The effect of risks from the supply chain on corporate financial performance: A case study in Vietnam

Quang Bach Tran[a*], Thi Huyen Nguyen[b], Duc Anh Duong[c] and Dieu Linh Tran[a]

[a]*Lecturer, Faculty of Economics, Vinh University, Vietnam*
[b]*Expert, Vietnam Bank for Agriculture and Rural Development - Ha Tinh Branch, Vietnam*
[c]*Lecturer, Faculty of Foreign Languages, Vinh University, Vietnam*

A B S T R A C T

This study aims to examine the impact of risks from information in the supply chain on the financial performance of enterprises, with the case study in Vietnam, using quantitative research methods, through SEM linear structure model analysis. With 412 samples who are managers of different ranks at enterprises, the study results show that risks from information in the supply chain not only have a direct, reverse impact but also have an indirect impact on financial performance depending on the level of interdependence of businesses. In addition, opportunistic behavior and the degree of interdependence have also been shown to have a reverse impact on the level of cooperation of enterprises. The findings of this study show a contribution both theoretically and practically, demonstrating the inherent negative risks of information in the supply chain to the financial performance of the enterprise. Research has shown the intermediate role of the degree of interdependence in the relationship between the above two factors. Based on the research results, the authors propose several recommendations to improve the financial performance of enterprises.

1. Introduction

Financial performance is an important aspect of strategic planning, being one of the most important goals that govern almost all other objectives in the strategic planning of an enterprise. Almajali et al. (2012) argue that there are many different financial measures to evaluate financial performance in an enterprise such as: profitability, enterprise value, the market value of shares, project value, solvency. Research, assessment of financial performance, along with investigating its determinants, is one of the areas of interest to many researchers. Risks in the supply chain can cause significant damage to the production and business activities of enterprises. Environmental instability poses many risks to businesses (David, 1993; Simchi & Zhao, 2003). Risks from market demand are due to fluctuating, complex, and unstable market demands (Boyle et al., 2008). The high-risk market is characterized by constantly changing customer needs which is difficult to forecast. Businesses often have difficulty meeting customer needs in such an environment (Trkman & McCormack, 2009). Risks in the supply chain may appear due to the impact of the political, economic, social, and natural environment, etc. and these risks increase as supply chains expand and become more complex (Khan & Burnes, 2007). The above risks are usually objective and beyond the control of each member of the chain. Therefore, members often tend to diversify relationships to minimize the above risks instead of strengthening cooperation and close links with a small number of partners.

Information is an important factor affecting the effective coordination between the functional divisions within the enterprise as well as among members of the supply chain (Lee et al., 1997). Incomplete information is one of the main causes of reduced

efficiency. Sharing information and improving the quality of information sources will reduce risk, improve the accuracy of decisions, and increase alignment between members of the supply chain. As a result, risks posed by lack of information, delayed information, problematic information systems, or low information security can all affect the performance of businesses and alignment between members in the supply chains (Christopher & Lee, 2004).

Looking back on Vietnam's economic development, the labor costs which were considered one of Vietnam's most competitive advantages to compete with world-class businesses have gradually been lost. Along with that, the process of global economic integration has put Vietnamese businesses under increasingly fierce competitive pressure, requiring businesses to be able to provide products and services with increasingly high quality, low price and on-time delivery time to meet the increasingly demanding needs of competitors in the global value chain. In fact, Vietnamese businesses are now mostly small and medium-sized enterprises, once the budget is carefully planned, businesses will more likely to go in the right direction, make the right decisions and easily accomplish the goals. However, currently, along with the common economic difficulties, the serious shortage of cash flow makes it difficult for many businesses to be able to cover expenses to maintain production and business activities such as expenses for employees (salary payment, social insurance, health insurance, unemployment insurance, union funding). In addition, businesses still have to pay rent for premises, shops and factories while having to suspend operations. Increasing transportation costs lead to a shortage of raw materials and input materials, increasing the cost of production. In addition to this, the supply chain from production and consumption to exports is disrupted, stagnating locally. Many affected manufacturing and exporting enterprises have to delay or cancel orders.

The study aims to model and examine the relationships that directly and indirectly impact risks from information in the supply chain on corporate financial performance in Vietnam. The findings of this study have a theoretical and pragmatic contribution, demonstrating the connection between risks from information in the supply chain and the financial performance of enterprises, as well as the intermediary role of the degree of interdependence between enterprises in this relationship. Based on the research results, the authors propose a number of recommendations to improve the financial performance of the business in the current context.

2. Literature Review and Hypotheses

2.1. Literature Review

Risk is defined in a variety of ways depending on the field of study (Wagner & Bode, 2008). According to Juttner et al. (2003), risks in the supply chain are those associated with information, the flow of transportation of materials and products from suppliers to the end consumer, and the potential to affect the disproportion between market supply and demand. There are many ways of classifying the source of risk. Cavinato (2004) divides risks in the supply chain from the following five sources: risks in material flows, currency; information, partnerships and innovation opportunities for members of the supply chain. In risk classification and approaches, the approach according to the authors Juttner et al. (2003) and Punniyamoorthy et al. (2011) is quite common in supply chain studies, including risk from the supply, the risk from the market, the risk from information sources and finally risk from the environment.

Financial performance is one of the essential concepts in business strategy and management. Mishkin (2007) argues that financial efficiency is a monetary measure of a company's policies and activities. Financial efficiency is determined through comparisons between inputs and outputs, the main goal of which is to manage resources in such a way as to maximize outputs with constant resources. Efficiency in the enterprise refers not only to the results achieved, but also to the quality of the organization's activities. On the other hand, the essence of corporate finance is to use money to resolve relationships such as organizing, mobilizing, distributing, using and managing capital in the business process. Thus, financial efficiency refers to the achievement of financial activity in the enterprise. Financial efficiency refers to the financial health of the enterprise. Almajali et al. (2012) argue that there are many different financial measures to evaluate the financial efficiency in an enterprise such as: profitability, enterprise value, market value of shares, project value, solvency, etc. However, these indicators can be divided into 2 types: classical financial indicators and modern financial indicators.

Behavior, whether of an individual or organization, always exists in two positive and negative forms, active or passive. According to Tran et al. (2021), opportunistic behavior is considered a negative form of behavior, governed and determined by the perception, attitude, competence of individuals and organizations. Opportunistic behavior is often dominated by individual factors, which significantly affect business partnerships and can coordinate the progress of the business. Supply chain cooperation is defined in different ways, and basically, they belong to two conceptual groups: process-focused and relationship-focused. Supply chain cooperation is seen as a business process whereby two or more supply chain partners work together and work towards common goals (Mentzer et al., 2001; Stank et al., 2001; Manthou et al., 2004; Sheu et al., 2006), while supply chain collaboration is also seen as the formation of close, long-term partnerships where supply chain members work together and share information, resources, and risks to accomplish common goals (Golicic et al., 2003). Interdependence is defined as two or more interdependent entities (Maponya, 2004). Interdependence is the state of the relationship between two parties in which the damage of severing ties or reducing exchanges is equivalent for each party.

According to Joseph (2007), interdependence refers to the condition in which agents or events in different parts of the system affect each other.

2.2. Hypotheses

2.2.1. Risks from information in the supply chain and corporate financial efficiency

When the market risk is high, the manufacturer must frequently change the product, output and order (Trkman & McCormack, 2009). Fluctuating and changing market demands will make it more difficult for manufacturers to identify market needs and feedback from customers, it also becomes more difficult to maintain the link with customers (Calantone et al., 2003). The diversity of information, on the one hand, creates opportunities for businesses to more easily grasp the current state of the economy, the trend of business fluctuations in the future, on the other hand, creates many potential risks for businesses. Whether accidentally or intentionally, misinformation always carries very high risks and leaves businesses with many consequences in both short and long term. Therefore, in the context of enterprises in Vietnam, in order to test the relationship of the impact of risks from information in the supply chain and/on corporate financial performance, the study proposes the following hypothesis:

H₁: *Risks from information in the supply chain have a reverse impact on the financial efficiency of businesses in Vietnam.*

2.2.2. Risks from information in the supply chain and opportunistic behavior

Risks from information and environment are often objective and beyond the control of individual members of the supply chain, which can create negative opportunistic behaviors (Nguyen et al., 2020). Therefore, members often tend to diversify relationships to minimize the above risks instead of strengthening cooperation, closely linking with a small number of partners and thereby also minimizing undesirable behaviors from partners (Chen et al., 2013). When there are risk factors in business, especially with risks from information that can be seen as a hotbed for individuals and organizations to carry out negative individualistic behaviors to thrive to gain benefits for their own needs. Studying this problem, the team of authors posits the hypothesis:

H₂: *Risks from information in the supply chain have a positive impact on the opportunistic behavior of enterprises in Vietnam.*

2.2.3. Opportunistic behavior and corporate financial efficiency

Financial efficiency reflects strategic objectives and it is regulated by various actors. Bakiev (2013) argues that the high-performance working system through mediation is the relationship between trust, organizational cohesion and organizational performance perception that positively influences organizational performance. In the supply chain, if opportunistic behavior is there to remain, it will have an insignificant effect on the common interests of the whole participants as well as of each member. To consider the impact of opportunistic behavior and corporate financial performance, in the context of enterprises in Vietnam, the authors propose the following hypothesis:

H₃: *Opportunistic behavior has an adverse impact on the financial performance of enterprises in Vietnam.*

2.2.4. Risks from information in the supply chain and the level of cooperation

Risks in supply chains can emerge due to the impact of the political, economic, social, natural environment, etc., and these risks are increasing as supply chains are constantly expanded and become more complex (Khan & Burnes, 2007). When the market risk is high, the manufacturer must frequently change the product, output and order (Trkman & McCormack, 2009). Collaboration always brings many positive signs to the participants and is an opportunity for each member to leverage their strengths and weaknesses through support from other members of the supply chain. However, whether they want to or not, cooperation is intrinsically risky for the participating enterprises. With the aspect of risk from supply chain information, in order to study the impact of this factor on the level of cooperation of the participants, the following hypothesis is proposed:

H₄: *Risks from information in the supply chain have an adverse impact on the level of cooperation of enterprises in Vietnam.*

2.2.5. The level of cooperation and financial performance

Collaboration in supply chain linkages is necessary, which will lead to faster product development, reduced development costs, improved technology and improved product quality, thereby impacting the financial performance of the business (Walter, 2003). When cooperation becomes tighter, it essentially engenders more trust from the participants and has a positive impact on the sustainable linkages of the whole business, as well as on the financial performance of each specific business. In order to investigate the relationship between the level of cooperation and corporate financial performance, the following hypothesis is proposed:

H5: *The level of cooperation has a positive impact on the financial performance of enterprises in Vietnam.*

2.2.6. Risks from information in the supply chain and the degree of interdependence of enterprises

Paulraj (2007) also affirmed that the instability of supply, demand and technology is the underlying factors that give rise to the instability of the environment and this instability affects the strengthening of the relationship between buyers and sellers. Frohlich and Westbrook (2001) discovered the relationship between external pressures and supply chain linkages. Similarly, there is a relationship between technological fluctuations and the level of vertical linkages in the supply chain (Afuah, 2001) or long-term supply relationships between partners in the chain (Paulraj, 2007). In order to investigate this issue, the following hypothesis is proposed:

H6: *Risk from information in the supply chain has a positive impact on the level of interdependence of enterprises in Vietnam.*

2.2.7. Level of interdependence and corporate financial performance

Delaney and Huselid's (1996) study measured corporate financial performance based not on financial indicators but on employees' perceptions of the organization's performance which relies on criteria such as product quality, new product development, ability to attract workers, customer satisfaction and the relationship between managers and employees as indicators of the performance of management in the enterprise. Cognitive measurement has a positive influence on organizational performance (Dollinger & Golden, 1992). Therefore, the following hypothesis is proposed:

H7: *The level of interdependence has an adverse impact on the financial performance of enterprises in Vietnam.*

*2.2.8. Opportunistic behavior and level of cooperation*

Behavioral uncertainty makes it difficult to predict and understand a partner's actions. Management from both companies must view the partnership as a common growth strategy and be absolutely committed so that they trust each other when acting in the common good (Fawcett et al., 2008). Business goals may seem difficult to achieve by individual organizations, but through collaborative supply chain relationships, these goals can be easily achieved. Thus, collaborative behavior and activities in supply chain management have gained considerable importance (Kocoglu et al., 2011). In essence, opportunistic behavior involves behaviors that are negative, contrary to collective interests and govern the common linkages and cooperation of enterprises involved in the supply chain. Studying the relationship between these two factors, the authors formulates the hypothesis:

H8: *Opportunistic behavior has an adverse impact on the level of cooperation of businesses in Vietnam.*

2.2.9. Degree of interdependence and degree of cooperation

Collaboration in the supply chain also leads to improved performance in the supply chain (Vereecke & Muylle, 2006). Mentzer et al. (2001) further confirms that increased global competition further increases environmental instability and further encourages alignment between members of the supply chain. Mostly, the relationship between businesses involved in the supply chain is dominated by the proactiveness or passiveness of each member of the whole enterprise. However, if a business is too passive and depends heavily on one or more other participants in the supply chain, it will create negative signs, reduce the cohesion, and the level of cooperation of the participants. Given the context in Vietnam, to investigate how the relationship between the degree of interdependence influence the level of cooperation of enterprises involved in the supply chain is expressed, the following hypothesis is proposed:

H9: *The level of interdependence has an adverse impact on the level of cooperation of businesses in Vietnam.*
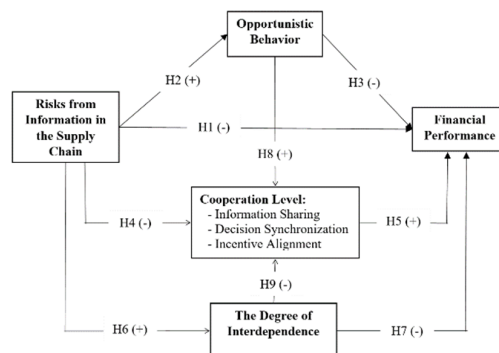
Fig. 1. Proposed Research Model

3. Research Method

3.1. Research Scale

Using the quantitative research method, on the basis of the purpose and overview of the research works, the team of authors conducts an analysis and selects 5 factors to include in the model. In addition to the independent variable that is the risk from information in the supply chain and the dependent variable that is the financial performance, the study uses 3 intermediate variables including Opportunistic Behavior; The level of cooperation includes Information Sharing; Decision synchronization; Incentive alignment and Degree of interdependence. The research scale used is the Likert scale with 5 degrees (Strongly agree; Agree; Normal; Disagree; Strongly disagree). Indicators measure the applied variables that are adjusted in accordance with the characteristics of the study sample from previous studies.

Table 1
Origin of the scale of variables

No.	Variable	Code	Number of observations	Scale origin
1	Risks from Information in the Supply Chain	RII	6	Wagner & Bode (2008); Zhao et al. (2013)
2	Opportunistic Behavior	OPB	5	Katsikeas et al. (2009)
3	Cooperation Level	COL	19	Togar and Ramaswami (2005)
	Information Sharing	INS	5	
	Decision Synchronization	DES	7	
	Incentive Alignment	INA	7	
4	The Degree of Interdependence	DEI	5	Katsikeas et al. (2009)
5	Financial Performance	FIP	6	Moneva and Ortas (2010)

3.2. Research Sample

The research sample is selected according to the non-probability sample selection method which is a convenient sample selection. Respondents included managers of different levels at enterprises in Vietnam, which are distributed in all three regions of the North, Central and South and operate in many fields such as production, commercial business, and services. The process of collecting survey data is conducted in two ways in person and online. The total number of questionnaires was 800, the total number of questionnaires collected was 519, the number of usable questionnaires was 412. According to research by Hair et al. (1998) for reference to the expected sample size, the minimum sample size is 5 times the total number of observed variables. With the number of observations in the article being 41, the scale of the study consisted of 492 samples to ensure the analysis requirements. The study period is from February 2022 to July 2022.

3.3. Data Processing

Data after collection, cleaning is processed through SPSS and AMOS programs. To assess the reliability of the scale, the study conducted Cronbach's Alpha analysis for each group of variables. To consider the suitability and consider the type of observations, the study is based on three main coefficients: corrected item (Total Correlation) > = 0.3; Cronbach's Alpha coefficient > 0.7; the Cronbach's Alpha If Item Deleted coefficient, when the Cronbach's Alpha If Item Deleted value is greater than the Cronbach's Alpha coefficient of the group, this type of observation variable should be considered. Then, the EFA discovery factor analysis study aims to determine the "convergence value" and "Discriminant validity of the scale" and with the factor loading requirement > 0.5; KMO coefficient > = 0.5 and < = 1; value Sig. < 0.05, while the percentage of Average Variance Extracted > 50%. The method of extracting the factor used is the method of rotating varimax factors.
Next, the study used AMOS software to assess the suitability of the research model through CFA and finally conducted validation of research hypotheses using SEM linear structure model analysis with the requirement of chi–square/df indicators < 5 (Hair et al., 1998); GFI, TLI, CFI > 0.8 (Segars & Grover, 1993); RMSEA < 0.08 (Taylor et al., 1993).

4. Results and Discussion

4.1. Testing the Reliability of the Scale

The results of the Cronbach's Alpha test analysis show the reliability of the scale and the data values included in the analysis when the Cronbach's Alpha coefficient of all variables > 0.7. However, the RII6 indicator has a larger Cronbach's Alpha If Item Deleted coefficient of 0.922 than the Cronbach's Alpha coefficient of the RII variable (0.907); The FIP6 indicator has a larger Cronbach's Alpha If Item Deleted coefficient of 0.874 than the Cronbach's Alpha coefficient of the FIP variable (0.804). So, in order to further increase the suitability of the scale, the study removed two indicators RII6 and FIP6.

Table 2

Rating the reliability of the scale through Cronbach's Alpha coefficient

No.	Variable	Code	Cronbach's Alpha
1	Risks from Information in the Supply Chain	RII	0.922
2	Opportunistic Behavior	OPB	0.879
3	Information Sharing	INS	0.909
4	Decision Synchronization	DES	0.909
5	Incentive Alignment	INA	0.827
6	The Degree of Interdependence	DEI	0.867
7	Financial Performance	FIP	0.874

4.2. EFA

After testing the reliability of the scale, the study conducted EFA discovery factor analysis for both independent, intermediate, and dependent variables. With independent and intermediate variables, the EFA analysis was conducted three times, the results of the analyses all showed that the Loading factor > 0.5; KMO coefficient > = 0.5 and < = 1; value Sig. < 0.05; the percentage of Average Variance Extracted > 50%. However, at the first and second analyses, due to the failure to ensure the "Convergent validity" and "Discriminant validity" requirements, the DES2 and INA5 indicators were disqualified. With the dependent variable being financial performance, the results of the analysis show that the data qualifies for analysis due to the presence of factor load factors >0.5; KMO coefficient > = 0.5 and < = 1; value Sig. < 0.05; the percentage of Average Variance Extracted > 50% and satisfying two conditions are "Convergent validity" (observed variables converge on the same factor) and "Discriminant validity" (the observed variables belonging to one factor discriminated from another).

Table 3

EFA factor analysis results

EFA Analysis		KMO coefficient	P-value	Average Variance Extracted (%)	Loading Factor:	Conclusion
Independent variables and intermediate variables	The 1th time	0.887	0.000	66.747	All of them > 0.5	DES2 was removed.
	The 2nd time	0.898	0.000	66.972	All of them > 0.5	INA5 was removed.
	The 3rd time	0.896	0.000	67.593	All of them > 0.5	Ensure the analysis requests
Dependent variable		0.860	0.000	66.819	All of them > 0.5	Ensure the analysis requests

4.3. CFA analysis

The results show the suitability of the model. Chi–square = 1832.793; df = 608; Chi–square/df = 3.014 (<5); P= 0.000; GFI = 0.850 (>0.8); TLI = 0.884 (>0.8); CFI = 0.894 (>0.8); RMSEA = 0.064 (<0.08).
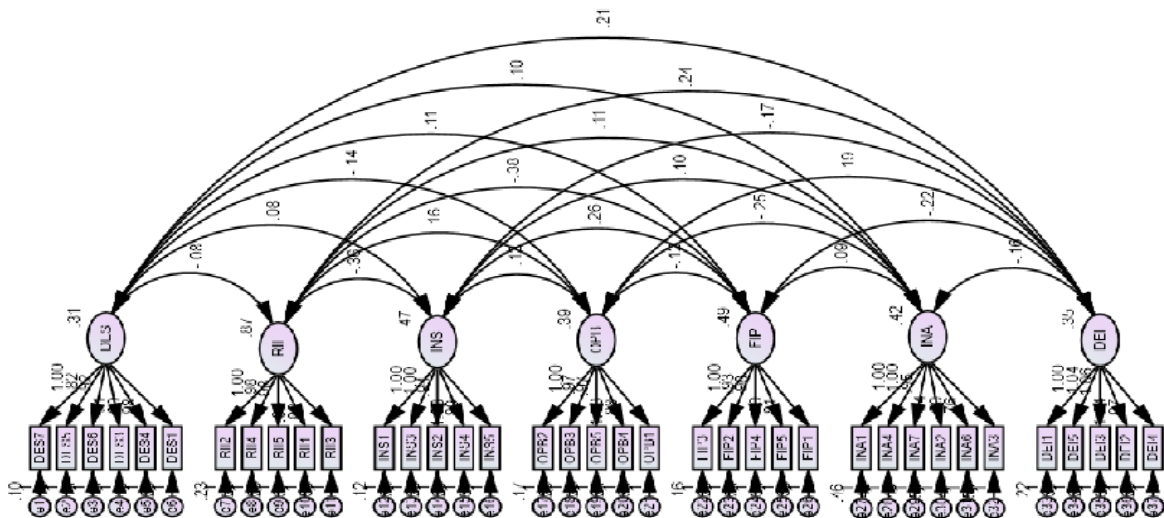

Fig. 2. CFA analysis

4.4. SEM Analysis

Conducting an analysis of the SEM model for the research model, we found that all indicators were all satisfactory. In particular, Chi–square = 2079.834; df = 617; Chi–square/df = 3.371 (<5); P= 0.000; GFI = 0.833 (>0.8); TLI = 0.864 (>0.8); CFI = 0.874 (>0.8); RMSEA = 0.069 (<0.08).
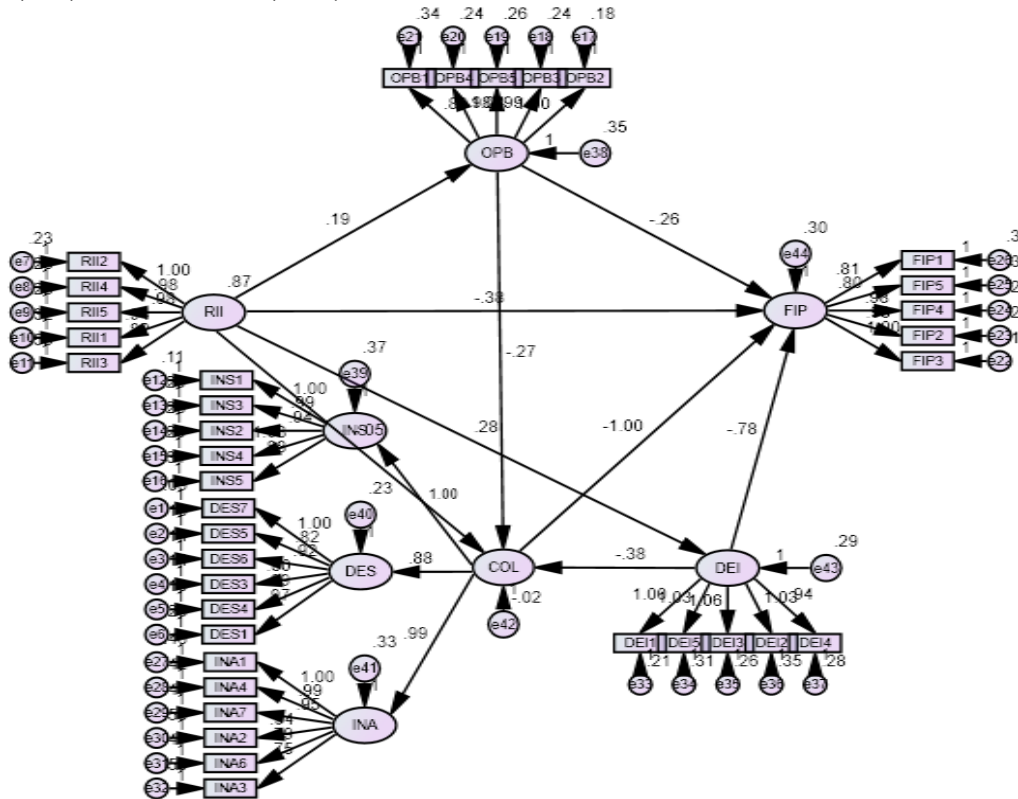

Fig. 3. SEM model analysis

The results of estimating relationships in the model show that the research model is relevant. Except for the H3 and H5 hypotheses, all the remaining hypotheses with a significance level of p < 0.05 are accepted.

In particular, the H1 hypothesis is accepted with a significance level p < 0.05 and a regression weight of -0.378 < 0. This means that the risks from information in the supply chain have an adverse impact on the financial performance of businesses in Vietnam. This result corresponds to the research works of Calantone et al. (2003); Trkman and McCormack (2009).

The result rejects H3 because it has a significance of 0.112 > 0.05, which means opportunistic behavior has no direct impact on the financial performance of enterprises in Vietnam. Meanwhile, with the significance level of < 0.05 and among positive regression (0.193), the H2 hypothesis is accepted, which means that the conclusion that the risk from information in the supply chain positively affects the opportunistic behavior of enterprises in Vietnam. This result corresponds to the research works of Chen et al. (2013); Nguyen et al. (2020).

Similarly, the H4 and H5 hypotheses test risks from information in the supply chain to the level of cooperation and the level of cooperation to the financial performance of enterprises in Vietnam. The results showed that the H4 hypothesis with a significance level of 0.010 < 0.05 and the regression weight (-0.053) was accepted, i.e., the risk from information in the supply chain was shown to have an adverse important on the level of cooperation of enterprises. This result supports previous studies by Khan and Burnes (2007); Trkman and McCormack (2009). Meanwhile, with the significance of 0.090 (> 0.05), the study refutes the H5 hypothesis, so the level of cooperation is proven to have no direct impact on the financial performance of enterprises in Vietnam. Although this goes against some of the research works of...., however, the results also show that, in order to improve financial efficiency, improving the level of cooperation of enterprises involved in the supply chain is necessary, but not enough, but businesses themselves need to have acumen to do business. At the same time, enterprises also need to mobilize, use and effectively combine resources put into business activities to improve business performance and financial efficiency of enterprises.

Hypotheses H6 and H7 are both accepted with significance in the p-< 0.05 test and regression weights of 0.281 (> 0) and -0.776 (< 0), respectively. Therefore, it can be concluded that the risks from information in the supply chain positively affect

the level of interdependence of enterprises and thereby have an adverse impact on the financial performance of enterprises in Vietnam. This result is similar to the work of Dollinger and Golden (1992); Delaney and Huselid (1996); Afuah (2001); Frohlich and Westbrook (2001); Paulraj (2007).

Thus, with the refutation of the H3 and H5 hypotheses, while accepting all the remaining hypotheses from H1 to H7. The results of the study have shown that risks from information in the supply chain not only have a direct and adverse impact, but also have an indirect impact on financial performance through the level of interdependence of enterprises. These conclusions show the contribution of research when demonstrating the negative nature of information risks in the supply chain to the financial performance of enterprises. In particular, research has demonstrated the intermediate role of the degree of interdependence in the relationship between the above two factors.

In addition, given the significance level in the test < 0.05 and the regression weight both < 0 (-0.267 and -0.381), the H8 and H9 hypotheses are also accepted. Thus, the research results have demonstrated that both opportunistic behavior and the level of interdependence have an adverse impact on the level of cooperation of businesses in Vietnam. These conclusions are also in agreement with the results from Mentzer et al. (2001); Vereecke and Muylle (2006); Fawcett et al. (2008); Kocoglu et al. (2011).

Table 4
SEM analysis results for relationships in the model

Hypothesis	Relationship	Weight	S.E.	C.R.	P	Conclusion
H1	FIP ← RII	-0.378	0.056	-6.748	0.000	Accepted
H2	OPB ← RII	0.193	0.032	5.942	0.000	Accepted
H3	FIP ← OPB	-0.262	0.164	-1.591	0.112	Rejected
H4	COL ← RII	-0.053	0.021	-2.573	0.010	Accepted
H5	FIP ← COL	-1.001	0.590	-1.696	0.090	Rejected
H6	DEI ← RII	0.281	0.032	8.837	0.000	Accepted
H7	FIP ← DEI	-0.776	0.227	-3.415	0.000	Accepted
H8	COL ← OPB	-0.267	0.036	-7.494	0.000	Accepted
H9	FIP ← DEI	-0.381	0.045	-8.470	0.000	Accepted

4.5. Descriptive Statistical Analysis

Thus, the results of the study have shown a link between risks from information in the supply chain and the financial performance of enterprises. In order to capture an accurate picture of reality and by comparing with the results obtained, the study conducts a descriptive statistical analysis, determining the average value of the factors included in the model. With the highest average value of all factors included in the model is 3.9522, the Decision synchronization of businesses when participating in the supply chain through survey data is evaluated at a relatively high level. This is seen as a positive signal and a result of the efforts of the parties when participating in the flow of investment and business cooperation. At the same time, businesses involved in the supply chain also clearly show their role in connecting members, ensuring the principle of harmonization of the interests of the parties. This is very important and demonstrates the need for sustainable relationships, ensuring the goals of mutual development of the parties. Meanwhile, with an average value of 2.2053, the level of interdependence between enterprises involved in the supply chain is rated at the lowest level of all factors included in the model. Along with opportunistic behavior, interdependence between members can be seen as a negative factor, which has a significant impact on the overall performance of the parties involved. However, with the above average value, this is still a relatively high figure compared with other negative factors in the market and still needs more attention from each business. Businesses need to be more proactive in their activities, avoid subjectivity, and review the results of the work of another organization with which they have a relationship. The common development for all parties involved only comes when all enterprises strive together to reach out and for collective goals, on the contrary, subjectivity, and passive nature at work will cause businesses to limit their own growth capacity and thereby slow down the overall growth momentum of the whole common bond.

Table 5
The results of statistical analysis describing the variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
RII	492	1.00	5.00	1.6809	0.91649
OPB	492	1.00	5.00	2.4313	0.64502
COL	492	1.83	5.00	3.6801	0.43637
INS	492	1.00	5.00	3.6199	0.69996
DES	492	1.00	5.00	3.9522	0.52858
INA	492	1.67	5.00	3.4682	0.65598
DEI	492	1.00	4.60	2.2053	0.65340
FIP	492	1.00	5.00	3.8813	0.67475
Valid N (listwise)	492				

5. Conclusions and Recommendations

The study aims to model and verify the impact of risks from information in the supply chain on the financial performance of enterprises, with the case study in Vietnam. Research results show that risks from information in the supply chain not only have a direct and adverse impact, but also have an indirect impact on financial performance through the level of interdependence of businesses. In addition, both opportunistic behavior and the degree of interdependence have been shown to have an adverse impact on the level of cooperation of enterprises. The findings of this study show a contribution both theoretically and practically. Theoretically, research has demonstrated the link between risks from information in the supply chain and the financial performance of enterprises, as well as the intermediary role of the degree of interdependence between enterprises in this relationship. In practical terms, the research results help managers and policymakers to get more support solutions to improve corporate financial efficiency. Besides those contributions, the study also has certain limitations. With convenient sampling being a limitation of the study, it is possible to reduce the ability to control the representativeness of the sample. At the same time, the research context is also limited to businesses in Vietnam. With the results achieved, the paper opens up the development orientation in research conducted in other countries in the region and around the world. Based on the research results, the authors propose a number of recommendations to improve the financial efficiency of the enterprise:

Firstly, with the risk from information in the supply chain, businesses need to promptly grasp the risks from both internal and external information that businesses receive. Information plays a "power" role in business or any other field, but it is also because of that, it would become an obstacle if the information obtained is not fully verified and accurate. Enterprises need to limit the risks from information by establishing an operating system in the acquisition and processing of information that ensures professionalism and efficiency.

Secondly, with the opportunistic behavior of the parties involved, businesses need to actively seek and detect opportunistic behaviors, individualism that may appear in the bonds created. It is necessary to introduce "constraints" between enterprises when participating in the supply chain, upholding the collective spirit, ensuring harmonious interests between the parties involved.

Thirdly, with the level of cooperation between enterprises, enterprises need to further strengthen the sharing of knowledge, ensure uniformity in decisions that are related to the interests of the parties, as well as the common goal of the bloc. Participating businesses need to ensure a sustainable, long-term link by caring and supporting each other in each specific case. Use the strengths and initiative of their business to make up for the shortage and passive nature of other businesses. This will be an effective measure for the overall sustainable development of the supply chain and an effective tool for each enterprise to mobilize and more effectively use all its resources, towards perfecting and improving financial performance and overall operational efficiency of the whole enterprise.

Fourth, given the level of interdependence between businesses involved in the supply chain, businesses also need to limit their dependence on any other business or organization when participating in the supply chain. Enterprises are affiliated but need to create their own paths, be proactive in everything and be ready for alternatives when there is fluctuation and change dominated by many different factors.

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