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Financial Information Systems as an Approach to Achieve Financial Stability within Kuwaiti Commercial Banks

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Abstract: Current study was carried out so as to measure the impact of (FIS) on financial stability of commercial banks in Kuwait. Researcher depended on Arab Financial Stability Index (AFSI) including (Macroeconomic Stability, Financial Markets Stability, Banking Stability, and Financial Stability). Quantitative approach was employed through adopting a questionnaire, the questionnaire was distributed online on a convenient sample of (65). SPSS was employed to analyze and screen primary data. Findings of study proved that FIS played a role in increasing financial stability within commercial banks in Kuwait. Among the dimensions of financial stability, both (macroeconomic stability and financial markets stability) were the most influenced as they resembled high and positive relationship to the independent variable with an R value of r =0.652 and r =0.643 respectively. Other dimensions of stability which included (banking stability and financial stability) presented a medium and positive relationship to the independent variable and expressing and r value of r =0.466 and r = 0.592 respectively. Current study recommends the importance of conducting research on the impact of FIS on the effectiveness of financial decision-making, or the contribution of information received from FIS in making investment decisions for commercial banks.

Introduction

The banking sector works to mobilize and employ the savings of society, as the state's savings are concentrated in banks as deposits in the banking system, which works to direct them to the various economic sectors (Kesto and Ravi, 2017). The aim of this directive is to prepare the environment for a comprehensive economic enhancement, and the issues of development, credit provision and financial stability have increased in importance and become among the priorities, especially in emerging economies (Anjanappa, 2017).

In 2019, the world witnessed a decline in economic stability attributed to the trade disputes between many countries. However, in 2020, the world has started with the hope of easing these differences and improving

global economics, but, Corona virus pandemic and the health precautions that followed to limit the spread of the virus caused international economy to fall into a state of depression, unemployment and job losses that it had not witnessed for decades (Restoy, 2020). According to Didier et al (2021); Micheni (2017), some activities witnessed a state of collapse, and countries took financial easing measures with as an approach to mitigating people's harm as much as possible. However, this financial facilitation has a price, as it has increased the risk of weakness in global financial system which is pre-existing risks with the accumulation of public debts in most countries.

Vučinić (2020) indicated from their end that financial stability now is somehow connected to technology, and in that sense there appeared the so called (FiTech) meaning financial technology, agreeing with Board (2017), FiTech is the technological tools, applications, devices and programs that are employed to tackle financial processes of organizations, this idea was developed later on to be Financial information system FIS that we know now. But how can technology be helpful to mitigate financial stability? This remains the question.

Based on above argument, current study focused on measuring the influence of financial information systems on financial stability within commercial banks in Kuwait. Arab Stability Financial Index (ASFI) was used so as to examine the influence of FIS on financial stability which included (Macroeconomic Stability, Financial Markets Stability, Banking Stability, and Financial Stability) and see deeply how the stability in those indicators managed to help in increasing stability within commercial banks in Kuwait.

1.1 Model

In realizing main aim of study, researcher managed to create a study model so as to shed the light on relationship that gathers between variables:

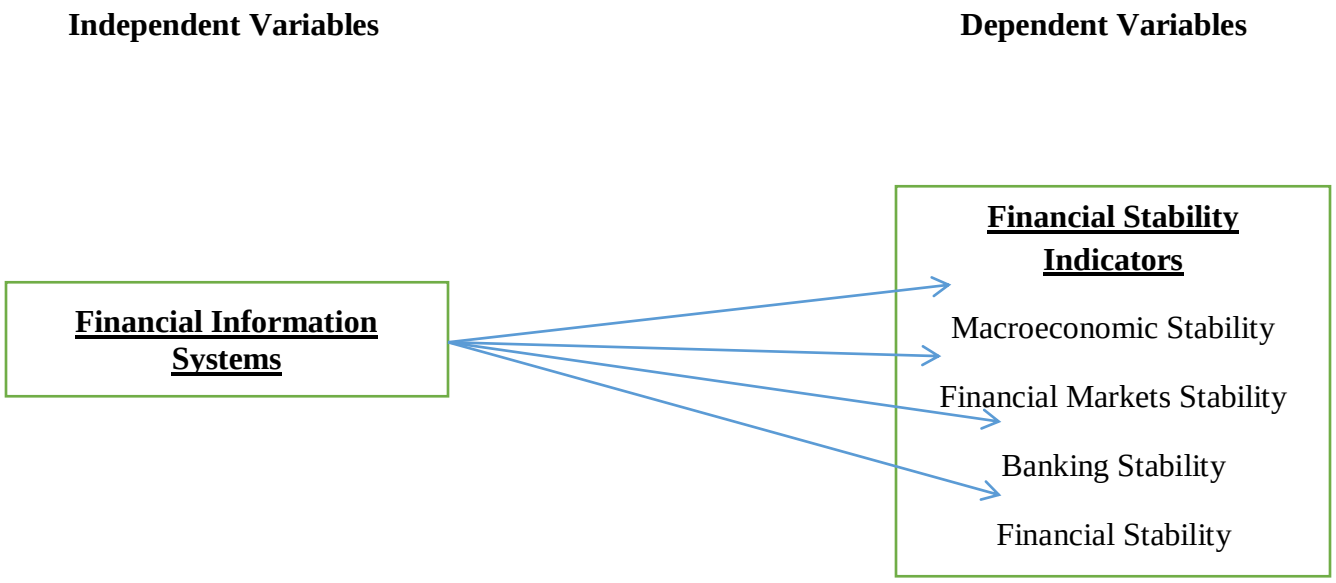

Figure 1. Study Model Vučinić (2020) and Board (2017)

1.2 Hypotheses

From the above model, following hypotheses were extracted:

Main Hypothesis:

H: FIS positively influences financial stability of Kuwaiti commercial banks

Sub-Hypotheses:

H1: FIS positively influences macroeconomic stability of Kuwaiti commercial banks

H2: FIS positively influences financial markets stability of Kuwaiti commercial banks

H3: FIS positively influences banking stability of Kuwaiti commercial banks

H4: FIS positively influences financial stability of Kuwaiti commercial banks

1. Literature Review

2.1 Financial Information Systems

Financial Information systems (FIS) are essential systems within an organization, they resemble the main source of information needed by all administrative levels and external parties, especially financial information that presents an overall comprehensive attitude regarding the organizational health (Russo et al, 2018).

According to Axelsen et al (2017), the expansion of the concept of FIS and the development of its objectives to mitigate developments of the economic life of the institution to include the means to ensure the correctness, accuracy and reliability of financial statements, and to ensure the implementation of policies, administrative procedures and organizational plans connected to the information system, through what it contains of the basic components and components of control and feedback (Hendershott et al, 2017). The integrity of the FIS is also a criterion for judging the regularity of financial books and records and the data they contain and that they are free from errors, fraud and manipulation (Hashim and Piatti, 2018).

Financial information systems are considered one of the essential sub-systems in management information systems that are comprehensive, as they provide useful data and information for financial decision makers and interact with the rest of the management sub-systems including marketing, production and human resources systems (Blums and Weigand, 2019). Financial information systems (FIS) are defined according to Muda (2017) as systems designed with information technology to support financial activities and provide management with information and facts about financial activities within the organization.

As for Trpeska et al (2017) and later agreed on by Fidler and Russell (2018), FIS is seen as the automation of financial operations of both the budget and the treasury unit by tracking financial events and records of all transactions so as to summarize information and support the financial report, and the system usually includes tools of ICT, personnel, and procedures, controls and data.

2.2 Financial Stability

According to Humble (2021), financial stability can be defined as the state in which the financial sector in a country has the ability to face and deal with both internal and external risks and crises in addition to keeping up with the current crisis so as to guarantee the full administrative service for the financial resources, manage investments and monitor payments efficiently. Boot et al (2020) stated that being in a

position of financial stability mean not to breach the mechanisms of financial control that includes reducing risks of credit granting, liquidity, or operational risks, and putting into perspective the growth proportionality in values of financial assets with growth in the real economy , and increased job opportunities.

Mexmonov (2020) argued that the notion of financial stability isn't all about the steps and processes of dealing with financial crisis, it also the strategy of rehabilitating the financial section to digest these crises, limit the possibilities of their appearance, and decrease the chances of their reverberations being transmitted to the main financial sector constituents, and then to the entire economic sector of the country. This needs a lot of transparency and disclosure, in addition to governance of financial bodies including banks and financial markets. Also, there is a necessity of linking the macroeconomic indicators with the banking safety indicators, achieving performance discipline in the financial markets, and making sure those payments, settlements and other financial systems to continue, in times of crisis, to carry out their role in an effective way (Kronick, 2018).

2.3The Arab Stability Financial Index (ASFI)

According to Mexmonov (2020), stability indicators are organizational variables that can supply information and data about the organization in general and financial terms, they are variables that enable to monitor and control the organization by directing decision-makers to take the right decisions in a timely manner based on data provided by stability indicators (Phan et al, 2021).

In cooperation with Financial Stability Team in the Arab Countries, the International Monetary Fund launched the Arab Financial Stability Index (AFSI) between 2015-2019 so as reach a quantitative indicator capable of measuring the financial stability objectively, impartially, accurate and specific. AFSI mainly aimed to work as financial guidance tool and an early warning tool capable of alerting and guiding the concerned authorities and financial decision makers so as to plan to act and address any potential financial crisis and before it occurs (Callieris et al, 2017). AFSI has contributed to assisting decision makers in guiding them to take the necessary proactive policies and strategies to effectively confront crises and solve them (Nasreen et al, 2017). AFSI also contributed to indicating the soundness of financial system based on specific financial and quantitative measures (Seyed Hosseinzadeh et al, 2021).

AFSI has helped to emphasize principle of transparency and disclosure, and managed to convert raw data in to information for market uses and those interested in financial systems, with reference to drawing attention to the various risks that the financial system in general may be exposed to. In addition, AFSI has contributed to monitoring many variables and comparing them in time based on risk map so as to form a complementary tool that is seen as an early warning approach has the ability to controlling and monitoring any risks or fluctuations within the financial system (Kim et al, 2020)

Sholdarov and Mullaboev (2019) indicated that the AFSI consisted of four indicators, including the banking sectors index, the macroeconomic index, and the capital market index, in addition to the financial cycle index. Financial weights for these indicators range from 0 to 1, and the closer the index value is to (100%) was higher financial stability.

2.4 Financial Stability within Kuwaiti Banks

The financial situation of Kuwaiti banks recently represented a model for the best way to face financial crises, as Central Bank of Kuwait announced that the Kuwaiti banking sector had been supported during

Covid-19 pandemic with all the necessary pillars so as to establish financial stability of banking sector (Al Hussaini, 2018).

The Kuwaiti banking sector represents the backbone of financial system in the country, and it provided the economy with various financial services and products without interruption and in stressful working conditions. This confirmed that the success of Kuwait and Kuwaiti commercial banks in maintaining a good financial stability was as a result of the application of accommodative monetary policies supported by supervisory policies directed to widen lending space for banks and enhance their financing capabilities to address the repercussions of the pandemic and its repercussions on the economic and banking situation, this is in-line with a well-built system of measures represented in adapting technology so as to follow up on financial and monetary matters and direct them through the decision-making process based on accurate and correct information derived from the advanced financial systems adopted by Kuwait in banking sector (Al-Kharusi and Murthy, 2020).

2. Methodology

Supporting aim of current research was done through quantitative approach utilizing numerical primar y data and be able to translate numbers into understandable results. For that sake, a questionnaire was developed and contained two main sections a) demographics sample and B) paragraphs connected to study variables (financial stability and FIS) and study sub-variables which included (Macroeconomic Stability, Financial Markets Stability, Banking Stability, and Financial Stability).

Population was information systems departments within (13) commercial banks in Kuwait. A "convenient sample" of (65) information systems department managers was exposed to self-administered questionnaire uploaded online for COVID 19 health precautions. After uploading the questionnaire for 8 weeks through Google Forms, (47) properly filled questionnaires were retrieved which indicated (65%) response ratio as accepted.

SPSS was used so as to process and analyze primary data including descriptive statistics (mean, standard deviation, percentage and frequency). For hypotheses testing, researcher used multiple and simple regression and Cronbach's Alpha was used so as to test study reliability and it is found that alpha = 0.897 which was acceptable as it was greater than 0.60 (Sekaran & Bougie, 2014).

3. Analysis and Results

4.1 Demographic Results

Table 1 presented frequency and percentages of respondents who tackled the study questionnaire. It included (age, gender, qualifications and experience). Table 1 indicated that most of sample was males (83%) of sample. Regarding qualifications and experiences, it appeared that most of sample held (PhD) degree forming (66%) of sample with an experience that was more than 17 years forming (46.8%) of entire sample.

Table 1. Demographic Results

Gender			
		f	%
Valid	Male	39	83.0
	Female	8	17.0
Education			
Valid	BA	6	12.8
	MA	10	21.3
	PhD	31	66.0
Experience			
Valid	5-10	6	12.8
	11-16	19	40.4
	+17	22	46.8
	Total	47	100.0

4.2 Questionnaire Analysis

Table 2 presented mean and standard deviation of responses to questionnaire statements. Table uncovered that respondents held positive attitudes regarding statements of questionnaire as all statements' means appeared to be higher than mean of scale 3.00. The statement with the highest mean "FIS highlighted the market value of shares to GDP" which scored a mean of 4.13/5.00 compared to the least positively answered statements which scored a mean of 3.53/5.00 articulated "FIS controlled the stock price-to-earnings ratio" but still positive since it came higher than 3.00.

Table 2. Questionnaire Analysis

	Mean	Std. Deviation
Financial Information Systems		
FIS serves in terms of providing decision makers with information about financing financial projects and real estate financing	3.64	.965
FIS provides important and accurate information about the economic and financial feasibility study	3.83	1.185
FIS provides decision makers with information about the practical aspects of granting loans	3.87	.924

FIS contributes to controlling monopolistic operations in the financial and monetary markets	3.77	1.005
FIS provides acknowledgments with information about the financial aspects of the operation of joint stock companies and banks	4.06	.919
FIS prepares the parties interested in the skills to invest in the financial markets, including stocks and bonds, and the formation of investment portfolios	3.70	1.061
Financial Stability Indicators		
Macroeconomic Stability		
FIS has helped reduce the credit gap and avoid the current account deficit to output	3.94	.870
FIS reduced the indebtedness of individuals through the data and information that is supplied to the banking sector on a regular basis	3.91	.929
The importance of FIS is to control foreign reserves	4.02	.897
Through FIS, the real estate price index can be legalized and inflation can be avoided	3.91	.929
FIS has helped reduce the credit gap and avoid the current account deficit to output	3.94	.987
Financial Markets Stability		
FIS highlighted the market value of shares to GDP	4.13	1.035
FIS controlled the stock price-to-earnings ratio	3.53	1.316
FIS dominated the ratio of the market value of shares to the gross domestic product	3.83	1.110
Through FIS, inflation in all its forms is avoided	4.11	.938
FIS has clarified a mechanism for dealing with potential and expected financial crises	3.60	1.014
Banking Stability		
FIS has helped enable capital adequacy, profitability and asset quality	3.87	.947
FIS contributed to controlling credit facilities to total assets	3.85	.884
FIS controlled the change in non-performing debt	4.00	.780
FIS dominated the loan-to-deposit ratio and the deposit-to-asset ratio	4.11	.787
Financial Stability		
FIS contributed to encouraging financial institutions to finance profitable projects	3.91	.974

FIS prevented assets from deviating significantly from their intrinsic value	4.09	.855
Through FIS, financial imbalances that arise internally in financial markets are dispelled	4.09	.830
The role of FIS is to efficiently direct investment opportunities	3.77	1.047
Contribute FIS to continue to perform payments efficiently	3.94	.845

4.3 Variables' Statistics

The same descriptive statistics was done on study variables – see table 3 -. All variables were taken positively because their mean came higher than mean of scale 3.00. The highest mean was for the benefit of (banking and financial stability) appearing with a mean of 3.95 /5.00 while (FIS) came with the lowest mean 3.81/5.00.

Table 3. Variables' Mean

	Maximum	Mean	Std. Deviation
FIS	5.00	3.8121	.65073
Macroeconomic Stability	5.00	3.9447	.76181
Financial Markets Stability	5.00	3.8383	.53510
Banking Stability	5.00	3.9574	.62188
Financial Stability	5.00	3.9574	.56712
Stability	5.00	3.9227	.52136

4.4 Hypotheses Testing

H: FIS positively influences financial stability of Kuwaiti commercial banks

Table 4. Testing Main Hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711[a]	.506	.495	.37059

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.323	1	6.323	46.043	.000[b]

	Residual	6.180	45	.137		
	Total	12.503	46			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.751	.325		5.393	.000
	FIS	.570	.084	.711	6.785	.000

So as to test main hypothesis, researcher used linear regression. It was seen value F appeared significant as p-value less than 0.05. Also r=0.711 "reflected **high and positive relationship**". So that we accept the hypothesis, that is, FIS positively influences financial stability of Kuwaiti commercial banks

H1: FIS positively influences macroeconomic stability of Kuwaiti commercial banks

Table 5. Testing 1st Sub-Hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652[a]	.426	.413	.58371

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.364	1	11.364	33.353	.000[b]
	Residual	15.332	45	.341		
	Total	26.696	46			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.033	.511		2.020	.049
	FIS	.764	.132	.652	5.775	.000

So as to test the 1st sub-hypothesis, linear regression indicated that value F was significant as p-value less than 0.05. Also r =0.652 "reflected **high and positive relationship**". So that we accept the hypothesis, that is, FIS positively influences macroeconomic stability of Kuwaiti commercial banks

H2: FIS positively influences financial markets stability of Kuwaiti commercial banks

Table 6. Testing 2nd Sub-Hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.643[a]	.414	.401	.41418

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.452	1	5.452	31.781	.000[b]
	Residual	7.719	45	.172		
	Total	13.171	46			

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.822	.363		5.021	.000
	FIS	.529	.094	.643	5.637	.000

Using linear regression, 2nd hypothesis was tested, value of F value was significant as p-value less than 0.05. Also r =0.643 "reflected **high and positive relationship"** which accepted the whole hypothesis "FIS positively influences financial markets stability of Kuwaiti commercial banks"

H3: FIS positively influences banking stability of Kuwaiti commercial banks

Table 7. Testing 3rd Sub-Hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.466[a]	.217	.199	.55647

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.855	1	3.855	12.450	.001[b]
	Residual	13.935	45	.310		
	Total	17.790	46			

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.262	.487		4.640	.000
	FIS	.445	.126	.466	3.528	.001

Testing 3rd hypothesis was done linear regression; it was found that F value was significant since p-value was less than 0.05. Also r =0.466 reflected **medium and positive relationship**. So hypothesis got accepted and "FIS positively influences banking stability of Kuwaiti commercial banks".

H4: FIS positively influences financial stability of Kuwaiti commercial banks

Table 8. Testing 4th Sub-Hypothesis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592[a]	.351	.337	.46193

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.193	1	5.193	24.337	.000[b]
	Residual	9.602	45	.213		
	Total	14.795	46			

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.989	.405		4.916	.000
	FIS	.516	.105	.592	4.933	.000

The final and 4th hypothesis was tested using linear regression; it was found that F value was significant since p-value was less than 0.05. Also r= 0.592 reflects **medium and positive relationship**. Based on that, hypothesis got accepted and FIS positively influences financial stability of Kuwaiti commercial banks.

4. Discussion

Present research was carried out aiming to measure how the variables of financial stability (Macroeconomic Stability, Financial Markets Stability, Banking Stability, and Financial Stability) were influenced by FIS and how it managed to present a healthy and positive environment for commercial banks to operate in. Researcher depended on quantitative method to collect primary data, a questionnaire was used and distributed on (46) information systems department managers within (13) commercial banks in Kuwait. SPSS was used to tackle the collected data reached following findings:

- Financial managers working within Kuwaiti commercial banks were fully aware of FIS and applications; they managed to respond to the questionnaire easily and positively.
- Main hypothesis was accepted "FIS has a positive influence on financial stability" with an **r =0.652** that was associated with "strong and positive relationship" to dependent variable.
- All dimensions of financial stability adopted (Macroeconomic Stability, Financial Markets Stability, Banking Stability, and Financial Stability) seemed to be influenced by FIS based on hypotheses testing presented earlier in the analysis part.
- Among the dimensions of financial stability, it appeared that both macroeconomic stability and financial markets stability were the most influenced as they resembled "high and positive relationship" to independent variable with an R value of **r =0.652 and r =0.643** respectively
- Other dimensions of stability which included banking stability and financial stability presented a medium and positive relationship to the independent variable and expressing and r value of **r =0.466 and r = 0.592** respectively.

The study proved that FIS was able to maintain a good financial stability for organizations, specifically Kuwaiti commercial banks; it was found through the analysis that there was significant influence of FIS on financial stability and its variables, and this had positive impact on the financial stability in Kuwaiti banks. Looking at the analytical tables and examining hypotheses, it was proven along with Nasreen et al (2017) and Seyed Hosseinzadeh et al (2021) that FIS affects financial stability banking institutions through achieving macroeconomic stability by identifying and collecting economic data, which are the main sources of financial systems, which by their nature are raw material, and then perform calculations that are rationale depending on this data to convert it later into information that serves decision-makers to direct their decisions towards the right path. Here, macroeconomic stability is achieved, which by its nature achieves an appropriate and positive environment for banks to operate in.

On the other hand, and the same allegations appeared by Mexmonov (2020) and Muda (2017) the study proved that FIS was able to achieve great stability in banking sector through the possibility to keep and protect the assets of the bank through an effective internal control system that ensured security of data and assets, and that FIS in the banking sector was able To provide useful information to current and potential investors and creditors for purposes of making investment and lending decisions based on honest and fair

information so as to make sound financial decisions, the same idea was also adopted by Trpeska et al (2017).

The results of study proved that the general economic stability of state, in addition to financial and monetary stability, are the most important factors that will pave the way for the stability of banking sector in it, and accordingly, financial stability of banking sector depends on achieving economic stability in general in view of the possibility of creating an enhanced financial sector It is stable and has the ability to control savings so as to support investment opportunities, thus provide job opportunities, raise the state's general productivity level and thus reach the stage of general financial stability which matched what was believed in by Vučinić (2020) and Board (2017).

5. Conclusion and Recommendations

The banking sector is an essential sector that has a direct influence on the country and all its sectors, however, there is a need to control and control of this sector launching from principles of disclosure and transparency. In addition, providing a healthy financial environment is an essential catalysts banks to reach financial stability, and this is what the current study has proven regarding FIS ability to form a healthy financial and monetary environment, supportive for banking institution in a way that is logical, scientific and financial way by providing decision makers with all the necessary information because their decisions are directed towards the right.

Accordingly, FIS is not just a financial tool or software that is either dealt with or abandoned, but FIS is a necessary component of internal environment of banks that will help financial authorities and agencies reaching a state of stability based on specific plans that are adopted Relying on information received from FIS. Current research indicated that FIS is characterized by modernity and richness in information, and therefore researchers can continue to integrate FIS with other financial topics, and accordingly current research recommends conducting research on impact of FIS on the effectiveness of financial decision-making, or the contribution of information received from FIS in Making investment decisions for commercial banks.

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