

The effects of fast delivery, accidental management and top management on sustainable logistics growth

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ABSTRACT

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The objective of the current study is to examine the effect of fast delivery and accidental management on sustainable logistics growth. The study examined the relationship between fast delivery, accidental management, top management and sustainable logistics growth. Top management is used as a moderating variable. In this study, the Thai logistic companies are investigated, therefore, the population of the study is on logistics companies of Thailand. Data were collected from the employees of logistics companies to examine the effect of fast delivery, accidental management and top management on sustainable logistics growth. A survey was carried out and 450 questionnaires were distributed among the employees. Results of the study show that sustainable logistics growth is the most important for the logistics companies influenced by the fast delivery, accidental management and top management. Fast delivery has a positive effect on sustainable logistics growth. Increase in fast delivery increases the sustainable logistics growth. Moreover, accidental management also has a positive effect on sustainable logistics growth. Better accidental management has a positive role to enhance sustainable logistics growth. Additionally, top management also shows a positive role in sustainable logistics growth.

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1. Introduction

In any industry, growth has the most important element with the passage of time. Companies require an important level of growth in their business activities and have a major role in growth (Ul-Hameed, Mohammad, Shahar, Aljumah, & Azizan, 2019). To stay in the market with the biggest competitors, growth in logistics is very important (Sommanawat, Hotrawaisaya, Waiyawuththanapoom, Srisawat, Aunyawong, & Jernsittiparsert, 2021). The number of businesses is increasing which provide high quality along with the other elements. Among all the business companies as well as others unrelated to the business, thus, the role of growth is vital. Increase in the growth also increases the performance of the companies. Therefore, the role of growth among industries is very important (Fernando, Jabbour, & Wah, 2019; Jang, Kwon, Ahn, Lee, & Park, 2019) which has several benefits for the companies in the shape of better performance by providing valuable insights for the companies.

Only the highest growth is not important, it also requires sustainable growth. The sustainability in the growth is required in this market of high industrialization. Fluctuation in the growth of logistics companies requires a significant positive level of sustainability. Increase in the sustainability among the logistics companies also increases the overall performance of these companies. In the logistics industry, sustainable growth in the operations of the logistics companies shows a positive role. Sustainability in the logistics operations shows the maintenance of long-term growth by the logistics companies. However, a low level of sustainability decreases the importance of growth and companies cannot sustain the growth for long term purposes. Therefore, sustainability in logistics operations has vital importance. Importance of sustainability in logistics is also highlighted in the literature (Cannas, Ciccullo, Cigolini, Pero, & Ruci, 2018; Osmani & Zhang, 2017).

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However, it is not easy to achieve sustainability in the logistics operations. A special effort is always required for the high sustainability achievement by the companies. There is a high competition with various other companies related to logistics and it is really tough to achieve sustainability in the logistics practices. That is why the Thai logistics companies are also lacking sustainability. Decrease in the sustainability among the logistics companies of Thailand, it is really tough to maintain a reasonable performance. Decrease in sustainability also affects negatively on performance which makes the tough survival by the company in the market. A short-term sustainability in the logistics operations increases the performance for short term activities. On the other hand, long term sustainability among the logistics companies increases the performance for a longer period of time. That is why the sustainability in the company is the most important to the survival possible among the other competitors. Thai logistics has a vital role in the Thai business activities (Ditkaew, Pitchayatheeranart, & Jermstittiparsert, 2020). However, Thai companies are facing the crucial role of sustainability in the operations. Low sustainability in the growth of Thai companies always shows adverse effects on the company, because it decreases the revenue of this industry.

The sustainability in the growth of logistics can be improved with the help of fast delivery. Fast delivery is one of the most powerful instruments and has a major role to enhance the performance of logistics. Logistics companies' performance can be enhanced with the help of fast delivery. As in the previous studies, it is investigated that delivery has a major role in logistics practices (Holguín-Veras, Leal, Sanchez-Diaz, Browne, & Wojtowicz, 2018). Along with the delivery, accidental management is also having a major role in the growth of logistics. As the proper management in logistics maintains the delivery on time, they maintain the performance. However, inappropriate management of accidents in the logistics operations has a negative role in the growth of logistics. As the previous studies highlighted the better role of emergency or accidental management in logistics (Cieslinski, Witkowski, Piepiora, Piepiora, & Bernat, 2016; Yu, Sun, Solvang, & Zhao, 2020). Therefore, the objective of the current study is to examine the effect of fast delivery and accidental management in sustainable logistics growth. Along with this, the current study also examined the moderating role of top management. As the strategies designed by the top management in logistics companies have a vital role in the growth of logistics. Not only in the logistics companies, top management has a major role among all companies. Performance of the company as well as the performance of employees play a major role in the sustainable growth. Number of studies investigated the major role of top management in performance of the companies (Cui, Zhang, Guo, Hu, & Meng, 2019; Latan, Jabbour, de Sousa Jabbour, Wamba, & Shahbaz, 2018). Therefore, this study also examined the role of top management. Hence, this study examined the relationship between fast delivery, accidental management, top management and sustainable logistics growth which is shown in Fig. 1.

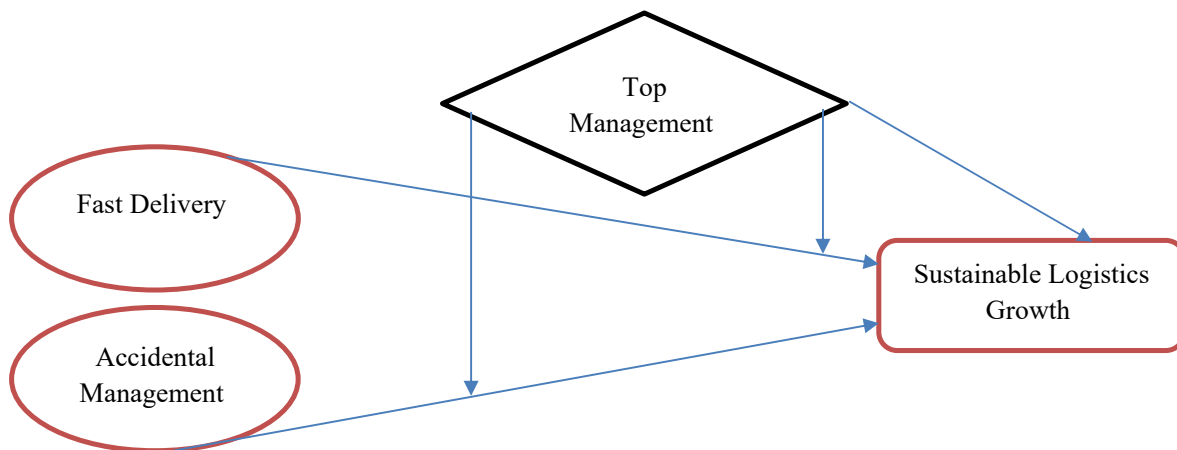


Fig. 1. Theoretical framework of the study showing the relationship between fast delivery, accidental management, top management and sustainable logistics growth

2. Literature Review

Logistics industry of Thailand has a crucial role in the context of Thailand as well as it has important roles in various other countries. Thailand is one of the important Asian countries which has a major role in logistics. The need of the logistics industry in Thailand is vital because Thailand has a high population. Growing population of Thailand requires better and wide range services of logistics. Therefore, logistics companies working in Thailand should have wider scope as well as it should have better performance and growth along with the increase in population. In this way, Thai logistics companies' sustainable logistics growth is very important. Hence, Thai logistics companies have a major role in Thailand (Ditkaew, Pitchayatheeranart, & Jermstittiparsert, 2020). The performance of logistics companies of Thailand, especially the sustainability logistics growth is influenced by different factors which have a major role in the nation. It has local and national importance for Thailand. Particularly, Fig. 1 shows the relationship between fast delivery, accidental management, top management and sustainable logistics growth. Most importantly, two factors; fast delivery and accidental management have a major role in sustainable logistics growth. Furthermore, top management has a moderating role between these factors and sustainable logistics growth.

2.1 Fast Delivery and Sustainable Logistics Growth

Delivery is the procedure of carrying goods from a main source location to a predefined end point. There are diverse delivery kinds such as postal, courier, as well as relocation services that also deliver various goods for commercial as well as private interests. Delivery has a major role in the operations of logistics. It has a vital role in the performance as well as growth of logistics. Because delivery of goods has key importance for the customers. Better delivery of the goods to the customers has a major influence on the satisfaction level of customers. As in logistics, customer satisfaction plays a major role to influence the logistics performance and finally, logistics performance influences the delivery. Fast delivery majorly includes the time of delivery. Customers always remain conscious regarding the delivery time. Delivery must be on time to increase the customer satisfaction. As customer satisfaction has vital importance in logistics (W.-U. Hameed, Nadeem, Azeem, Aljumah, & Adeyemi, 2018; Umair, Zhang, Han, & Haq, 2019).

Hypothesis 1. *Fast delivery has a positive influence on sustainable logistics growth.*

2.2 Accidental Management and Sustainable Logistics Performance

An accident is an unexpected event that occasionally has troublesome or unwanted consequences, other times being unimportant. The incidence of such an event may or may not have unrecognized or unaddressed risks contributing to its cause. The management of these unexpected events is called accidental management. Accidental management among all the companies has the most important effect on the operations. Therefore, among the operations of logistics operations, it also has a major role in logistics companies. Accidents are common in the logistics industry due to the extensive delivery of goods from one place to another place. As the accidents are high in number in logistics companies, it requires proper management. Thus, the proper management of accidentals in the logistics companies of Thailand plays a vital role. It has a major influence on the sustainable logistics performance. Increase in accidental management increases the sustainable logistics growth. Previous studies also highlighted the role of accidents in logistics (Alavi et al., 2017; Peng, Peng, Wang, & Tan, 2018). Proper management of accidents in these companies lead to timely delivery of goods and help to provide quality services to the customers. As timely provision of goods to the customers increases the level of satisfaction among the customers. Finally, a better satisfaction level shows a positive role to enhance sustainable logistics growth in Thailand. Therefore, in logistics companies' sustainable growth, accidental management is important which leads to the following hypothesis.

Hypothesis 2. *Accidental management has a positive influence on sustainable logistics growth.*

2.3 Top Management and Sustainable Logistics Growth

Top management consists of senior-level managers of any company, or those positions that hold most of the important responsibilities. Jobs titles which may include; Chief Operating Officer (COO) of the company, Chief Executive Officer (CEO) of the company, Chief Financial Officer (CFO) of the company, President as well as Vice President are usually used by top managers in different companies. Most of the time, top management consists of various managers at company level. These managers are responsible for all the tasks in the company. Generally, these managers or the supervisors of the staff members. These supervisors have a major influence on the operations. Similarly, in the logistics company, managers are included in the top management along with the CEO. These managers manage the whole company. This top management has a relationship with sustainable logistics growth. Sustainability emphasizes on meeting the wants of the current without cooperating the aptitude of future peers to meet their wants. The idea of sustainability is self-possession of three pillars: economic, environmental, as well as social—also known as profits, planet, as well as people. Sustainability in the operations of logistics companies is very important. Even the survival of most of the companies in Thailand is based on sustainable logistics growth. In this direction, top management has a major role in logistics growth. It is highlighted in the previous studies that logistics and top management has important relationship with each other's (García-Sánchez, Guerrero-Villegas, & Aguilera-Caracuel, 2019; Jeenanunta et al., 2018; Ye, Zhao, Prahinski, & Li, 2013). In this study, top management is used as moderating variables. As top management has an effect on the relationship of fast delivery and sustainable logistics growth. It also has an effect on the relationship of accidental management and sustainable logistics growth.

Hypothesis 3. *Top management has a positive influence on sustainable logistics growth.*

Hypothesis 4. *Top management moderates the relationship between fast delivery and sustainable logistics growth.*

Hypothesis 5. *Top management moderates the relationship between accidental management and sustainable logistics growth.*

3. Method

Number of research methodologies are available in the literature. Various methodologies are important for specific studies. Therefore, in the section of research methodology, the investigation about the nature of the study is most vital. In this way, before selecting the research method, the current study viewed that this study is the investigation about the relationship between variables which is based on the primary data from the employees. Therefore, this study required a quantitative

research approach to achieve the objective. Consequently, this study followed a quantitative approach. Mixed method approach is also most suitable which is applied in various studies (Nawaz et al., 2020; Simmons et al., 2020). Hence, to examine the relationship between fast delivery, accidental management, top management and sustainable logistics growth, the current study used a quantitative research approach in which primary data were collected and analyzed using software. This analysis of primary data was managed after collecting data through developing research questionnaires. Questionnaire was used in this study after adapting various measures from the previous investigations. Questionnaire was based on the section including the scale items of key variables; fast delivery, accidental management, top management and sustainable logistics growth. The Thai logistics companies are investigated; therefore, the population of the study is logistics companies of Thailand. Data were collected from the employees of logistics companies to examine the effect of fast delivery, accidental management and top management on sustainable logistics growth. 230 responses were used for data analysis, however, 450 were distributed, 239 were returned and nine were not completed. Finally, questionnaires were distributed through cluster sampling.

4. Findings

It is most important to fix the errors in the data. Errors in the data could be related to the missing value (Aydin & ŞENOĞLU, 2018) as well as outlier. Therefore, errors in the data should be resolved before further analysis. For this purpose, preliminary data analysis was performed as shown in Table 1.

Table 1
Data Statistics

	No.	Missing	Mean	Median	Min	Max	SD	Kurtosis	Skewness
FD1	1	0	3.47	4	1	5	1.29	-0.908	-1.454
FD2	2	0	2.99	4	1	5	0.974	-1.874	-0.427
FD3	3	0	3.42	4	1	5	1.219	-0.584	-0.575
FD4	4	0	3.356	4	1	5	1.279	-0.857	-1.428
FD5	5	0	3.333	4	1	5	1.265	-0.936	-0.363
FD6	6	0	3.397	4	1	5	0.983	-1.808	-0.475
AM1	7	0	3.47	4	1	5	1.164	-0.481	-0.497
AM2	8	0	2.957	4	1	5	1.155	-0.739	-1.436
AM3	9	0	3.621	4	1	5	1.334	-0.765	-0.663
AM4	10	0	3.584	4	1	5	0.988	-0.59	-0.564
AM5	11	0	3.466	4	1	6	1.228	-1.756	-0.352
AM6	12	0	3.484	4	1	6	1.148	-0.617	-1.407
TM1	13	0	2.99	4	1	5	1.304	-0.918	-0.507
TM2	14	0	3.479	4	1	6	1.356	-0.985	-0.41
TM3	15	0	3.543	4	1	5	0.955	-0.635	-0.419
TM4	16	0	3.543	4	1	5	1.155	-1.635	-0.419
TM5	17	0	3.452	4	1	5	1.202	-0.472	-1.626
TM6	18	0	2.92	4	1	5	1.263	-0.791	-0.476
SLG1	19	0	3.347	4	1	5	1.256	-0.875	-0.387
SLG2	20	0	3.498	4	1	5	1.18	-0.52	-0.507
SLG3	21	0	3.571	4	1	5	0.958	-1.737	-0.44
SLG4	22	0	3.616	4	1	5	1.331	-0.758	-0.662
SLG5	23	0	4.075	4	1	5	1.193	-0.565	-1.578
SLG6	24	0	3.475	4	1	6	1.225	-0.73	-0.384
SLG7	25	0	3.493	4	1	6	1.128	-0.498	-0.444
SLG8	26	0	4.105	4	1	5	0.967	1.701	-1.037

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

There are a number of data analysis techniques available in the literature, however, selection of the most appropriate technique is important among the primary data analysis. As the current study is based on primary data analysis. Therefore, this study used Partial Least Square (PLS) to analyze the collected data (Henseler & Chin, 2010; Henseler et al., 2014; Henseler & Fassott, 2010; Henseler, Ringle, & Sinkovics, 2009). First step of PLS is given in Fig. 2 which shows that fast delivery is measured by using six items and all items have loadings more than acceptable value. Moreover, accidental management is measured by using six items and top management is measured by using six items. Finally, sustainable logistics growth is measured with the help of seven items and all items are above acceptable range. Hence, fast delivery, accidental management, top management and sustainable logistics growth have factor loadings achieved minimum value. Factor loadings are given in Table 1 and Fig. 2.

According to the instructions of J. Hair, Hollingsworth, Randolph, and Chong (2017) composite reliability (CR) should be above 0.7 and average variance extracted (AVE) should be above 0.5. The values of CR and AVE are given in Table 3. It shows that CR is above 0.7 for fast delivery, accidental management, top management and sustainable logistics growth. Moreover, AVE for fast delivery, accidental management, top management and sustainable logistics growth is also above 0.5. Finally, discriminant validity was assessed through cross-loadings (Fornell & Larcker, 1981) as given in Table 4.

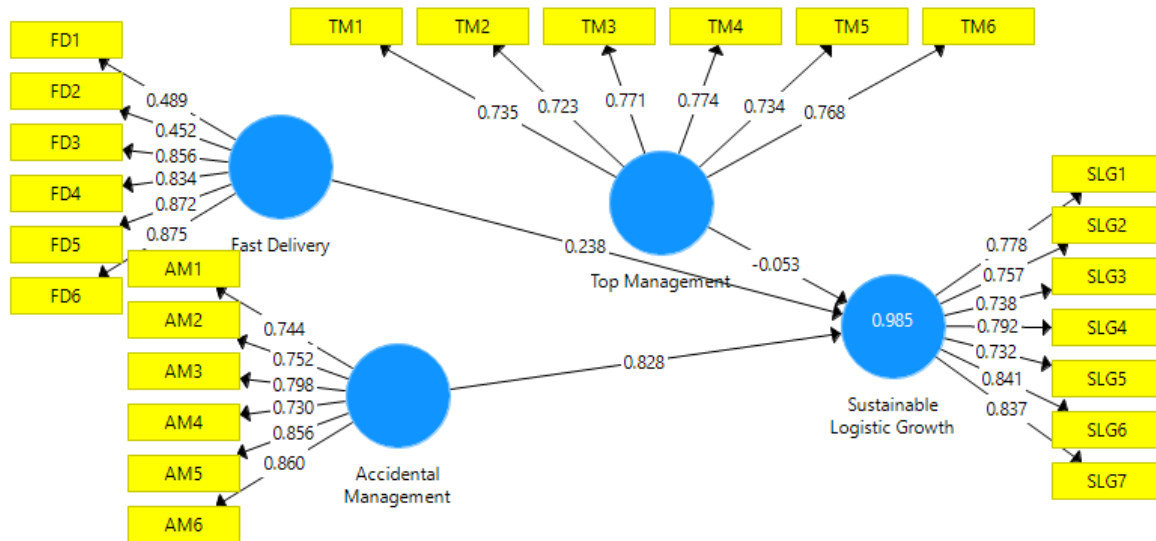


Fig. 2. Measurement Model

Table 2
Factor Loadings

	Accidental Management	Fast Delivery	Sustainable Logistics Growth	Top Management
AM1	0.744			
AM2	0.752			
AM3	0.798			
AM4	0.73			
AM5	0.856			
AM6	0.86			
FD1		0.489		
FD2		0.452		
FD3		0.856		
FD4		0.834		
FD5		0.872		
FD6		0.875		
SLG1			0.778	
SLG2			0.757	
SLG3			0.738	
SLG4			0.792	
SLG5			0.732	
SLG6			0.841	
SLG7			0.837	
TM1				0.735
TM2				0.723
TM3				0.771
TM4				0.774
TM5				0.734
TM6				0.768

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

Table 3
Reliability and Convergent Validity

	Alpha	rho A	CR	(AVE)
Accidental Management	0.88	0.883	0.91	0.627
Fast Delivery	0.84	0.894	0.88	0.566
Sustainable Logistics Growth	0.894	0.897	0.917	0.614
Top Management	0.859	0.884	0.886	0.564

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

After the assessment of reliability as well as validity, in the next step, this study examined the relationship between the variables. The relationship between fast delivery, accidental management, top management and sustainable logistics growth was examined with the help of PLS Structural Equation Modeling (PLS-SEM). PLS-SEM is most popular and highly recommended for primary data analysis (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014; J. F. Hair, Ringle, & Sarstedt, 2013; J. F. Hair, Sarstedt, Pieper, & Ringle, 2012; W. U. Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018; Henseler et al., 2009). The direct effect of fast delivery was examined on sustainable logistics growth. Moreover, the direct effect of

accidental management was examined on sustainable logistics growth. Finally, the direct effect of top management is examined on the sustainable logistics growth. Results in Table 5 shows that fast delivery has a positive role in sustainable logistics growth. Accidental management also has a positive role in sustainable logistics growth. Finally, top management has a positive role in sustainable logistics growth. PLS structural model is given in Fig. 3.

Table 4
Cross-Loadings

	Accidental Management	Fast Delivery	Sustainable Logistics Growth	Top Management
AM1	0.79	0.735	0.754	0.658
AM2	0.752	0.569	0.733	0.55
AM3	0.798	0.639	0.788	0.582
AM4	0.793	0.618	0.733	0.565
AM5	0.856	0.674	0.831	0.642
AM6	0.86	0.699	0.838	0.595
FD1	0.354	0.689	0.356	0.6
FD2	0.317	0.752	0.318	0.606
FD3	0.756	0.856	0.777	0.712
FD4	0.75	0.834	0.774	0.767
FD5	0.684	0.872	0.781	0.646
FD6	0.704	0.875	0.755	0.644
SLG1	0.684	0.868	0.878	0.645
SLG2	0.739	0.736	0.757	0.662
SLG3	0.751	0.565	0.838	0.556
SLG4	0.794	0.655	0.799	0.59
SLG5	0.724	0.618	0.732	0.568
SLG6	0.854	0.684	0.881	0.651
SLG7	0.846	0.7	0.897	0.594
TM1	0.381	0.475	0.381	0.735
TM2	0.412	0.46	0.414	0.723
TM3	0.413	0.48	0.419	0.771
TM4	0.403	0.477	0.414	0.774
TM5	0.753	0.837	0.782	0.894
TM6	0.73	0.61	0.758	0.768

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

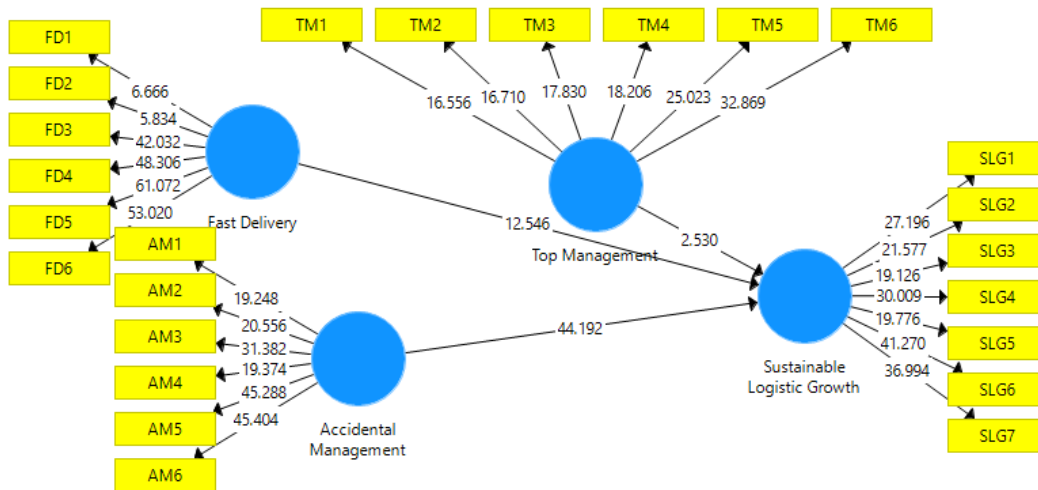


Fig. 3. Structural Model

Table 5
Direct Effect Results

	(O)	(M)	SD	T Statistics	P Values
Accidental Management → Sustainable Logistics Growth	0.828	0.827	0.019	44.192	0
Fast Delivery → Sustainable Logistics Growth	0.238	0.239	0.019	12.546	0
Top Management → Sustainable Logistics Growth	0.053	0.052	0.021	2.53	0.012

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

Moderation effect was also examined with the help of the PLS structural model which is given in Fig. 4 and results are given in Table 6. This study examined the moderation role of top management between fast delivery and sustainable logistics growth. Moreover, this study examined the moderation role of top management between accidental management and sustainable logistics growth. The moderation role of top management between fast delivery and sustainable logistics is

insignificant as the t-value is 1.168. The moderation effect of top management between accidental management and sustainable logistics growth is significant with t-value 2.017. Moderation effect is given in Table 6 which shows that moderation effect strengthens the positive relationship between accidental management and sustainable logistics growth. Finally, the r-square value is strong in the current study.

Table 6
Moderation Effect Results

	(O)	(M)	SD	T Statistics	P Values
Accidental Management → Sustainable Logistics Growth	0.825	0.824	0.021	39.117	0
Fast Delivery → Sustainable Logistics Growth	0.238	0.239	0.018	12.947	0
Moderating Effect 1 → Sustainable Logistics Growth	0.022	0.024	0.019	1.168	0.243
Moderating Effect 2 → Sustainable Logistics Growth	0.023	0.025	0.011	2.017	0.041
Top Management → Sustainable Logistics Growth	0.05	0.05	0.02	2.508	0.012

Note: FD = Fast Delivery; AM = Accidental Management; TM = Top Management; SLG = Sustainable Logistics Growth

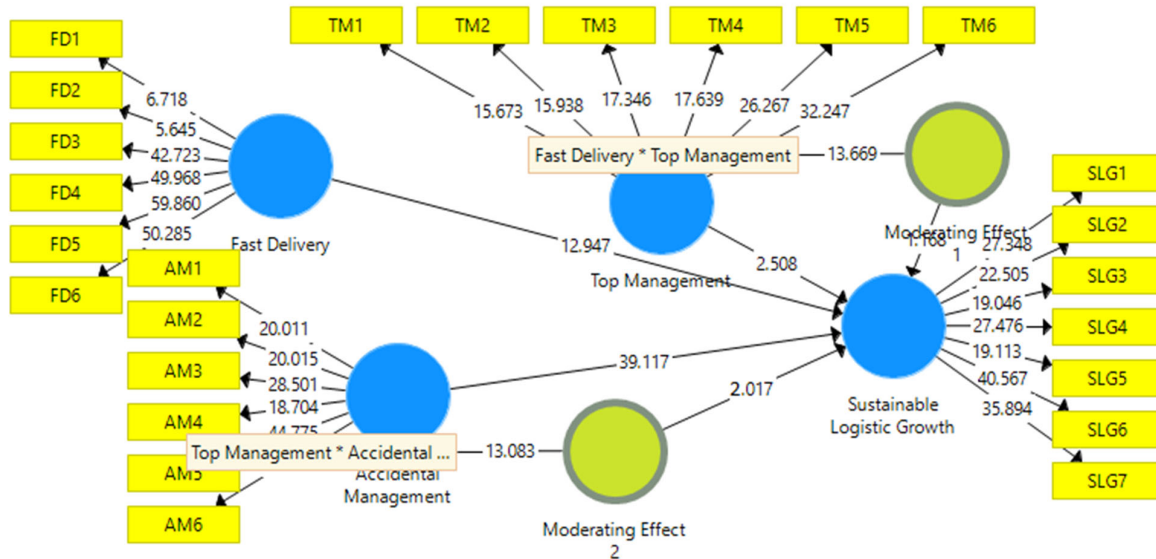


Fig. 5. Moderation Effect

5. Conclusion

The objective of the current study was to examine the effect of fast delivery and accidental management in sustainable logistics growth. This study examined the relationship between fast delivery, accidental management, top management and sustainable logistics growth. Furthermore, top management uses a moderating variable. Literature review highlighted that growth of logistics companies in Thailand is most important in a competitive market globally. Along with the growth, sustainability in growth is most crucial. Therefore, this study is an attempt to highlight various important factors affecting logistics growth. This study considered the element of sustainability in growth of logistics. Results of the study shows that sustainable logistics growth is most important for the logistics companies which are influenced by the fast delivery, accidental management and top management. Outcomes of the study provided vital outcomes for the sustainable logistics growth. According to the results of this study, sustainable logistics growth can be achieved with the help of fast delivery. Fast delivery to the outcome has the most vital role in sustainable logistics growth. Fast delivery has a positive effect on sustainable logistics growth. Increase in fast delivery increases the sustainable logistics growth. The second factor which has influence on sustainable logistics growth is accidental management. Accidental management is the vital element in the smooth operations of logistics companies. It provides a valuable contribution to accidental management. Accidental management also has a positive effect on sustainable logistics growth. Better accidental management has a positive role to enhance sustainable logistics growth. In this direction, top management also has the most crucial role among the logistics companies. Top management has a moderating influence on the relationship of accidental management and sustainable logistics growth. Hence, this study investigated that fast delivery, accidental management and top management has vital influence on sustainable logistics growth. Increase in these factors increases the sustainable logistics growth.

5.1 Implications of the Study

The relationship between fast delivery, accidental management, top management and sustainable logistics growth which is examined in the current study is the most vital relationship. This relationship is vital because the effect of fast delivery and accidental management is examined on sustainable logistics growth. Number of previous studies investigated logistics; however, the effect of fast delivery and accidental management is not examined on sustainable logistics growth. This

investigation about the fast delivery and accidental management has a vital role for the literature. Because the effect of fast delivery and accidental management on sustainable logistics growth is not examined by the previous studies, even this relationship is not examined in the logistics industry of Thailand. Furthermore, this study investigated the moderation role of top management. This study examined the moderation role of top management between fast delivery and sustainable logistics growth. Moreover, this study examined the moderation role of top management between accidental management and sustainable logistics growth. In terms of practical implications, this study is also vital for the logistics company's management. The management of logistics companies can increase the growth of sustainable logistics practices by including the insight from the current study. As this study proved that fast delivery and accidental management enhances the sustainable logistics growth, therefore, management of logistics companies should prove fast delivery and accidental management to enhance logistics sustainability growth. Furthermore, this study proved that top management has a vital role in this whole process. Top management increases the sustainable logistics practices which suggested that management of logistics companies should enhance sustainable logistics practices.

5.2. Limitations of the Study

The current study is limited to the logistics companies of Thailand. As the logistics operations as well as the strength of logistics services are different from country to country, the market is also different, that is why the results are tough to apply on the developed countries. Therefore, next studies should examine the current model on developed countries. Furthermore, this study only used fast delivery and accidental management to examine the effect on sustainable logistics growth. However, there are also important factors which affect sustainable logistics growth such as staff service quality, e-payment system and e-traceability. These factors should also include investigating logistics sustainability.

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