

Impact of Fintech on Management Control Practices Case of companies in the service sector in the Casablanca-Settat region of Morocco

Impact de la Fintech sur les pratiques du contrôle de gestion : cas des entreprises du secteur des services dans la région de Casablanca-Settat du Maroc

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Abstract

Innovation in fintech presents great opportunities and challenges for businesses in general and for those in the services sector around the world specifically. This article aims to examine the impact of Fintech on accounting and management control practices. In this study, four variables were used to measure management control practices (financial reporting, performance management, budgeting and strategic costing practices) while financial technology was measured by two variables: big data analysis (BDA), and artificial intelligence (AI). Our work aims to present a theoretical conceptual framework, which will be completed by an empirical study soon, with the aim of further exploring the relationship between the use of new financial technologies to promote the emergence and evolution of practices management control in Moroccan companies.

Keywords: Fintech, Management Control, accounting practices, service sector, Morocco.

Résumé

L'innovation dans le domaine des technologies financières présente de grandes opportunités et d'énormes défis pour les entreprises en générale et pour celles du secteur des services du monde entier spécifiquement. Cet article vise à examiner l'impact de la Fintech sur les pratiques de comptabilité et de contrôle de gestion. Dans cette étude, quatre variables ont été utilisées pour mesurer les pratiques de contrôle de gestion (rapports financiers, gestion des performances, budgétisation et pratiques stratégiques de calcul des coûts) tandis que la technologie financière a été mesurée par deux variables : analyse des big data (BDA), et intelligence artificielle (IA). Notre travail vise à présenter un cadre conceptuel théorique, qui sera compléter par une étude empirique prochainement, dans l'objectif d'explorer d'avantage la relation entre l'usage des nouvelles technologies financières pour favoriser l'émergence et l'évolution des pratiques du contrôle de gestion dans les entreprises Marocaines.

Mots clés : Fintech, Contrôle de Gestion, pratiques comptables, secteur des services, Maroc.

Introduction

Financial technologies (FinTech) such as artificial intelligence (AI), big data analytics (BDA), blockchain technology (BCH), and cloud-based accounting have received considerable attention from researchers, practitioners, and policymakers. If the collection, processing, and analysis of high-quality data in real time is enabled by these digital technologies, this could suggest that accountants will be able to present more accurate financial reports on the state of their businesses and even conduct more reliable budgeting processes (Elmagrhi et al., 2019; Ibrahim et al., 2021a; Osei-Assibey Bonsu et al., 2023). Risk management, budgeting, and auditing could be improved via FinTech (A. W. Al-Smadi et al., 2023; Y. Chen et al., 2016; Yoon et al., 2015). Globally, the amount invested in 2024 reached \$95.6 billion, down from \$119.8 billion in 2023 (Statista; 2024). Morocco launched the “AL KHAWARIZMI” program in 2019, which aims to support AI research with a budget of 50 million MAD.

Several theoretical frameworks have been discussed in the literature for their relevance to management control, including agency theory, stakeholder theory, legitimacy theory, capital requirements theory, transaction cost theory, commitment theory, and political cost theory (R. W. Al-Smadi et al., 2020). In the context of our research, we focus on a theoretical framework that draws from three core perspectives to analyze the influence of FinTech on management control practices: agency theory, stakeholder theory, and legitimacy theory. In addition, we also incorporate the Resource-Based View (RBV) to enrich our analysis.

1. Theoretical Framework of Financial Technologies and Management Control

1.1. Financial Technologies: Literature Review

Fintech, defined « as the use of digital and information technologies in financial services, has significantly changed the way financial institutions operate » (Sangwan et al., 2020). In the business world, « fintech is an interdisciplinary field that integrates finance, technology, and innovation management » (Sung et al., 2019). Digital financial technologies, including artificial intelligence (AI), big data analytics (BDA), and cloud-based accounting systems, have attracted significant interest from researchers, industry professionals, and regulatory bodies. If high-quality and timely data processing is possible, this could suggest that accountants will be able to present more accurate financial reports and improve management performance. Similarly, accountants will be able to perform better in auditing through improved audit evidence and reliable budgeting (Elmagrhi et al., 2019; Ibrahim et al., 2021a), risk management, budgeting, and auditing could be improved via Fintech (Y. Chen et al., 2016). This indicates that Fintech could help auditors achieve greater compliance with auditing values and increase the overall

assurance level by obtaining more appropriate and sufficient audit evidence (ICAEW, 2014; Yoon et al., 2015).

Fintech has always been a major obstacle to accounting and auditing procedures, especially those requiring estimates or projections, including depreciation, risk assessment, and budgeting (Ibrahim et al., 2021a). However, advanced financial technologies offer potential solutions that can provide a vast volume of data processed in real time, which is more likely to stimulate the accounting core with a smooth flow of high-quality data while reducing agency expenses (Odonkor, E., Soori, A., Soviany, P., Aitkazinov, K., & Ajayi-Nifise, O. , 2024). Despite this, current research on accounting information systems is underdeveloped. This is generally theoretical evidence and therefore a lack of empirical evidence of fintech in accounting (Baldwin et al., 2006; Omoteso, 2012; Sutton et al., 2016). To help expand knowledge, this article aims to fill this important gap by answering the research question:

Research question: Does Fintech lead to better management control practices in the service sector for companies in Casablanca-Settat region?

In our article, we focused on two financial technology practices: big data analytics (BDA) and the use of artificial intelligence (AI). Big data analytics is defined by three dimensions (volume, velocity, and variety). To measure each of these dimensions, we used the items defined by (Ghasemaghaei & Calic, 2019). According to these authors, the volume dimension is defined by four items, the velocity dimension is also defined by four items, and the variety dimension is defined by three items (Table 1 in appendix).

As for artificial intelligence, it is defined by 13 items that have been validated in several studies (Table 2 in appendix).

1.2. Management Control and Its Practices: Literature Review

While Bonsu and colleagues (Osei-Assibey Bonsu et al., 2023) studied the relationship between financial technology and accounting practices worldwide, including financial reporting, performance management, budgeting, auditing, risk management, and fraud management, we drew on this study and others, such as those by (Abdullah & Almaqtari, 2024), (Osei-Assibey Bonsu et al., 2023), and (A. W. Al-Smadi et al., 2023), who studied the impact of artificial intelligence on the transformation of accounting and auditing practices, to select appropriate variables for measuring management control practices. Thus, in this regard, we have chosen four variables for evaluating management control practices, namely: financial reporting (financial reports in the broad sense), performance management, planning and budgeting, and strategic cost management practices.

Previous literature has defined financial reporting as "the preparation of financial reports to inform interested stakeholders about economic performance, financial position, and treasury operations." According to (Almaqtari, 2024), performance management is measured by two sub-dimensions: the Scorecard (TS) and the Balanced Scorecard (BSC). In this study, we will only introduce the Balanced Scorecard (BSC) because it measures both financial and non-financial performance indicators. Planning and budgeting are measured by three items. As for strategic cost management practices, they are measured by three sub-variables: ABC (6 items), target cost (5 items), and life cycle cost (5 items), (Adigbole et al., 2022), (Table 3 in appendix).

2. Impact of Financial Technologies on Management Control Practices: Conceptual Model

The impact of Fintech on accounting practices has been discussed in several studies in both developed and developing countries, such as those by: Arnaboldi et al., (2017); Bonsón & Bednárová, (2019) ; J. Chen et al., (2015) ; Dai & Vasarhelyi, (2017) ; Mosteanu & Faccia, (2020) ; Schmitz & Leoni, (2019). Their findings varied, ranging from a positive relationship to a negative relationship to no relationship. All of these studies explored the relationship between fintech and management control practices using several factors. In the current study, four variables were used to measure management control practices (financial reporting, performance management, budgeting, and fraud risk management), while financial technology was measured by two variables: big data analytics (BDA) and artificial intelligence (AI). This section will be structured into two subsections. In the first section, we will present a literature review and develop the hypotheses that explain the link between Fintech and management control practices. In the second section, we will present the theories that will be used to illustrate this relationship.

2.1. Impact of Fintech on Financial Reporting

The rapid evolution of FinTech has led to major changes in management control practices, particularly in financial reporting (Osei-Assibey Bonsu et al., 2023). Researchers such as Y. Li et al., (2021) have concluded that FinTech benefits the automation of financial reporting processes, reducing the cost, time, and errors associated with financial reporting. Through robotic process automation and other solutions, FinTech plays a vital role in improving the efficiency of financial collection, reconciliation, and reporting processes (Odonkor, E., Soori, A., Soviany, P., Aitkazinov, K., & Ajayi-Nifise, O. (2024).

Transparency of information disclosed to other stakeholders is the main objective of corporate reporting and governance systems. BDA can increase transparency, financial reporting, and the

quality of accounting information (Moffitt & Vasarhelyi, 2013; Warren & Marz, 2015). Velocity, one of the characteristics of BDA « defined as the speed at which data is processed and formed », could now create and analyze data over the real period, thus making it easier for companies to disclose their financial reports in a timely manner (Al-Htaybat & von Alberti-Alhtaybat, 2017). In the same vein, Hassani et al., (2018) highlight how BDA allows management accountants to collect large-scale structured and unstructured data to generate quality financial reports and serve strategic decision-making.

Artificial intelligence can provide real-time updates to financial reports (Antwi, B. O., Adalakun, B. O., & Eziefule, A. O. (2024). Indeed, Deng et al., (2021) confirmed that Fintech coupled with other technologies such as AI, natural language processing, and machine learning, further automates the interpretation of statistics, leading to more insightful financial reports. Similarly, Osei-Assibey Bonsu et al., (2023) confirmed a positive and significant impact of AI and big data on accounting, while the impact of AI is greater than that of big data.

Fintech, given its ability to provide managers with relevant information in real time, increases the efficiency of reporting (Antwi, B. O., Adalakun, B. O., & Eziefule, A. O. (2024). Therefore, the adoption of Fintech is much more likely to reduce the firm's agency costs (Kudyba & Kudyba, 2014). In addition, Overall, Fintech allows managers to process data on the needs of all different stakeholders and communicate with them better in order to satisfy them (Ibrahim et al., 2021b).

Given the vast amount of information that Fintech can collect from social networks and media, social legitimacy and stakeholder satisfaction increase (Ntim et al., 2013).

Overall, the impact of Fintech on improving reporting efficiency appears feasible, while the number of empirical studies conducted in this area remains very limited. Therefore, we fill this gap with a field study to test the causal relationship between Fintech and financial reporting, leading to our first hypothesis:

H1: Fintech positively and significantly affects the financial reporting of Moroccan companies.

2.2. Impact of Fintech on Performance Management

Performance management: « is a set of measurement tools such as dashboards used to steer and control business management by collecting, assembling, filtering, analyzing, interpreting, and communicating appropriate data » (Tambe, 2014).

Several studies emphasize that heightened competition complicates performance management (Chui et al., 2014). Traditionally, management accountants rely on structured data to evaluate the four dimensions of the Balanced Scorecard (BSC), such as customer satisfaction, employee

loyalty, value creation for shareholders, and the efficiency of internal processes (Richins et al., 2017b). In this context, Big Data Analytics (BDA) offers the ability to process vast volumes of both structured and unstructured information, enabling managers to craft a more responsive and strategic BSC that aligns with customer expectations and business goals (Elkmash et al., 2022). Similarly, Bala and Verma (2018) note that FinTech tools enhance access to real-time data, allowing for timely analysis of performance indicators and supporting strategic decision-making through clearer and more effective planning.

AI allows for the collection of data from multiple sources, enabling managers to make informed decisions in real time. The expansion of performance management is another benefit of AI (Asatiani et al., 2019).

Son et al., (2020) studied the impact of FinTech on the automation of overall performance measurement through the integration of algorithms and machine learning. They concluded that « FinTech solutions automate the monitoring and evaluation of key performance indicators (KPIs), reducing the effort of rebalancing indicators and providing accurate insights into the organization's overall performance».

Chen et al., (2023) examine whether and how FinTech improves the investment efficiency of listed companies in China. The result of this study confirms the positive and significant relationship between the use of FinTech and the improvement of the investment efficiency of these companies (Chen et al., 2023). Guo & Shen, (2016) used a SYS-GMM model to analyze the impact of FinTech on the risk-taking of financial institutions in China, the data of a panel of commercial banks over the period 2003 to 2013 found that FinTech decreases the risks and control costs of banks in the initial phase of FinTech use, and that the financial risk as well as the management and control costs increased during the growth phase of FinTech. In addition, the risk-taking response of Chinese commercial banks is heterogeneous. Based on this literature review on the impact of fintech on performance management, we formulate our second hypothesis (H2):

H2: Fintech positively and significantly improves performance management practices.

2.3. The Impact of Fintech on the Strategic Planning and Budgeting Process of Companies

The integration of Fintech into the budgeting process of companies is one of the topics that has received significant attention from researchers worldwide. For example, Uña et al. (2023) highlighted the importance of Fintech in automating budgeting processes, which facilitates the

automatic generation and monitoring of budget information, thus reducing manual effort and enabling companies to make informed decisions.

«Budgeting is described as a realistic and quantitatively articulated strategy for the future » (Gleim & Flesher, 2015). Budget also refers to a «quantitative description of a plan for a given period» (CIMA, 2008). «Budgeting is an approach based on internal and external data to the company, which increases the degree of risk and uncertainty taken by management accountants in formulating future forecasts and objectives» (Collier & Berry, 2002). Management accountants can take advantage of Big Data Analytics (BDA) models to make reliable forecasts by taking into account internal and external variables of the company (ICAEW, 2014). BDA as an information system contributes to reducing information costs and improving forecasts of resource requirements (J. Chen et al., 2015).

Empirically, BDAs should conduct accurate forecasts of real-time demand and sales by analyzing available data on potential customers' needs, competitors' sales, and statistics on the economic situation (Duan & Xiong, 2015). Basically, the BDA could better predict the future by relying on past data (Duan & Xiong, 2015. Op. cit). In the same context, Chao & Tao, (2023) demonstrated that digital financial technologies allow companies to leverage historical facts and market trends to make more accurate forecasts, thus improving the accuracy of budget projections. Similarly, Mahmud et al., (2022) also believe that FinTech allows companies to study their financial function by taking into account more informed decisions and timely changes in finances. Therefore, FinTech's real-time data analysis (BDA) increases the degree of budget accuracy.

Meanwhile, García et al., (2021) demonstrated that big data analytics (BDA) « is capable of controlling the sources of risks and uncertainties in budgetary processes while enabling companies to implement proactive strategies to mitigate these risks ». In addition, Y. Li et al., (2021) recognize the importance of budgetary data protection and confidentiality related to FinTech programs in budgeting. Similarly, Chen et al., (2023) concluded « that artificial intelligence allows for adaptive budgeting». Similarly, Almaqtari et al., (2024), based on a study conducted on the impact of AI on accounting practices in Saudi Arabia, concluded on «a positive and significant effect of AI on the effectiveness of the strategic planning and budgeting process». Indeed, «AI-driven algorithms can continuously analyze changing market conditions and automatically regulate budget allocations in real time » (Chaffey, D. (2020). However, the relationship between fintech and corporate budgeting remains conceptually grounded and lacks

empirical evidence (Y. Chen et al., 2016; De Baerdemaeker & Bruggeman, 2015; Fisher et al., 2002). Hence, the importance of formulating our third hypothesis:

H3: Fintech positively and significantly influences the strategic planning process and corporate budgeting.

2.4. The Impact of Fintech on Strategic Cost Management Techniques (ABC, Life Cycle Costing, Target Costing)

Strategic cost management «is the application of strategically oriented cost management techniques to generate and use cost information to improve productivity» (Shank, J. K., & Govindarajan, V. (1993); «customer satisfaction, and enhance competitive position» (Cooper & Slagmulder, 1998; Horngren et al., 2000). According to Anderson (2007), «strategic cost management is a key objective of a company, which aims to align the costs of a product or service with the company's strategy and maximize its strategic performance».

To achieve the objectives of strategic cost management, techniques or practices that have been developed over the years are used (Shank, J.K. & Govindarajan, V. (1993) and (Hilton et al., 2003). These techniques, « which are mostly developed outside of traditional management accounting and are still evolving» (Hilton et al., 2003). These strategic cost management techniques include, among others, « activity-based costing (ABC), kaizen accounting, benchmarking, quality cost management, activity-based management (ABM), target costing, and life-cycle costing» (Hilton et al., 2003). However, this study focused on activity-based management (ABC), target costing, and life-cycle costing techniques by examining the impact of fintech on its cost management techniques.

Life cycle costing «is a strategic cost management technique» (Shank, J.K. & Govindarajan, V , 1993), « that focuses on tracking and managing the total cost that will be incurred throughout a product's lifetime, including its pre-production, production, and post-production costs » (Asiedu & Gu, 1998) ; « Tracks and accumulates all costs related to a product over its entire life span including R&D, design, production, marketing, distribution, and customer service » (Blocher et al., 2002). « It is based on the conceptual framework that strengthens management's ability to leverage internal and external linkages» (Hansen & Mowen, 2007). The life cycle of a product from the manufacturer's perspective, as noted by Bengü & Kara, (2010), « includes the following stages: conception, design and development, manufacturing, marketing, logistics, and service ». At each of these stages, it is possible to effectively manage costs using life cycle costing (Cooper & Slagmulder, 1998). Therefore, « life cycle costing considers not only the costs incurred by the producer during the life cycle of a product, but also the costs incurred by

customers on the product » (Petrova & Zarudnev, 2013). Life cycle costing information is useful for managers in planning and making cost management decisions (Horngren, C. T., Datar, S. M., & Rajan, M. V. (2015). The goal of life cycle costing is to ensure that at each stage of a product's life, cost reduction is achieved without sacrificing quality and can provide a competitive advantage to a company (Petrova & Zarudnev, 2013).

Sakurai, (1992), in defining target costing using a strategic approach, « described it as a comprehensive means of strategic cost management that focuses on reducing the total cost of the product from its design and development ». « This strategic cost management technique combines the skills of engineering and marketing to reduce and manage costs» (Cooper, R., & Slagmulder, R.,1997) ; therefore, «it is a multifunctional activity » (Horváth, 1993; Shank & Fisher, 1999). Target costing is a market-oriented and customer-centered technique (Cooper, R. ,1995), because the design and manufacturing of the product result from knowing the requirements and tastes of customers in terms of product features and usage through market research (Ansari and Bel, 1997) ; (Swenson et al., 2003) ; (Zengin & Ada, 2010). The objectives that the target costing method seeks to achieve are : «to ensure cost reduction throughout the life cycle of a product » (Horvath & Tani, 1997) and (Tani et al., 1994); «to ensure high product quality and customer satisfaction; to carry out profit planning » (Sakurai, 1996); «to ensure the timely introduction and development of new products» (Horvath & Tani, 1997). Blocher et al., (2002), state: «Activity analysis is used to develop a detailed description of the specific activities performed in the operations of businesses. The application of ABC systems by companies poses several problems: costs of collecting, processing and storing data (Anderson, 2007). The data problem for costing systems has amplified, especially in today's more complex manufacturing environment with less labor, more mixed production lines, and a large share of overhead (Kaplan, R. S., & Cooper, R. (1998) . Adopting a Big Data Analytics (BDA) system equipped with advanced analytical capabilities can significantly reduce many of the limitations traditionally associated with Activity-Based Costing (ABC) (Davenport & Harris, 2007). The vast data volume managed by BDA helps mitigate issues of data insufficiency, while its high processing speed supports real-time decision-making. Furthermore, the system's ability to ensure data accuracy and reliability addresses concerns related to data quality (Cardinaels & Labro, 2008). In addition, sophisticated analytics tools facilitate the selection of the most relevant cost drivers, a long-standing challenge in the effective application of the ABC method (Cavaliere et al., 2004, 2007). However, empirical evidence is needed to support these theoretical arguments, hence the following hypothesis:

H4: Fintech has a positive and significant impact on the effectiveness of strategic cost management practices such as: ABC, TC, LCC.

Conclusion

Based on the literature review of previous studies examining the impact of the introduction of Fintech in accounting and management control, several conclusions were drawn. First, the use of Fintech leads to changes in costing practices by facilitating the implementation of the ABC method, the target cost method, and the life cycle method. Second, the use of Fintech leads to the automation of dashboards and their enhancement with non-financial indicators. This provides clear and instant visibility into the company's overall performance.

Third, the use of Fintech in financial reporting represents a considerable advancement in the way organizations communicate their financial performance. By extracting information from unstructured data, improving report generation processes, accelerating report creation times, and increasing the communicative value of financial information, by enriching these reports with non-financial indicators. Fourth, the introduction of Fintech facilitates the strategic planning and budgeting process. These findings require contextualization in the field of Moroccan companies. Therefore, we believe it is appropriate to conduct an empirical study to further explore this issue in the context of Moroccan companies in the service sector in a future quantitative study.

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