



Role of FinTech Adoption for Competitiveness and Performance of the Bank: A Study of Banking Industry in UAE

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Abstract

FinTech is the combination of innovation and technology to deliver financial products and services to stakeholders. The paper aims to investigate the impact of FinTech on the competitiveness and performance of the banking industry in the UAE. The research is empirically tested based on the 76 banking professionals and executives (bankers) from Dubai (UAE). The findings suggest that the adoption of FinTech had a significant influence on the competitiveness and competitiveness results in the performance of the banking industry in the UAE. The second findings suggest that proper adoption of FinTech and aligning with the management of technology also have a direct impact on the performance of the banking industry in the UAE. The study becomes important because the UAE Banking industry serves almost 200 nationalities and its performance depending on FinTech and competitiveness.

Keywords FinTech adoption · Competitiveness · Performance · Management of technology (MoT) · Banking Industry · UAE

Introduction

Financial services and banking can adopt and evolve continuously using internet-based digital technologies to remain stakeholder-focused and competitive. The use of Internet-based digital technologies in the financial services industry refers to FinTech, which results in new business models and creating new services. Digital cash, digital currency, digital payments, digital invoicing, cryptocurrency, digital mortgage, digital remittance, digital investment, digital leasing, cash management, digital advising, digital factoring, digital insurance, crowdfunding, digital lending are some of the examples of FinTech services in the banking industry (Gomber et al., 2017). There have been many studies on the relationship between FinTech and competitiveness (Bomer, 2020; Chen, 2020; Glavina et al., 2020; Kemunto & Kagiri, 2018; Khromenkov, 2019; Romanova et al., 2018; Sudiatmika & Purwanti, 2020; Wang et al., 2021). However, there is a lack of evidence to establish a clear relationship between FinTech, competitiveness, and performance in the

banking industry and especially in the Middle East region. Though FinTech plays a vital role in the banking industry of the Middle East, empirical evidence about the relationship is missing.

The role played by the banking industry is vital for the economic development and sustainability of the individual, industry as well as country. Therefore, it becomes important for the banks to bring value to stakeholders by reinventing processes and services (Ho et al., 2009) to achieve competitiveness and continuous performance in the banking industry. The growth can be possible by adopting and using state of art technology-enabled products and services to stakeholders and service delivery (Sharma, 2017). Thus, banking products and services innovations due to adopting technology have completely changed the way banking industry operates and works. Ideally, FinTech helps to improve the business processes by streamlining its operations and services, which may result in competitiveness and performance. The connotations of competitiveness include; effectiveness, efficiency, flexibility, technology, quality, productivity, value creation, etc. (Ambastha & Momaya, 2004; Arulraj & Annamalai., 2020; Momaya, 2001). This research is arguing that FinTech use and adoption can contribute to the competitiveness and performance of the banking and finance

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industry in the UAE. Also, proper management of the use of FinTech can contribute to improved competitiveness and performance of the industry.

UAE's traditional banking industry is facing tough challenges due to COVID 19 and the global economic slowdown. Another challenge is rapidly growing FinTech and remittance companies across the world to cater to the need of the customers (John, 2017). UAE remittances services companies charge a low transaction fee and less time to complete a financial transaction. This results in challenging a traditional banking business in UAE. Banks are adopting newer technologies and innovations to serve the need of the customers and stakeholders. Therefore, proper management of technology (MoT) is required. MoT has elements, such as adaptation, new product, and services development in addition to adoption (Momaya, 2018). MoT of FinTech helps the banking industry to streamline its processes, enhance effectiveness and efficiency and enhance the overall delivery process to remain competitive. As we know that the role of FinTech in the financial sector has major significance for the last 30 years or so. It helps to achieve service delivery, customer satisfaction, efficiency, effectiveness, and lower transaction costs in a significant way. Therefore, among the elements of MoT (EMoT: Momaya, 2018) discussed above, we focused only on adoption in this study. We have two questions;

RQ1: Does FinTech adoption impact competitiveness?

RQ2: Does FinTech adoption impact performance?

The size of the UAE economy (approximately 500 billion GDP) and banking industry has significant pie in it, where the oil and natural gases are the biggest contributor. The service sector accounts for almost 64% of UAE GDP and that includes travel, tourism, and banking. UAE is the third-largest remittance sending country after the USA and Saudi Arabia. It sent almost \$42 billion in remittances in 2018, after Saudi Arabia (\$43 Billion) and the USA (\$159 Billion). The UAE banking industry serves almost 200 plus nationalities, foreign institutions and that is the uniqueness of the industry. There are 46 banks, including 25 international and 21 domestic banks, and the banking industry is managed by the Central Bank of UAE (Hashmi, 2011). UAE is the pioneer to use and adopt the latest innovations and technology in every sector/industry. For example; 3D building, hyperloop, tallest building, healthcare technology adaptation. This paper is researching the role of FinTech in competitiveness and performance in the banking industry in the UAE. As there is a strong need to improve the competitiveness of the banking industry in the UAE banking industry as its rating has been decreased by Moody recently and the growth of the Industry reduced to 1.7% due to the global pandemic (COVID 19).

Theoretical Background

FinTech word is made with the combination of three words; finance, financial services, and technology (Bomer, 2020). (Financial Stability Board 2017a, b) defines FinTech as....

“technologically enabled financial innovations that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services.”

The impact of FinTech on the banking and financial services industry is high (Chopra et al., 2013, 2015). Newer technological innovations, recent technological infrastructure development, and technology implementation across the financial and banking industry changing the way it operates and resulting in changing expectations of the customers (Goel et al., 2012). Huge investments are made in the financial and banking industry to reinvent and achieve competitiveness. Several studies have been carried out related to FinTech and competitiveness and performance (Bomer, 2020; Financial Study Board, 2017a, b; Gupta et al., 2017; Momaya et al., 2020). The recent work categorized FinTech into FinTech 1.0, FinTech 2.0, FinTech 3.0, and FinTech 4.0 (Bomer, 2020) and linked with achieving competitiveness. The impact of mobile banking, e-banking, agency banking, and process automation is significant on competitiveness in commercial banks in Kenya (Kemunto & Kagiri, 2018).

FinTech Adoption

FinTech adoption is making use of the availability of communication, making financial transactions easy and secure, the ubiquity of the internet, and the automated processing of information as well as transactions in the financial industry (Davradakis & Santos, 2019). Moreover, there is risk involved with financial services operation adopting new FinTech, particularly to financial losses due to different factors in the business environment. Every country is dealing with financial industry legislation and local legislation about FinTech adoption. However, UAE has Islamic banking practices across most of the banking industry and Shariah law. Therefore, The UAE government is to regulate the FinTech adoption in banking industry. It means, banks and FinTech companies must collaborate to bring synergetic outcomes from the collaborations rather than acting rivalry following Islamic banking practices and Shariah law. Strategic collaboration between FinTech and banking partners can be encouraged with government

regulations. Thereby, resulting in improved customer service, increased efficiency, and more extensive adoption by banks that will feel less skeptical about integrating technologies (Alzaidi, 2018).

FinTech use and adoption in the banking industry has to look from strategic aspects of management of technology as it requires through alignment with business objectives and processes. One of the challenges is the acceptance of the end-users and local citizens. The mobile banking adoption rate is almost 52%, however, still, people have a negative attitude towards FinTech adoption (Chavali & Kumar, 2018). Further, FinTech is often influenced by perception about how easy or difficult it would be to use it. This is due to the attitude and complex nature of digital banking (Shirish et al., 2016). UAE banks need to understand customer's perceptions first before adopting technology; user-friendliness, reliability, convenience, value-adding. If customers are not able to access digital banking services through digital platforms, then they are forced to visit physical branches. Adopting more streamlined FinTech enabled processes strategically more important (Obeidat & Saxena, 2015). There can be many FinTech enabled processes that can be provided, such as; advisory services, insurance services, online bank account opening, and signature submissions services (Oracle, 2016).

Top management plays an important role in managing technological change and innovation in any industry. All aspects of technology adoption are dynamic. There is a need of solid leadership to ensure that all stakeholders, systems, and processes are aligned with the FinTech adoption approach. UAE is the role model when strategically managing technological change and innovation in the banking industry (Gopi, 2018). The government of the UAE also plays a vital role. The organization plays a major role in ensuring the successful adoption of technological change by employees, existing systems, and processes by effective change management of technology adoption (Kroll, 2018). Training is required to customers, employees, and stakeholders. It increased stakeholder's flexibility (Dwivedi & Momaya, 2003), which is required for FinTech adoption related changes. The management will be able to determine whether the innovation and technology adoption process will be carried out in phases gradually or it will be a complete project overhaul in favor of innovation and technology. It alludes to a critical aspect in strategically managing change, which is clear and open communication (Simões & Esposito, 2014). Poor communication causes resistance to change by both employees in the banking industry and customers, for whom the technology was designed and adopted in the first place.

FinTech Adoption and Competitiveness

FinTech leads to increased profitability, financial innovation, and improved control of risk. Further, FinTech can improve the traditional business model by reducing bank operating costs, improve service efficiency, strengthening risk control capabilities, and creating enhanced customer-oriented business models for customers; thereby improving comprehensive competitiveness (Momaya, 2019; Panchal & Krishnamoorthy, 2019; Wang et al., 2021). Thus, FinTech innovations are an integral part of business strategy for the financial and banking industry. FinTech innovations have positive impacts on financial organizations that fully exploit the adoption process strategically. This leads to improved competitiveness and improved performance in the current market (Ahn & Kim, 2019; Dash, 2017). FinTech advancements with the help of artificial intelligence, mobile technologies, blockchain are the major cause to boost competitiveness through improved customer services (Momaya et al., 2020).

If managed technological adoption strategically that will result in improved efficiency, and the significant result achieved by organizations (Kroll, 2018). Further, the efficiency of the organization is improved when executives take on an active role in promoting the desired technological innovations in different sectors, thus causing a cultural shift. By applying good strategic management practices, organizations can improve efficiency to a great extent (Jin et al., 2018). For example; Emirates NBD is highly efficient by ingraining elements of improved lives for customers through technological efficiency in its mission by paying significant attention to the online banking technology that accounts for 90% of all financial transactions by the UAE customers through banks (Bose & Mugambi, 2018). These results increase operational efficiency in the banking industry, which continuously reinvents its product and service offerings to meet the demand and expectations of the contemporary consumer.

The UAE banking industry is the witness to see numerous new technology every other day. With recent development in artificial intelligence, banks can be streamlining processes, monitor patterns, understand customer behavior, customized services, cost reduction, errors minimization, and improved customer relationships with banks (Alzaidi, 2018; Ghurair, 2018). FinTech services using e-banking and m-banking save the customer time and cost of paying the branch visit. Streamlining banking processes enhances efficiency and effectiveness in banking institutions (Anjalika & Priyanath, 2018).

H1 FinTech Adoption leads to Competitiveness in UAE Banking Industry

FinTech and Performance

Emirates NBD is an example to use a humanoid robot named Pepper that can speak with customers in both the English and Arab languages to understand the market's needs better and provide appropriate guidance, thus increasing customer satisfaction. Delivery of state of art quality services using technology in banking industry enhance customer satisfaction and result in customer retention (Anjalika & Priyanath, 2018). It helps the banks in maintaining their competitiveness. Therefore, FinTech adoption improves the performance of the banking industry.

FinTech has completely transformed the banking industry in UAE (Dash, 2017). So increasing interest in FinTech services by the customer in the UAE, which resulted in positive and negative both ways. The positive impact is the collaboration between FinTech and the banking industry leading to increased efficiency and effectiveness of the banking industry (John, 2017). The transaction cost reduction is due to the collaboration of different stakeholders across the industry results in customer benefits. It also results in boosting performance and attracting new customers, improving customer engagement approaches, and enhancing brand loyalty as posited (Obeidat & Saxena, 2015). This factor boosts the competitiveness of the industry in general on a global scale. With the help of FinTech, banks can increase product and service offerings in the digital world. The unique mobile banking services provided by Emirates NBD. Modern channels (e-banking, m-banking) of operations are possible with the help of FinTech in the banking industry to provide quality and convenient services to people (Obeidat & Saxena, 2015).

H2 FinTech Adoption Leads to Performance in the Banking Industry in UAE

H3 Competitiveness Leads to Performance in the Banking Industry in UAE

Therefore, the research is trying to establish the relationship among FinTech adoption, competitiveness, and performance in the Banking Industry in the UAE.

Research Design

The questionnaire was designed based on the inputs from banking executives, literature review, and tested before used for the survey. The questionnaire was divided into two subsections to make it easier for participants to provide answers. The first section focused on the demographic information of participants including; age, gender, years of experience in the banking industry, and the job position that they held in

their organizations. The second section was about the overall issue of FinTech adoption, competitiveness, and performance in the banking industry. A total of 20 questions were there that includes demographics (four questions), FinTech adoption (eight questions), competitiveness (five questions), and performance (three questions). The questionnaire items are presented with constructs and descriptive statistics in the ESM Appendix (Table A1). Overall, the questionnaire was designed clearly to help participants follow it easily and provide clear answers. The questionnaire used a 7-point Likert scale where 1 is least important and 7 is most important.

The respondents require to have significant knowledge about FinTech and its importance in banking. Therefore, the selected sample comprised key employees and managers from the UAE's banks. 76 participants were selected based on convenience sampling who could easily approachable and can give time to fill out the questionnaire and can share their inputs for the research. The SurveyMonkey tool was used to collect the responses. As mentioned before, the data were collected from 76 participants in the banking industry in the UAE occupying different positions and possessing different years of experience in the banking industry.

Data Analysis and Results

The Data analysis is done using Minitab 19.0 and SmartPLS. There is a need to understand the characteristics of the studied sample. Therefore, the demographic results are presented in the ESM Appendix (Table A2) separately to demonstrates the gender characteristics of the sample that was used in the study. The number of males and females in the study were equal: 38 for each gender making a total of 76 participants. The age of the participates with work experience and their position is explained below. An important observation is that approximately 60% of the respondents are below the age of 30 years because the reach and availability of senior banking executives were inaccessible. Senior executives did not participate in the survey despite sending multiple reminders. There is another important observation most of the respondents were Emiratis executives and we did gather major information from Emiratis in our survey.

Table 1 shows the composite reliability, average variance extracted of the constructs. The Mean, Loading, and Variance inflation factors (VIF) of the items are in the table. The detailed descriptive statistics of the items are explained in ESM Appendix Table A1. Composite reliability is close to 0.9 which validates the reliability of the constructs (Hair, 2015). Usually the bottom line is being 0.7 for the reliability of the constructs. The average variance extracted should be close to 0.6 and only competitiveness is 0.51 but way above the threshold. Therefore, the constructs are validated. The mean loading is adequate. The variance inflation factor is a

Table 1 Questionnaire items and constructs analysis

Questionnaire	Construct	Mean	Loading	AVE	CR	VIF
FinTech created a new opportunity for banking	FinTech adoption	5.051	0.505	0.707	0.923	1.644
FinTech in the UAEs banking is inevitable		4.949	0.644			
FinTech helps to innovate products and services for banks		5.128	0.737			
FinTech adoption is favourable in UAE regulations		4.615	0.739			
FinTech adoption process is smooth to adopt in your bank		4.167	0.589			
FinTech adoption required a strategic approach of technology management		4.859	0.752			
FinTech adoption is supported by everyone in the bank		4.603	0.839			
FinTech adoption creates new channels	Competitiveness	4.705	0.84	0.51	0.890	3.469
FinTech helps to reduce the cost of financial transactions and services		4.654	0.893			
FinTech Improves the quality of services delivery		4.474	0.85			
FinTech helps to improve the productivity of the banks		5.064	0.867			
FinTech helps to reduce the time of the services		4.603	0.867			
FinTech helps to increase flexibility	Performance	4.846	0.716	0.791	0.919	3.464
FinTech helps to improve the profit of the bank		4.679	0.931			
FinTech helps to improve the growth of the bank		4.885	0.926			
FinTech overall helps bank performance		4.038	0.807			

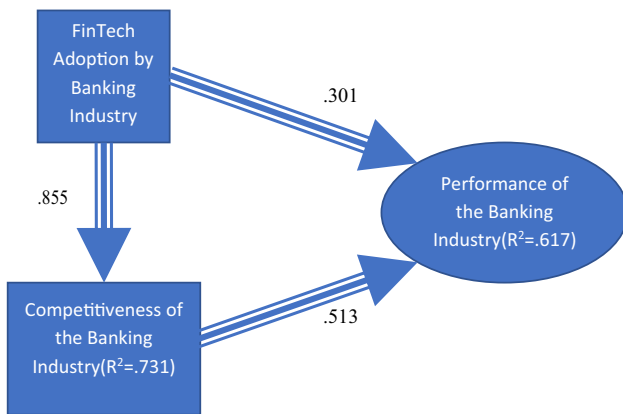


Fig. 1 The research framework

good indicator of explaining multicollinearity (Sekaran & Bougie, 2016). VIF close to 2 demonstrates no multicollinearity and 2–5 means mild to moderate multicollinearity. In few cases, mild to moderate multicollinearity has been observed but no high multicollinearity. Therefore, data are considered for further analysis.

Hypothesis Testing

The hypotheses of the research can be demonstrated by the framework illustrates in Fig. 1 and the detailed Smart PLS model is in ESM Appendix (Figure A1). The hypotheses results are summarized in Table 3. The detailed construct relationship using correlation matrix is shown in Table 2 and all relations are significant at 0.05 level of significance. Similarly, the items correlation matrix can be referred to in

Table 2 Relationship among constructs

Correlation among constructs	FinTech adoption	Competitiveness	Performance
FinTech Adoption	1		
Competitiveness	0.855	1	
Performance	0.739	0.77	1

ESM Appendix (Table A3). FinTech adoptions impact competitiveness, competitiveness impacts banking performance, and FinTech adoptions also impacts banking performance. The relationship (correlation) among all three constructs is 74% and above that signifies the relationship among all three (Bell et al., 2013). All three hypotheses are significant at a 0.05 level of significance as the *p* value is less than 0.05. The model demonstrates that a 61.7% impact in the performance is due to the FinTech adoption and competitiveness. Also, 73.1% impact on competitiveness is due to FinTech adoption. Three key hypotheses were developed and tested below with the help of the empirical approach used in this study.

Discussion

The United Arab Emirates is one of the high-ranked countries in competitiveness. And banking industry plays a vital role in the country’s economy and competitiveness to serve 200 different nationalities. Based on the results provided above, from the demographic perspective, there were equal numbers of males and females in the study. The UAE’s

Table 3 Hypothesis statistics

Hypothesis	Original sample (<i>O</i>)	Sample mean (<i>M</i>)	Standard deviation (STDEV)	T statistics (<i> O </i> /STDEVI)	<i>p</i> values
H1: FinTech adoption → competitiveness	0.855	0.859	0.023	37.971	0
H2: FinTech adoption → performance	0.301	0.309	0.15	2.002	0.046
H3: Competitiveness → performance	0.513	0.507	0.143	3.595	0

banking industry has a high level of gender diversity. However, both (men and women) have an equal chance of being employed in the sector to contribute. With the focus on innovations and technology, the banking industry is looking for fresh ideas by engaging new employees who are also able to embrace change regarding technological change. Individuals in different positions in the banking industry were included in the study with the view of getting a range of views that relate to the adoption of technology through MoT and strategic management perspective in the UAE's banking industry. Therefore, most of the respondents are below 30 years and Emiratis.

It is established that FinTech (innovation and technology in the banking industry in the UAE) impacts performance of the banking industry and also competitiveness significantly. The same is illustrated in Table 3. FinTech influences performance and competitiveness in the banking industry because of their ability to generate new products and services that help in attracting and keeping consumers. Also, with them, the delivery of services and products to consumers becomes more convenient thus boosting competitiveness. The findings correspond to the literature that innovation and technology adoption has improved performance by streamlining processes and operations in the sector (Anjalika & Priyanath, 2018). There is an easier opportunity for the realization of more goals through streamlined processes. Further, banks such as the Emirates NBD in the UAE have developed innovative services, for example, online and mobile banking, robotics enabled banking that helps consumers access services easily, and thus achieve better performance in the market. Hence, FinTech adoption significantly influences the competitiveness and performance of the banking industry in the UAE as empirically proved.

FinTech management in the UAE has been carried out through policy actions and UAE has a national innovation strategy in 2014 (Hana, 2017). It helps to create a friendly environment in the country to encourage innovations and technological adoption in various sectors and various industries of the economy including the banking industry. The UAE government plays a vital role in enhancing the processes since the adoption of technology and innovation in the banking industry has not yet been achieved (Ghurair, 2018). There is a need for proper innovation and technology management practices, banks will be enabled to prepare

adequately and be at the forefront of technologies that would significantly contribute to their business and operational models in the long run. Common FinTech services are; Automatic Teller Machine (ATM), Mobile banking, online banking, credit card, debit card, video teller machine, robotics enabled services, self-service receipt print, foreign currency remittance, and exchange. Therefore, some banks have taken initiative and engaged with FinTech to enhance the competitiveness of the industry all inclusively. Overall, technology and innovation adoption in the banking industry in the UAE is a significant contributor to the performance and competitiveness of banking institutions. However, there is a need to put in place more significant strategic management approaches regarding these technologies and innovations.

Concluding Remarks

Overall literature and empirical findings confirmed that FinTech influences competitiveness and performance in the banking industry in UAE. Therefore, the research supports that FinTech set the ground for the development of new products and services that could put the banking industry in a good position to compete and perform well. UAE believes in innovation and technological changes and quickly adopts new technologies. So, the banking industry takes first movers' advantage to adopt FinTech. This study will give an idea to the banking industry to align innovations and technological changes for enhancing the competitiveness and performance of the banks. Overall, the banking industry in the UAE has the opportunity to continue growing and being more competitive with the gradual and better establishment of technological and innovation approaches.

Overall strategic management practices define the impact of adopting FinTech on the performance of financial and banking industry operations and that results in the performance of the industry. Therefore, the financial industry and organizations must plan clearly to align FinTech, adoption, change management, stakeholder management, and top leadership commitment along with government policies to ensure change is done smoothly without any resistance. It will bring competitiveness and performance in the financial and banking industry not only in UAE but across the world.

Managerial Implication

The research framework reflects that only adopting FinTech adoption improves the performance of the banking industry (beta is 0.301). If it does through competitiveness then performance is better and higher (beta is 0.513). It implies that adopting FinTech required clear MoT and aligning strategically with business objectives to achieve the full potential of performance. Therefore, managers and practitioners must understand that aligning FinTech strategically with business objectives and business mission is valuable along with managing FinTech. Therefore, adopting directly will not help organizations to exploit the full potential of FinTech and many organizations are using it. For example; Emirates NBD, Emirates Islamic Bank, First Gulf Banks are leaders in FinTech exploitation (Alzaidi, 2018). However, the same impact of FinTech is not observed throughout the banking industry in UAE. The constructive effects of the breakthrough nature of technology are not felt equally by all banks in the UAE owing to different approaches to the strategic management of technology (MoT) and apparently due to the hypothetical nature of some banks as cited (John, 2017). Also, FinTech adoption can result in gradual change and also gradual performance so managers may ensure that the FinTech adoption process happens gradually and the management of technology part is taken care of properly.

Limitations and Scope for Further Research

The sample is collected from Dubai out of seven emirates because all bank branches and offices are located in Dubai. However, the sample could be extended to other emirates (Abu Dhabi, Sharjah, Ajman, Ras-Al-Khaimah, Fujairah) but due to reach and resource constraints, and the COVID situation, this could not be possible.

The scope of future research should consider extending the sample size across all seven emirates. The further research also aims to extend to other emirates as well as neighboring countries; such as Oman, Bahrain, Qatar, and Saudi Arabia. The further objective would be how to integrate human–technology interactions within the banking industry to improve performance.

Key Questions Reflecting Applicability in Real Life

1. What is the impact of FinTech adoption on the competitiveness of the banking industry?
2. What is the causal relationship between competitiveness and performance in the banking industry?
3. Is there an impact of FinTech adoption on the performance of the banking industry?

4. What is the role of the banking industry in the UAE economy?

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Authors' contributions PD and JIA contributed to the study conception, design, and preparing first draft of manuscript. Data was collected by JIA. Data analysis using SmartPLS was done by RD. All authors read and approved the final manuscript.

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Data Availability The data about this study are available on request from the corresponding author.

Code Availability Not Applicable.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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