Why CFOs use Big Data Analytics? A theoretical analysis

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Abstract. Big Data Analytics (BDA) is an emerging technology, which can be employed in some different ways and that is being used in many businesses and management areas. Recent studies focus their attention on it as a strategic tool investigating factors that can influence its usage. The scope of this paper is to develop a preliminary literature review in order to analyze which are the main theories and determinants used to explain the usage of BDA by CFOs. Numerous researches use different theories to analyze the usage of BDA. Our analysis show that the main theoretical framework are the following: Theory of planned behavior (TBP); Utility theory; Innovation Theory (DOI); Technological Organizational and environmental theory (TOE) and Human capital theory. Within these theories, the determinants used to explain the use of BDA could be articulated in four categories: environmental, technological, organizational, human capital attributes.

Keywords: Big Data, analytics, Big Data Analytics, CFOs, theories, determinants.

1. Introduction

In the last years, firms have developed new information system strategies to overcome j,external changes. One of the most relevant changes regards the continuous analysis of the real-time information, which needs the ability to deeply understand and thoroughly interpret a wide variety of information [1].

New forms of structured and unstructured information become important and the increasing challenge for firms is to obtain better value from those information to gain competitive advantage [2; 3].

In this scenario, Big Data (BD) and BDA are increasingly gaining popularity among practitioners and academics. It can be considered a solution to interpreter consumer behavior, detect frauds and even predict the future market trends [4; 5].

BD may be defined a "large datasets that is challenging to store, share, search, visualize, and analyze and here the orders of magnitude exceed conventional data processing and the largest of data warehouses" [6]. It is important to underline that when it comes to BD, we refer to large sets of structured, semi-structured or unstructured data, which are obtained from different sources and contexts (for e.g it can be extracted from social media) [7; 8]. BDA represent a set of advanced analytical techniques and technologies that operate on BD to obtain information to enhance decision-making process [9; 8].

The business decisional processes are changed [10; 11], in this scenario the BD influence the decisional processes both at the level of strategic responsibilities [11; 12; 13] and at the level of board [11; 14]. Moreover, BD can improve competitiveness, innovation and efficiencies [19].

The BD usage is able to influence the decision process of management accountant and so his role has undergone a substantial transformation [15; 16; 17]. As Merendino and colleagues (2018) [11] note "Chief Data Officers, Chief Information Officers or Chief Analytics Officer are defined as a new breed of executive that some leading organizations are seeking to hire to improve their usage of BD in decision-making". Management accountant role is engaged in operational and strategic decision for their firms by drawing insights from all data including BD [18].

Usage of analytics makes it easy to carry-out the four basic functions of business management including planning, controlling, organizing, and directing. Organizations typically collect data on several parameters and store them for political, economic, social, technological, legal, and environmental purposes in the form of huge databases. Analytics helps organizations analyze these data and derive meaning out of it. Such data-driven and evidence based results have positive consequences for organizations

Based on this premises, the aim of this study is to carry out a preliminary analysis of the literature regarding the adoption of BDA by CFOs, in order to identify which are the main theories and determinants used to explain the usage of BDA by CFOs. We identify and investigate a set of theoretical frameworks: theory of planned behavior (TPB), utility theory, innovation theory (DoI), Human capital theory and Technology-Organization-Environment (TOE) so as to be able to consider both the aspects linked to innovation, technology and the environment and those linked to the behavior of the manager accountants.

The remainder of the paper is organized as follow. The next section presents the research phases, than the selected theories that investigate the use of BDA are described. We then discuss the determinants that these theories consider to explain the use of BD e BDA and we suggest a comprehensive classification of those determinants.

We conclude the paper with additional thoughts about the state of the literature, including the limitations and the future steps of the research.

2. The research methodology

The research methodology is composed by four steps:

- first: we carry out a preliminary analysis of the literature regarding the adoption of BDA by CFOs. In order to identify which are the main theories and determinants used to explain the usage of BDA by CFOs we use as "the platform to perform the literature search and selection." *google scholar*, *web of scienze* and *scopus*. In this first research step we use as keywords *"big data", "bid data analytic", "determinats"and "theoretical framework*". In order to have the great number of articles we combined the words between them. We chose to consider only papers that are included in business, management and accounting subject area:
- second: we read the abstract of the papers to select the scientific articles relevant for our research. At least we identify 60 contributes from 1968 to 2019;
- third, we read each article and classify them according the theoretical framework. In this phase we also surveyed the determinants of BDA usage according each theoretical framework;
- fourth, we organized those determinants according four categories.

3. The main theoretical frameworks from literature review

According the preliminary literature review, the main theoretical framework used are the followings:

- Theory of planned behavior (TBP)
- Utility theory (UT)
- Innovation Theory (DOI)
- Technological Organizational and environmental theory (TOE)
- Human capital theory (HCT)

Several scholars study the BDA intention and usage and its determinants by a combination of theoretical framework [20; 21; 22; 23; 24; 25; 26]. They recommend the usage of more theoretical models basing on the limits that has the implementation of only one model. For example, Chen et al. (2016) [27] underline that TOE framework presents two limits. The first one is that contextual factors directly affect the decision to adopt a technological innovation. The authors state that the decision-making process is not a fully rational process and for this reason the innovation cannot be influenced directly and only by external factors. The second limitation is that contextual factors can influence the innovation implementation in same ways that TOE framework keeps out.

Theory of planned behavior

The TPB and the UT are used by scholars in order to understand the actual intention of accountant manager about using BDA in the near future [15; 17; 28; 29].

The TBP was proposed by Ajzen [30; 31]. It represents an intention model that explains and predicts behavior in multiple contexts [32]. This theory focuses its attention on "intention concept", defined as the will to undertake a particular behavior. It has three cognitive antecedents: the individual's attitude (to be favorable or otherwise for the target behavior), the subjective norms of the reference groups (the opinion of our references group, for e.g. family, friends…) and the perceived behavior control (underline the difficult grade to perform that behavior).

Utility theory (UT)

The UT, in the economics literature, explains behavior of individuals based on the premise that people (or firms) can consistently rank order their choices depending upon their preferences. According to Fishburn (1968) [33], this framework deals in the people's choices, decisions, preferences, worth and value. Fishburn [33] recommends the use of this theoretical background when individuals or firms have to make decisions with several alternatives. Recently this theory has been applied to BDA in order to explain the management accountant's (MA) intention in using big data. In this sense, Varma [15] blends the utility theory with the theory of planned behavior to investigate the determinants of BD usage intentions.

Innovation Theory (DOI)

The DOI is a theoretical framework that investigates how, why, and what a new ideas and technology spread through cultures, both at the individual level and at organization level.

Individuals have different degrees of innovation inclination even if it is generally observed that the portion of the population adopting an innovation is approximately normally distributed over time [34]. In this distribution, it can identify five categories of individual innovativeness (from earliest to latest adopters): innovators, early adopters, early majority, late majority, laggards (Rogers 1995) [34]. According to DOI theory [34] the aptitude to innovate is related to such independent variables as individual characteristics, internal organizational structural characteristics, and external characteristics of the organization.

Individual characteristics can be described as the leader inclination to change. Internal characteristics of organizational structure include centralization (that indicates the level of power concentration); complexity (that indicates the level of organization's members of knowledge); formalization (among organization members in terms of rules); interconnectedness (the degree to interconnection between social system and interpersonal networks); organizational slack (that indicates the degree of staff availability for the organization needs); size (it is the number of employees in the organization).

External characteristics of organization refer to attitude of this to be open toward the outside.

Technological Organizational and environmental theory (TOE)

The TOE theory has been used by scholars to recognize new technology adoption and usage. It was developed by Tornatzky and Fleischer, in 1990 [36].

To recognize the contextual factors that can influence the BDA adoption, several studies apply the TOE framework which identifies factors related to the adoption of technological innovations in the technological, organizational, and environmental contexts [7; 35]. This framework is well accepted and frequently used to make clear the specific determinants of the implementation of BDA [6; 7; 8; 25].

Authors identify the process by which organizations adopt and implement innovations, and so technological, organizational and environmental context. The Technological context consists in the technology that organization can use both technology currently in use and the new technologies relevant to the organization.

The organizational context describes the organizational characteristics that can facilitate or constrain innovation adoption and usage, such as scope, size, and the amount of slack resources available internally etc. The environmental context are external factors that may influence new technology adoption as the arena in which the firm conducts its business, managers competition and corporate governance etc.

Starting from this framework, it is important to underline that firm's perception of BD and BDA usage benefits represents the most critical determinant.

Compared to the DOI theory, TOE framework includes a new and important component: the environment context. This element can present some constraints and opportunities for implementation of technological innovation.

Human capital theory (HCT)

HCT is used to explain determinants related to human resources as age, educational background and gender. For years, the literature has underlined the importance of human capital resources and demonstrated that individuals possess a stock of skills, knowledge and expertise that can be leveraged for organizational and/or personal benefit. Starting from these considerations, scholars working in different disciplines (from psychology to economics) have developed human capital theory [37]. Human capital theory defines human capital as a "resource that is created from the emergence of individuals' knowledge, skills, abilities, and other characteristics" [37].

Research on this theory considers human capital to be a key driver of firm performance [38](Becker, 1993) and analyses the effects of employees' knowledge, skills, abilities and other competences on the capacity of organizations to reach their goals, improve their financial success and achieve sustainable competitive advantages [39; 40; 41] (Barney, 1991; Martin et al., 2013; Unger et al., 2011).

4. Big Data Analytics determinants

The study of the five theories previously described, permits also to analyze, the determinants of the BDA adoption by CFOs. In fact, as highlight in the previous section, the five theories, when used to interpret the BDA adoption, allow researchers to identify several determinants. We surveyed those determinants for each theory and then re- articulated them in four categories: environmental, technological, organizational, human capital attributes.

According to theoretical framework identified during the analysis, the technology dimensions are described as the characteristics of available technologies which are relevant to a firm, the organizational determinants include company attributes, such as size, formal and informal linking structures, competencies and the amount of slack resources, the environment dimension includes competitors, industry specifics and governmental regulation. Finally, the human capital attributes are related to human resources as age, educational background and gender and the utility of management accountant to implement the BDA in the firm context. Using this approach we are able to identify the eventualy drives that can guide the strategy companies approach to use the BD and BDA and then to recognize the factors with major influence on the initiation phase of big data adoption within a chosen strategy. Table number 1 presents a synthesis of these determinants.

Tab. 1- *Big Data Analytics determinants*

Context	Influencing Factors identified	Definition	Relevant literature
Environment	Competition Pressure	The degree of external pressure- competition	Oliviera & Martins (2009); Malladi & Krishnan (2013); Nam et al. (2015); Agrawal (2015)
	Industry/market complexity	The instability of environment	Malladi & Krishnan (2013); Malaka, Brown (2015) Agrawal (2015); Al-Isma'ili et al (2016)
	Partners	Enacted trading partner power	Yeh et al. (2014); Alrousan (2014); Park et al. (2015); Mahesh et al. (2018)
	External support	Support to implement and to use Information system	Scupola (2009); Le et al. (2012); Al-Isma'ili et al. (2016); Hung et al. (2016)
	Regulatory	The adequate institutional framework	Alrousan (2014); Nam et al. (2015); Agrawal (2015
Technology-innovation	Complexity	The degree of innovation complexity- difficult to use	Le et al. (2012); Alrousan (2014); Agrawal (2015); Hung et al. (2016)
	Relative advantage	The degree to which innovation is perceived as advantage	Oliviera & Martins (2009); Li et al. (2011); Park et al. (2015); Agrawal (2015); Nam et al. (2015); Al-Isma'ili et al (2016); Mahesh et al. (2018)
	Compatibility	The degree to which innovation is perceived as compatibility with bussiness'style	Le et al. (2012); Agrawal (2015); Malaka, Brown (2015); Al-Isma'ili et al. (2016); Mahesh et al. (2018)
	Trialability	The potential to adopt the innovation in the firm	Randani & Kawalex (2009); Malaka, Brown (2015) Agrawal (2015); Al-Isma'ili et al. (2016)
	Technological resource competency	Innovation motivation	Ramdani et a. (2009); Oliviera & Martins (2009); Agrawal (2015); Al-Isma'ili et al. (2016); Mahesh et al. (2018)
	Technology infrastructure	The potential of internal technology	Oliviera & Martins (2009); Malladi & Krishnan (2013), Yeh et al. (2014)
Organization	Organizational size	The size of the firm (number of employees, annual revenue)	Oliveira & Martins (2009); Oliveira & Martins (2009); Agrawal (2015); Le et al. (2012), Al-Isma'i et al. (2016), Hung et al (2016); Mahesh et al. (201
	Organizational readiness-organization resources	The degree to which an firm has conscious resource management	Hameed et al. (2012); Malladi & Krishnan (2013); Puklavec et al. (2014); Park et al. (2015)
	Skill	Experience of It employees - skill and knowledge	Hameed et al. (2012); Le et al. (2012); Yeh et al. (2014); Nam et al. (2015); Agrawal (2015); Malaka & Brown (2015); Al-Isma'ili et al. (2016); Mahesh et al. (2018)

3.1. Environmental determinants

Same scholars proposed a study where they use a framework based on determinants of innovation adoption were grouped into different components. In this study, according TOE theory environmental context can considered determinants of IT adoption in organizations

The environmental context refers to the group of external or inter-organizational factors that can influence BDA adoption. According to prevalent literature we identify a set of eventually environmental determinants as competition pressure (the degree of external pressure- competition), industry/market complexity (the instability of environment), partners (enacted trading partner power), external support (Support to implement and to use Information system), regulatory (the adequate institutional framework).

Same scholars indicate a significant positive relationship between competitive pressure and adoption of BD technology. For e.g. Oliviera and Martins in 2009 [26], study the determinants of web site and e-commerce adoption decisions using a technology-organization-environment (TOE) framework on a representative sample of 2626 Portuguese firms, they underline that competitive pressure, an environmental factor, has significantly influences. Competitive pressure is considered as "facilitator" of assimilation of BD technology [6; 42; 43], as matter as fact they use the TOE to explore the BDA determinants in emerging economies highlighting that competition intensity can influence positively BDA adoption.

While some studies examine competitive pressure, industry and market pressure [8; 6; 42; 44]; and partner pressure [45; 46; 47; 48] as factor under the umbrella term external pressure and analyze how they can influence the usage of new technology tools. For example, Malladi and colleagues (2013) [42] present and test a conceptual model of factors associated with the extent of organizational Business intelligence Analytics (BIA) usage. Their study shows that the industry competitive intensity influences BIA usage. Moreover, they argue that the sophistication of data-related infrastructure in firms drives BIA usage and they underline that the dimension of firm is positive correlated to large BDA usage in business functions. Conversely, managerial challenges related to integration and talent management prevent extensive research on Information Technology adoption. The scholars show that external support, defined as support to implement and to use Information System, is a key factor in the new technologies adoption process [44; 49; 50; 51]. Scupola in 2009 [49] defined the external environment as "the arena in which an organization conducts its business". In his study, he shows that two environmental factors are significant in e-commerce adoption in Australia and Denmark and customer pressure and access and quality of ICT consulting services, which can be considered external support variables.

Other scholars [6; 43] argue that the presence of adequacy institutional frameworks and business laws governing enhance the use of innovations/technology. In this sense, Agrawal (2015) [6] uses the TOE to explore the BDA determinants in emerging economies. In his study, the results show that there are six variables that can be considered significant determinants respect to the institutional framework: complexity, compatibility, regulatory support, organizational size, competition intensity and

environmental uncertainty. An important aspect, linked to environmental contest, is represented by financial costs to implement and to operate these tools and the quality, integration, security and privacy for adopting and utilizing BD and BDA in firms. These factors would act as inhibitors in implementing and activating BD and BDA in firms.

3.2 Technological determinants

Tornatzky and Fleischer (1990) [36] in their study called "The Process of Technological Innovation", propose a framework of how the determinants of Information Technology adoption can be grouped into three contextual elements. A literature review of all type of Information Technology adoption indicates that characteristics of innovations that are more analyzed. According to prevalent literature, we identify a set of possible technological determinants as complexity (the degree of innovation complexity- difficult to use), relative advantage (the degree to which innovation is perceived as advantage), compatibility (the degree to which innovation is perceived as compatibility with business style), technological resource competency (competency of internal resource), technology infrastructure (the potential of internal technology).

TOE framework underlines how technological capability is consider as great help the adoption and usage of BD and BDA in firm. In order to help this determinant the firm should secure the related technology capability readiness in terms of the data management such as data collection, processing, and integrating, and the data analytics analysis, and interpretation.

The complexity of an innovation is determined by the degree to which it is perceived as difficult to understand and use them. More authors postulate that it is negatively related to innovation adoption and its implementation. Researchers have repeatedly found that complexity facilitates the usage of innovation in the firms [6; 50; 51]. For Agrawal (2015) [6] complexity includes two components: the challenges of customization and high costs. The second component involves the high investment or maintenance costs. Firms that perceive high technology complexity have more doubts to adopt BDA and assimilate it into their organization.

At the same way, compatibility of innovation with the firm business style is considered a driver of information technology tools adoption. Agrawal, in his study, demonstrates that compatibility may be an important determinant of BDA adoption.

In the same prospective, other scholars [23; 6; 43; 44; 47; 48] argue that the degree which the innovation is perceived as advantage (called relative advantage). Al-Isma'ili and colleagues (2016) [44] considered this factor as important driver because it is associated with the benefits that the new technology can create in terms of facilitating the processes in the organization, and, in this way, improve the firm efficient.

Other important technological drivers are technological resource competency and technology infrastructure. The level of technological resource competency [6; 23; 44; 48; 52] and technology infrastructure [23; 42; 45] are reported to the level of information technology sophistication in the organization. These factors are explained

in terms of employers' competence and new technology usage by management, as well as the information technology infrastructure installed in the organization, which improves the firm attitude to implement new technological tools as BD or BDA.

Several previous studies show that the most appropriate key factors, which can be classified as technological dimensions determinants, can be explained though the DOI theory because this framework could be explained by characteristics of innovation as relative advantage, compatibility, complexity, trialability and observability. In other words the DOI framework demonstrates that the more robust understanding of the technological factors is, the more technology adoption is.

3.3 Organizational determinants

According TOE framework [6; 7; 8; 25], the organizational context refers to the group of intra-organizational factors that are believed to influence adoption. Some scholars analyze as determinants followings characteristics: organizational size (the size of the firm measured as number of employees or annual revenue), organizational readiness- organization resources (the degree to which a firm has conscious resource management), skill shortage (experience of employees - skill and knowledge).

There are multiplicity opinions about the role that organizational size plays in the process of innovation adoption. In the time, same scholars have consistently found a significant relationship between size of organization and BD or BDA adoption [6; 26; 44; 48; 50; 51].

For e.g., Al-Isma'ili and colleagues (2016) [44] investigate the factors that influence cloud computing adoption within Australian SMEs. The analysis indicates that same organizational determinants as firm size were found to be determinants of the adoption of cloud computing services.

Le et al, (2012) [50] in their study attempt to answer to the question: "What are the factors driving the adoption of e-commerce in Vietnam from a managerial perspective". They perform a logistic analysis, testing 16 possibly determinants. The results show that support of industries, support of government, comportment of suppliers and buyers, compatibility of the innovation are considered e-commerce drives. All these factors can be considered as external support. They introduce as possible determinants the characteristics of managers, specifically two factors and so the effects of managers' attitude toward innovation and the knowledge of managers on the adoption of e-commerce.

Recently, Mahesh and colleagues (2018) [48] study how identify the factors determining the intention to adopt BD technology in financial services industry of Sri Lanka and the relationship between those factors and the BD usage. They use a structured questionnaire survey that was carried out to collect data from 30 licensed finance companies in Sri Lanka. Thanks of a quantitative approach the study shows that there is a significant positive association among organizational size for BD technology adoption (and other several drivers as compatibility, relative advantage, technological resource competency, absorptive capacity, competition intensity, regulatory support

and organizational intention). Some authors [42; 47; 53; 54]; consider the organizational readiness- organization resources and so the degree to which an firm has conscious resource management, in term of managerial challenges. In their studies, the ability to blend managerial and his skills became a significant drivers to assimilate information technology and to use BD. For e.g. Park et al. (2015) [47] in their study have the purpose to identify and to prioritize factors which can influence BD adoption in Korea. The technological capability is considered as the critical determinant. At the same way management support, government support and policy are identified as the adoption key factors.

In several studies, scholars identify a set of determinants linked to employees' knowledge, manager innovation attitude and chief skills as factor under the umbrella term skills.

Malaka and Brown (2015) [8], in their study about the adoption of BDA within the telecommunication industry in South Africa, according to TOE theory, consider as organization driver the skills. According to Rogers [35] the individual decision, for e.g. manager decisions, to adopt innovation mainly relies on knowledge about particular innovation; in other words, in line with DOI theory, the better innovation we know, the more we decide to use it.

3.4. Human capital attributes

Other scholars focus their attention on the characteristics of CFO, which can influence the usage of BD or BDA in the firms. We focus our attention on Attitude, subjective norm and perceived behavioral (evaluation of the intention behavior), gender (male or female), age (years) and quality of human recourses (education level- skill). In order to highlight the human capita attributes that are able to influence the intention to use BD and BDA the scholars use as theoretical framework the theory of planned behavior and utility theory. According to TOE theory, management support for BDA implementation could be the facilitator; in fact it would directly help in the BDA's diffusion addressing the decision making process.

Nasco and colleagues (2008) [55], using the TPB, construct a model intentions to adopt e-commerce among 212 managers/owners of SMEs in Chile. Their analysis shows that the subjective norm and attitude constructs can be considered driver. Ajzen (2002) [55] revised the theory of planned behavior concentrating his attention on the link existent between past behavior and future behavioral intent.

According to TBP and UT, Varma (2018) [15] investigates about the role of the management accountant (MA) as active participants in the organization's decision-making process. He conducts a study in early 2017 using a partial least squares-structural equation modeling technique with a sample of 203 MAs in 11 Indian cities. The results identify the attitude as the most significant antecedent of intent to use BD followed by the subjective norms. He focuses his attention especially on MA's attitude, intention and behavior, underlining the relevance of UT and TPB used together to investigate the management accountant's intention to implement the use of BDA in the organizations. Moreover, the scholars underline how the UT deals in the people's

choices, decisions, preferences, worth and value. This consideration could be used to understand the management accountant decision to implement the BDA in the firm context. Other study [35], focusing on DOI framework, argues that innovation adoption is linked with the innovation decision process. In line with this framework, the attitude of decision maker will be linked to perform or to reject the innovation. Therefore, managers' attitudes play a crucial role in adopting or not adopting the BDA tool.

Other studies analyze the role of social and cultural factors, such as gender, age and level of education. These factors can influence the adoption of new information technology, for example BD.

Gender and age to enhance the use of alternative technology. For e.g. Morris and colleagues (2005) [9] extend the theory of planned behavior by incorporating gender and age as drivers to adoption of technology in the workplace. In the same way, Baker and colleagues (2007) [56] study the effects of gender, age and education level on new technology implementation in Saudi Arabia, using the TPB.

There are several, previous studies that demonstrate how the education level implies an increased likelihood to use the technological instrument by the people [57; 58; 59]. The usage of alternative technological tools requires technical skills and ability to search, use and interpret information [60].

5. Conclusions, limitations and future research

Several studies recognize the role BDA plays in addressing the challenges of the organizations. A growing number of research confirm the role of BDA to plan and optimize the business operations, forecast business outcomes, improve efficiency, make better decisions, and offer new products and services. In addition, analytics capabilities can help CFOs to find more novel uses of data, to build their support activities organizations around data and to suggest new way to transform firm business models.

Starting from these considerations, the scope of this paper is to develop a preliminary literature review in order to survey, which could be the main theories used to explain the usage of BDA by CFOs.

Considering Scopus, WOS and Scholar databases and searching for articles in the business and management fields using four keywords (big data, big data analytic*, determinant*, theoretical framework*) we collected 60 useful research products. At the first, we surveyed the main theoretical frameworks of those words, and then we focused on the determinants of technologies as BD or BDA.

First of all, our analysis reveal that numerous studies use contemporary two theories to analyze the usage of BDA. Furthermore, the study show that the main theoretical framework adopted in the examined research works analyzed are the following: Theory of planned behavior (TBP); Utility theory (UT); Innovation Theory (DOI); Technological Organizational and environmental theory (TOE) and Human capital theory (HCT).

Within these theories, the determinants used to explain the use of BDA could be articulated in four categories: environmental, technological, organizational, human capital attributes.

The technology dimensions are the characteristics of available technologies which are relevant to a firm. The organizational determinants include company attributes, such as size, formal and informal linking structures, competencies and the amount of slack resources. The environment dimension includes competitors, industry specifics and governmental regulation. Human capital attributes are related to human resources as age, educational background and gender and the utility of management accountant to implement the BDA in the firm context.

Starting from previous cited theories, this study has shed light on a set of factors or determinants that are related to the adoption of BDA in several types of industrial sectors. Then an overall conclusion could be made with respect to the determinants of the intention for BDA adoption. The theory identified underlines a set of categories, which are able to group several key factors for BDA usage. For e.g. factor as compatibility, relative advantage, technological resource competency, organizational size, absorptive capacity, competition intensity, and regulatory support could be considered drivers for BDA adoption; on the other hand other factors as the risk for privacy, high implementation costs and etc…could be considered as inhibitors that hinder the adoption process.

Recent studies underline the importance of the human resources in the use of this new type of technologies in the organization, that considerations highlight the importance of the manager, the manager accountants and CFO to the intention to use the BDA.

The BD and BDA usage are trends and they represent a potential changes for providers of accounting information and for research focused on issues concerned with strategy-control links, cost management complexities, outsourcing and cloud-based technologies, financial reporting and management accounting. The accounting information are transforming and new technologies are increasingly this process. The need of data examination, information and knowledge implications could be considered for accounting professionals. For these reasons, we considered essential for manager accountants and CFO to know the key drivers that can influence new technologies tools in the firms in order to enhance these drivers. This study is a first step as major research. Our analysis represents only the starting point of a structured literature analysis Further steps will aim at conducting a systematic literature review of ongoing debate on BDA and at proposing and testing a research model to investigate the BDA determinants from the perspective of CFO.

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