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Editors

Influence of Reporting Structure and Perception of Role of Information Technology on Decision-Making: A Qualitative Study

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Abstract

Decision-making in organizations is influenced by the perception of executives in management roles. Information Technology (IT) investment budget forms a significant portion of the overall budget in organizations. These investment decisions are made by executives who perceive IT to play certain roles in supporting organizational objectives and missions. It is critical to understand these perceptions about IT that allow resources to flow (or not) towards critical IT solutions and maintenance. This study explores the perceptions of high-level executives about the role of IT in an organization's success. A case study is performed at a financial institution in the northeast region of the United States. The results indicate that there are four types of the dominant role of IT, as suggested by the data. These are 1) IT as a strategic partner, 2) IT as a support function, 3) IT as a facilitator, and 4) IT as a business enabler. Further analysis suggests that the role of an executive in an organization is related to how they perceive IT's role. This study also suggests that the CIO reporting structure in an organization might influence how the role of IT is perceived in an organization. Implications for research and practice are drawn, and future research directions are suggested.

Keywords: IT role, strategic IT, IT enabler, IT support, IT facilitator, qualitative, case study

1. INTRODUCTION

Most business executives believe IT is critical to a firm's strategic success but are unclear about "how and where" IT actually contributes to business value. Only 30 percent of business executives engage IT leadership in developing business strategies (Worthen, 2007). IT leaders often complain that IT is not given the opportunity to shape business strategy. It clearly shows that IT leadership is not appropriately engaged in the development of the business strategy of the organizations. IT administration is historically focused on aligning IT strategies with business strategies (Strohlein and Pucciarelli, 2019). IT strategy should also

inform business strategy by presenting new and unexpected opportunities and capabilities. CIOs and strategy development stakeholders must cycle back and forth between business and IT strategies to maximize synergies (Strohlein and Pucciarelli, 2019). A big part of how these strategies and alignment are conceived depends on how the executives in decision-making roles perceive IT's role in the overall business vision.

Executives' views differ on the "strategic role of IT" and "goals of IT" in the organization. These differences are significant as it influences the scale and direction of IT investment decisions and the extent to which IT investment impacts firm performance (Kiessel, 2012). Executives'

positive perception of IT builds confidence and encourages leaders to focus on IT not only as an operational but also as a strategic tool (Porter, 1996). IT in organizations has evolved to the point where its goal is not only to enable the business but also to improve and transform the organization's capabilities (McDonald, 2007). IT is valuable, but the extent and dimensions are dependent upon internal and external factors, including complementary organizational resources of the firm, its stakeholders, and the competitive and macro environment (Melville et al., 2004). IT is gaining more and more strategic importance in an ever-changing computing environment. A new understanding of the role and value of IT is crucial. IT does not solely support but creates business value (Uhlig and Remané, 2022).

The executives' individual characteristics, such as personal history & values, education, etc., may vary fundamentally. Each executive brings a somewhat unique perspective to processes and evaluates an organization and its internal environments (Ireland et al,1987). Since perception plays a crucial role in individual decisions and strategy development of the firm, it is important to understand executives' perceived "role of IT" in the organization and examine whether executives' perception of it relates to their position in the organization. This research study aims to understand the executives' perception of the "role of IT" in a firm. The specific research question posed in this study is: *What are executives' perceptions of the role of IT in a firm?*

The following section presents a discussion of the current research in this domain. The literature review section is followed by the methodology adopted in the study. A description of the case and data collection and analysis mechanisms are presented. Results from the case study are presented with a discussion about the implications of the study and future research paths.

2. LITERATURE REVIEW

A critical review of research literature is presented around the main components of the study: perception in decision making, IT strategy, and the role of IT in business.

Perception in Decision-Making
Perception plays a critical role in the decision-making process. Perception is "our sensory experience of the world around us and involves both recognition of environmental stimuli and

actions in response to these stimuli" (Cherry, 2015). A great degree of perception is involved in addressing a complex problem in the decision-making process. Horn (2006) observes that "all decisions require perceptual processes to extract factual information from the external world that can be used to help develop an answer to a problem." The role of perception could also depend on the nature of the decision context. Some decisions require a minimum of perceptual involvement, while other decisions of choice rely primarily on internal preferences. Wang and Chan (1995) argue that the personal attributes approach contributes to identifying characteristics that can be used to predict an individual's information-processing capability. Wang and Cha, (1995) propose a global information processing framework that demonstrates the information-processing capability of the top managers and determines the quality of information used in formulating strategic decisions.

Senior managers' information-processing activities involve three sequential steps: view, search and interpret (Wang & Chan, 1995). The "view" determines the competitive, economic, technological, and political scope of information to which managers' attention should be directed. The "search" activity involves the acquisition of specific types of information (familiar, novel, soft, or hard) that the managers are looking for. The "interpret" activity is defined as the analysis of collected information. The outcome of the analysis determines if the captured information will be perceived to be relevant and valid and be the input for the strategic decision-making process of the firm. Anderson and Paine (1975) identify three sources of bias that influence strategic decisions: Selectivity: Separation of information for further consideration; Closure: Compilation of pieces of information into a meaningful whole; Interpretation: Use of earlier experience as an aid in judging the information previously collected. Perception plays a critical role in decision making of executives in IT roles.

Executives' Perception and Information Technology
The role of the perception of executives has been extensively studied in information systems research (Fink & Neumann, 2009; Kraemer et al., 1999; Tai & Phelps, 2000; Tallon, 2010, 2013; Tallon, Kraemer, & Gurbaxani, 2000; Tallon & Kraemer, 1999). The positive perception of the executives about business value of IT in a firm strengthens the strategic role of IT in meeting business objectives. The

favorable perception of IT leads to confidence in the leadership team and gains support in IT initiatives projects, and encourages leaders to focus on IT not only as an operational but also as a strategic tool (Porter, 1996). Universally, business executives differ in strategic intent or goals for IT. These differences are important because they influence the scale and direction of IT investment decisions and how these investments will impact firm performance. Organizations with more focused goals for IT perceive higher levels of IT payoffs throughout the value chain. If IT payoffs are consistent with executives' goals and expectations, executives are likely to be satisfied with IT performance. Higher satisfaction with IT performance would lead to a greater executive commitment to IT , thus leading to IT spending. Executives', who are unable to get the intended results of IT investments, might be unfavorable to IT and work towards reducing the IT budget. The payoffs from IT investments are directly related to executives' perspectives (Kraemer et al., 1999). The executives' perceived IT payoffs and management practices play a significant role in creating IT value in the organization Tallon, Kraemer, & Gurbaxani, 2000). The IT leadership reporting structure has a notable impact on the perception of IT. Tai and Phelps (2000) propose that an indirect reporting CEO/CIO relationship has negative effect on role of IT. For organizations that have shown business transformation via IT, CIOs have been an influence on members of the core executive team.

Role of Information Technology

It is essential to understand executives' perception about the role of IT in an organization as it has resource-wise implications. Analyzing the role of information technology is vital when firms' focus on streamlining business processes and cost reduction related initiatives (Stewart, Coulson, & Wilson, 2014). IT plays multiple roles in achieving an organization's business objectives. Schein (1992) proposes three strategic roles for IT in organizations: automate- replace manual tasks with the automated process; informate- collecting and disseminating information throughout the organization and transform: using IT to create new business models. Strategic intent for IT provides a broader perspective of information technology in a firm. IT in a strategic partner role improves process, increases productivity, brings efficiency at an organizational level and provides flexible and scalable resources for the business (Agarwal & Sambamurthy, 2002). Chan (2000) suggests

three roles of IT in a firm: an initiator, a facilitator or an enabler. IT in an initiator role acts as an agent of change. IT in a change agent role helps firm transform itself by focusing on organizational effectiveness, improvement, and development. The role of IT as enabler has been identified by many researchers (Al-Tameem, 2004; Dewah, 2014; Kanter, 1996; Luftman, Papp, & Brier, 1999; Mitra, 2005). The role of IT as a facilitator role serve as a coordination mechanism (Dedrick, Gurbaxani, & Kraemer, 2003; Dewett & Jones, 2001). IT facilitates the expansion of the firms and improves the relationship with other firms through the outsourcing of activities (Nieto & Fernández, 2005). The availability and quality of IT support is a critical factor helping a business operate smoothly. Lack of quality IT support could have a negative impact on business operations (Peter, 2003).

Dewett and Jones (2001) argue that IT moderates the effects of organizational characteristics on outcomes through its ability to generate information efficiencies and synergies. Information efficiencies are the cost and time saving that result when IT allows individual employees to perform their current tasks at a higher level and expand their role in the firm due to advances in the ability to gather and analyze data. Information synergies are the performance gains that result when IT allows two or more individuals to collaborate across inter-organizational or inter-departmental roles in a firm. Management views IT as a scarce resource and necessary evil in the organization. In some organizations, management sees IT role in shaping different types of strategies: such as defensive strategy, aggressive strategy, moderate and development strategy. IT roles could vary in an organization based on the current and future needs of the business.

3. METHODOLOGY

Organizational Context

This case study was conducted at a financial institution located in the mid-Atlantic region. Hereafter, the organization would be referred to as Mid-Atlantic Financial Institution (MAFI) a pseudonym given to the research site for the context of this research study. MAFI is a cooperative financial institution. The customers, and other banks, are required to have a firm membership. The customers share ownership of the firm along with other member financial firms. MAFI's mission is to provide low-cost liquidity to its customers and enhance the quality of the communities it serves. The firm is

governed by an independent Board of Directors and executive committee. The executive committee consists of President, Chief Executive Officer (CEO), Chief Operating Officer (COO), Chief Strategy Officer (CSO), Chief Financial Officer (CFO), Chief Risk Officer (CRO), and General Counsel (GC). The Chief Information Officer (CIO) leads the information technology (IT) department and reports the o COO of the firm. There are seven committees: Executive Committee, Audit Committee, Finance Committee, Risk Committee, Human Resource Committee, Product and Service Committee and Governance and Public Policy Committee. These seven committees report to Board of Directors and are formed by members of senior management team of the firm. Each committee is led by one of the executive committee members. Senior management's primary responsibilities are to: (1) manage the firm safely and soundly, and in accordance with the highest standards of ethics and integrity; (2) implement the strategic direction established by the Board; (3) establish and maintain a strong system of internal controls; (4) implement the policies established by the Board; and (5) ensure the firm's compliance with applicable legal and regulatory requirements."

MAFI's corporate plan reflects the firm's future direction and assists in decision making related to the allocation of resources and risk tolerances. The firm's CSO is responsible for the overall strategic planning process. The strategic plan covers a period between three and five years and is revised every three years. The firm's board of directors reviews the strategic business plan annually, establishes management reporting requirements, and monitors implementation of the strategic business plan, the operating goals, and objectives. The firm's executive committee reviews the strategic plan and financial and non-finical goals. The committee makes recommendations to the Board of Directors in terms of any changes or the creation of a new strategic plan. The current strategic plan provides a path to accomplish the firm's strategic objectives and creates a framework for evaluating the current technology environment in order to ensure that the firm has an information technology that delivers the required technology capabilities and is in alignment with the firm goals.

The cost-benefit analysis, compliance, reputational risk, and operational risk are the key factors in determining the priority of the business application enhancement request. Business unit managers, business analysts, system analysts, program managers, project managers, IT managers and directors are member of the PEG. ITGC, BCAG and PEG each committee has a charter. All decisions are made by the committee reaching consensus through voting. Committee-based decision-making is a common practice in organizations. The preference of individual committee members is a distinctive element in the process of committee decision making (Noh, 2007).

Data Collection
Data for case study can come from multiple sources. Yin (2018) proposed three principles to address the construct validity and reliability-related concern in case study research. These are: using multiple sources of evidence, creating a case study database and maintaining a chain of evidence. Five data collection efforts were undertaken for this study: documents, interviews, direct observation, archival records and participant observation. Documents play an explicit role in any data collection in doing a case study. For this study, the researcher collected meeting minutes, memoranda and progress reports on projects. For interviews, an initial solicitation was sent out to 30 potential participants in the organization. Twenty-six participants volunteered to be part of this study. After the initial follow-up with participants, the researchers scheduled face-to-face interviews. For archival records, the researchers collected organization charts, participants' details such as job titles, and prior years of strategic planning documents.

Observation evidence provides additional information about the topic being studied and serves as another source of evidence in the case study. The observation could range from formal to causal data collection activities. The researcher is an employee at the case study site and observed project meetings, department and organization level meetings and usage of information technology policy and procedures. The researcher gained access to two committee meetings and participated in these monthly meetings regularly. The researcher took notes and utilized the participant-observation protocol.

Data Analysis
Creswell (2012) describes data analysis in qualitative research consist of "preparing and organizing the data (i.e., text data as in transcriptions or image data in photographs) for analysis, then reducing the data into themes

through a process of coding and condensing the codes, and finally representing the data in figures, tables or discussion." (p. 180). Creswell (2012) proposed a data analysis spiral framework for qualitative analysis strategy. The data analysis spiral involves the following phases during the process: organizing, reading and memoing, describing, classifying and interpreting, and representing and visualizing the data (p. 183).

Yin (2018) argues that qualitative data analysis consists of examining, categorizing, tabulating, and testing to address the initial propositions of a study. Yin (2018) advocates for having a general analytic strategy to define priorities for what to analyze and why.   For a case study, data analysis involves making a detailed description of the case and its setting (Creswell, 2012). Stake (1995) proposes four types of data analysis and interpretation technique in case study research: categorical aggregation, direct interpretation, patterns and natural generalization. In categorical aggregation, the researcher pursues a collection of instances from the data hoping to find issue-relevant meanings. In direct interpretation, the researcher looks at a single instance and draws meaning from it without looking at multiple instances. In this study, the researchers used Creswell's data analysis and representation technique and Yin's "Relying on theoretical propositions" and "developing a case description" analytic strategies.

4. RESULTS

IT can play multiple roles in achieving an organization's business objectives. Timely and proper implementation of IT in an organization may lead to broader shifts in products, markets, and society as a whole. The emergent themes about the perceived role of IT at MAFI suggest four dominant factors: IT as a Support Function (SF), IT as a Business Enabler (BE), IT as a Facilitator (Fac) and IT as a Strategic Partner (SP). A brief description of each factor is presented.

IT as a Support Function

16 out of 26 participants perceived role of IT as a Support Function (SF) at MAFI In Figure 1. In this role, IT implements and provides support for the entire underlying infrastructure such as network, desktop, laptop, mobile devices, servers, and telecommunications. IT works with business units to deploy the most effective technology solutions to better serve the internal users and customers. IT provides ongoing

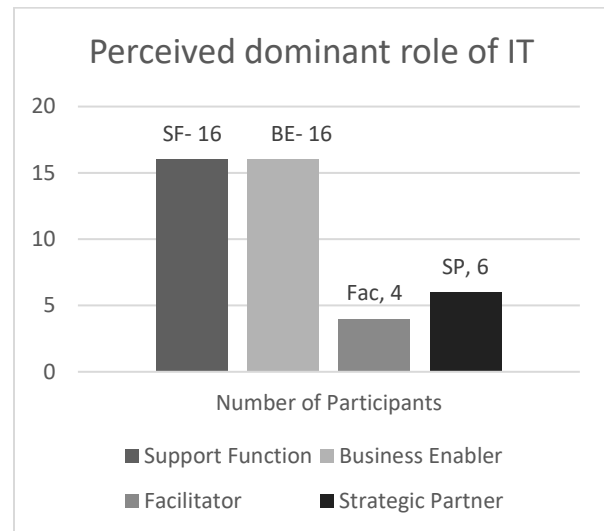support to internal users and customers through helpdesk or self-service facilities via the firm's intranet.

Figure 1: Perceived Role of IT

As one of the senior executives observed:
> Support function... without business unit IT does not exist. IT is to support the needs of its client. Understand technology... What your needs are and what are your alternatives... client has to decide...Technology is a mean to get there.

A similar view was supported by another IT manager:
> IT is a support function. Support means not just supporting the problem, also delivery of new system, new applications. Over the past years IT has become publicly more important in organization because we automated more processes. I think business unit in this organization depends on IT.

IT supports the business, and its role is to provide technology solutions for business problems. One of the IT managers pointed out, "It depends on the business model of the organization. For our business model, IT in a support role is the right role" and one of the senior executives said, "for us, IT is a support function... Our business model is not necessarily focused on IT." The availability and quality of IT support are a critical factor in helping a business operate smoothly. Lack of quality IT support could seriously impede business operations (Peter, 2003).   The dominant perspective for this role is that IT should always ensure that infrastructure is always up and running and available for business. IT is

perceived as a necessary tool for supporting the main business by running day-to-day operations smoothly. IT as a support function is widely recognized by C-level executives, business unit directors, business unit managers, and IT leaders of MAFI.

IT as a Business Enabler

The theme of the role of "IT as business enabler" clearly emerged from the data. IT is enabling the business units to do the job in a more effective way and provide solutions to business problems in an efficient way 16 out of 26 participants predominantly view the role of "IT as a business enabler" at MAFI. An enabler is an entity that offers the ability or the necessary assistance to accomplish something (Choi & Chan, 1997). There is support in the research literature for the role of information technology as an enabler of growth in firms (Mitra, 2005). As one of the business executives said the role of IT at MAFI is "to provide the ability to the firm to manage its business affairs and also communicate with our shareholders and customers as efficiently as possible." Kanter (1996) views IT as an enabler for working smarter and more productively. IT is designed for efficient data processing and analytical capabilities for better decisions making. Alavi and Yoo (1995) point out that IT acts as an enabler that provides rapid processing and analytical capabilities, parallel access, and information capture. A similar view is presented by one of the business executives about the role of IT at MAFI. As per the business executive, "IT helps us in processing data and creating reports. It enables us to communicate with people in the most effective fashion."

IT as a Facilitator

Data suggest that IT as a facilitator, serves as a liaison between various business units to promote smooth and timely delivery of software products or updates. At MAFI, IT works with various business units to gather and define business and technical requirements for a variety of business initiatives. Four out of twenty-six participants viewed role of "IT as a facilitator" at MAFI in Figure 1. A crucial role of IT within organizations is to serve as a coordination mechanism (Gurbaxani, & Kraemer, 2003). One of the business executives describes, "IT role is to help facilitate the business and business people should define what that means and technology is a way to facilitate or accomplish those goals." IT facilitates collecting business requirements, system changes and system upgrades. IT works with various business units to determine the system dependency or gap between the external and internal systems. One senior executive said about the role of IT, "IT facilitates our business model and helps guide non-IT people in terms of thing we should be thinking about and to help our control structure."

IT as a Strategic Partner

Six out of twenty-six participants perceived the role of IT as a strategic partner at MAFI in Figure 1. IT brings efficiency, improves processes, and increases productivity at the organizational level. IT as a strategic partner role provides flexible and scalable resources for the business (Agarwal & Sambamurthy, 2002). At MFAI, one of the senior executives views the role of IT as:

> *IT brings efficiency across organizations. IT works with a whole organization in a much more detailed manner than any other business unit. In theory, executive management has a certain perspective; audit has a certain perspective as they see the whole organization, but IT works with the whole organization in a much more detailed manner the way the other two do not. IT works with other business unit's day-to-day basis. There is a long-term relationship. IT is in a position to provide opinions or value-added concepts.*

IT has the ability to solve large and complex problems across organizations. IT is a means to provide flexibility, improve the process, and increase productivity at the organizational level. Another senior executive puts her thought on the role of IT as:

> *IT is fundamental to everything we do from a business perspective. IT is a skeleton system and may be a brain function and framework of the organization. Without IT, we cannot function. IT is the heartbeat of the organization.*

5. DISCUSSION

Table 1 presents the mapping of the organizational positions of the participant at MFAI and identifies the dominant perceived role of IT. The management column in table 1 represents the participants' current position in the organization. Participants with C-level job title such as CEO, CIO, CFO and COO are grouped here as "Senior". Participants with job title "Director" are grouped here as "Mid-level". Participants with job title "Manager" are grouped here as "Lower". The senior

management group clearly identifies with three out of four dominant roles of IT as proposed in this study. The senior management group views the roles of IT as a Business Enabler, Support Function, and Strategic Partner. The mid-level management group identified two out of four dominant roles of IT as proposed in this study. The mid-level management group views the roles of IT as a Business Enabler and Support Function. In contrast, the lower management group views the role of IT as a Business Enabler, Support Function and Facilitator.

Business function	Perceived dominant role of IT			
	SP	BP	SF	Fac
Senior	✓	✓	✓	
Mid-level			✓	✓
Lower			✓	✓	✓

Table 1: Organization Position and Role

The perceived role of IT is classified based on the two-dominant groups: IT and non-IT. The group defined as "IT" comprised participants who have job titles such as IT Director, IT Manager, Program Manager, CIO and also workers in the IT department in an organization. The non-IT group consist of participants with job titles such as CFO, COO, CEO, directors, and managers. Table 2 presents the mapping of the business functionality of the participants and the identified dominant perceived role of IT. The IT group predominantly identified with two perceived roles of IT: Business Enabler and Support Function. The "non-IT" group identified with all the four dominant roles of IT: Strategic Partner, Business Enabler, Support Function and Facilitator.

Business Function	Perceived dominant role of IT			
	SP	BE	SF	Fac
IT		✓	✓	
Non-IT	✓	✓	✓	✓

Table 2: Business Function and perceived dominant role of IT

At MAFI, IT plays multiple roles in achieving business goals. Four broad themes emerged as the perceived roles of IT in this firm: Strategic Partner, Business Enabler, Support Function, and Facilitator.
The above findings are consistent with Schein (1992) categorization of roles of IT in a firm: automate, informate or transform. "Automate" relates to the perceived role of IT as a "Support Function" as identified in this study, "Informate" relates to the perceived role of IT as "Business

Enabler" and "Transform" relates to the perceived role of IT as "Strategic Partner" as identified in this study. Chan (2000) identifies the role of IT as an initiator, a facilitator or an enabler in a firm. The perceived role of IT "Strategic Partner", as identified in this study is consistent with the role of IT as initiator. The perceived role of IT as a "Business Enabler" is similar to role of IT as an enabler. The perceived role of IT as a "Facilitator" is parallel to role of IT a facilitator.

The CIO reporting structure plays a significant role in determining the role of IT in a firm. Research literature suggests that indirect reporting CEO/CIO relationship has a negative effect on the perception of IT in the organization. At MAFI, data show that 70% of participants believe that the CIO reporting structure does have an impact on determining the role of IT in a firm. This finding is consistent with Tai and Phelps (2000) argument that CIO plays a critical role in business transformation through IT. Figure 2 presents the impact of the CIO's reporting structure in determining the role of IT in a firm.
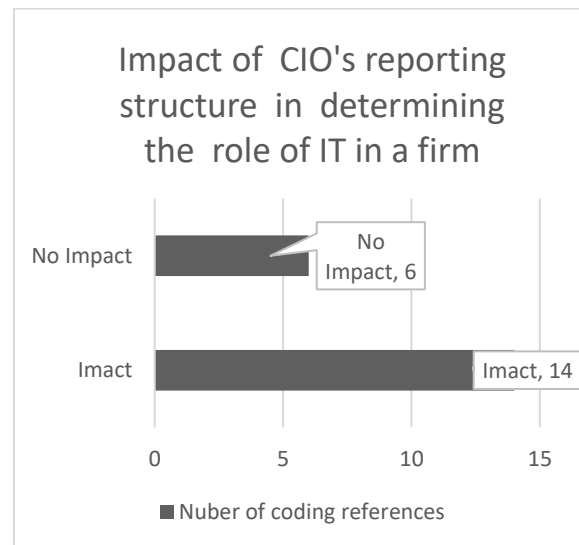

Figure 1: Impact of CIO's reporting structure

Porter (1996) argues that a positive perception of IT leads to confidence in the leadership team and gains support for IT initiatives, and encourages leaders to focus on IT not only as an operational tool but also as a strategic tool. Tai and Phelps (2000) find that an indirect reporting CEO/CIO relationship has a negative impact on the perception of IT. At MAFI, 62% of participants agree that CIO should directly report to the CEO. As one of the business

managers said:

I think IT is strictly looked at as operational when CIO reports to the COO. Once things are labeled operational, that does not perceive as strategic. Reporting back to the CEO, just elevate IT in much more than operational. IT should be viewed as strategic in the firm that cuts across all the business units.
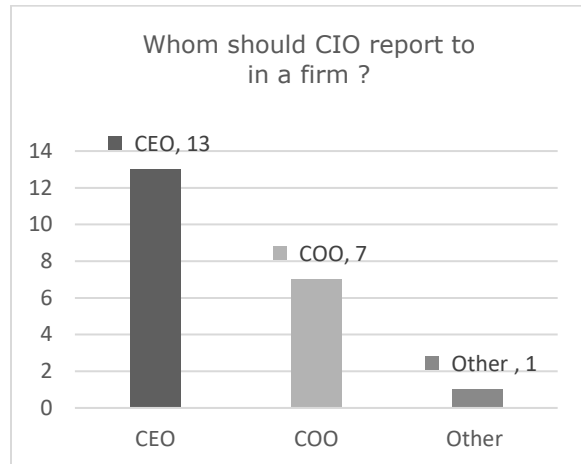

Figure 2: Whom should CIO report to in a firm?

This study has several implications for research and practice. This study contributes to research by suggesting the perceived role of IT is related to reporting structure of IT leadership in an organization. The perceived role of IT forms the basis of strategies and initiatives for alignment with business goals and it is critical to understand these perceptions of IT for better alignment. More studies in this area about how different reporting structures support alignment is warranted. On the practice side, IT executives could use this as a guide to check how their perceptions are shaping organizational IT effectiveness. If the perception of IT is limited, it cannot lead to deeper synergies with business.

6. CONCLUSION

This study shows that the perception of executives in decision-making roles in an enterprise, about the role of IT in an organization, is important in shaping how IT is consumed. The four dominant roles of IT that have emerged in this study show how IT decisions such as investments are influenced by the perception of executives. This study also suggests that the reporting structure of IT leadership is important in determining how IT is perceived. Future research on this should be

conducted to compare the effectiveness of different reporting structures in organizations and their correlations with IT perception.

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