Perception of IT Governance in an Emerging Market

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Abstract—**Scholars as well as practitioners have addressed challenges with practicing IT Governance effectively. Literature on IT Governance practice is limited to those field studies conducted in developed economies where IT Governance maturity is established to some degree. This research raises the issue that examining IT Governance in Emerging Economies like Turkey, and China may bring up different insights for research and practice. This study is aimed to examine IT Governance Practice in an Emerging Economy where practitioners' perceptions are assumed to an important factor thereof. Descriptive and Contingency data analysis helps in surfacing essentials of IT governance. We identify eleven significant associations among decision domains (Investment, Project Prioritization, and Initiation) and control objectives (Accountability, IT Representation on Board, Performance Management, IT leader title). Research and practical implications of the results are discussed.**

Keywords; It Governance, COBIT, IT Management, IT Perception

I. INTRODUCTION

Information Technology (IT) governance is about organizational arrangements, decision rights, and processes concerning effective IT use, development and management. Increasing attention to IT Governance is not without reasons. Various factors including legislation requirements and high business expectations about return on IT investment urge organizations to achieve effective IT Governance. Based on an empirical study, [9] states that companies with effective IT governance have profits that are 20% higher than other companies pursuing similar strategies. In the same study, well governed IT departments estimated up to 40% greater return than their competitors for the same IT investment.

Research focusing on IT governance aims to understand the interplays between business and IT in terms of governance mechanisms, rules, decision rights, politics, roles and responsibilities. Such interplays are examined as the phenomenon of business-IT alignment, degree of business or IT dominance, sustainable IT. For instance, in an IT dominance case, business may leave decision rights to IT. As shall be discussed in the next session, desired interplays between business and IT are formed in certain archetypes and expected to lead to effective IT governance, which in turn results in desired business value.

Empirical studies including [12] emphasize strong association between corporate and IT governance. Furthermore, IT Governance as embedded in corporate governance should not be isolated from the market characteristics [1]. Studies by using several indicators to assess corporate governance show that there are differences among countries [13]. For instance, emerging economies including Turkey score low in terms transparency and disclosure compare to developed economies [13, 2]. IT practice in emerging markets need to deal with different environmental dynamics when compared with other countries. Especially missing appropriate IT perception and professionalism in business world are the most important issues that should be handled.

Most IT Governance studies, where the unit of analysis is organizations in developed countries, presume existence of some degree of governance maturity. That is, organization levels and roles are considered to be explicit. Proposed models appear to be based on the idea that organization levels such as executives, business, operational are present formally from the IT governance point of view. We suspect that especially in emerging economies where organizations yet to give credit to IT Governance, such levels are not necessarily explicit. In this sense, this research raises the issue that examining IT Governance in Emerging Economies like Turkey, and China may bring up different insights for research and practice. As such, the literature on IT Governance is limited to the aforementioned presupposition and far from surfacing practitioners' perception on IT governance in emerging economies. This research attempts to fulfill this gap and aims to understand what perceptions of IT governance exist and how they differ from others as contextualized differently in the literature.

The research approach guiding our research rationale makes use of existing IT governance models (that is, models depicting archetypes and governance control objectives from an emerging market point of view. This leads an adopted model, which is appropriate for the subject matter at hand. We collected data and conducted contingency analysis to understand underpinnings of practitioner' perceptions on IT governance.

This research contributes to an understanding of practitioners' perceptions on IT Governance in an emerging market where model archetypes and governance control objectives are used as essential primitives of the research model used. Among others, we found that prevailing

archetypes and as well as actors involvement in decision-making are different from the literature. The results partly support and partly contrasts with findings of the present studies.

In the next section, we discuss prior research on IT Governance and underpinnings of this study as research background. Thereafter, we establish a conceptual model for the research and provide elaboration of key concepts and explain the data analysis method used. The consecutive section present findings and reflects them on the proposed model with a venue for further research. The last section concludes our discussion with research implications for research and practice.

II. RESEARCH BACKGROUND

The research root of IT Governance goes back to 1950s where research on traditional IT organizational structures had been examined [10]. 1980s, studies raised this issue under different headings such as Information Systems Management IT/IS Planning [3], Key Issues in IS Management [4]. In 1990s, scholars focused on the idea of strategic alignment [5] referring importance of aligning organizational levels including business and IT. [15]explicitly mentioned the term IT Governance and focused on its arrangements by using a contingency approach. In recent years, with the passage of the Sarbanex –Oxley Act of 2002 in the US and its effects on other international legislations, the term IT Governance has gained considerable popularity in practice and research.

Given the diversity of conceptualizing IT Governance, we adopted the research framework in [5] to make sense of prior research on IT Governance and show where this research is positioned. The framework identifies IT governance forms and IT Governance contingency analysis as two essential research streams. The former research stream refers to decision making and organizational structures [3, 18]. The latter studies focus on what and how contingencies affect IT Governance.

The conceptual link between decision-making and organizational structure has been articulated in various research contexts including IT/IS management, strategic alignment, IT governance arrangements and archetypes. Essential elements underlying decision-making are decision authority holding decision rights. The notion of decision right is already acknowledged as a central element of governance and defined as decision-making authority [16]. Scholars including [15, 5] identify three sets of stakeholders holding varying degrees of decision authority of decision right in designing IT governance arrangements: Corporate IS, divisional IS, and line management. [16]supports another conceptualization of decision authority, which is (de)centralization of decision right in designing IT governance arrangements: single or multiple authorities many involve. The question still remains what decision matters are to be investigated in an information systems context.

Based on prior research on IT Governance, [19] proposes five major IT decisions, which are: IT principles decision concerning high level statements about the use of IT; IT architecture decision concerning determination of how best to use the mix of technology, data, applications; IT infrastructure decision focusing on choice for effective IT capability; Business Application decision referring to business needs for acquiring and developing IT; IT investment decision and prioritization decision concerning budget determination and allocation for IT. Noticeably, these decisions are tightly couples and we consider business application decision as a trigger decision for IT infrastructure. Furthermore, IT principles and architecture decisions are not always explicit in those organizations where IT governance is mature enough, which is typical for organizations in emerging markets. Thus, for this research, we focus on the last three decision matters which are highly relevant and critical for IT governance in an emerging market.

We prefer IT Project Decision to Business Application Decision as it specifically refers to a decision about whether or not an IT project is to be included. In other words, a "Go" or "No-Go" decision is to be made for a specific IT project. Notice that approval of project does not necessarily imply its execution in a specific order. Thus, we need to consider IT investment and prioritization as two distinct decision matters and for the former we use "IT budget decision" as it refers to both business and infrastructure related IT investment. Regarding the third decision matter, we employ the same term, which is "Prioritization of IT project" indicating a specific order for IT projects.

Practicing of IT governance needs to be supported by in-house or adopted methodical means such as framework, methods and tools. Larsen et al review 17 most known tools in terms of their dominating organizational scope and processes. They point out that Control Objectives for Information and Related Technology (COBIT) is the only means supporting decision-making process at the activity level. Since the focus if this research is on decision making, COBIT serves as an appropriate model to investigate IT governance practice[12]. The COBIT is being used extensively in practice throughout the world and strives for providing generally acceptable framework to achieve good Information Technology (IT) security and control practices [11,12]. On the other hand, its use in practice is studied partially and yet to be fully understood in terms of empirical findings [14].

ISACA promotes COBIT as a framework emphasizing IT related domains, which can be decomposed into processes and further activities. Given that the research focuses on decision matters, two interrelated domains are found to be relevant, which are Plan and Organize, Monitor and Evaluate. Rather than delving into the selected activities for the research focus, we stay at the fundamental level and consider four conceptual elements as promising associative primitives with IT decision making. These elements are responsibility and management of IT projects, performance measurement and assessment, IT manager level, and IT Representation on Board.

III. RESEARCH MODEL AND METHOD

Figure 1 depicts the frame of this research with underlying key conceptual elements. This research is aimed to surface possible associations among (and between) three IT decision rights and focused IT governance control objectives.

Noticeably, this research is explorative in nature and does not test prior formulated relations. In fact, this research is to identify the very nature of associations among the concepts underlying IT governance and provides researchers with a basis on which such relations can be established and tested in predictive manner.

Essential to any decisions is decision matters and actors involved in decision-making. Three fundamental decision matters (budget, prioritization, Goor No-Go) and for governance objects (Accountability, Performance, IT Authority, Representation on Board) are found to be relevant. Four control objectives are related to Monitor and Evaluate, Plan and Organize aspects of COBIT.
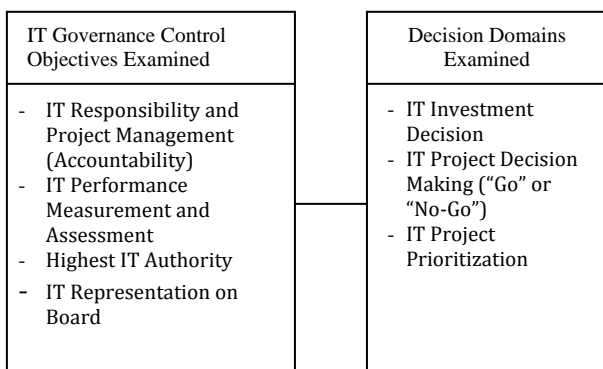

Figure 1. Research frame with underlying conceptual elements

The concept of accountability is concerned with responsibility and management of IT projects, as such it is related to the following control objectives: Manage Projects (as coded PO10 in COBIT), Manage Human Resources (PO7), Define IT processes, organizations, relationships (PO4). For accountability, we want to identify which department (IT, Business, or both) has the responsibility and management of IT projects. Performance is related to Measure and Evaluate IT performance (ME1) control objectives. Then, the question is whether or not IT projects are measured and evaluated. IT Authority representation refers to PO4, PO7, and communicate management aims and directions (PO6). This raises the question of what title is used for the highest IT authority (CIO, IT Director, IT Manager, Team Leader, Specialist) in organizations. Final consideration is IT representation on board. Even CIO is present as the highest title in an organization, the key decision can be made on an Executive Board and CIO may not be its member. Thus, we want to find out whether or not IT representative is a member of the board.

Since we want to identify organizational arrangements (archetypes) for each decision, we need to explicate these archetypes. A fundamental presupposition for characterizing organizational archetypes is based on involvement of organizational authority or level which possess decision rights. In line with [18] three authorities are identified as the most prominent ones, which are Executives (often such entitled as CxO, that is, Chief Executive Officer, Chief Finance Officer, Chief Information Officer), Business Unit Leader-BUL (may also be entitled as Business Line Manager, Business Process Owner), Information Technology Manager-ITM.

TABLE 1. IT GOVERNANCE ARCHETYPES ADOPTED

Decision right for a particular IT decision		CXO Levels	Business Unit Leaders	IT Management
Business Monarchy	A group of business executives (i.e., CxOs, may include CIO)	X		
Feudal	Business Unit Leaders.		X	
Federal	C level executives and one other business groups	X	X	X
IT Duopoly	IT Manager and other BU leaders		X	X
IT Monarchy	Individuals or groups of IT Managers			X
Anarchy	Each individual user			

Combinatorial generations of authorities lead to eight cases, six of which are already included in the archetypes summarized in Table 1 below. Two cases (ITM and CxO, BUL and CxO) are subsumed in the federal archetype. That is, two cases as distinct archetypes are not viable for the organizations in emerging markets. Overall, we use six IT governance archetypes for three decisions as shown in Table 1. Thus, the key question is: which archetypes are dominant in which decision matters? Are there any associations among these decisions in terms of archetypes and IT governance control objectives?

In case of business monarchy, only an executive level is considered to be relevant; in case of feudal, business unit leaders who are not at the executive level are center of attention. Thus these two archetypes (Business Monarchy and Feudal) are solely business oriented. In contrast to business monarchy and feudal, federal archetype includes at least two organizational levels, possibly both executives, business and/or IT leaders. In a similar vein, IT Duopoly allows involvement of both business and IT as partners, possibly at the same level. Thus, these two archetypes (Federal and IT Duopoly) indicate business and IT contributed structure.

The other archetype (IT monarchy indicates IT dominance with different degrees. IT Monarchy subsumes IT savvy actors at different levels including IT managers. Classifications of archetypes based on the domination yields Table 2 as shown below.

TABLE II. DOMINATIONS OF ARCHETYPES

Business Dominated	Business and IT Contributed	IT Dominated (Only IT)
Business Monarchy	Federal	IT Monarchy
Feudal	IT Duopoly	

To analyze the associations, we constructed a questionnaire based on the aforementioned articulations of conceptual elements. Respondent's background is measured with respect to their positions (Senior Manager, Business Unit Manager, IT Manager, IT Specialist). A number of interviews were conducted with IT practitioners to fine tune questions for the respondents. We also pre-tested the questionnaire with respondents from ten organizations. Finally, we created a web-based questionnaire and invited people who are members of an IT professional online network. This network, called "Turk IT" formed in LinkedIn has about 8000 members, we got 252 responses. Among these respondents, 11% is executives, 18 % is business unit managers, 24 % is IT manager, and 47% is IT specialist.

Regarding such sample, one can question its representativeness and validity. Concerning representativeness, thanks to data acquired from the online network used characteristics of respondent's background is found to be similar regarding validity; we use late responses to investigate validity and possible bias with the sample. As suggested in (Fitzgerald, 1998, Wallace and Mellor, 1988), we collected late respondents data (the number of late respondents is 55) and make use of such data with random sample of "normal" responses. Descriptive and contingency analysis of the sample and late responses is similar too.

As the data collected is categorical, we consider non-parametric tests. For the analysis of the associations, contingency data analysis is found to be an appropriate strategy. We employ Chi-Square Test to explore possible associations. We state the null and alternate hypothesis for each possible association. Chi-Square module of the SPSS tool was used to perform the analysis on categorical data. Total number of associations analyzed is 21, which are discussed in the next section.

IV. FINDINGS AND DISCUSSION

A. Descriptive Analysis

Table 3 shows percentages for observed frequencies of governance archetypes for three decisions and accountability control objective.

The most dominant archetype for IT investment decision is business monarchy (35,9 %). Only 5,5% of business monarchy cases (CxO) includes CIO as authority involved in IT investment decisions. Noticeably, 70 % (business monarchy, federal, feudal excluding CIO) cases are excluding IT authority in IT investment decision. On the other extreme, in 8,3% cases, IT authority is the only authority making decision about IT investment. It is 34,1% cases where to some degree both business and IT authorities (Federal with CIO and IT Duopoly) are involved in the decision.

TABLE 3. FREQUENCY OF IT GOVERNANCE ARCHETYPES (THE MOST COMMON ARCHETYPES FOR EACH DOMAIN ARE HIGHLIGHTED)

	IT Investment decision (%)	IT Project Go- No Go Decision (%)	IT Project Priority Decision (%)	Accountability (%)
Business Monarchy (CxO)	**35,9** (5,5% CIO)	21,7 (2,3% CIO)	20,6 (2,7% CIO)	
Feudal (BUL)	18,3	**25,3**	**25,4**	13,8
Federal (CxO, BUL, ITM)	23,1 (3,1% CIO)	22,9 (3,5 CIO)	16,9 (3,5% CIO)	
IT Duopoly (BUL, ITM)	10,8	18,1	21,0	34,8
IT Monarchy (ITM)	8,3	8,0	12,1	**46,7**
Anarchy	3,6	4,0	4	
Others				4,7

Regarding "Project Go-No Go" decision, feudal archetype is found to be the most dominant archetype (25,3%) and federal archetype is the second most dominant one (22,9 %). Similar to IT investment decision, in most cases (64,1 %), Project Go-No Go decision is non-IT driven. For this decision, compare to IT investment decision, in more cases (41% is the total of federal and IT duopoly archetypes), business and IT authorities are together involved.

Regarding IT Project Priority decision, feudal archetype is found to be the most dominant archetype (25,4%) and IT duopoly is the second most dominant one (20,6 %). Cleary, business dominance for this decision is reduced (56,7 %) compare to Investment and Project decisions (70% and 64,1%). To visualize a degree of authorities involvement for each decision, we provide Figure 2. Business dominated archetypes have the concentration in the edges of radar.

Figure 2. Dominance of each archetype for each decision.(Blue line: Business dominated, Red line: Business and IT, Green line: Only IT)
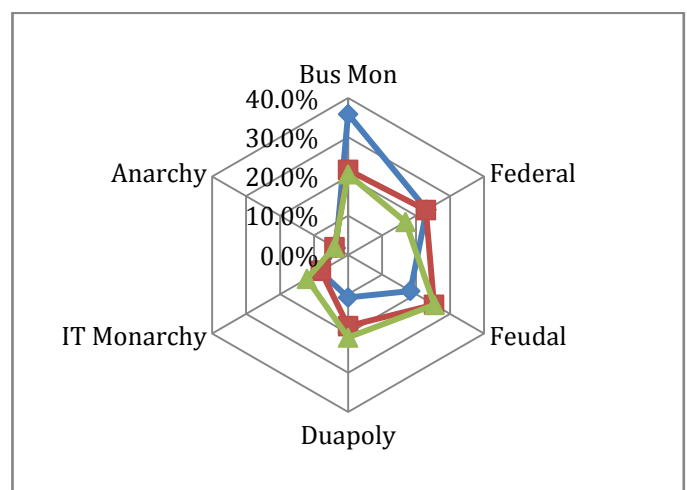
To depict nuances for these decisions, we use three categories of archetypes (Table 2) based on degree of business and IT dominance. Business dominated archetypes refer to high degree of business involvement, whereas only IT refers to exclusive IT involvement. The third category indicates varying degrees of IT and business contribution in the decisions. Figure 3 depicts strong business domination for three decisions.

Figure 3. Business and IT contribution in the decisions (Blue line: IT Investment Decision, Red line: Project Go/No Go and IT, Green line: Project Prioritization).
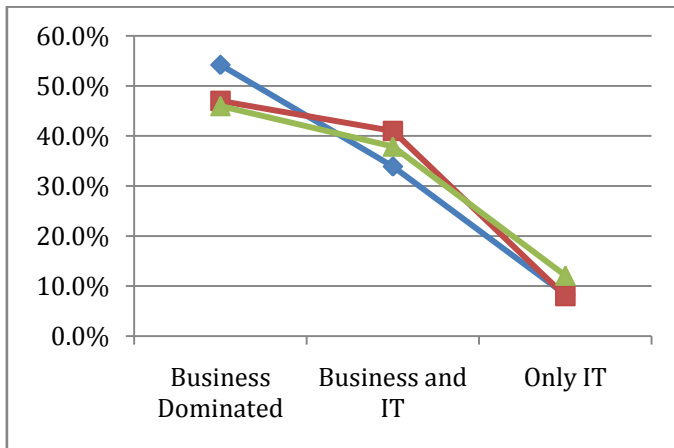
Percentage of each authority as accountable for IT projects is provided in Table 3 and Figure 4 is aimed to provide an alternative visualization. The most dominant authority is IT units (46,7%), whereas business is solely accountable in 13,8 % cases. A shared accountability accounts for 34,8 % of cases. To show a clear contrast between accountable authority as a decision objective and three decisions in terms of archetypes, we crafted Figure 5.

Figure 4. IT Project accountability archetypes.
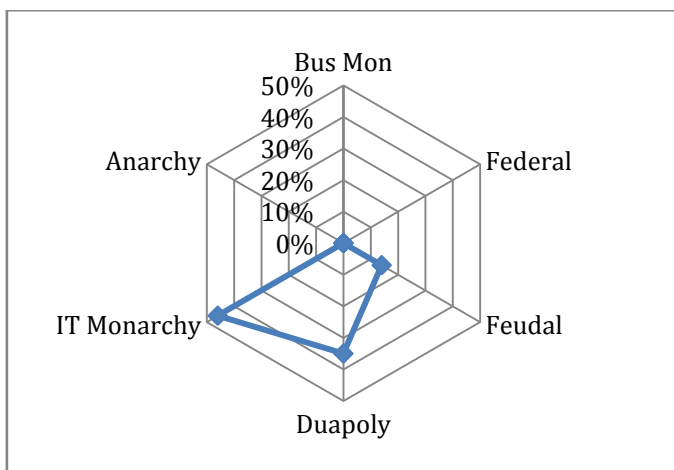
Considering the project life cycle from decision, to delivery with the performance measurement included in the IT governance, we come to the following result that is shown below in Figure 5.

Figure 5 shows major milestones of an IT project life cycle in practice, from decision to delivery in time sequence. Business domination is very high at the beginning of the project decision steps. It starts with 54.2% of business dominant decision making of investment. Effect of business domination reduced slightly to 47% and 46 % respectively for the other project related decisions. With the completion of decision phases of the projects, next phase of project implementation starts.

Figure 5. How decision rights are realized during IT governance life cycle. (Blue line: Business dominated, Red line: Business and IT, Green line: Only IT)
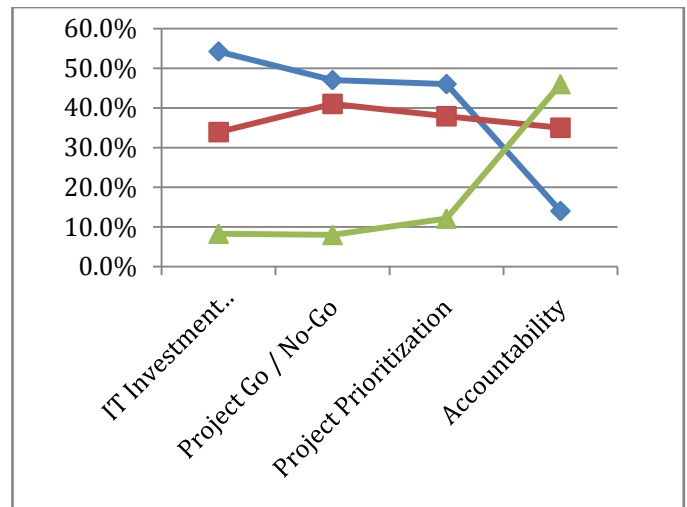
For a good governance project implementation needs accountability. This phase has a remarkable output. A significant reduction of business domination effect is sensed in this step from 54.2%, 47% and 46% to 14%, while Only IT effect significantly increases in the same step from 8,3%, 8%, 12,1% to 46%. This graph in Figure 5 depicts that majority of the IT project decisions are taken by the domination of business units, but accountability is delegated to the IT units or handled with the contribution of IT units.

There are cases that both IT units and business units are involved with the decision and implementation steps of the projects. This case covers around one third of the respondents.

In practice, final milestone of the IT project within lifecycle is the project closure step that is fulfilled with the project performance measurement. The result shows that 57% of the respondents state that, their organizations measure IT project performance while 43% do not. At the outset of the data available, it seems that association between performance measurement and board membership is possible. As such, Table 4 is summarizing the result.

TABLE 4. FREQUENCY OF PERFORMANCE MEASUREMENT AND BOARD MEMBERSHIP. IT BOARD MEMBER

	Yes	No (%)
Performance measured and evaluated	67 %	50%
Performance not monitored	33 %	50%

The last control objective is about recognition of IT authority entitled. We aim to identify the highest IT authority in organizations. Table 5 shows the result of most common titles in organizations. 23% of respondents state presence of Chief Information Officer in their organizations. 22% of respondents believe that IT management title (CIO, IT Director, IT Manager) is missing since only IT leader (11%) or specialist (11%) title is available.

TABLE 5. TITLE FOR HIGHEST IT AUTHORITY

Job Titles	Percentage
CIO	23
IT Director	29
IT Manager	26
IT Leader	11
Specialist	11

B. Contingency Analysis

Data analysis for identifying associations among conceptual elements is done by applying Chi-Square test. All possible associations among 7 conceptual elements result in 21 hypothesis. For each of them, we consider a null hypothesis and identify if and how strong the association exists.

To give an idea about how to establish these associations, consider the following association. A null hypothesis (denoted as H0) for association between investment and project decision making is called Hypothesis #1 (H1) stating that there is no association between IT Investment Decision and IT Project Decision.

TABLE 6. THE RESULTS OF FIRST HYPOTHESIS ($X2 = 98,043$, DF= 25, P=0,000)

		IT governance archetype for Investment Decision						Total
		Monarchy	Feudal	Duopoly	Federal	IT Monarchy	Anarchy	
Monarch	f_o	33	11	2	7	1	1	55
	f_e	19,9	10,0	5,9	12,7	4,6	2,0	55
Feudal	f_o	25	20	6	10	0	3	64
	f_e	23,1	11,7	6,9	14,7	5,3	2,3	64
Duopoly	f_o	13	8	13	8	4	0	46
	f_e	16,6	8,4	4,9	10,6	3,8	1,6	46
Federal	f_o	15	5	4	25	7	1	57
	f_e	20,6	10,4	6,1	13,1	4,8	2,0	57
IT Monarchy	f_o	5	2	1	6	5	1	20
	f_e	7,2	3,7	2,1	4,6	1,7	0,7	20
Anarchy	f_o	0	0	1	2	4	3	10
	f_e	3,6	1,8	1,1	2,3	0,8	0,4	10
Total	f_o	91	46	27	58	21	9	252
	f_e	91,0	46,0	27,0	58,0	21,0	9,0	252

In other words, the null hypothesis for H1 states that there is no difference between the set of observed frequency and expected frequency for governance archetypes concerning IT investment and project decision. If H0 is rejected (indeed, it is rejected with significance level α1: ,001) we consider that investment and project decision is associated with some level of significance. It is common to accept 0,05 as the level of significance, but given the explorative nature of research, we used four significant levels (0,001, 0,005, 0,05, 0,01) to sense strength of associations.

Table 6 provides the chi-square distribution for Hypothesis 1 (H1), designated and calculated as

$X2= \sum [\frac{(fo-fe)2}{fe}]$ Df = [(number of rows-1)*(number of colomns-1)] with k-1 degrees of freedom, where: Df is degree of freedom : (r-1)*(c-1); k is the number of categories; fo , fe is an observed and expected frequencies respectively in a particular category

Table 7 provides a summary of the results for all possible associations. Chi-Square analysis shows that overall 11 associations with significance level with α1 to α4: ,001 to ,05 are found to be present and the rest (10 associations) are not significantly present. Significant associations are classified and visualized in Figure 8. Weights of associations are labeled from the strongest α1 to the weakest α4 respectively. We shall discuss each association briefly.

TABLE 7. SUMMARY OF CHI-SQUARE RESULTS FOR ALL ASSOCIATIONS (BOLD ITEMS SHOW SIGNIFICANT ASSOCIATION)

	Investment	Go- NoGo	Priority	Accountability
Investment		**H1: ,000**	**H2: ,000**	**H3: ,000**
Go No-Go			**H7: ,000**	**H8: ,003**
Priority				H12: ,052
Accountability				
IT Leader Title				
IT on Board				
Performance				

	IT Leader Title	IT on Board	Performance
Investment	H4: ,312	H5: ,554	H6: ,081
Go No-Go	**H9: ,039**	H10: ,385	**H11: ,040**
Priority	H13: ,086	H14: ,366	**H15: ,003**
Accountability	H16: ,123	H17: ,425	H18: ,311
IT Leader Title		**H19: ,000**	**H20: ,006**
IT on Board			**H21: ,000**
Performance			

Figure 6.   Visualization of Significant Associations
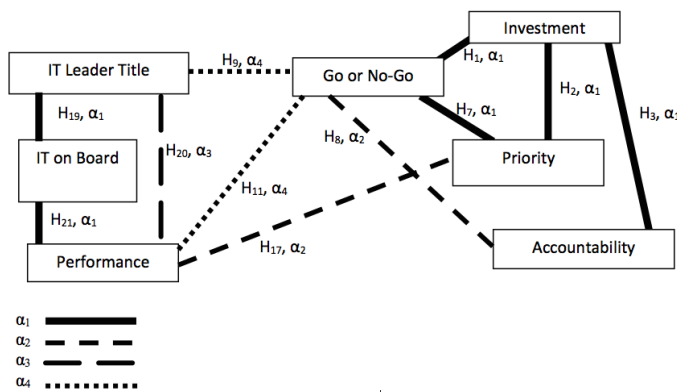
The result of Chi-square gives the primary or secondary association weights. There are two main lobes in the association model in figure 6. First one is the decision domains, each of which has strong associations with others. The other lobe is the organization related control objectives which are IT unit leader position, IT unit leader's title and IT representation on organization's board. On the other hand, accountability of the project implementation and project performance measurement has associations with either decision group, or organization objectives. Their associations with these groups are not as strong as the internal associations at any group. But availability of a secondary weighted association is analyzed further.

IT Investments, IT application decision or Project go / no-go decision and IT project prioritization decision are found to be significantly associated. Business dominated people are the owners of these decision rights. IT dominated authorities take the lead for the progressive project implementation phase. Figure 5 shows this case for both parties.

Association between IT representation on board and project performance might be interpreted as the effect of IT representation on project performance measurement as shown in Table 4. This effect can be an indicator of more positive control and contribution demonstrated when IT represented in board of the organization.

Table 7 and Figure 6 show the weights of all associations. From α1 to α4 it represents the weights from the strongest to the weakest respectively. We discuss each association briefly.

H1, H2 and H3: These three associations have the strongest association among them. These three are the subdomains of main decision domain, which are investment decision, project implementation decision and project priority decision. Graphical and chi-square results prove these strong relations. This result shows clearly that decision makers have a tendency of taking the decision power in all decision steps.

H4, H5 and H6 represent that there are weak associations between Investment decision and, IT unit head title, IT representation on organization board and project performance measurement. Thus, we cannot demonstrate any significant improvement or change if we push for change on any of these controls.

H7 and H8 show a significant association between Project Go / No-Go decision and Priority decision. Project Go / No go and accountability have a weaker association which has been described as second strong association in this study.

H9 and H11 represent the third order associations which are observed between project implementation, and IT head title (H9), Project performance measurement (H11).

H5, H10, H14 and H17 have a weak association. This means that IT representation on board has no significant association among the other domains. IT representation on board has only relation with the project performance measurement. This can be interpreted as more positive control on the IT projects, when IT represented in board.

H11 and H15 show that performance measurement has a strong relation with decision domain.

H12 shows that there is a weak association between Project priority and accountability. H13, H16, H6, and H18 have the same weakness in the association.

H19, H20 and H21 show that there are very strong association between project performance measurement and IT head title and IT representation in board. As emphasized previously, when IT unit head title gets higher in the organization hierarchy, there is a potential that IT can be represented on board. When IT represented on board of the organization, better IT governance is delivered and a positive control or measurement on the project performance is established.

C. Further Study

This research is one of the first attempts to identify IT governance practice in an emerging economy. Endogenous factors may need to be taken into account to understand the

effect of such characteristics as market, organization, and project. Furthermore, a number of control variables can be considered to analyze their effect on the results. In this case, other non-parametric tests, including Kruskal–Wallis test would be needed. Control variable may include, for instance, size of the company in terms of headcount and budget, size of the IT department, annual IT budget, and annual IT spending ratio, IT project size in terms of budget, time and headcounts.

Considering those control objectives, one can question the associations among the parameters of "annual IT spending ratio" and IT board representation, IT Unit head title, decision domains authority. Same parameters' association can be observed for the "size of the company" and "size of the IT department". Headcount of the organization or headcount of the IT department may have an impact on the good IT Governance implementation in emerging markets. Similarly organizations' revenue and/or IT budget may have an impact on good IT governance too. One should focus on the association of these parameters on IT governance for the emerging markets.

As we identified eleven significant associations, one needs to analyze specific relations for these associations in detail. For instance, Abu-Musa (2007) focus on performance measurement and evaluation, examine if and how other associated variables have some effect on it. Cumbs et al. (2010) examine strategic importance of IT and investment.

V. CONCLUSION

Majority of IT decisions such as budget, project start and project priority, are taken by the business units independently. Feudal and Business Monarchy archetypes refer to this case, and have the following weights in the decision domains as shown in Table 8.

Although decisions are mostly taken by business units independently, project accountability is naturally delegated to IT Units directly or to a group that IT takes place as shown in Figure 5. This may be the result of IT people and/or organization feel more comfortable to delegate the lead to IT in technical project implementation. This situation is not reflecting implementation of good IT governance. The necessary information link cannot be established between decision and implementation groups. This can result in mistiming of the project, wrong cost estimation and insufficient outputs. Diversification of decision owners and implementers will cause improper IT governance, and this may lead failure of IT projects.

Decision making domains archetypes are related with other decision domains. When the rank of IT unit head is higher, possibility of representation of IT unit within the executive committee is higher. This may have a positive impact on better IT governance because of the role of CIO in the IT governance. This study suggests that further research is needed to analyze the effect of IT board representation on the project performance measurement. Positive effect may bring on better control and feedback on the project performance measurement.

TABLE 8. DECISION DOMAIN AND ACCOUNTABILITY RELATIONSHIP

	Budget decision	Project Go No Go	Project prioritization	Accountability
Business Dominated	55,07%	48,91%	46,74%	13,77%
Business + IT Contributed	33,70%	40,22%	38,04%	34,78%
Only IT	7,97%	7,25%	11,59%	46,74%
Anarchy	3,26%	3,62%	3,62%	4,71%

Decision making domains archetypes are related with other decision domains. When the rank of IT unit head is higher, possibility of representation of IT unit within the executive committee is higher. This may have a positive impact on better IT governance because of the role of CIO in the IT governance. This study suggests that further research is needed to analyze the effect of IT board representation on the project performance measurement. Positive effect may bring on better control and feedback on the project performance measurement.

We noted that in only 57% of the cases performance of IT projects is monitored. The analysis also brings out that there is no association between project performance and project accountability. This might be surprising as one can expect that when business and IT equally share accountability of IT project, better performance is expected. This needs to be examined further.

Practical implications of the study can be considered as suggestions in the following ways.

- Highest level of IT involvement from scratch must be promoted. Governance must be supported at the top of the organization by all business and IT executives. Because IT governance results more profitability for the organizations and more return of investment for the IT departments. Needless to say, sustainability of the IT governance is essential for the enterprise.

- Business monarchy is the proposed archetype for the good IT governance in all levels of decision domains. This archetype provides involvement of the IT (including CIO) and business units from the beginning in all decision steps. This model also enables for the sponsorship, accountability and performance monitoring to take place during the project implementation.

- IT Unit representation in the executive committee level will not only provide good IT governance, but it will also let the organizations to avoid improper decisions and misconnection of decision and implementation of the project. Clearly it will disable any confliction or miscommunication.

- In addition to the Business Monarchy archetype in the decision domain, CIO representation on board or executive committee will enable more IT project performance monitoring in the organizations. Organizations should keep these performance monitoring indicators aligned with the business

performance indicators. That will keep IT and business alignment in line.

- IT representation on board may smooth the sharp transition of accountability transfer from business to IT that is depicted in Figure 5. Involvement of CIO from the first decision steps proceeding to the implementation step along the project life cycle will enable that smooth transition and better awareness of the projects for both business people in the executive committee and IT people as the project executers.

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