

SHIPPER'S INTENTION ON USING RAIL TRANSPORTATION IN THE CASE OF MALAYSIA BORDER

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Abstract: *This research attempts to investigate the factors influencing shipper's intention in using rail transportation in Thailand. Researcher had extracted six factors from literature review associated with the main factor, that is, the intention to use rail transportation, the dependent variable, relating it to timeliness, flexibility, reliability, safety & security, and cost factor, the independent variables. The research undertook primary data collection by using questionnaires targeted at shippers in the logistics and transportation activity, focusing on mode choice selection. Despite limitations, the examination revealed the correlation between timeliness and flexibility effecting strong influence on shipper's preference in consistent with the Theory of Mode choice model. Interestingly, the majority of Thailand shippers being sampled favored timeliness and flexibility in adopting rail transport. Notably, a positive relation of these two variables induced significance on other independent variables like cost, reliability and safety in the shipper's preference or intention to use railway as shipment haulage. Therefore, researcher recommended that the constraint of the study was localized to a small sample in southern Thailand that could be generalized on the whole of Thailand. The sample had been carefully selected at random and to be representative of the general outlook for Thailand. The population of survey was defined and confined to those active shippers in southern Thailand that sees the peninsula seaports, along both coasts, potential rise of cross-border and global trade with Malaysia. The sample taken aptly accommodates the requirement of representativeness of the case for generalization in Thailand, as a whole. It is aspired that this is deemed as the tip of the iceberg as reference for other research to be done.*

Keywords: *shipper's intention, theory of mode choice, timeliness, flexibility*

2021 JGBSE

Article Received:10 October 2020, Revised: 25 November 2020, Accepted:08 January 2021

Introduction

Rail transportation is one of most important transportation modes worldwide mobilizing both people and product. It has evolved with technological change and energy-efficient consumption. Rail transport contributes positively towards global economy in resolving congestion and facilitation of freight delivery. Hence, this needs to be taken into consideration to minimize negative impact in order to prepare for the possible changes (Ministry of Transport, Thailand, 2007). In that regard, Thai railway has a great expansion opportunity as it is supported with a vast land transportation that supplies the majority of domestic freight traffic (Charanwanitwong, 2012).

Shipper and consumer had been concerned about the capacity of railway to serve their long term needs and this concern was addressed with the improvement in asset utilization program like the number of unit train shuttles and quick loading/unloading incentives (National grain car council, 2011). Evidently, railway track and vehicle improvement were revealed not materializing causing customer's perception to lower preference for railway transportation in Thailand (Asian Development Bank, 2013).

Worldwide business competitiveness is an essential element for decision makers to acknowledge consideration of various factors on the appropriate mode of shipment transportation that care to sustain shipment value. On that stand, the selection of transportation mode has become more complex with multi-criteria decision considerations that decision makers have to face, such as cost, quality, delivery time, safety, accessibility and etc., in the choice for the best transport mode (Özceylan, 2010).

Minding the foregoing argument, the question of "What factors influence freight shipper in his intention to use rail transport in Thailand?" was fully recognized. Accordingly, the research objective was founded to investigate factors that influence freight shipper in the intention to use rail transport in Thailand.

Literature Review

The State Railway of Thailand (SRT) is the sole railway operator of Thailand with network of 4,180 km of rail tracks connecting 46 provinces of the country. In fact, SRT have only one-meter railway tracks width which limited to loads approximately 15-18 tons, petroleum products, cement and other building materials are the most principal cargoes carried by railway (Ongkittikul, 2014). However, Thailand rail transportation is old in condition and poorly maintained that constrains its role expansion ability in land transport resulting in low rail freight market share in tonnage with forecasted growth for year 2011 posting only 8%, and onwards forecasted to average of 7% growth through 2015 (Asian Development Bank, 2011).

The Intention to Use Rail Transportation

The Intention to Use Rail Transportation is a dependent variable that is defined, within the transportation industry, by Bektas and Crainic (2007) as the decision to choose transportation mode depends on the perception of all alternative services with matching comparison of other available information. Furthermore, Samimi, Kawamura, and Mohammadian (2011) came up with the basis for an acceptance tool policy assessment, specifically the truck and rail transport, where competition for shipper's shipment preference. So intention results in a decision that is identifiable with perception and acceptance to select or forego choices. Jarzemskis and Jarzemskiene (2017) held that rail transportation becomes more competitive than road transport only when sufficient volume of cargoes exists. Likewise, National grain car council (2011) suggested that advancement in locomotive technology enables the railroad to become more efficient and allow customer's preference to ship more per train. Then, according to Majercak, Kudlac, and Panak (2015), the variety of transport mode, the process of selection any kind of transportation mode should be based on pre-established criteria and assessed on several aspects that affect to the final quality of transport. These pre-established criteria are indicating the right mode of transport, crucial to guarantee the import and export activity efficiency, and sustaining cost effectiveness through safety, reliability, price, availability, as well as speed, an essential influence to ensure the selection process of preferred mode.

Service quality

According to Mun, Yee, Chalaya, and Sharif (2017) service quality is a portion of how well the service level that is delivered matches customer expectations, while a firm delivering quality service means conforming to customer expectations on a consistent basis, also service quality only involves customer appraisal and it is about the services performance level to fulfill the customer's needs.

Customers' Satisfaction

Customer satisfaction is purely connected to the customer's decision on choosing the public transport service provider in the future. The experience of the customers on the service whether the service has met their expectations and fulfilled their need will decide their intention to use the service by the provider (Mun, Yee, Chalaya, and Sharif, 2017).

Kim, Byun, Park, and Kim (2014) found that in order to maximize profit shipper and carrier prefers cheaper mode of transport which is basically based on transit time.

Timeliness

Scherer and Dziekan (2012) introduced travel time as a major impact on people's consideration to choose public transport mode to promote the image of transport system particularly in regard to rail transport. Timeliness is therefore related to travel or transit time to follow schedule. Similarly, understanding the factors that influence shipper's decision to choose the mode for shipment will show that transit time is a crucial determinant among the significant factors influencing shipper's choice sentiment on transport mode (Mitra and Leon, 2014). Also, Kim, Byun, Park, and Kim (2014) found that in order to maximize profit shipper and carrier prefers cheaper mode of transport which is basically based on transit time. The contention of train punctuality as a key element is supported by the high incidence of delays and this has caused the need to identify the most effective value improvement strategies of railway timeliness affecting travelers (Grechi and Maggi, 2019). Furthermore, in order to rail be punctual there are requiring as show below factors:

Transport Infrastructure

According to the Office of Rail Transport, (2020) railway infrastructure management is the provision of railway infrastructure, which means allocating paths along railway lines for railway undertakings and providing the necessary railway infrastructure for use. Railway undertakings are authorized to have minimum access to railway infrastructure and access to service facilities on railway network and also to provide this service.

System

Refer to Rodrigue (2020) most rail systems improved passenger and freight services where both sections are maintained the railways give priority to passengers since rail persists as the dominant mode for inter-city transport which a significant investment has occurred in improving the comfort of trains and in passenger rail stations, but most distinguished has been the upgrading of track and equipment in order to achieve higher operational speeds.

Flexibility

Flexibility is the ability to adapt, and to adopt improvements, in facing new business opportunities. Woodburn (2011) found that better understanding of the rail market nature for inland container movement to and from the key ports in Britain must observe rail network flexibility and capability to cater to new business opportunity such as inland container

movement. Thus, to fascinate more customers in container rail transportation, the rail container shipping market must improve on its flexibility of service as it plays a significant role in the industry as referred to Russia shipper's choice for land transportation especially in container basis between rail and road transport industry (Kearney, 2010).

Flexible Transport

According to Fan, Schwartz, and Voß (2016) Flexible transport can be achieved by using variable transportation modes in two steps: The first step is to determine the transportation mode for each product on each transportation link. Buffer time should be reserved by using low-speed transportation modes. The second step is to eventually switch to a faster transportation mode after a disruption event happens to save transport time for adopting alternative plans. The decision of the second step depends on the location and severity of the disruption event.

Whereas, Grosso (2011) affirmed that reliability is also one of the influencing factors in deciding the choice of transport mode to move traffic or cargo to the destination.

Reliability

According to Raicu and Taylor (2006), system reliability is identified significant in the planning, construction and operation of transportation network to commit on the degree of stability of quality of service offered. Reliability in mode of transport equates efficiency in transport planning, modelling, analysis, management avoiding delays especially with the introduction of the Intelligent Transportation System (ITS) to rail system (Qureshi and Abdullah, 2013). Therefore, reliability denotes stability of quality service through efficiency. Landex (2012) accorded delays in railway network can reduce railway operation reliability and thus it is necessary to institute an analysis, and plan thereof, on the different future scenarios of railway operation concerning the decision on connecting train delays to ensure railway reliability. According to study of Conradie, Fourie, Vlok, and Treurnicht (2015) shows that reliability being important to railroad companies, and cannot be ignored, a reliability metric or standard based on a railway service performance is established which maximizes the availability of equipment by improving the system reliability through system inspection, and finally scheduled preventative maintenance and replacement. To increase shipper reliability rail transport must fulfill the below factors:

Service Reliability

Present research on service reliability of public transport is dedicated to schedule punctuality both operators and passengers' perspective, which is service regularity represents the operators' perspective which commonly used indicators to measure reliability, passengers' travel time-related aspects such as average waiting time, additional waiting time, average travel time and average additional travel time describe passengers' perspective of reliability (Firew, Mladenovic, and Weckström, 2016).

System Reliability

According to the study of Conradie, Fourie, Vlok, and Treurnicht (2015) show that reliability is essential to railroad companies, and cannot be ignored, which is to maximizes a reliability metric on railway service performance on an improvement the system reliability through system inspection by established the availability of equipment and scheduled preventative maintenance and replacement

Beside, Vishnuvarthani and Selvaraj (2012) suggested the way to increase the reliability of rail transport is to deploy more Mobile Security Force to improve security protection of travel trip.

Safety & Security

Vishnuvarthani and Selvaraj (2012), the majority of people's perception on preference for rail transportation are highly negative with regard to transport safety in terms of theft, robbery, and the likes. The commitment to comply with all security requirement and with evidence of perfect record thereof to warrant capability of maintaining their shipment from such threat. In contrast, Sideris, Taylor, and Fink (2006) introduced an important long-term strategic security planning of rail transport that can prevent loss and damage goods, stolen or even terrorism condition in the logistics and transportation system. Roberts (2012) expressed that enhanced security is dependent upon the carrier willingness to undertake transport of products that is known to be hazardous by its nature, such as hazardous chemical product, as the obligation to conform to strict security requirement is much needed. Besides that, safety and maintenance inspections should be repeatedly supervised in all parts of the train system that can create a scheduled number of repair and educative maintenance action using the inspection and diagnostic measurements to ensure time consistency as each work with contrasting work load bears time limits for restoration (Liden, 2015). On the other hand, to increase the enhancement for SRT rail transport safety below factors are needed to be concern an improvement:

Human Factor

A human factor is a discipline that applies knowledge of human capabilities and limitations to the design, operation, and maintenance of technological systems, which it draws from established disciplines such as psychology, ergonomics, physiology, and engineering (National Rail Safety Regulator, 2017).

Maintenance Factor

The maintenance of industrial equipment is defined as all activities necessary to restore equipment to/or keep it in a specified operating by improving the reliability of the system through scheduled preventative maintenance, replacements, and inspections condition which the objective to maximize equipment availability (Conradie, Fourie, Vlok, and Treurnicht, 2015).

Moreover, to maximize profit, transportation cost meets the criteria of shipper and carrier preferences (Kim et al., 2014).

Cost

According to Banomyong, Ritthironk, Varadejsatitwong and Supatn (2011) the factor that affects a decision making process of logistics service provider (LPS) is the cost of logistics, that in turn influences a positive or negative outcome. Transportation cost is the second important factor that most of service providers should be mindful and address it with suitable planning to optimize resource utilization. Sivalai and Rojniruttikul (2018) disclosed that logistic cost in Thailand is high when compare to other ASEAN neighbors, Malaysia and Singapore, as both countries have the overall logistics cost below 10% of GDP. Besides that, Scherer and Dziekan (2012) remarked that the image of transport system has an effect on demand for rail transport and cost creates major impact on mode choices of public transport conducive to its market share. In addition, Odoyo, Owuor (2014) cautioned on the factors that make rail transport a non-preferable transport mode among oil marketer and the key determinant factor points to cost of transport particularly in the carriage of white petroleum

product. The below factors are the most influential cost factors that related to transportation cost structure to the development of rail transportation in the country, which are:

Government Investment

According to Thongkamkoon, (2017) The transportation infrastructure quality plays a crucial role in improving competitiveness as now Thailand’s transportation infrastructure is still in developing as compared to other developed countries in the Asia Pacific, which is on 27 March 2015, the Cabinet approved the Transport Infrastructure Development Master Plan (2015 – 2022) (Kong-led, 2018). Furthermore, the Transport Infrastructure Development Strategies 2015 - 2022 consists of 5 Plans which targeting to reduce the cost of logistics and transportation, which in turn to improve the competitiveness of the economy (Thongkamkoon, 2017).

Funding

Funding is the revenue foundation which makes financing possible that may come from passenger ticket revenues, freight contract revenues, subsidies from the government to provide social services, or revenues from leveraging assets such as stations and right-of-way (Lawrence, 2018)

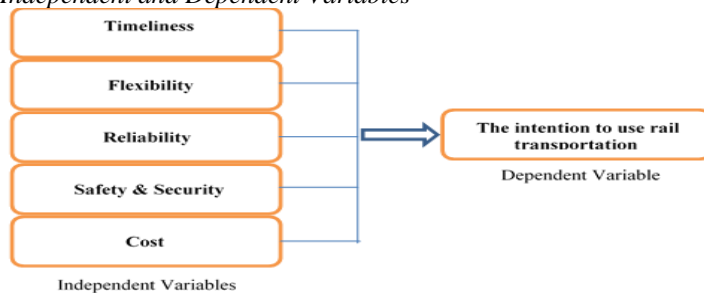
Methodology

It reviews the research design and methodology used to answer the research questions. First, it presents the variables for testing the research questions and states the main hypotheses. Next, the research methodology is described in detail, including sampling, instruments, data collection, and the data analysis method.

Research Frame Work

It explained the relationship between independent variables and a dependent variable as depicted in the diagram below.

Figure 1
Independent and Dependent Variables



Research Design

Descriptive based research was present to this study, where the main factor of descriptive research could deliver correctly and effectively relevant variables to the research question. Quantitative research method design was used to investigate the relationship between emerged variables. The research undertook primary data collection by using questionnaires targeted at shippers involved in logistics and transportation activity and it focused on mode choice selection.

Operation Definition of Variable and Hypotheses

The hypotheses for this study were as follow.

H1: Timeliness influence to the intention to use rail transport.

H2: Flexibility influence to the intention to use rail transport.

H3: Reliability influence to the intention to use rail transport.

H4: Safety & Security influence to the intention to use rail transport.

H5: Cost influence to the intention to use rail transport.

Population

According to the prescribed objective, a survey was carried out on the practitioners (shippers) involved in logistics and transport activities, who were the main respondents for this research. This was decided basing from evidence from previous studies that shippers' experience could facilitate the survey on perception of road transport fulfilling their shipment carriage requirement better than rail transport.

Sampling Data

In this study, researcher sampled only southern Thailand shippers with varied transport of shipment use, both for import and export activities. Simple random representative sampling method was used to ease the researcher from performing on the whole population thereat. In this endeavor, the sample size taken was 214 as the population of shippers or manufacturing companies in southern Thailand was 463 companies (Department of Industrail Works, Ministry of Industry, 2015). In defining the sample size; the researcher will use the matrix table introduced by Krejcie and Morgan (1970).

Data Analysis Method

In order to ensure the study was validated, researcher used a process of multiple regression analysis to getting more study on the relationship between those variables, independent variables and a dependent variable by the overall variance derived and thereby to explain the model and the relative contribution to the total variance for the benefit of the researcher and others.

Data Analysis

The data analysis and presentation was derived through the utilization of the software Statistical Package for Social Science (SPSS) version 20. It does frequency distribution analysis, descriptive statistics, normality, factor analysis, Cronbach's Alpha for reliability and Pearson Correlation Matrix and Multiple Regression that were used to measure the relationship between variables.

Respondent Demographic Profile

A total of 214 questionnaires were distributed to the target respondents and all 214 sets were to the researcher with 19 sets of questionnaire excluded as an outlier, that is, an observation point that was distant from other observations due to variability in the measurement or experimental error. Descriptive statistics was used to analyze and summarize the data acquired from the respondents. As pointed by Pallant (2007), descriptive statistics is used to describe the features of the sample, as recounted in the Method section, and to check the variables for any assumptions discrepancy of the statistical techniques addressing the specific research questions. Table1 below presents the frequency analysis of respondent demographic profile.

Table 1

Respondent demographic profile frequency

Variable	Frequency	Percent
Gender		
Male	88	45.1
Female	107	54.9
Age		
20-30	123	63.1
31-40	50	25.6
41-50	21	10.8
51-60	1	0.5
Marital Status		
Single	105	53.8
Married	90	46.2
Education level		
High school graduated	18	9.2
Bachelor's degree	137	70.3
Master degree	34	17.4
Ph.D.	6	3.1
What is your current employment status		
Full time	154	79
Part time	41	21
Please indicate how much volume of your transport in Tones per year? (We appreciate that this may be approximated)		
Lower than 1,000 tonnes/year	85	43.6
1,000 - 3,000 tonnes/year	55	28.2
3,000 - 5,000 tonnes/year	28	14.4
More than 5,000 tonnes/year	27	13.8
What industry would describe your company being in?		
Automotive part	21	10.8
Chemical	10	5.1
Food product	39	20.0
Lumber or wood product	14	7.2
Rubber product	18	9.2
Other commodities	93	47.7
How is your company's product transported?		
Bulk cargo	21	10.8
Piece goods	94	48.2
Less container load	23	11.8
Full container load (FCL)	57	29.2
Which of the following modes of transport is your MAIN mode for your freight movement in Thailand?		
Road transport	152	77.9
Rail transport	13	6.7
Ocean transport	17	8.7
Air transport	13	6.7

Table 1 (Continued)

Variable	Frequency	Percent
How often do you use rail transport to transfer your product?		
1/month	26	13.3
2/month	20	10.3
more than 2/month	30	15.4
Our company never use rail transport	119	61.0
Over the last five years, what kind of transportation mode that you use at most?		
Road transport	152	77.9
Rail transport	15	7.7
Ocean transport	15	7.7
Air transport	13	6.7
Does your company take responsibility for selecting the type of transport mode that you use?		
Yes	166	85.1
No	29	14.9
What do you think about rail transportation in Thailand?		
Timeliness	40	20.5
Flexibility transport	20	10.3
Reliability	9	4.6
Safety & Security	7	3.6
Low cost	119	61.0
How important does your company views rail transportation as a usable alternative for your company's transport?		
Not important	13	6.7
Less important	12	6.2
Neutral	99	50.8
Important	49	25.1
Very important	22	11.3
How much important will you give to the timeliness factors?		
Please rate		
Not important	5	2.6
Less important	5	2.6
Neutral	37	19.0
Important	44	22.6
Very important	104	53.3
How much important will you give to the flexibility factors?		
Please rate		
Not important	6	3.1
Less important	8	4.1
Neutral	57	29.2
Important	76	39.0
Very important	48	24.6

Table 1 (Continued)

Variable	Frequency	Percent
How much important will you give to the reliability factors? Please rate		
Not important	6	3.1
Less important	4	2.1
Neutral	48	24.6
Important	46	23.6
Very important	91	46.7
How much important will you give to the safety & security factors? Please rate		
Not important	3	1.5
Less important	6	3.1
Neutral	33	16.9
Important	46	23.6
Very important	107	54.9
How much important will you give to the cost factors? Please rate		
Not important	4	2.1
Less important	5	2.6
Neutral	47	24.1
Important	57	29.2
Very important	82	42.1

Multiple Regressions Analysis

This study used standard multiple regression analysis to evaluate the relation between independent and dependent variable at a 95% confidence interval. The interpretation of this analysis is based on t-value and significant level which provides evidence whether its support or not support the hypothesis stated earlier. T-value should be >2 while significant level, $p < 0.05$. Table below summarizes the results for the developed hypothesis.

Table 2
 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.777 ^a	0.603	0.590	2.17503

a. Predictors: (Constant), COST, TIME, GL, RELIABILITY, FLEXIBILITY, SAFETY

Table 3
 ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	1351.356	6	225.226	47.609	0.000 ^b
1	Residual	889.383	188	4.731		
	Total	2240.738	194			

a. Dependent Variable: DV

b. Predictors: (Constant), COST, TIME, GL, RELIABILITY, FLEXIBILITY, SAFETY

Table 4
 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.225	1.133		1.081	.281
GL	-0.183	0.094	-0.111	-1.942	0.054
TIME	0.626	0.083	0.570	7.517	0.000
1 FLEXIBILITY	0.395	0.087	0.375	4.561	0.000
RELIABILITY	-0.133	0.133	-0.082	-1.002	0.318
SAFETY	-0.233	0.139	-0.141	-1.679	0.095
COST	0.120	0.076	0.121	1.572	0.118

a. Dependent Variable: DV

Table 5
 Summary of The Finding from Hypothesis Testing

Hypothesis	Accept/Reject
H1: Timeliness influence to the intention to use rail transport.	Accept
H2: Flexibility influence to the intention to use rail transport.	Accept
H3: Reliability influence to the intention to use rail transport.	Reject
H4: Safety & Security influence to the intention to use rail transport.	Reject
H5: Cost influence to the intention to use rail transport.	Reject

In the case of H1, the t-value is $7.517 > 2$, $p < 0.05$ which posits that Timeliness has a significant impact on the intention to use rail transport. Therefore, it validates the first hypothesis. In the case of H2, the t-value is $4.561 > 2$, $p < 0.05$ which supplement that Flexibility has positive impact on the intention to use rail transport. The results support H2. However, in the case of H3, the t-value is $-1.002 < 2$, $p > 0.05$ which indicates no significant relationship between Reliability and The intention to use rail transport. Moreover, In the cases of H4 and H5, the t-value is -1.679 and 1.572 , $p > 0.05$ respectively which are also indicates no significant relationship between both two variable Safety & Security and Cost to The intention to use rail transport.

DISCUSSION AND CONCLUSION

Discussion of Finding

For this study, the respondents were 214 from southern of Thailand. The following discussion was based on objectives and the results obtained from multiple regression tests. The multiple regression tests revealed that:

1. a positive relation between timeliness and the intension to use rail transport and, in fact, it was first priority in the transportation mode choice;
2. Flexibility of transport made the same effect on transport preference which means that shippers also emphasized on flexible transportation for Thailand railway transportation.
3. In this study, timeliness and flexibility were found a positive significant effect on the intention to use rail transport. Previous study revealed that shippers were willing to pay high cost in order to reduce the transportation time which mean shipper consider timeliness was first priority for their decision when the selection of mode was needed (Halse and Oslo, 2012).

However, there were three factors found insignificant to this study, reliability, safety & security, and cost factor implying that Southern Thailand shippers were not strongly focused on those factors

Practical Contribution

In the practical perspective, transportation policy is seen as a key instrument in promoting, developing and shaping the national economy which is the goal of transport policy is to make effective decisions concerning to distribution transport resources, including the management and regulation of existing transportation activities (Slack, Notteboom, and Rodrigue, 2020). Thus, this research which contribute to the policy maker give southern Thailand local authority to do a strategic planning in order to look into a bigger picture and benefit from railway transportation of country to increase usage share as mention in Peetawan and Suthiwartnarueput (2018) Thailand the major investments during 1980-2000 were mainly infrastructure improvements and maintenance with few double tracking and triple tracking projects which cause to awakening of the government's concern about the country's high logistics cost per gross domestics product (GDP) with a low proportion of freight transported by rail (approximately 2% of freight transported domestically) that has pushed the National Economic and Social Development Board (NESDB) to launch national logistics strategies and a master plan to bring down the cost by 2 percent by 2020 (Peetawan and Suthiwartnarueput, 2018).

Theoretical Contribution

The contribution of this research, in the theoretical perspective, lies in identifying factors such as timeliness, flexibility, reliability, safety & security, and cost that could be important in their influence on the intention to select rail transportation as a first priority choice of transportation mode, particularly for freight transportation. This research contributed to the theoretical Mode choice model by testing shipper intention to use rail transportation in Thailand. The result of this study supported the Theory of Mode choice model in a way that shipper preferred timeliness and flexibility for their intention towards certain action. In this study, shippers were influenced by social interaction and their connection through the process of seeking information and sharing experiences.

This research not only contributed on theoretical grounds but also contributed to the extanding research on rail for ASEAN empirical knowledge persractive as Thailand is one of ASEAN country which claims that Thailand rail transportation lacks empirical research and, as such, there is a need for understanding its factors and their influences as acknowledged from shipper perception. This study tested the shipper's intention to use rail transport in Thailand, adopting the original theory of pevious studies, to be the basis in this undertaking.

Limitations and Recommendation

There were few limitations of the present study need to be highlighted and these are as follows:

1. This study employed sampled respondents in southern area of Thailand only and it was insufficient to apply the finding for the whole country. The result obtained from this study might not be generalized to the whole nation since only the southern part of the country was involved. Therefore, it is essential for future research to conduct and covers a larger group of respondent and should not only focus on one specific area only to get interesting findings.
2. This research included all shippers company in the private sector that are currently using rail transportation as well as those who rarely using it. The studies faced some difficulties to get permission for distributing the questionnaire due to their underestimation of this academic research. Therefore, future study researchers should also consider conducting study in the public sector or running comparative studies between the public sector and private sector in Thailand or any other interesting country.
3. Quantitative methods were chosen for this study since it was the fastest way to gain information from respondents. However, the information gaining from this method is unreliable. This also can be deemed as another limitation of this study. Therefore, future research should also use qualitative method in order to ensure the generalizability of the findings.

Conclusions

Based on discussion above, it is important for future study to acknowledge the importance of the factors that affect shipper's intention in rail transport preference. This study is hope to enlighten company and organization dealing in or with rail transportation industries. More importantly, the benefit of this study will give the relevant local authority and, particularly, the Ministry of transport in Thailand to have a better insight of the opportunity that lies ahead for rail transportation, hence, the need to improve and overcome the limitation to enhance railway freight revenue by promoting usage share in the market.

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