead of Indonesia. In its "APEC's Ease of Doing Business – Final Assessment 2009–2015" report, APEC (2016, p. 11) noted that the Philippines streamlined communications between the Securities and Exchange Commission and the Social Security System through improved coordination between the national and local governments by reducing the 16 steps originally required to start a business to just six.

Compared with other ASEAN nations when it comes to enactment of related laws with e-Commerce Act, the Philippines is quite at par with ASEAN-6 as shown in Table 6. Though the enactment of the laws

Table 3. *Endorsed Projects (2005 e-Gov Fund)*

Project	Cost (PhP,M)
1. NEDA Harmonized Government Numb	200.00
2. DILG Public Safety Information System	176.00
3. DTI Philippine Business Registry	200.00
4. NCC E-LGU and Community E-Center	200.00
5. POEA E-OFW Link (Phase 2)	100.00
6. DBM E-Procurement	100.00

Table 3. *Endorsed Projects (2005 e-Gov Fund Releases)*

Project	Cost (PhP,M)
1. OP Proper – Preparation costs of the training for Policymaker s software	1.80
2. DILG Public Safety Information System (2005 released)	176.00
3. DOTC-OSEC LTFRB Frontline Unit Services Enhancement and Upgrading Project	20.00
4. DOTC-OSEC Executive Management Information System	24.00

appears to be advanced, the Philippines had just started to sense the effect of the Data Privacy Act of 2012 (RA 10173) and Cybercrime Act of 2012 (RA 10175) that were both passed into law to strengthen confidentiality and penalty provisions under the e-Commerce Law. Case in point was the infamous ComeLeak incident, or the data breach of 76,678,750 voters' personal information in March 2016; the National Privacy Commission found the Comelec liable for violations of Sections 11, 20, 21, 22 and 26 of RA 10173 (Celis, 2017).

Further, the Asian Development Bank (2016) noted that foreign direct investment can help achieve inclusive economic growth and regional Asian integration given the increasing tradability of services through e-Commerce.

Nevertheless, the Philippines has yet to improve

Table 5. *Ease of Doing Business in Philippines Ranking, 2008 – 2016*

2008		2010		2012		2014		2016
141	144	134	136	133	108	97	99	99

Table 6. *Status of e-Commerce Law Harmonization in ASEAN as of 2013*

Member Country	Electronic Transactions	Privacy	Cybercrime	Consumer Protection	Content Regulation	Domain Names
Brunei Darussalam	Enabled	None	Enabled	Partial	Enabled	Enabled
Cambodia	Draft	None	Draft	None	Draft	Enabled
Indonesia	Enabled	Partial	Enabled	Partial	Enabled	Enabled
Lao People's Democratic Republic	Enabled	None	None	Draft	Enabled	Partial
Malaysia	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
Myanmar	Enabled	None	Enabled	Enabled	Enabled	Enabled
Philippines	Enabled	Enabled	Enabled	Enabled	None	Enabled
Singapore	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled
Thailand	Enabled	Partial	Enabled	Enabled	Partial	Partial
Viet Nam	Enabled	Partial	Enabled	Enabled	Enabled	Enabled

further its e-Commerce infrastructure as manifested in the pronouncements of President Rodrigo Duterte in his inaugural speech on June 30, 2016. He emphasized, “I direct all department secretaries and the heads of agencies to reduce the requirements and the processing time of all applications, from the submission to the release. I order all department secretaries and heads of agencies to remove redundant requirements and compliance with one department or agency, shall be accepted as sufficient for all” (par. 25. Almost a month after, due to the pending passage of the Freedom of Information (FOI) bill, he issued Executive Order No. 02 (EO-02) on July 23, 2016 to operationalize in the executive branch the people’s constitutional right to information and the state policies to full public disclosure and transparency in the public service. The EO-02 is premised in the provisions of the Data Privacy Act of 2012 (RA 10173) in its aim to strengthen the fundamental human right of privacy, and of communication while ensuring the free flow of information to promote innovation and growth. In this regard, processing time reduction and FOI are very much interrelated to one another as their common critical success factor is greatly hinged on the compliance with e-Commerce Law. Last April 2017,

DTI Secretary Ramon Lopez said, “For the EoDB, we are targeting from a rank of 99, we want to reach about a level of 58 to 63 by really cutting down the burden, the number of steps, and the number of days in starting a business. This, however, will not be attained this year yet as the reforms of shortening the process of starting a business are ongoing. But we can expect an improvement in the rankings, nonetheless” (Mercurio, 2017, par. 4).

Corollary, Secretary Rodolfo Salalima of the Department of Information and Communications Technology (DICT) asked President Duterte in a press briefing to issue an executive order to create a single portal for the country to consolidate all the data, systems, and processes of all government departments to DICT (Presidential Communications Operations Office, 2017). This is not only to improve public service where citizens can have online access to services of all government departments but also to enhance cyber security. He stressed, “People need no longer go from place to place just to contact all these departments. Through our portal, one stop shop portal, pwede na ang tao maski sa probinsya, use our portal to transact, say for example, with the NBI, the BIR and other government agencies” (par. 3). The DICT was

newly created department in 2015 by Republic Act 10844. Hence, Sec. Salalima's statement is absolutely related to attaining Stage V. Further, it is also in parallel with the Philippine e-Commerce Roadmap 2016-2020 (DTI, 2016) which highlighted the role of e-Commerce in economic development.

Hence, compliance with e-Commerce Act must be managed as an integral part of an agency's strategy and the concerned top officials must recognize its scope and implications to their organization. A compliance program should help an agency not only to streamline its internal operations but most especially on how it would serve the Filipino citizens. Edwards and Wolfe (2004) defined compliance in general terms as the adherence to rules and regulations laid down by those in authority; that is, not only does compliance mean adherence to the letter of the law, it also is just as concerned with adherence to the spirit of the law. Compliance includes concepts of obedience, observance, deference, governability, amenability, passiveness, non-resistance, and submission and linked to this are aspects of duty that include doing what ought to be done, moral obligation, accountability, propriety, fitness, to be on one's good behavior, answerability, acting morally, and ethically.

Research Gaps

There has been no domestic study on the compliance with e-commerce law or even international study for that matter. What have been gathered for dependent variable in this study are compliance models in international law, financial services, taxation, global supply chains, and corporate social responsibility. Hence, this initiative will serve as a research gap for local, or even for international consumption, with the end in mind in determining the significant factors why the majority of Philippine government offices were not able to comply with the e-Commerce Act as mandated by law.

Significance of the Study

Electronic governance or e-Governance in the Philippines started in the '90s and would have finally advanced supposedly after the enactment of the e-Commerce Act in 2000. In the study of Magno

and Serafico (n. d.), they assessed the role of IT in promoting good governance. They noted that government offices in the 1990s were already online offering various information services through their respective websites.

The e-Governance implementation is synonymous to migration to e-business models and a lot of focus was given on business processes perspective of an entity (Gale & Krell, 2005). A business process is "... a set of logically connected tasks performed to achieve a specified business outcome" (p. 118). It is a rational organization of people, materials, equipment, and energy through systems, procedures, and methods into work activities designed to produce a specified work product or outcome. Business processes have defined inputs, service providers, clients, and results. They can exist within functional units, span departmental boundaries within organization, or take place across organizations. The organization is conceived as a system of business processes used to achieve its objectives. With all government offices complying with e-Commerce law would mean efficient services and, thus, eventually reap the following expected benefits:

- Improved EoDB standing would eventually mark the Philippines of being at par with ASEAN countries;
- Easier to achieve inclusive economic growth through foreign direct investment and regional Asian integration;
- Faster turnaround time in providing e-Commerce services ensures convenience to citizens and businessmen in transacting anytime, anywhere, and anyhow;
- Minimized face-to-face interaction enhances transparency to curb corruption and red tape in the workplace;
- Quick inter-agency sharing of data and information facilitates decision making by heads of agencies; and,
- Streamlined and cost-effective internal operations create a lean and productive workforce.

This study vividly defines the moral obligation of public officials who should take the initiatives to comply with the e-Commerce Act (2000) and generate recommended strategies and action steps on how to properly manage e-Gov projects internally in their

respective agencies and externally by interfacing these projects with other government offices. Hence, it is the contribution of this paper to come up with the regulatory compliance theory with e-Commerce law in the Philippine context.

Theory and Hypotheses

To examine the influence of the organizational commitment and organizational maturity on the use of IT, I use the socio-economic theory on regulatory compliance by Sutinen and Kuperan (1999). The determinants of compliance (DOC) theory was developed by Sutinen and Kuperan (1999) by putting together economic theory with theories from psychology and sociology with the aim to study both intrinsic and extrinsic motivations that influence the choice of an individual to comply with a given set of regulations. In addition, the threat of sanctions is the only policy mechanism that could improve compliance theory accounts for the moral obligation and social influence as well as the conventional costs and revenues associated with illegal behavior. Based on Becker's (1968) model, the threat of sanctions is the only policy mechanism that could improve compliance with the regulation.

According to Sutinen and Kuperan (1999), the theory indicates that the individual violates only if the benefits less the expected costs of violating exceed or equal the benefits of compliance; otherwise, the individual complies. Another significant motivation explaining compliance behavior is the moral obligation. Further, cognitive and social learning, which are the two leading psychological theories, could also explain compliance behavior: based on cognitive theory, compliance is based on individual's personal morality and level of moral development.

Per Leung (1995), an individual engages in an illegal activity in the first period and will be fined or imprisoned (or both) if caught and convicted; and he will then take part only in legal activity subsequently in the second and final period. The empirical study resulted that bribery upon seeing the enforcers is an evasion activity that attracts non-violators to violate, educate and experience discouraging chronic violation, and believing that enforcement inadequately encourages chronic violation. Hence, he suggests that some of the policy measures to consider

for fighting non-compliance should include education and awareness campaign, efficacy of detection, and effective implementation of the regulation.

Hypothesis 1 (H1). The organizational commitment positively influences the level of regulatory compliance.

The first framework prediction highlights the importance of organizational commitment which defines the individual's psychological attachment to the organization. Meyer and Allen (1991) cited that employee's commitment may be emotional attachment towards the organization (i.e., affective), recognition of costs associated with leaving the organization (i.e., continuance), and a moral obligation to continue employment or remain with the organization (i.e., normative). Moral obligation is the belief that an act is one prescribed by a person's set of values and it is also a duty, which one owes, and which one ought to perform, but is not legally bound to fulfill. When someone recognizes a duty, that person commits himself to its fulfillment without considering his own self-interest. Among the three commitment types, the normatively committed employees are likely to show compliance (Ahmadi & Avajian, 2011).

Wiener (1982) described normative organizational commitment as a sense of obligation connecting a person to a certain course of action and it is a function of internalized normative beliefs; that is, an individual's beliefs that he has a moral obligation to engage in a code of conduct reflecting loyalty and duty in all social situations in which he has a significant personal involvement; and a person's internalized beliefs that are consistent with organizational mission, goals, policies, and style of operations. It is called "normative" because employees are brought up with the idea that it is the norm to be loyal and dutiful to one's organization. It is also interesting to note that the higher the level of normative commitment, the greater the employees' feelings to remain with the organization (Meyer & Allen, 1991). Hence, the head and employees of an agency are all bound to do their moral obligation to serve the citizens to the fullest.

Being an employee of the government, the agency head has a moral obligation to perform his function in conformance to good government governance and such should encompass his leadership in pushing the agency

to comply with the e-Commerce Act (2000). Hart (1984) argued that public administration is a "moral endeavor" that requires special moral obligations and unique moral character. On the other hand, the moral obligation of employees is to perform their duties within the Code of Conduct and Ethical Standards for Public Officials and Employees (1989) with the proper influence of the agency head to comply with the e-Commerce Act (2000). If the personal moral values of employees do not completely support policies, or even compliance with the e-Commerce Act, a form of moral suasion is education or training which can provide the right information to people concerned and thereby influencing their personal values and behavior according to Fishbein and Ajzen (1975) as cited by Sutinen and Kuperan (1999); and such may be attained by conducting goal orientation and compliance training.

Sutinen and Kuperan (1999) further expounded on public choice theory and cited that some legitimacy depends on the authority's capacity to provide positive outcomes. However, mandates of the authority may or may not influence the personal moral values of individuals and this may lead to non-compliance with the law and to legal authority. On the other hand, the behavior of others may influence individual compliance behavior as the higher the compliance by others, the stronger the individual's incentive to comply. Hence, the magnitude of compliance would generally affect the total compliance condition. Though moral obligation and social influence would create a high degree of compliance, coercive enforcement measures remain an important part of any compliance.

Although it is also the moral obligation of employees to subject themselves willingly and without hesitation to audits and possible sanctions, these are very much related also to the enforcement variable of the DOC which would eventually push the employees to comply. As earlier stated, when someone recognizes a duty, that person commits himself to its fulfillment without considering his own self-interest and he is considered a normatively committed employee (Ahmadi & Avajian, 2011).

Likewise, Pires (2008) argued that the enforcement of labor and employment laws is effective by combining punitive (i.e., fines) and pedagogical inspection practices (i.e., education and/or technical assistance) by promoting sustainable compliance by way of legal and technical solutions that would connect

workers' rights with firms' performance. This is like the enforcement variable in the DOC of Sutinen and Kuperan (1999).

On matters concerning leadership, the agency head's influence over his employees is an essential part of his duty. There can be no leadership without influence because influencing is how leaders lead. Influence is the power and ability to personally affect other's actions, decisions, opinions, or thinking and it is a crucial component to good leadership as it could gain commitment from people at all levels of an organization. What Scharlatt and Smith (2011) emphasized further is that influence tactics can generate resistance, compliance, or commitment. Besides, Truckenbrodt (2000) explained that positive interactions between leader and subordinates amplify the latter's sense of commitment. On the other hand, social influence occurs when individuals make real changes to their feelings, opinions, and behaviors because of interaction with others who are perceived to be similar, desirable, or expert. Kelman (1958) identified compliance, identification, and internalization as the three broad varieties of social influence.

Sutinen and Kuperan (1999) explained further that orders of an authority like the leader's directives are linked to legitimacy as a determinant to compliance through moral obligation and social influence. This is also referring to position influence as derived from job position and such authority is used to meet company's objectives and usually results in compliance (Federal Emergency Management Agency, 2010). Hence, leadership is the act of influencing employees to voluntarily pursue organizational goals and it is not possible to influence people without using power (Kreitner, Kinicki, & Buelens, 2002).

Apparently, the theory of Sutinen and Kuperan (1999) clearly shows that the organizational commitment primarily through the agency head's leadership and good governance directly affects compliance and these are very much related to the DOC, particularly the moral obligation and social influence; that is, normatively committed employees are likely to show compliance and influence tactics can generate commitment or compliance. In other words, the willingness to comply stemming from moral obligation and social influence is based on the perceived legitimacy of the authorities or leaders charged with implementing the regulations (Sutinen & Kuperan, 1999).

When moral acts are motivated intrinsically as explained by Sutinen and Kuperan (1999), the rewards are internal to oneself and non-material. Thus, violating the regulation is contrary to the individual's moral values and thereby reduces violations. On the other hand, moral acts are extrinsically motivated when one's social reputation is at stake and therefore relevant to compliance behavior. Since morality and influence are closely related, the principles used to evaluate one's own behavior are used to evaluate others' behavior. Hence, the moral standards wherein individuals support their own behavior are also the foundation for the social influence they apply. Social influence to comply is expected to be stronger and would result to the widespread of a common moral obligation; hence, violation would be contrary to social norms and therefore reduces the number of violators. Moreover, legitimacy refers to the orders of an authority like the leader's directives, police, or other authorities and it effectively functions as a stock of loyalty on which leaders can draw even when the dictates are contrary to an individual's self-interest.

The commitment of the employees may induce non-compliance even if the agency head is committed and that can be attributed to their own respective behavioral intentions (Davis, Bagozzi, & Warshaw, 1989). Even Sutinen and Kuperan (1999) cited that mandates of the authority may or may not influence the personal moral values of individuals and this may lead to non-compliance though the behavior of others may influence individual compliance behavior. Further, if a certain e-Gov project is already being or just implemented, the affected employees may not cooperate if they are cheating their agency if corrupt practices are in place and this is also depicted in the DOC model as illegal gains (Sutinen & Kuperan, 1999). This can be explained by institutional theory which revolve around the concept that organizational action reflects a pattern of doing things or practices that evolves over time and becomes legitimized within an organization and an environment; and such is predictable from perceptions of legitimate behavior derived from cultural values, industry tradition, firm history, and the like (Eisenhardt, 1989). Same is true when the technology in an e-Gov project is not acceptable; non-compliance is also inevitable. In those two scenarios, the project may be perceived as a threat or not acceptable and would result to a behavioral intention leading to resistance to change as elaborated

in the Technology Acceptance Model by Davis (1989).

In addition, organizational commitment denotes the strength of identification with and involvement in an organization (Mowday, Steers, & Porter, 1979). It includes a strong belief and acceptance of an organization's goals and values, a readiness to exert a considerable effort on behalf of the organization, and an ardent desire to remain an organizational member and such is highly related to the affective organizational commitment (Meyer & Allen, 1997).

Regarding organizational culture, it is the common set of assumptions, values, and beliefs shared by the organizational members (Trevino, 1986) and is one of the principal factors that affect individual behavior (Wiener & Vardi, 1990) and misconduct (Vardi & Wiener, 1996). Cheating is a misconduct and it violates a rule that is prescriptive, mandatory, regulative, and conduct-governing (Green, 2004). But if other reasons, like employees not properly oriented and trained on a given e-Gov project, the implementation may only take a longer period before employees' commitment could be solicited especially if too much bureaucracy is deeply rooted in the organization. That culture could possibly result in non-compliance and the only chance for employees to comply is for the head of the agency to induce the right leadership style coupled with managerial skills.

Organizational commitment is all about the commitment of the agency head and it is quite critical as compliance with e-Commerce Act is greatly hinge on his leadership. Compliance is the desired organizational behavior and Burke and Litwin's (1992) model stressed that the environmental factor is the most important driver for change to comply. Burke (2008) pointed out that the external environment often prompts organizational change. The antecedent to the implementation of the change strategy in this case study is external as mandated by e-Commerce Act; that is, government agencies are specifically required to comply with it within two years after its effectivity in year 2000. This event should have brought to light the need for better processes and policies to cope up with the mandate. This highlighted the need for change by automating the internal processes of an agency. Leadership is, therefore, the biggest catalyst for change (Burke, 2008).

I see two separate organizational commitments to comply with the e-Commerce Act (2000), that is, the commitments of the agency head and the

employees. The commitment of the agency head spells his leadership in running the agency by conducting himself in accordance with high standards of behavior as a role model for employees within the agency. It is incumbent upon all agency heads as public servants to typify the standards that others are expecting within the organization to meet. It is his influence to motivate and enable the people under him to contribute towards the effectiveness and success of the organization to comply vis-à-vis the individual behaviors of his people. Though the agency head has his own behavior which could surely sway compliance, he has more responsibility in visioning what appropriate plans and control mechanisms should be in place to successfully fulfill the requirements of the law; and that is through his managerial skills, which include the formulation of agency's strategic plan and the adoption of the best practices in project risk management in handling e-Gov projects.

Hypothesis 2 (H2). The organizational maturity of the agency in using IT positively moderates the influence of the organizational commitment on the level of compliance.

My second framework prediction highlights the organizational maturity on the use of IT. It refers to the adherence of an agency with the IT governance principles and the alignment of IT in all aspects of the business processes of the agency vis-a-vis compliance with the e-Commerce Act. The alignment of IT with the agency is measured using the five levels of strategic alignment maturity model of Luftman (2003); that is, Level 1 – Initial/Ad hoc, Level 2 – Committed process, Level 3 – Established focused process, Level 4 – Improved/managed process and Level 5 – Optimized process. This only means that if an agency has not aligned its IT plan, including the implementation of related IT projects with e-Commerce, with business processes and regulatory mandates, there's a big probability that the internal operations of that concerned agency have not gone through computerization and may take time to reach the compliance level 3.

Compliance with the e-Commerce Act (2000) is a project and it calls for professional project risk management to successfully implement it. It is quite important for the head of agencies to understand the basic prerequisites to comply with the e-Commerce

Act. No government agency would surely comply without coming up with a plan that would incorporate comprehensive compliance activities to include the tapping of a credible IT organization to implement information systems and technologies.

In a Public Accounts Committee report "Delivering Successful IT-enabled Business Change," it summarizes the key difference between the public and private sector (Virgo, 2007). As cited in that report, "For commercial organizations, IT-enabled change can be crucial to the success or failure of the business and, reflecting this importance, incentives and performance management regimes are geared to motivate those responsible to succeed" (p. 15/par. 2).

As organizational dependence on IT is visibly taken as a prerequisite to compliance with the e-Commerce Act (2000), the IT leader obtained recognition as a member of the executive team (Ross & Feeny, 2000) and s/he is known to be the chief information officer (CIO) as per Bock, Carpenter and Ellen (1986, as cited by Ross & Feeny, 2000). Information technology is a critical enabler of cross-functional business processes and is likely to have significant implications for the structures and processes of IT organization. Roepke, Agarwal, and Ferratt (2000) suggested that a key element in transforming IT organization to a strategic business partner in aligning IT resources with business is the development of IT human capital in terms of leadership skills, competencies, and behaviors in collaboration and partnership with other business units. The CIO's primary job in the organization is to link information systems with business and gaining competitive advantage using information technology (Benjamin, Dickinson, & Rockart, 1985). Concerning the CIO and CEO relationship, Feeny, Edwards, and Simpson (1992) argued that good CEO/CIO relationships will contribute to the success of the organization vis-à-vis strategic information systems planning, business/IS partnerships, and CEO involvement in IT management. It is therefore important to understand that the presence of CIO is an indication of organizational maturity on the use of IT as s/he implements the e-Gov initiatives of the agency to comply with the e-Commerce Act.

On the concept of IT governance, it focuses on the ability of an organization to coordinate and integrate IT decision-making authority across the enterprise (Peterson, 2004). IT governance is the strategic alignment of IT with the business to achieve

maximum business value through the development and maintenance of effective IT control and accountability, performance management, and risk management. Some of the international standards in IT governance are ISO/IEC 38500, Control Objective for Information and Related Technology, and Information Technology Infrastructure Library.

So, it is the agency head's responsibility to coordinate the tasks and activities for the achievement of agency's institutional e-Gov goals through planning, organizing, leading, and controlling of resources (Dimovski & Penger, 2002). This way, compliance with e-Governance laws and regulations would come in handy by specifically preparing business strategic plans, including the information systems strategic plan or ISSP that would guide the agency in formulating, implementing, and evaluating cross-functional decisions that would enable an organization to achieve its objectives (David, 1989). The information system strategic plan presents the roadmap for automating the business processes of an agency and other IT governance-related activities.

A mature organization in terms on the use of IT would have implemented a Digital Nervous System or DNS (Gates, 1999) wherein all its business processes are fully dependent on the information processing infrastructure of the organization. Consequently, the decision making in the organization would be fast, secure, accurate, and reliable based on the speed of the DNS reflexes. Embedded in such mature organization is the explicit and systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use, and exploitation and it is called knowledge management (KM). The application of IT systems and other organizational resources to manage knowledge strategically is called knowledge management system (KMS).

In a study of Wiig (2002), he rationalized that public administration (PA) shares the responsibility to assure that its society provides the quality of life intended for its citizens. From a societal knowledge or intellectual capital (IC) perspective, this implies participation in building and leveraging society's IC to obtain the necessary economic foundation through KM. The goal of KM is to improve the effectiveness and sustained viability of any enterprise—be it a commercial corporation, a part of society, a country, or a single individual. KM plays important roles

in PA. Each role serves specific constituencies and purposes and is implemented differently. Jointly, they build society's intellectual capital to improve the effectiveness of public and private decision making and situation handling.

Once business strategies are translated into projects, a very proactive project team, which includes end users and representation from cross-functional departments affected by the technology, is needed to ensure a successful implementation (Thielst, 2007). As the leaders of change, the project team would want to assess the processes, identify important linkages with other existing systems, and possible risks that may impede the project. Effective management of technology implementation means supporting the project team (i.e. leadership), selecting the right technology, and designing and providing appropriate training; and it is important to consider having employees who are adaptable and versatile.

Sometimes adopting technology seems to be an attractive option for those of us who are faced with an improvement challenge just to comply with the e-Commerce Act (2000). For example, we purchase more state-of-the-art devices if we deem them to be the solution to our ineffective processes and systems. However, technology is not a panacea for the skills we lack or for every improvement issue we encounter.

Further, if the agency is following the best practices in handling an IT project, which include the assessment whether the agency's project management office is judiciously using the budget, implementing an e-Gov project would be very easy. It is in this regard that the top executives of an agency must find an approach to translate the strategy to project strategy via portfolio and program management (Lan-Ying & Yong-dong, 2007).

Emphasized by Yarberry (2007) in his study, change management is a core IT general control required to support the business functions of any enterprise. While change control is conceptually simple, the mechanics of implementation and monitoring require attention to detail as well as support from IT, users, and business unit management. At its most basic level, change management is a control system that ensures programs, systems, and infrastructure modifications are authorized, tested, documented, and monitored. In another study, Hopkins (1999) pointed out that most of the problems identified in implementing IT

projects can be avoided or at least minimized when there is effective partnership existing between IT and the business managers. According to Ball (2000) in his study, another critical success factor to be considered in change management is the IT education of people in an organization. There were success stories that have used IT education with extraordinary success.

Resistance to change by managers and professionals is a widespread problem. To better predict, explain, and increase user acceptance, we need to better understand why people accept or reject computers. The technology acceptance model (TAM) specifies the causal relationships between system design features, perceived usefulness, perceived ease of use, attitude toward using, and actual usage behavior (Davis, 1989). Generally, the TAM offers an informative representation of how design choices influence user acceptance, and should, therefore, be helpful in applied contexts for forecasting and evaluating user acceptance of information technology. On another note, there's a theoretical model called Theory of Reasoned Action (TRA) which explains why a person's performance of a specified behavior is determined by his or her behavioral intention (BI) to perform the behavior; and, the BI is jointly determined by the person's attitude (A) and subjective norm (SN) concerning the behavior (Davis et al., 1989).

To assess the associated knowledge and IT skills of the agency's manpower is also a critical success factor. If they lack it, technology could be perceived as complex and, therefore, could mean slow diffusion and assimilation of e-Gov project (Fichman, 1999). And in terms of accountability, auditing of government entities will help boost government transparency. Just like in the case of China, it will continue its efforts to crack down on economic crimes committed by officials, and its state auditing administration will publicize the results of its auditing of government organs. Experts welcome this move, saying it will help improve the supervision of government officials and help establish an accountability system within the government. In "Audit results publicized to supervise government" (2005), Ren Jianmin, a professor of Tsinghua University, says audit reports can reveal two kinds of financial problems within the government: unreasonable planning and poor budget execution. He believes a system that publicizes audit results will help establish the accountability system within the government.

Hypothesis 3. BIR and Comelec have at least established an acceptable level of compliance with the e-Commerce Law.

I summarize graphically these three predictions and the broader framework as shown in Figure 1. The operational framework captures the DOC variables of Sutinen and Kuperan (1999) encompassing moral obligation and social influence, moral development and personal values, and legitimacy. The dependent variable (DV) is the level of regulatory compliance with the e-Commerce Act (2000) and this pertains to the adherence of the agency to the rules and regulations defined in the Act. The independent variable (IV) is the organizational commitment covering leadership, government governance, goal orientation, compliance training, audits, and sanctions. The moderating variable is the organizational maturity on the use of IT which is composed of IT organization, IT governance, knowledge management system, project risk management, change management, IT user acceptance, IT skills development, and systems audits.

Extent of Organizational Commitment vis-a-vis Varying Levels of Compliance

There's a simple template of compliance assessment being used by Florida Reliability Coordinating Council Inc. (n. d.) to evaluate the level of compliance of an entity using a three-point scale; that is, 0 = Insufficient, 1 = Expectations Met, and 2 = Expectations Exceeded. Nonetheless, assessment is not an end in itself. It should be a tool to come up with an action plan, such as the "Action Plan to Enhance Institutional Compliance" (The University of Texas System, 2003), the "Corporate Compliance Plan" (Community Mental Health Services of Muskegon, 2006), and the "Action Plan – Institutional Compliance," (University of Houston System, n.d.). Further, Hansen, Myers, and Schwartz (2011) affirmed that universities should have ethics and compliance programs that would enhance a university's community culture and eventually ensure accomplishment of their U.S. and international legal and regulatory obligations.

Conversely, I use varying levels of regulatory compliance to measure the maturity level of an agency in complying with the e-Commerce Act and such are categorized as follows:

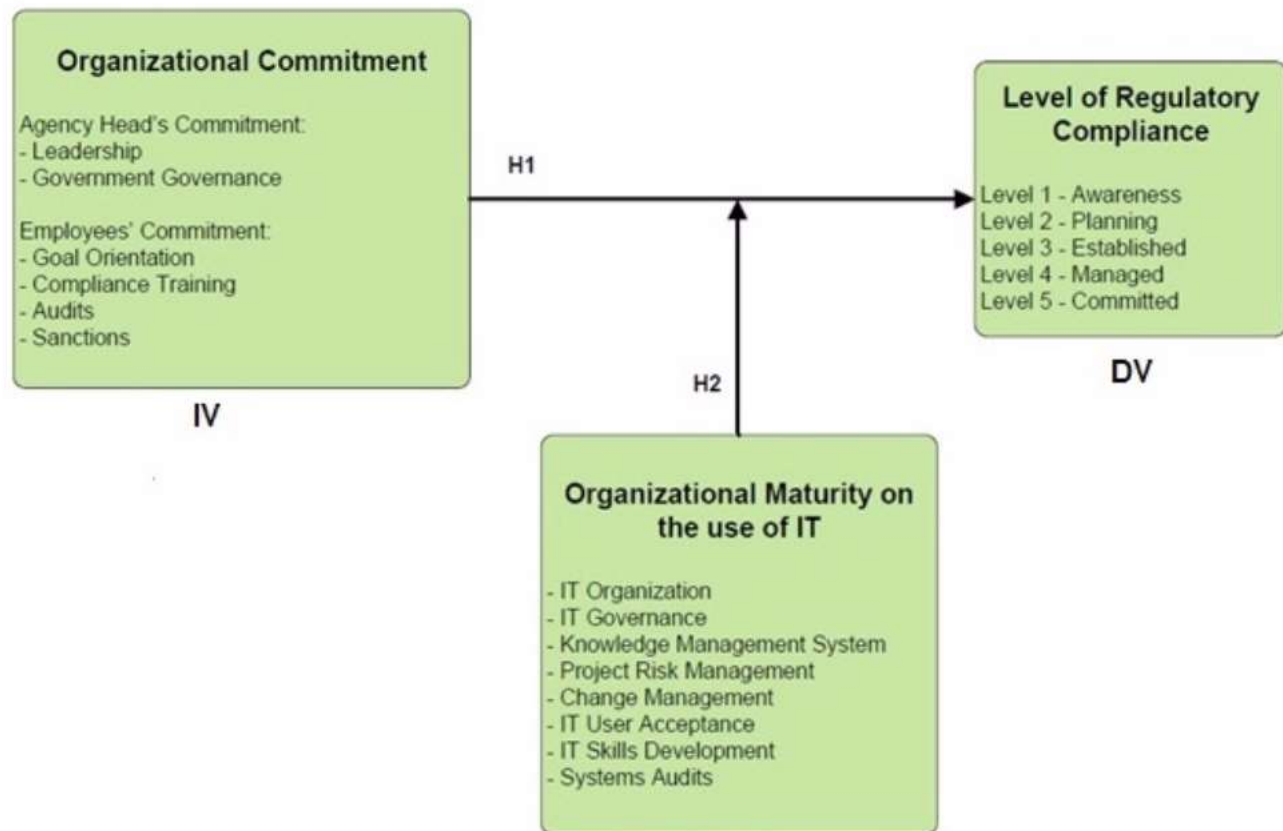


Figure 1. Operational framework.

- Level 1 – Awareness Stage. The agency knows the e-Commerce Act and has an idea on how to implement e-Gov projects.
- Level 2 – Planning Stage. The agency has incorporated the e-Gov projects in their Strategic Plan.
- Level 3 – Established Stage. The agency has implemented at least one interactive e-Gov project (Start of compliance).
- Level 4 – Managed Stage. Almost all the business processes are controlled electronically (Compliant).
- Level 5 – Committed Stage. All the business processes are controlled electronically (Fully Compliant).

The maturity level aims to give an accurate, reliable, and honest summary of the current level of maturity of the compliance status of an agency. It aims to help in identifying and providing evidence of

good practice in compliance management, providing evidence of compliance with the e-Commerce Act and its Implementing Rules and Regulations, identifying gaps and areas of weaknesses which may require improvement, measuring the extent to which an agency views compliance management as an operational and strategic priority.

The level of compliance is significantly related to how committed the agency head and his/her employees to comply with the e-Commerce Act (2000). Committed employees would surely push their limits to attain the highest level of maturity. Else, if there's no genuine commitment, the organization would only be hitting either Level 1 or 2 and thus compliance with the e-Commerce Act would never be attained. At the very least, the concerned agency should reach compliance level 3 to be considered compliant with the e-Commerce Act. This is a case of regulatory compliance management concern where top officials and IT people would share an agreement concerning

the alignment between the regulation (i.e., e-Commerce Act) and the agency's information system (Bonazzi & Pigneur, 2009). And to ensure that commitment is enabled within the consciousness of the subordinates, there must be a compliance management program in place with the intention to learn compliance responsibilities, understand these responsibilities, ensure that requirements are incorporated into business processes, ensure that responsibilities are carried out and requirements are met, and take corrective actions as necessary (FDIC, 2005). The compliance program consists of the policies and procedures which guide employees' adherence to laws and regulations while the compliance audit determines the agency's level of compliance as well as adherence to policies and procedures.

Research Methodology

I employ multiple-case design due to potential analytical benefit as the evidence from it is often considered more convincing and more robust (Yin, 2009, p. 53). Further, Yin (2009, p. 61) stated that working on two cases makes theoretical replication possible. The logic of replication is analogous to multiple experiments; that is, upon uncovering a significant finding from a single experiment, the next step is to replicate this finding by conducting a second, third, and even more experiments (Yin, 2009, p. 54). As a result, Yin declared that each case either predicts similar results (literal replication) or predicts opposite results for predictable reasons (theoretical replication). Also, because the contexts of the two cases are likely to differ to some extent, arriving at a common conclusion despite the varied circumstances will have immeasurably expanded the external generalizability of one's findings compared to those of a single case (Yin, 2009). Generalizability is the extent to which the findings of a research study are applicable to other settings (Saunders, Lewis, & Thornhill, 2007, p. 598).

I focus on the compliance initiatives of the BIR and Comelec. These agencies represent two cases with contrasting situations. One major contrast observed between the BIR and Comelec was the proactive performance of the former's CIO in the IT industry while the latter had none. If the subsequent findings will support the hypothesized contrast, the results would represent a strong start toward theoretical replication

(Yin, 2009, p. 54) and strengthen the external validity of my findings.

The unit of analysis is not the agencies themselves, but I focus on the compliance initiatives undertaken by these agencies, which reflect the overall compliance approach of BIR and Comelec. Hence, it is better to consider the overall compliance initiatives as the main unit of analysis, with the individual cases as embedded units of analysis.

I utilize as many sources of evidence to achieve data triangulation as the major approach to evaluate the outcome of this study such as the agencies' strategic plans, websites, audit reports, relevant studies, letters, memos, email, agenda and minutes of meetings, annual reports, newsletters, published materials from newspapers, magazines, and other pertinent primary and secondary sources of data (Yin, 2009, p. 101). And the goal of which is to corroborate the same fact or phenomenon through the convergence of evidence.

Hence, the research methodology is a combination of qualitative and quantitative analyses. The cross-case analysis is a suitable method to come up with qualitative analysis to examine the compliance variables by comparing the case-based empirical patterns. On the other hand, using multivariate statistics explains the quantitative analysis to test the hypothesis mathematically. The moderating variable warrants the use of interaction terms in the multiple regression framework. Mean, correlation and multiple regression coefficients, and standard deviation are helpful in describing the patterns in agency head's commitments and employees' commitments as well as level of compliance.

Case 1: The Bureau of Internal Revenue

Even before the enactment of the e-Commerce Act (2000), the BIR had done successful initiatives in automating its processes and this was through the leadership of its commissioners. Understanding such leadership is manifested in the "BIR history of computerization initiatives" (Bureau of Internal Revenue, n. d.) of the commissioners from 1986 to present.

In 1993, Commissioner Liwayway Vinzons-Chato initiated a comprehensive and integrated program known as Action-Centered Transformation to realign and direct the entire organization towards

the fulfillment of its vision and mission. In 1994, a five-year tax computerization plan (TCP) was planned and later implemented. It involved the establishment of a modern and computerized Integrated Tax System (ITS) and Internal Administration System (IAS). The ITS supports the Bureau in meeting its goals in increasing revenue collections through strengthened collection efforts, improved collection programs, and enabled collection officers. The ITS facilitated in the increased technology literacy of BIR management and personnel based on new and improved processes. Most importantly, the integrated system also established information linkages with affiliations with other government agencies, as well as private institutions like banks and insurance companies.

In 2000, Commissioner Dakila Fonacier prioritized taxpayer compliance and deters tax violations through full utilization of tax computerization in the Bureau's operations, expansion of the use of electronic Documentary Stamp Tax metering machine, and the establishment of tie-up with the national government agencies and local government units for the prompt remittance of withholding taxes. After the passage of the e-Commerce Act in 2000, the Bureau lined up "E-Commerce programs and projects" (n. d.).

In 2001, under the administration of Commissioner Rene Bafiez, a technology-based system that promotes the paperless filing of tax returns and payment of taxes was adopted through the Electronic Filing and Payment System (eFPS).

From 2002 to 2005, Commissioner Guillermo L. Parayno realized the significant benefits of rolling out various e-Services, which include electronic broadcasting, web-based TIN application and processing, electronic raffle of invoices/receipts, reconciliation of listings for enforcement (RELIEF), the BIR Contact Center (BIRCC) in the national office and eLounges in the regional offices, e-payment gateways, e-substituted filing of tax returns, and electronic submission of sales reports. Under the Run After Tax Evaders (RATE) Program, Commissioner Parayno conducted Tax Compliance Verification Drives and accreditation and registration of cash register machines and point-of-sale machines.

In 2005, the BIR laid down a strategic plan called "Blueprint for development towards 2010" to serve as its roadmap for attaining its goal. It stated the direction to take and is focused on using and improving current technology in reaching out to the taxpaying public, to

encourage and inspire the taxpayers to be compliant in their tax obligations, as well as play active roles in promoting compliance, with convenience as its primary sales pitch. The Bureau visualized a "no-contact" system of interaction with the taxpaying public while achieving its goal of compliance and revenue generation, and eventually attain the status of the second highest tax performance in the Asia-Pacific Region.

Still in 2005, based on the blueprint for 2010, the Information Systems Group (ISG) that was led then by Deputy Commissioner (DCIR) Lilia Guillermo, the CIO then, prepared the Information Systems Strategic Plan (ISSP) for 2006–2010 (Bureau of Internal Revenue, 2005) through the consulting services of KPMG Laya Mananahaya. During the review of BIR's information systems, KPMG found out that BIR's business processes were all computerized. This was already a sign that the maturity level of BIR on the use of IT was that high. KPMG also reviewed the past ISSPs. They noted that in 1994, BIR vigorously integrated IT in its internal business operations. Guided by the ISSP of 1993–1998 which focused on the general computerization goal of BIR's tax operations and internal systems, the Information Systems Group (ISG) achieved the implementation of the ITS and the IAS. The main objective of ISSP for 1998–2002 was to simplify and enhance these systems to address changing needs, implement a "near-zero" encoding policy, broadened the accessibility of users and taxpayers, emphasized enforcements, implemented internal administration, and empowered users and the ISG.

In 2006, Commissioner Jose Mario C. Buñag expanded the RATE Program to the Regional Offices, implemented new payment gateways such as the Efficient Service Machines and the G-Cash and SMART Money facilities. He also implemented the Benchmarking Method and installation of e-Complaint System.

In 2007, Commissioner Lillian B. Hefti focused on the strengthening of the use of business intelligence by embarking on data matching of income payments of withholding agents against the reported income of the concerned recipients. Through the LGU Revenue Assurance System, which aims to uncover fraud and non-payment of taxes, information sharing between the BIR and the Local Government Units (LGUs) was also intensified. To enhance audit capabilities, the use

of Computer-Assisted Audit Tools and Techniques (CAATs) was also introduced.

In 2008, under the “Oplan Kandado” Program, Commissioner Sixto S. Esquivias conducted a nationwide closure of erring business establishments using eComplaint facility where complaints on erring BIR employees and taxpayers who do not pay taxes and do not issue ORs/invoices can be reported.

In 2009, Commissioner Joel L. Tan-Torres pursued a high visibility public awareness campaign on taxpayers’ service programs wherein he institutionalized several programs/projects to improve revenue collections. Through the signing of several Memoranda of Agreement to improve specific areas of tax administration, linkages with various agencies (e.g., LTO, SEC, BLGF, PHALTRA, etc.) were established.

In 2010, Commissioner Kim S. Jacinto-Henares focused on the filing of tax evasion cases under the RATE Program.

BIR (2011) crafted the “BIR high-level strategic plan: 2011–2016” with the end in view of addressing improvements in revenue collections, enhancing taxpayer satisfaction, and significantly alter business processes and systems. In support to that plan, the ISG lined up the “BIR priority programs/projects for CY 2011–2016” in its ISSP for 2011–2016 which composed of electronic tax information system (ETIS), geographic information system (GIS) for tax mapping and zonal valuation purposes, document imaging system (iReturns), Risk-based audit program, benchmarking and eProfiling project, computer assisted audit tools and techniques project, electronic taxpayer account management program (eTAMP), automated reconciliation of collection data, performance management system (PMS), and Human resource information system (HRIS).

To check the effectiveness of BIR’s strategic plan for 2011–2016, the Bureau of the Treasury (2013) released a report showing that the BIR yielded a very productive output in just two years. It was not a surprise when the BIR generated a convincing revenue of P1,057.916 Billion at the end of 2012.

Furthermore, with the established information linkages with other external entities, BIR enabled faster and more efficient exchange of third-party information. The financial linkages, such as the alliance of government financial institutions called FINLINK use IT to facilitate the sharing of information between members, coordinate and rationalize complimentary

processes, and reduce transaction costs through the elimination of physical transit of data. The members of FINLINK are the Department of Finance, Bureau of Treasury, Bureau of Customs, Securities and Exchange Commission, Social Security System, Bangko Sentral ng Pilipinas, Department of Trade and Industry, and the BIR itself. The industry group is the linkage that facilitates the collection and monitoring of tax payments of special industry groups such as insurance companies, banks, and stockbrokers.

Aside from FINLINK in 2005, BIR then was linked with other government agencies such as Land Registration Authority, Department of Budget and Management, Land Transportation Office, Insurance Commission, Quezon City Hall, Manila City Hall, Quezon City Hall, Department of Interior and Local Government, Maritime Industry Authority, Home Development Mutual Fund, National Statistics Office, and Board of Investments. To date, BIR is already technology linked with the DTI, GSIS, PhilHealth, SEC, and other LGUs through the Philippine Registry System of DTI.

From the passage of the e-Commerce Act, BIR has continuously innovated its internal business processes while providing interactive web applications in service to the taxpayers. The pro-active leadership of DCIR Guillermo was a major factor in the organizational maturity level of BIR in using IT. She made it possible to implement e-Gov projects successfully from the administration of Presidents Joseph Estrada to Benigno Aquino III. Hence, it was no surprise that DCIR Guillermo was cited as one of the 11 “Most Powerful Women in IT” in the country in 2003 by Media G8way Corporation.

Case 2: The Commission on Elections

The Comelec underwent three major strategic planning exercises. The first was in 1992 during the time of Chairman Christian Monsod and it was called Operation MODEX. The modernization of the electoral process was identified as one of the components of the six-year Operation MODEX program (1992–1998). Under the leadership of Chairman Benjamin Abalos in 2006, Comelec crafted a strategic plan for 2006 to 2010 and it was dubbed as Operation Modernization and Electoral Reforms with Integrity and Transparency (MERIT). The Operation MODEX was backed up by an ISSP in 1993 while Operation MERIT had no ISSP

to support it. Regrettably, the Operation MODEX and MERIT had not realized any single automation of its internal business processes and even automation of electoral process involving counting and canvassing of votes.

In October 2007, after a systems audit, it was found out that the internal business processes of the Comelec were practically manual. Hence, the Comelec prepared a three-year ISSP and prioritized 16 different management information systems that the Comelec needed to automate its internal business processes (Celis, Casifio, & Borra, 2008). However, the said ISSP was not implemented.

In 2011, the third strategic plan was called Comelec Strategy for 2011 to 2016 or COMSTRAT 1116. The good thing about COMSTRAT 1116, it was followed up by the preparation of ISSP for 2012 to 2014 and it was entitled “Comelec information system strategic plan 2012–2014” (Commission on Election, 2011). All of these happened during the leadership tandem of Chairman Sixto Brillantes and Commissioner Gus Lagman.

The main objective of MODEX and MERIT to modernize the electoral process, in accordance with Republic Act 8436, as amended by Republic Act 9369 (Election Automation Law of 2007), was only realized in 2010, 2013, and 2016 elections. However, Comelec is faced with ongoing legal cases filed by the Philippine Computer Society and AES Watch in the Ombudsman in the conduct of 2010 and 2013 elections due to non-compliance with all the technical provisions of the Election Automation Law of 2007 (Tuazon, 2013) and the provisions of e-Commerce Act related to electronic signature (Sections 8, 9, 10, 11, 27, & 31). On the other hand, there are also legal cases surrounding the 2016 elections, especially the incident related to the changing of “?” characters to “ff” in the transparency server (Punay, Echeminada, & Crisostomo, 2017).

Aside from the implementation of the Comelec strategic plans and ISSPs, there are pertinent information related to the interviews I conducted in 2012. As a start, on matters regarding electronic documents, Chairman Brillantes (personal communications, November 15, 2012) then said, “Documentation matagal ko nang sinasabi! Paginbentaryo ng mga dokumento... We are in the process of transforming it from regular... puro papel into centralized document system. Until now, si Goyo (former Commissioner Gregorio Larrazabal) cannot be cleared for certain cases that he could not produce.

Di na nya malaman kung saan napunta!” About automation of business processes in COMSTRAT 1116, Chairman Brillantes cited, “Nabuo na namin yon! Ang problema implementation because of the budget. So nag-uumpisa na kami for 2011, suddenly when we got into the budget of 2012, na-question kami! So ngayon, sa last hearing namin sa budget, in-announce ko na that we are doing away with the COMSTRAT because we do not have budget to do it. Kasi, hindi daw pu-puede.” With reference to the Electoral Dispute Adjudication system of COMSTRAT 1116, Chairman Brillantes said, “(Without it) Nakakalimutan na, eh! Natatambakan. Kaya wala kaming consistency ng mga decisions. We cannot refer back to the old cases decided by the previous Comelec. Para mo hanapin, huhukay ka pa... Up to now, we are resolving barangay cases. So naiiwanan na naming ang mga bago!”

The Law Department head then, Atty. Esmeralda Ladra, commented on Comelec’s compliance with e-Commerce Act (2000) and said, “I don’t think we have already started during the time of enactment of e-Commerce Act. Although as an agency of the government, we have been trying to comply. But you see, we have several complaints like not only budgetary but of course, the competence of our people in the Commission” (personal communications, December 12, 2012).

The Planning Department head then, Atty. Ferdinand Rafanan, said, “I do not know that there was such compliance. If there is compliance, I should know because this is a law and it has been since 2000. I did not hear of that in Comelec or from anyone here. I heard about it on my own because of our continuing legal education” (personal communications, November 15, 2012).

Interestingly, the appointment of former Commissioner Lagman in 2011 made a lot of changes in managing the systems and processes of Comelec as he was also acting then as the CIO of Comelec. When I interviewed him in 2012, he said that Comelec is like a virgin forest with so many things to do and improve (personal communications, December 19, 2012). He also said that the last CIO of Comelec known to the public was Director Ernesto del Rosario who served from the preparation of the supposedly 2004 automated national and local elections until he retired in 2009. Nobody has ever replaced him until now. Per Commissioner Lagman, even the next in line IT officers to Dir. Del Rosario would not want to be promoted.

Commissioner Lagman relayed to me what he did when he started working in Comelec. First, he organized a committee that would handle the preparation of ISSP. After several weeks, it was approved by the National Computer Center and he said, "For the first time, Comelec finally now have an ISSP" (personal communications, December 19, 2012). Aside from automating HR, accounting and other common office automation systems, he added, "Automating the election is not the only application that you can automate in Comelec. One of the recommendations I made was to automate the monitoring of election cases. Side by side with the monitoring of cases, let us allow the electronic filing of cases. And the reason for that is... when you file an election case, you have to complete all the documents. Alam mo 'yang documents na yan, minsan isang balikbayan box! You have to submit something like 11 copies. Suppose 'yung case mo is a barangay election case, and say that you are in Mindanao, you have to send 11 copies to Intramuros. Ang hirap, hindi ba? So sabi ko, we should allow electronic filing of cases. So, at least the guy, can just email it to us" (personal communications, December 19, 2012).

On another note regarding finance, Commissioner Lagman mentioned, "Yung Finance (Department), di pa automated yan! Pa-excel-excel lang yan. Others, HR! Ang dami pang applications. It's not only the automation of elections. In my recent meeting with the Commission on Audit in February 2017, they said that they trained Comelec already on how to use electronic government accounting system (e-NGAS) in 2016. But to date, Comelec has not implemented the e-NGAS!" (personal communications, December 19, 2012).

Lastly, the interview with the president of Comelec's employees union, Mac Ramirez, revealed that their group was committed in automating the business processes of their frontliners in the field offices. They even cited NBI and LTO as models in providing services. Unfortunately, he said that their internal business processes were not automated yet. In the case of BIR employees, they have participated proactively in successfully implementing their e-services (personal communications, July 29, 2013).

Hence, it is unfortunate that the focus of automation since 1992 was all about electoral process but got so delayed due to inaction. The other business processes proposed to be automated as defined in 2007 and 2011 ISSPs were all set aside.

Qualitative Analysis

Cross-Case Analysis

Understanding on what transpired with the strategic plans of BIR and Comelec, a cross-tabulation matrix and process pattern matching diagram can easily be drawn up to show graphically the causal effects of these plans vis-a-vis compliance with e-Commerce Act (2000). To ascertain that the combined independent and moderating variables have great influence on regulatory compliance qualitatively, I use cross-case analysis to establish the following:

- Confirm H1 (i.e., organizational commitment positively influences the level of regulatory compliance)
- Confirm H2 (i.e., organizational maturity of the agency in using IT positively moderates the influence of the organizational commitment on the level of regulatory compliance)

Cross-Tabulation

The cross-tabulation shown in Table 7 displays the inter-relationships of the agency's strategic plans with their respective ISSPs and their respective implementation over time; that is, before and after the enactment of the e-Commerce Act (2000) from 1990 to 2013.

The organizational commitment in column 1 is represented by the agency's strategic plan and its implementation. These are basically the indicators of an effective leadership of an agency head. It only means that the direction of the agency is absolutely relying on the strategic plan. And when the plan is implemented, it is a manifestation of a transformational leader (Burke, 2008) exercising the four functions of management in planning, leading, organizing, and controlling (Mintzberg, 1973; Dimovski & Penger, 2002).

The maturity level on the use of IT is precisely affected by the agency's IT governance. In this regard, ISSP and its implementation are essentially the indicators whether the business processes of an agency are automated or not. Successful implementation of ISSP is entirely a clear manifestation also of effective leadership.

To explain the green bars of the BIR in Table 7 from columns 3 to 4, it is obvious that the combined strategic plans and ISSPs prepared and implemented have a positive causal effect (CE) on the readiness of

Table 7. Cross-Tabulation

Organizational Commitment & Maturity Level on the Use of IT		Before Enactment of RA 8792		After Enactment of RA 8792		
		1990 – 2000	CE	2001 - 2010	2011 – 2013	CE
BIR	Strategic Plan	Prepared	+	Prepared w/ e-Gov projects	Prepared w/ e-Gov projects	+
	Implementation	Done		Done	Done	
	ISSP	Prepared		Prepared	Prepared	
	Implementation	Done		Done	Done	
COM	Strategic Plan	Prepared	-	Prepared w/o e-Gov Projects	Prepared w/ e-Gov projects	-
	Implementation	Not Done		Not Done	Not Done	
	ISSP	Prepared		Prepared in 2007	Prepared	
	Implementation	Not Done		Not Done	Not Done	

Note: CE – Causal Effect on compliance with RA 8792

BIR before the enactment of the e-Commerce Act. Compliance was seamless after the passage of the law. Hence, the BIR just simply implemented the Full ITS Rollout Acceleration Program to facilitate the full utilization of tax computerization in the Bureau’s operations when the law was enacted in 2000. Likewise, columns 5 and 6 indicate that the BIR implemented plans highlighted in green bars from 2001 to 2013 after the passage of the law, resulted in a positive CE vis-a-vis compliance with the e-Commerce Act (2000). BIR then was proactive and aware of the challenges in IT to comply with RA 8792. Even Table 1 consistently shows that BIR is way ahead with other government agencies. These positive CEs are all attributed to the leadership of BIR’s past and present commissioners, notwithstanding their good relationships with their respective CIOs. Therefore, the BIR in this regard is considered compliant with the e-Commerce Act. Thus, H1 and H2 are confirmed.

On the other hand, the internal processes of Comelec (COM) were not yet computerized before and even after the enactment of the e-Commerce Act as indicated by red bars in the ISSP implementation. Column 4 shows red shaded bar with minus sign indicating non-readiness of Comelec even before the enactment of the e-Commerce Act due to non-implementation of strategic plans and ISSPs from 1990 to 2000. Such has a negative impact on the

causal effect on the readiness of Comelec to comply with the law.

Although MODEX, MERIT, and COMSTRAT 1116 were crafted and are considered clear signs of the good intentions of the concerned Comelec chairmen, nonetheless, these plans were not implemented.

In column 5, the bars from 2001–2010 of Comelec are shaded green and red both for strategic plan and ISSP. To explain this, there were two crucial events that transpired during this period, to wit:

1. Neither a planning exercise nor ISSP preparation was undertaken by Comelec from 2000 to 2002 to comply with RA 8792. In fact, Table 1 shows that Comelec was not even named as an agency that is e-Commerce ready. It only means that Comelec was already non-compliant with the e-Commerce Act in 2002. However, in Table 2, Comelec was cited as an agency that received P800 Million pesos in 2003 to automate the 2004 national and local elections. It was never realized because its implementation was stopped by the Supreme Court in January 2004.
2. Then Comelec prepared a strategic plan in 2006 called MERIT. But then again, the automation of business processes in compliance with e-Commerce Law was not incorporated. This

clearly explains that the Comelec en banc and the battery of its lawyers were neither concerned nor aware of RA 8792. However, an initiative to prepare the ISSP in 2007 was successfully prepared when former Commissioner Rex Borra approved the recommendation of its consultants (Celis et al., 2008) to do so. But it was eventually brushed aside when Borra left.

Column 6 shows an improved Comelec organization. Its COMSTRAT 1116 was a bit better than MERIT as the automation of business processes were included in the strategic plan. This resulted also in the initiation of the ISSP. Hence, COMSTRAT 1116 and its corresponding ISSP are depicted as two green bars. However, Comelec failed to implement the said plans as their budget for COMSTRAT 1116 was not approved. Again, this resulted in negative causal effect to RA 8792 compliance as denoted by the red-shaded bar and negative sign in column 7. Thus, Comelec in this regard is considered non-compliant with the e-Commerce Act. The H1 and H2 for Comelec’s part in this regard are confirmed.

Process Pattern Matching

Aside from cross-tabulation, another way of doing cross-case analysis is through the examination of Figure 2. This is called process pattern matching, which analyzes the impact of the presence or absence of strategic plans and its implementation with the e-Commerce Act compliance. A “High” indicates that a certain process is defined as either prepared or implemented while a “Low” is the opposite meaning of the former. “Compliance” is high when “Agency’s Strategic Plan,” “ISSP,” and “Implementation” are all high. It only means that a well-defined strategic

plan would have incorporated e-Gov projects, that its corresponding ISSP would have defined the details on how to accomplish such projects, and that said plans are implemented. If any of these three is Low as depicted in “Pattern B,” non-compliance with the e-Commerce Act is inevitable.

A pattern sample by Nicholson and Kiel (2007, p. 590) is used as a model to come up with Table 8. There are three rows of BIR and Comelec cases. Although the point of interest is the compliance after the enactment of the e-Commerce Act, I also included the event before the passing of the e-Commerce Act as this has an impact on the readiness or the maturity on the use of IT of a particular agency. Hence, the sources of evidence for each case are the documents/archival records and interviews.

The BIR follows “Pattern A” as indicated by high ratings in Agency’s Strategic Plan, ISSP, and Implementation. Notice that the evidences indicated, like the ITS Rollout Acceleration Program and BIR e-Commerce projects, were spearheaded by the agency head, in collaboration with the CIO. The speedy compliance of BIR was influenced by the TCP in 1994 which eventually provided a standard processing framework for the Bureau’s functions related to tax collection and administration. It was former Commissioner Liwayway Vinzons-Chato who initiated such comprehensive and integrated program that involved the computerization of ITS and IAS. After the enactment of the e-Commerce Act, the BIR consequently conformed and eventually lined up BIR e-Commerce projects. Then from the administration of former President Arroyo to President Aquino, the Commissioners never get tired of innovating BIR’s business processes through the power of the Internet. That only goes to say that leadership, coupled with

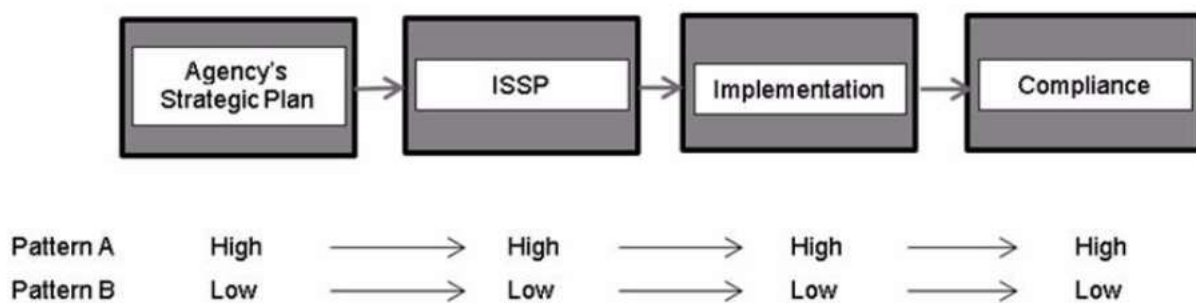


Figure 2. Process pattern matching diagram.

Table 8. *Process Pattern Matching*

		Agency's Strategic Plan		ISSP	Implementation		Compliance		Match		
Expected Patterns		Pattern A	High	High	High	High	High	High	Compliant		
		Pattern B	Low	Low	Low	Low	Low	Low	Not Compliant		
Case	Source	Event	Evidence	Rating	Evidence	Rating	Evidence	Rating	Evidence	Rating	
BIR	Documents/ Archival Records	Before Enactment of RA 8792	TCP	High	ITS IAS	High	Implemented	High	n/a	n/a	n/a
		After Enactment of RA 8792	ITS Rollout Acceleration Program	High	BIR e- Commerce projects	High	Implemented	High	www.bir.gov.ph	High	Matched w/ Pattern A - Compliant
	Interviews	After Enactment of RA 8792	ITS Rollout Acceleration Program	High	Regular preparation of ISSP	High	Implemented	High	www.bir.gov.ph	High	Matched w/ Pattern A - Compliant
COMELEC	Documents/ Archival Records	Before Enactment of RA 8792	MODEX	High	ISSP Prepared	High	Not Implemented	Low	n/a	n/a	n/a
		After Enactment of RA 8792	MERIT	High	Systems Audit	Low	Not Implemented	Low	www.comelec. com.ph	Low	Matched w/ Pattern B - Not Compliant
	Interviews	After Enactment of RA 8792	COMSTRAT 1116	High	ISSP 2012 -2014	High	Not Implemented	Low	www.comelec. com.ph	Low	Matched w/ Pattern B - Not Compliant

the maturity on the use of IT, has a causal effect on compliance.

On the other hand, Comelec follows “Pattern B” as indicated by low ratings in Agency’s Strategic Plan, ISSP, and Implementation. After long years since the time of former Chairman Christian Monsod, the agency was able to give attention in automating its internal processes vis-à-vis RA 8792 through its ISSP for 2012 to 2104. Nothing has happened yet in that plan but its implementation needs a full-time CIO who would support the Comelec Chairman and dedicated personnel committed to change agency’s business processes. Hence, with Comelec showing Pattern B as depicted by low ratings in the said processes, there is a pattern match with non-compliance with the e-Commerce Act.

Causal Effects on RA 8792 Compliance

Using cross-tabulation analysis, the causal effect (CE) of having prepared agency’s strategic plan and

ISSP as experienced by BIR, would consequently result to positive compliance with e-Commerce Law whether the time period is from 2000–2010 or 2011–2013. Any indication of unpreparedness of the said plans as experienced by Comelec in a given period would correspondingly cause negative compliance with RA 8792.

Conversely, process pattern matching shows that having high ratings in the agency’s strategic plan, ISSP, and implementation as experienced by BIR would match with Pattern A or compliance with the e-Commerce Act. A low rating in either agency’s strategic plan, ISSP, or implementation would therefore match with Pattern B or non-compliance with RA 8792.

In this regard, H1 and H2 are true; which means, that organizational commitment positively influences the level of regulatory compliance and that organizational maturity of the agency in using IT positively moderates the influence of the organizational commitment on the level of regulatory compliance. It is also confirmed

that H3 is not true as only BIR is the only agency established to be compliant.

Synthesis of Cross-Case Analysis

There are 34 and 22 respondents from the top management to the staff level of BIR and Comelec, respectively. There are 15 variables considered in the survey questionnaire wherein the responses are measured using a 5-point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, and 5 = strongly agree. The variables are: (1) level of regulatory compliance, (2) leadership, (3) good governance, (4) goal orientation, (5) compliance training, (6) audits, (7) sanctions, (8) IT organization, (9) IT governance, (10) knowledge management

system, (11) project risk management, (12) change management, (13) IT user acceptance, (14) IT skills development, and (15) systems audits.

In Table 9, the side-by-side comparison of all the tabulated means of compliance variables of BIR and Comelec is summarized.

In columns 2 and 3, the BIR’s high level of regulatory compliance (i.e., 3.5), as depicted by green bar, is very much influenced by equally high levels of organizational commitment (i.e., 4.03) and organizational maturity in using IT (i.e., 3.99), which are both represented by green bars too. Correspondingly, having a high level of organizational commitment is grounded on the high level of commitment of agency head (i.e., 3.93),

Table 9. Summary of Tabulated 15 Variables

Variables	BIR	COM
Level of regulatory compliance	3.5	2.33
Organizational Commitment	4.03	2.52
Organizational maturity on the use of IT	3.99	2.22
Commitment of agency head		
Leadership	3.86	2.43
Good governance	4	2.67
Commitment of agency head	3.93	2.55
Commitment of employees		
Goal orientation	4	2.5
Compliance training	4	3
Audits	4	2
Sanctions	4.5	2.5
Commitment of employees	4.13	2.5
Organizational Commitment	4.03	2.52
Organizational maturity on the use of IT		
IT Organization	4.14	2.43
IT Governance	4	2
Knowledge Management System	4	3
Project Management	3.75	2.25
Change management	4	2
IT user acceptance	4	2
IT skills development	4	2
System audits	4	2
Organizational maturity in using IT	3.99	2.22

Legend: High

High: Average of the means

Low

Low: Average of the means

Medium

which is caused by the high levels of leadership (i.e., 3.86) and good governance (i.e., 4), and high level of commitment of employees (i.e., 4.13), which is caused by the high levels of goal orientation (i.e., 4), compliance training (i.e., 4), audits (i.e., 4), and sanctions (i.e., 4.5).

Equally, the BIR's high level of organizational maturity on the use of IT (i.e., 3.99) is caused by the high levels of IT organization (i.e., 4.14), IT governance (i.e., 4), knowledge management system (i.e., 4), project risk management (i.e., 3.75), change management (i.e., 4), IT user acceptance (i.e., 4), IT skills development (i.e., 4), and systems audits (i.e., 4). It is undoubtful that BIR's business processes matured through time due to the religious execution of their ISSP. A noteworthy achievement in 2002 by DCIR Guillermo was when she implemented analytics using SAS analytics that has continued to deliver a huge return on investment. That time, BIR generated about Php7 billion by just using analytics. The good thing about analytics was that the taxpayers had understood that BIR was running an effective system that would detect under-declarations.

In columns 4 and 5, the Comelec's low level of regulatory compliance (i.e., 2.33), as depicted by red bar, is very much influenced by equally low levels of organizational commitment (i.e., 2.52) and organizational maturity in using IT (i.e., 2.22), which are both represented by red bars too. Correspondingly, having a low level of organizational commitment is grounded on the low level of commitment of agency head (i.e., 2.55), which is caused by the low levels of leadership (i.e., 2.43) and good governance (i.e., 2.67), and low level of commitment of employees (i.e., 2.5), which is caused by the low levels of goal orientation (i.e., 2.5), audits (i.e., 2), sanctions (i.e., 2.5) and medium level of compliance training (i.e., 3). What is not so convincing in the latter variable with yellow bar or medium level of assessment is that it contradicts the level of regulatory compliance (i.e., 2.33). In separate interviews, even Atty. Rafanan and Atty. Ladra said that Comelec had not done any initiative to comply with the e-Commerce Act.

On the other hand, the low level of organizational maturity on the use of IT (i.e., 2.22) is caused by the low levels of IT organization (i.e., 2.43), IT governance (i.e., 2), project risk management (i.e., 2.25), change management (i.e., 2), IT user acceptance (i.e., 2), IT skills development (i.e., 2), systems audits (i.e., 2) and

medium level of knowledge management system (i.e., 3). The latter variable is another not likely level that Comelec attained as represented by yellow bar. The replies of former Commissioner Lagman and some other respondents would rather be believable as they would know what it takes to have such credible system. And out of these eight variables, the most critical factor that would uplift the organizational maturity in using IT is the need for Comelec to beef up its IT organization. This can be realized by hiring a competent and experienced CIO who would manage Comelec's IT governance and the rest of the other variables.

Combining all these variables with either high or low level degree of assessments by BIR or Comelec respondents, respectively, thus coincide with their corresponding level of regulatory compliance assessment. Considering Burke-Litwin Model, leadership is the most critical variable that would influence other compliance variables in organizational commitment and organizational maturity in using IT. And putting all these together would, therefore, either thrust change to comply or none at all. For BIR, the high levels of both organizational commitment and organizational maturity in using IT yielded a high level of regulatory compliance. Conversely, with low levels of organizational commitment and organizational maturity in using IT resulted in low level of regulatory compliance. Thus, the causal effect on the dependent variable level of regulatory compliance depends on the intensity level of the independent variable organizational commitment and moderating variable organizational maturity on the use of IT.

It is confirmed in this comparative analysis that H1 and H2 are true. The H1 in this regard includes all the variables related to the commitment of the agency head, as well as the commitment of the employees.

Quantitative Analysis

Use of Statistical Tools

Aside from cross-case analysis, the responses on the survey questionnaire by BIR and Comelec respondents are analyzed through t-test, correlation, and regression analyses. The questionnaire contains items pertaining to the level of compliance as dependent variable (DV_Compliance), organizational commitment (i.e., predictor 1), specifically the agency head's commitment and the employees'

commitment to comply with the e-Commerce Act as the independent variable (IV_Commitment) and organizational maturity on the use of IT (i.e., predictor 2) as the moderating variable (MV_Maturity). The measures referring to agency head's commitment are leadership and government/good governance while the measure referring to employees' commitment are goal orientation, compliance training, audits, and sanctions. Conversely, the measures referring to organizational maturity on the use of IT are the presence of IT organization, the adoption of IT Governance, use of Knowledge Management System, effective project risk management, strict implementation of change management, the proactive participation of Users, and Audit people in the acceptance of any IT project, IT skills development of users, and regular systems audits of the information systems and technologies of the agency.

For the regression models for DV_Compliance, only the following variables are considered, not the raw variables, due to the limited sample size (n = 56) available:

- DV_Compliance = mean of six raw dependent variables
- IV_Commitment = mean of the 17 raw independent variables
- MV_Maturity = mean of the 22 raw moderating variables
- IV_by_MV = (IV_Commitment) x (MV_Maturity)
- GROUP (dummy variable with 1 = BIR and 0 = Comelec)

To assess empirical support for two predictors, I define the equations below based on the results of regression:

- Equation 1. Using the stepwise selection procedure, the resulting regression model between DV_Compliance and the main effects of IV_Commitment and MV_Maturity is given by:

$$\text{DV_Compliance} = 3.594 + 0.520(\text{Group}) - 0.515(\text{IV_Commitment}) - 0.892(\text{MV_Maturity}) + 0.332(\text{IV_x_MV}) \quad (1)$$

- Equation 2. The regression model containing only the main effects of IV_Commitment and

MV_Maturity (without the interaction term between IV_Commitment and MV_Maturity) is given by:

$$\text{DV_Compliance} = 1.158 + 0.549(\text{Group}) - 0.606(\text{IV_Commitment}) - 0.118(\text{MV_Maturity}) \quad (2)$$

Equation 3. Using stepwise selection procedure without considering the interaction term between IV_Commitment and MV_Maturity, the resulting regression model contains only the main effect of IV_Commitment is given by:

$$\text{DV_Compliance} = 1.179 + 0.513(\text{Group}) - 0.488(\text{IV_Commitment}) \quad (3)$$

t-Test

With reference to IV_Commitment results, the t-test for equality of means indicate that the BIR has a significantly higher mean than Comelec in all the independent variables (organizational commitment) ($p < 0.05$). BIR's mean level of organizational commitment (3.5509) is two scale points higher than Comelec's mean level of organizational commitment (2.4605).

For organizational MV_Maturity, results from the t-test for equality of means indicate that BIR has also a significantly higher mean than Comelec in all the moderating variables (organizational maturity on the use of IT) ($p < 0.000$). BIR's mean level of maturity on the use of IT (3.6768) is almost three scale points higher than Comelec's mean level of maturity on the use of IT (2.2823).

For combined IV_Commitment and MV_Maturity, t-test for equality of means indicate that BIR's overall mean in all the variables is significantly higher than Comelec's overall mean ($p = 0.000$). BIR's overall mean (3.6250) is two to three scale points higher than Comelec's overall mean (2.3218).

Considering the DV_Compliance, the t-test for equality of means indicate that BIR's level of compliance (3.4244) is significantly higher than Comelec's level of compliance (2.3795) ($p = 0.000$).

Correlation

Using all the 56 cases in the data set (BIR and Comelec data), the dependent variable (mean level of compliance) has a moderately strong direct correlation with the mean of the independent variables (organizational commitment) ($r = 0.760$)

as well as with the mean of the moderating variables (organizational maturity on the use of IT) ($r = 0.691$). These correlations are also statistically significant ($p = 0.000$) at the 5% significance level.

For the Comelec data alone ($n = 22$), the dependent variable (mean level of compliance) has a weak direct correlation with the mean of the independent variables (organizational commitment) ($r = 0.344$) as well as with the mean of the moderating variables (organizational maturity on the use of IT) ($r = 0.258$). These correlations are not statistically significant ($p = 0.117$ and $p = 0.246$, respectively) at the 5% significance level.

For the BIR data alone ($n = 34$), the dependent variable (mean level of compliance) has a moderately strong direct correlation with the mean of the independent variables (organizational commitment) ($r = 0.770$) and a moderate direct correlation with the mean of the moderating variables (organizational maturity on the use of IT) ($r = 0.632$). These correlations are both statistically significant ($p = 0.000$) at the 5% significance level.

Regression Analyses

For equation 1, the regression model has an R^2 statistic (coefficient of determination) value of 77.3%, which gives the proportion of the variability in the dependent variable (mean level of compliance) that is accounted for by the predictors (or independent variables) in the model equation. The coefficient 0.520 for the dummy variable GROUP (1 = BIR and 0 = Comelec) indicates that the mean level of compliance of BIR is higher on the average by one scale point than that of Comelec. The significance of the interaction term ($p = 0.049$) between the mean of the independent variables (IV_Commitment) and the mean of the moderating variables (MV_Maturity) indicates that MV_Maturity is a significant moderating variable between the dependent variable (DV_Compliance) and independent variable (IV_Commitment). The residual diagnostics for this regression model for DV_Compliance has standardized residuals ranging from -1.816 to 1.958 , which does not suggest the presence of outliers. Furthermore, the histogram and normal probability plot of the residuals do not suggest any violation of the normality assumption.

For equation 2, the regression model has an R^2 statistic value of 64.9%, which gives the proportion of the variability in the dependent variable that is

accounted for by the predictors (or independent variables) in the model equation. The coefficient 0.549 for the dummy variable GROUP (1 = BIR and 0 = Comelec) indicates that the mean level of compliance of BIR is higher on the average by one scale point than that of Comelec. The coefficient 0.606 corresponding to the independent variable (IV_Commitment) suggests an expected increase of 0.606 (or one scale point) in DV_Compliance for every one unit increase in the mean of IV_Commitment, holding the other independent variables constant. But note the negative coefficient of the moderating variable MV_Maturity, which is contrary to its expected direct correlation with the dependent variable DV_Compliance, indicating a strong multicollinearity ($VIF > 10$) between the predictors IV_Commitment and MV_Maturity. The residual diagnostics for this regression model for DV_Compliance has standardized residuals ranging from -1.702 to 2.276 , which does not suggest the presence of outliers. Furthermore, the histogram and normal probability plot of the residuals do not suggest any violation of the normality assumption.

For equation 3, the regression model has an R^2 statistic value of 64.4%, which gives the proportion of the variability in the dependent variable that is accounted for by the predictors (or independent variables) GROUP and IV_Commitment in the model equation. The coefficient 0.513 for the dummy variable GROUP (1 = BIR and 0 = Comelec) indicates that the mean level of compliance of BIR is higher on the average by one scale point than that of Comelec. The coefficient 0.488 corresponding to the independent variable (IV_Commitment) suggests an expected increase of 0.488 (or one scale point) in DV_Compliance for every one unit increase in the mean of IV_Commitment, holding the other independent variable GROUP constant. The exclusion of the moderating variable (MV_Maturity) by the stepwise selection procedure is not surprising owing to the fact that there is a strong multicollinearity between IV_Commitment and MV_Maturity. The residual diagnostics for this regression model for DV_Compliance has standardized residuals ranging from -1.668 to 2.159 , which does not suggest the presence of outliers. Furthermore, the histogram and normal probability plot of the residuals do not suggest any violation of the normality assumption.

Key Results and Implications

Equations 1 to 3 prove that H1 and H2 are true; that is, the organizational commitment (IV_Commitment) positively influences the level of regulatory compliance and that the organizational maturity of the agency in using IT (MV_Maturity) positively moderates the influence of the organizational commitment on the level of compliance. These equations are telling us that the presence of high IV_Commitment complemented with high MV_Maturity would result to high level of compliance.

However, if either IV_Commitment or MV_Maturity is low, the resultant level of compliance would be low. This only goes to say that if an agency has a high level of commitment, but their internal processes are not automated, compliance with RA 8792 would be low. Conversely, if the agency's business processes are automated but the agency has a low organizational commitment, compliance with RA 8792 would consequently be low. On the other hand, if we take out MV_Maturity in the equation, it is still representing indirectly by IV_Commitment and affect the level of compliance.

Regarding H3 stating that BIR and Comelec have at least established an acceptable level of compliance with e-Commerce Law, the t-test for equality of means indicate that BIR's level of compliance (3.4244) is significantly higher than Comelec's level of compliance (2.3795) ($p = 0.000$); that is, H3 is not true as only BIR has reached Level 3 while Comelec only attained Level 2 (Planning Stage).

What is so revealing from the primary and secondary sources of data and my interviews with BIR and Comelec people, the former had institutionalized the strategic role of IT organization and professionalized the implementation of its regular information systems

strategic plan even if the Office of the President appoints a new agency head. Further, BIR's internal business processes, as well as its services to the public, are generally computerized and therefore achieving 3.4244 level of compliance with the e-Commerce Act or towards the attainment of Level 4 (Managed Stage).

Conclusion and Recommendation

Conclusion

In theorizing compliance with the e-Commerce Act using case study approach hereby proves that organizational commitment, as moderated by organizational maturity in using IT, has direct influence in the level of regulatory compliance. The cross-case and statistical analyses of the two contrasting cases of BIR and Comelec show that H1 and H2 are true. Although H3 is false, Comelec's status can easily be improved and reach Level 3 by coming up with an interactive e-Gov project and simply follow the provisions of the e-Commerce Act, and even the Election Automation Law. With almost equal outcomes using both qualitative and quantitative analyses, there is no doubt that this study attained its objective of proving compliance theory using case study method. Table 10 shows the results of the two methods.

To top it all, compliance with e-Commerce Act is a management issue and using technology to comply with RA 8792 is a mere consequence. It is all about leadership coupled with proper planning, organizing, and controlling. To quote former Acting Chairman Borra, "Automation is management din yan, eh! Only that is technical!" (personal communications, January 19, 2013) Former Commissioner Lagman, being a

Table 10. Level of Regulatory Compliance

Agency	Cross-case analysis		Statistical analysis		Status
	Compliance Level	Hypotheses 1 & 2	Compliance Level	Hypotheses 1 & 2	
BIR	3.5	True	3.4244	True	Towards Managed Stage
Comelec	2.33	True	2.3795	True	Towards Established Stage

technical person himself, recommended that the filing and monitoring of election cases should be automated to facilitate the job of the commissioners. And this is a management concern too and technology is a mere consequence.

DCIR Guillermo then said, "Institutional ang rendering of the IT services." She added, "Government need help (especially in the) institutionalization of e-services!" (personal communication, December 12, 2012. What DCIR Guillermo stressed is all about electronic services at the convenience of taxpayers. When asked regarding sustainability of planned IT projects, DCIR Guillermo said, "Oo kasi nga sa amin may CIO! Kasi dito, ako yon, di ba? Alam ko kung ano ang dapat i-sustain."

Lastly, should all government offices reach at least Level 4, there is no doubt that Philippine ranking in EoDB would someday be at the top.

Recommendation

As conceptualized herein, the five-stage compliance maturity model on e-Commerce Act developed in this study may be applicable in any e-Commerce Act compliance efforts of Philippine government offices. This may be used in conducting assessment regarding the maturity level vis-a-vis regulatory compliance with RA 8792. Upon determining the level of compliance, the concerned agency may already come up with corresponding strategic plan on how to reach one level higher until the Committed Stage is reached. Attaining Level 5 when an agency is already at Level 3 or 4 would already be easier to achieve than when an agency is still in either Level 1 or 2; that is, the organizational maturity in using IT would be a major hurdle as it takes time to automate the business processes from scratch.

And to reach at least Level 3, it is recommended that government agencies should closely coordinate with DICT regarding the implementation of their ISSP, strengthen its management function, harmonize with successful government agencies (e.g., BIR) to know their experiences in implementing e-Gov projects, and execute strategic actions to comply with e-Commerce Act.

Limitations and Future Research

The results of the analyses through triangulation of relevant data and evidences gathered from BIR and Comelec would only refer to the moral obligation

and social influence of the DOC (Sutinen & Kuperan, 1999) and such is directly related to the organizational commitment. The variables deterrence and illegal gains in the DOC are not touched in this paper and it is recommended that further studies be conducted in determining their effects in compliance with RA 8792.

To elucidate, the variable deterrence would rely much on the provisions of the e-Commerce Act. It only penalizes the offenses of hacking and piracy, but nothing is mentioned in the law about penalty for non-compliance. Further study must be prepared on how DTI would be able to compel government agencies, especially Comelec, to comply with the e-Commerce Act. Sample action plan in this regard is to amend RA 8792.

Applicability of Compliance Theory

The compliance theory derived from this case study approach in understanding organizational commitment may also be applied to other regulatory compliance endeavours involving information technology, IT governance, and the like. Case in point is the regulatory compliance with RA 10173 or Data Privacy Act (2012). Another one is the pending bill in Congress regarding FOI. When this is enacted, this would require automation of processes.

Unlike the compliance with other laws or regulatory mandates, it is straightforward as there's no dependence with organizational maturity on the use of IT. It is either you comply or violate. Besides, other laws could easily provide penalties depending on the gravity of offense or crime.

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