

Factors Affecting Service Value Creation Of Road Transport Service Providers In Thailand

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Abstract

This research aims to determine factors affecting service value creation of road transport service providers in Thailand and propose a guideline for service value creation of road transport service providers in Thailand. This research was designed as quantitative. Data collection was performed using a questionnaire distributed to 276 road transport service providers whose business are still in operation and registered with the Department of Business Development (DBD). The data was analyzed using Structural Equation Modelling (SEM). The results revealed that dynamic capability does not influence service value creation. However, it has a direct effect on digital transformation and research and development (R&D) performance. It was also found that digital transformation has a direct effect on service value creation. In addition, R&D performance has a direct effect on service value creation and dynamic capability has an indirect effect on service value creation through digital transformation and R&D performance. The main practical implication of this research is to help create service value for road transport service providers in Thailand by developing their dynamic capability leading to digital transformation and R&D performance. This will result in service value creation of road transport service providers in Thailand in terms of relationship building, engagement, and co-value creation.

Keywords: Dynamic Capability, Digital Transformation, R&D Performance, Service Value Creation, Road Transport Service Providers

1. Introduction

Thailand 4.0 is one of the key economic and industrial development plans of Thailand which is based on the concept of digital development and holistic growth (Kohpaiboon, 2020). It focuses on building value-based economy and driving innovation, technology, and creativity, which spurs new businesses in different industries, especially in logistics industry (modern parcel delivery, road transport, customs brokerage, and product management). This results in continuous market growth of manufacturing and service sectors in Thailand. According to Global Consumer Behavior Research Report 2021, the market value of manufacturing and service sectors in Thailand is 426,655 million baht (approximately USD 13.333 billion) (Kasikorn Research Center, 2021). This attracts both Thai and foreign investors. As a result, various industries in Thailand try to develop their capabilities and create new and different services

catering to the needs of customers to stay competitive. For businesses to compete and keep up with the dynamic environment of global economy, innovation capability development, R&D performance improvement, and strategic organization transformation which incorporates the use of technology are critical (Miocevic, 2021; Donbesuur et al., 2020). They are key capabilities in succeeding in a dynamic market. With a rapid expansion of e-commerce at 18% per year (18% CAGR), the parcel delivery market has continued to grow at an average of 40% per year (40% CAGR). This results in 4 million parcels delivered per day in 2020 (ETDA, 2020).

There is intense competition among road transport service providers domestically and internationally which is driven by the growth of electronic commerce (E-Commerce). As E-Commerce grows, there is an increasing demand for express delivery. Hence, an increasing number of entrepreneurs have pivoted to operating their own express delivery service, making the competition more intense. According to the analysis of the Office of the National Economic and Social Development Council (NESDC) in 2020, it was found that road transport remains Thailand's main mode of transportation, accounting for 78.3%. Change in the business model linking trade with electronic commerce is supported and encouraged as it is beneficial in terms of logistics cost management (NESDC, 2020).

Road transport service is an important part of supply chain management. It is the link between buyers and sellers in product delivery. Covid-19 epidemic affects logistics system in terms of movement of goods, especially in road transport. This greatly impacts road transport service providers, most of whom are small enterprises (94.4% of registered enterprises) (NESDC, 2020). As they have a small customer base, their investment in technology and human resource is minimal. Those with limited working capital often face liquidity problems and are compelled to gradually close their business. On the other hand, middle-large enterprises possess competitive advantages and higher bargaining power in the market. As a result, small enterprises are unable to compete in the market during the crisis. Therefore, road transport service providers need to focus on building dynamic capability to swiftly respond to different needs of customers in changing market. The main factors that affect the decision of customers in choosing a service is the quality of product and the quality of service accompanying the product. In other words, if the quality of the product is exceptional, but the quality of the service accompanying the product such as delivery is poor, the product may not satisfy the customer. For this reason, service quality plays an important role in driving customer satisfaction. If such service is performed well, it will boost the level of satisfaction in the product, leading to the decision to choose the service. Good delivery management must consider the needs of all involved parties. In addition, customers must be satisfied with product delivery. Service value creation is important in meeting customer needs. It is the quality of service that creates new experience through customer perception. It must create the perception in which the benefits that customers receive are worth more than what they pay for (Nada & Ali, 2015).

Businesses that can create service value are more likely to achieve good service performance. The study of Luangsakdapich (2020) which focuses on service innovation capability and service performance of hotel businesses in Thailand, revealed that service value creation and proactive continuous service improvement influence service performance and customer engagement, leading to competitive advantage development. Liu & Huang (2020) studied the relationship between entrepreneurial marketing orientation, organizational value co-creation, and entrepreneurial self-efficacy. It indicated that market value co-creation enables organizations to communicate better with customers and become more aware of market needs. In addition, Barile et al. (2020) affirmed that the key variable in driving value co-creation in service processes strategically is improving R&D performance from different perspectives, leading to knowledge enhancement and continuous sustainable innovation. As road transport service providers play a significant role in logistics and product delivery, supporting the growth of e-commerce which contributes to Thailand's economy, their capabilities and

service quality must be developed and enhanced to compete in a dynamic market. Hence, factors affecting service value creation of road transport service providers needs to be explored so that road transport service providers will be able to improve their service quality and deliver service value (Borgström, Hertz & Jensen, 2021).

Various studies have been conducted on service value creation (Hansen, 2019). However, research on service value creation in the context of supply chain management and road transport is very limited (Matarazzo et al., 2021). In addition, there is a lack of studies on relationship between service value creation and dynamic capability (Kuo, Lin, & Lu, 2017). Therefore, this study aims to determine factors affecting service value creation of road transport service providers in Thailand and provide a guideline for service value creation of road transport service providers in Thailand. Hence, this research attempts to fill in the literature gap by developing a conceptual framework that emphasizes on dynamic capability, adaptability and service value creation which are the critical capabilities that entrepreneurs need to possess to succeed in business in the age of digital society and rapidly changing technology, allowing for expansion of knowledge in supply chain and marketing. This research also adopts a conceptual framework which integrates dynamic capability, R&D performance, and digital transformation, bringing about value creation to customers and organizations in the era of change under the Covid-19 epidemic situation. In addition, this research provides critical information for business executives in decision-making in service and manufacturing sectors in Thailand, particularly road transport service business in Thailand, which has seen a high growth in the past few years (NESDC, 2020). The research findings will help them develop appropriate strategies for service value creation, driving new product and service offering that meet the needs of customers.

This research article is organized as follows: the significance of the study and literature gap are highlighted in the introduction. Next, literature review and hypotheses are presented. Then, methodology, sample selection and data collection are described. Then, data analysis and results are discussed. Finally, discussion, implications, future research directions are proposed.

2. Literature Review

2.1 Dynamic Capability

Not only are competitive advantage and success in business supported by resources, but they also rely on dynamic capability. Dynamic capability influences development of resources and capability leading to the ability to respond to dynamic business environment (Krzakiewicz, 2013). Eisenhardt and Martin (2000) stated that dynamic capability is not solely the source of competitive advantage and business success. For competitive advantage to be acquired and business success to be achieved, dynamic capability must be developed from quality and suitable resources. Luo (2000) also described quality resources as talents with competency. They must be willing to develop, adapt and learn. They must also be aware of the environment that the firm is facing to learn and adapt accordingly. Dynamic capability can be defined as “appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment” (Teece & Pisano, 1997, p.515). The concept of dynamic capability was first introduced in 1990 (Teece, Pisano & Shuen, 1990). In 1994, dynamic capability framework was published in the research titled “The Dynamic Capabilities of Firms: An Introduction”. From the research, it was found that dynamic capability can be acquired when competitive advantage is achieved. Competitive advantage is fundamental in achieving effective business operation. Continuous learning in business operation and strategic management must be realized so that firm can gain critical knowledge and key resources such as trade secrets allowing firm to gain competitive advantage (Teece & Pisano, 1994). Dynamic capability can be defined in terms of innovation, resource development and resource reconfiguration. Innovation in dynamic capability can be defined as the ability to create and innovate

which can be found in R&D department of firms. They make use of available resources and create new knowledge, processes, and products. Resource development is the ability to exploit and improve resources to expand business. Resource reconfiguration is the ability to adapt or add value to resources which leads to improved and differentiated products (Teece & Pisano, 1994). Based on the research of Wang & Ahmed (2007), dynamic capability can also be defined in terms of ability to innovate, learn, and absorb new knowledge, and adjust to a changing environment. Hence, in this research, dynamic capability is specified as innovative, adaptive, and absorptive capability. Adaptive capability is defined as the ability to alter products or services in response to the rapidly changing demand of market. It is also investigated in terms of consumer and competitor monitoring, exploitation of new opportunities, and resource management (Drnevich and Kriauciunas, 2011; Wang & Ahmed, 2007). Absorptive capability is defined as the ability to learn and gain knowledge. Knowledge which is acquired externally is then applied internally to develop new products for market or improve efficiency in business operation (Zhou et al., 2018; Liu, et al., 2018). Innovative capability can be defined as the ability to apply knowledge acquired in creating new products, processes and systems which are beneficial to business and stakeholders. Innovative capability can be multi-dimensional. It can be applied to strategic management, organizational behavior, work process, product, and new market exploitation. In addition, it can be explored in terms of organization management and organization culture (Zhou et al., 2018).

2.2 Digital Transformation

Digital transformation plays a significant role in driving business in service and manufacturing sectors. Technology can cause change or transformation in business in response to customer needs and create competitive capability which is completely different from the past. Digital transformation has become an important issue in the past few years. World Economic Forum (WEF) initiated Digital Transformation Initiative (DTI) in 2015 in collaboration with Accenture which is the world's leading consultant company (WEF, 2015). Key technologies affecting service and manufacturing sectors were studied. These technologies were utilized by the world's leading companies contributing to business changes. From the study, 7 key technologies were specified: 1. Artificial intelligence (A.I.) 2. Autonomous vehicle 3. Big data analytics and cloud 4. Custom manufacturing and 3D printing 5. Internet of Things (IoT) and connected devices 6. Robots and drones and 7. Social media and platforms (Accenture, 2013). Digital transformation can be defined as changes in business model integrating technology in which services and processes are adapted to meet the needs of customers rapidly, leading to value-creation, new products, and services (Accenture, 2013; Solis, 2016; Ross et al., 2016). Based on the framework of digital transformation, digital transformation can be categorized in 3 levels which are Information Technology (IT) transformation, business operation transformation, and business model transformation (Accenture, 2013). IT transformation utilizes technology in organizational management with the aim to increase efficiency and effectiveness. Technology is incorporated in service and operation. Business operation transformation utilizes technology in organizational management and direct product or service delivery. Customers will become clearly aware of changes in product, service, and business operation when business operation transformation occurs. Business model transformation utilizes technology to transform the business entirely. The existing business can be transformed to become a new business affecting the business itself and customers. The transformation can significantly affect supply chain or industry (Accenture, 2013). Berman (2012) created a Digital Transformation Reference model which emphasizes on incorporating technology in managing organization, developing service and business operation, and creating platform for product and service delivery. Accenture (2013) proposed a digital transformation model which focuses on digitalizing marketing and business operation, and adapting business model. Taruta et al. (2018) identified critical factors of digital transformation which are resource fit, capability fit, changes in business model, and government regulation. Based on extensive review of various digital transformation models and factors, 3 dimensions of digital transformation are

proposed which are digital marketing, digital operation, and digital business. Digital marketing can be defined as utilization of technology to enhance customer service. It can be in the form of customer communication, product delivery, and creating new sales channels. For example, online promotion is offered to encourage customers to buy product through online channels. Digital operation involves implementing technology which facilitates internal coordination leading to work efficiency. To illustrate, Project Management Software can be utilized to reduce cost and track the progress of projects. Digital business is defined as adaption in services and products to meet the rapidly changing needs of customers. It can lead to creation of new products and services. For instance, in the past, Adobe focused on selling perpetual license to customers. With cloud technology, Adobe pivoted their business model and offered subscription service including cloud file saving and syncing, which provides ease and convenience to customers.

2.3 Research and Development Performance

Research and development (R&D) can be described as a process of seeking new knowledge systemically or development of new knowledge from production process, which is applied to improve products or services, leading to higher demand by customers and companies. In addition, Hung (2017) defined R&D as a guideline or an invention resulting from the process of innovation which is used to improve agencies or society, leading to effective development or change. Hurley & Hult (1998) stated that R&D leads to innovation, invention, and change which is beneficial and practical, and help create added value to businesses and consumers. Avlonitis et al. (1994) claimed that R&D is the process of improving, adapting, or inventing methods, services or products that can effectively meet the needs of customers. Laws et al. (2013) indicated R&D results in innovation, invention, or new technology that can effectively meet the needs of consumers. Griliches (2007) illustrated that R&D brings about products and services that are different from competitors which can add value to the business. In this research, R&D performance consists of 3 key dimensions based on various research and definitions which are customer, innovation, and financial perspective (Avlonitis et al., 1994; Hurley & Hult, 1998; Hult et al., 2007). Customer perspective involves the ability to provide new services which meet the needs of customers accurately and quickly. Innovation perspective focuses on development of new services which are unique and different from competitors. Financial perspective concerns management of R&D costs and management of firms' capital (Avlonitis et al., 1994; Hurley & Hult, 1998; Hult et al., 2007).

2.4 Service Value Creation

Value co-creation is very important to today's customers and is a unique process of creating interactions between firms and customers, particularly through online communication. If firms can provide convenience to customers and create unique experience based on customer perspective leading to continuous collaboration, they will be able to gain customer trust. In addition, firms will be able to develop products and services that meet the needs of customers, resulting in customer engagement. Service value creation can be defined as the process by which firms and customers collaborate to create value for both parties, resulting in a new product or service (Kao, Yang, Wu & Cheng, 2016). Prahalad & Ramaswamy first (2004) created the concept of value co-creation and proposed DART model that consists of 4 main elements which are dialogue, access, risk, and transparency. Co-creation focuses on communication between customers and firms. This creates shared values that lead to action and response. Communication can take place through various channels. It does not only involve exchanging of verbal information to support the process of value co-creation, but it also focuses on fostering interactions with stakeholders to create and develop innovations through mutual learning. Schilke, Hu & Helfat (2018) proposed the concept of value co-creation and created Interaction-Serve-Proposal-Act-Realize model (ISPAR model). The model focuses on providing services based on value co-creation between firms and customers and promoting communication between firms and customers to create

good experience for customers. There are 4 keys elements in the model which are interaction, serve, propose, agree, and realize. Kao, Yang, Wu&Cheng (2016) proposed Interaction-Engagement-Proposal-Act-Realized model (IEPAR model), which focuses on value co-creation in the context of communication through social media. It was emulated from the ISPAR Model. The element of 'serve' was changed to 'engage' to emphasize that engagement is a critical step towards the success of value co-creation. The element 'agree' was changed to 'act' to highlight the importance of change catalyst in firms' innovation. In this research, service value creation is measured in 3 dimensions which are interaction, engagement, and realization of value co-creation. Service quality can be achieved when firms provide services or experience that customer perceive to be worth more than what they pay for. Hence, firms will be able to retain customers and build customer loyalty. (Prahalad & Ramaswamy, 2004; Maglio et al., 2009; Schiavone, Metallo & Agrifoglio, 2014).

2.5 Dynamic Capability, Digital Transformation, R&D Performance and Service Value Creation

Mihardjo & Rukmana (2018) found that highly dynamic and competitive markets can influence dynamic capability leading to digital transformation. Dynamic capability must be developed so that digital transformation can take place, resulting in value creation (Mihardjo & Rukmana, 2018). Schmidt & Scaringella (2020) studied the relationship between dynamic capability and disruptive innovation with value proposition innovation as a mediator. It was found that dynamic capability influences value proposition innovation in terms of new offerings and new channels, leading to disruptive innovation and value creation. Therefore, firms must build learning and adaptive capability to drive disruptive innovation and transform the business model. Sasmoko et al. (2019) explained that innovative capability and adaptive capability influence technology adoption. Sousa-Zomer et al. (2020) illustrated that dynamic capability influences organizational change leading to digital transformation. Teece (2018) examined how dynamic ability and strategies are interdependent. Dynamic capability influences strategic management, resulting in business model design which improves R&D implementation. Schilke et al. (2018) validated that the dynamic capability enables firms to adapt to external changes and influences innovation. Landroquez, Castro & Cepeda-Carrión (2011) revealed that building dynamic capability in terms of strategic management, knowledge management, and customer relationship management leads to superior customer value creation. O'Cass & Sok, (2014) demonstrated that the dynamic capability of SMEs through the mediating role of competitive strategies influences value creation. Thus, Hypotheses 1, 2, 3, 4, 5 are proposed as follows:

H1: Dynamic capability directly influences service value creation.

H2: Dynamic capability directly influences digital transformation.

H3: Dynamic capability directly influences R&D performance.

H4: Dynamic capability indirectly influences service value creation through digital transformation.

H5: Dynamic capability indirectly influences service value creation through R&D performance.

2.6 Digital Transformation and Service Value Creation

Digital transformation helps develop capabilities of organizations leading to competitive advantage. Digital transformation in which organizations offers online services which adopt new technology can create value in service processes and enable customers to participate in creating value (Dugstad et al., 2019). Malar et al. (2019) found that digital organizations which incorporate new technology in online

services are able to create service value leading to customer interaction and engagement in value co-creation. Payne et al. (2021) studied development of technological capabilities, namely artificial intelligence and discovered that it drives customer engagement and business performance. Thus, Hypothesis 6 is presented as follows:

H6: Digital transformation directly influences service value creation.

2.7 Research and Development Performance and Service Value Creation

R&D performance can be described as a process of discovering new knowledge which can be applied to improve products or services, making the products or services become more effective, which create more demand from customers and businesses (Tutar et al., 2015; Hung, 2017). Kruger et al. (2018) asserted that collaborative design in R&D from innovation perspective has a positive effect on co-creating value. Barile et al. (2020) found that the key element in driving value co-creation in service process is to enhance R&D performance from different perspectives. Polese et al. (2018) identified that managing R&D from customer perspective results in a relationship which focuses on exchange of resources, value co-creation, and long-term sustainability of stakeholders. Therefore, Hypothesis 7 is stated as follows:

H7: R&D Performance directly influences service value creation.

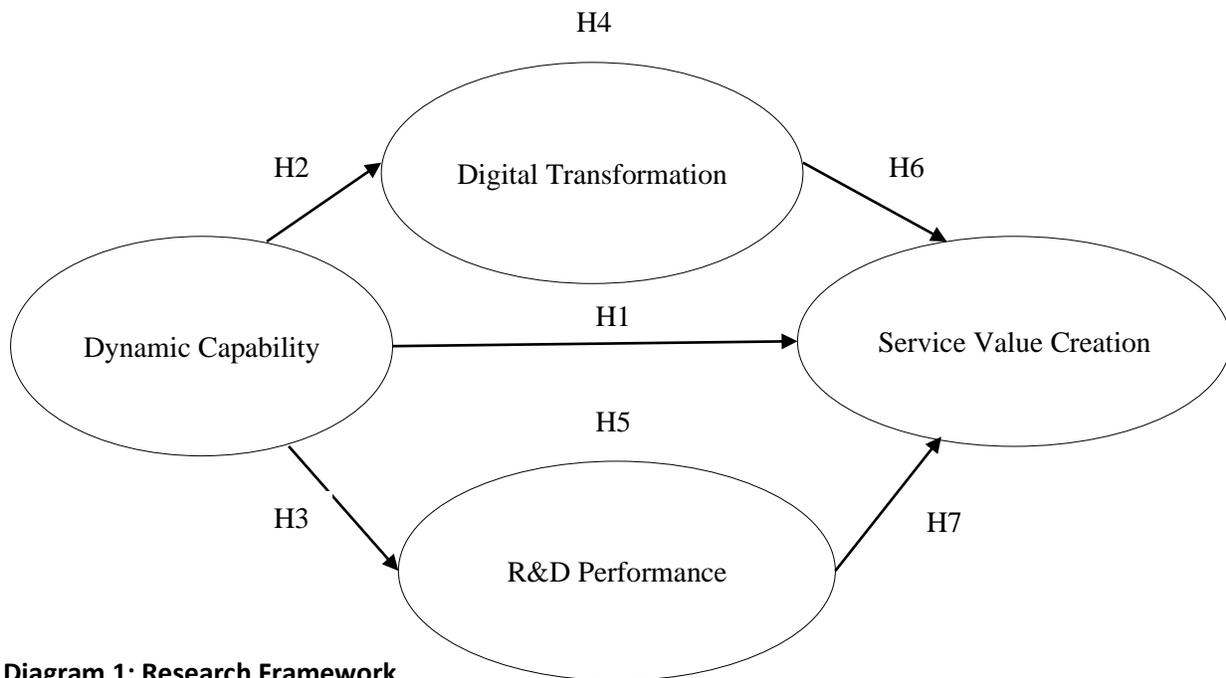


Diagram 1: Research Framework

3. Research Methodology

3.1 Research Process

This research employed quantitative approach. Questionnaire was used to collect data and SEM was used to develop a model explaining the relationship between dynamic capability, service value creation, digital transformation, and R&D performance. The research process was the following:

1. Literature review was conducted to develop a research framework.

2. A questionnaire was created based on the literature review and research framework. Index of Item-Objective Congruence (IOC) was performed to check the quality of the questionnaire. 5 experts from private and public sectors were contacted to review the questionnaire and determine content validity for each item.
3. The questionnaire was adjusted. A pre-test was conducted with 30 samples and Cronbach's Alpha Coefficient was performed to check the reliability of the questionnaire.
4. The questionnaire was distributed to 276 road transport service providers whose business is still in operation in the central, north, south, northeast and west region of Thailand for data collection. Data was analyzed using inferential statistics which are Confirmatory Factor Analysis (CFA) and SEM.
5. Discussion of research results and findings was provided. Implications and future research directions were proposed.

3.2 Population and Sample

The population in this research was 650 road transport service providers registered with the Department of Business Development (DBD) whose business is still in operation (ETDA, 2020). As SEM was employed, the estimation of sample is based on the ratio of sample to the number of variables, considering the sample size and estimated parameters. According to Schumacker & Lomax (2010) and Hair et al. (2006), the sample size is determined based on the ratio of 20 samples per 1 observed variable. In this research, there were 12 observed variables. Therefore, the sample size was 240 (20*12). To avoid error, not receiving all questionnaires and collecting incomplete data, an additional 15% of samples was added to the sample size. Hence, the total sample size was 276. Simple random sampling was adopted to select the sample by creating a sampling frame for sampling (Wanichbuncha, 2017).

3.3 Research Instrument Development and Testing

The quality of the items in the questionnaire was examined using Index of Item-Objective Congruence (IOC) to determine content validity. 5 experts in road transport business from private and public sectors reviewed the questionnaire and determined content validity for each item. The score of 0.6 needs to be achieved to pass content validity test. The result of the content validity test exceeded 0.6. Therefore, the questionnaire was suitable to be used. In addition, Cronbach's Alpha Coefficient test was performed to check the reliability of the questionnaire (Cronbach, 1990). The score of 0.7 must be attained to pass the test. The result exceeded 0.7 which means that the questionnaire was reliable.

3.4 Data Analysis

SEM was used to analyze the causal influence of dynamic capability on digital transformation, R&D performance, and service value creation. The direct and indirect effect of dynamic capability on service value creation was explored and determined. In addition, the direct effect of digital transformation and R&D performance on service value creation was explained and determined. Lastly, the direct effect of dynamic capability on digital transformation and R&D performance was investigated and determined.

4. Results

From the analysis of SEM, model fitness was found to be acceptable. This is based on the criteria of acceptable fit of fit index. Abbreviation of Observed and Latent Variables is shown in Table 1.

Fit Index	Criteria of Acceptable Fit	Value	Assessment of Fit
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Chi-square/df.	< 2.00	1.083	acceptable
CFI	≥ 0.90	1	acceptable
GFI	≥ 0.90	0.98	acceptable
AGFI	≥ 0.90	0.95	acceptable
RMSEA	< 0.05	0.017	acceptable

Table 1: Abbreviation of Observed and Latent Variables

The casual effect of exogenous variables and endogenous variables and the direct and indirect effect are presented in Table 2.

Dependent Variable	DC			DT			RB		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
Independent Variable									
DT	0.91	-	0.91	-	-	-	-	-	-
RB	0.81	-	0.81	-	-	-	-	-	-
SVC	0.85	0.88	-0.03	0.74	-	0.74	0.25	-	0.25
Independent Variable	ADA	ABS	INC	DM	DO	DB	CP	IP	FP
Coefficient	0.58	0.65	0.63	0.50	0.65	0.56	0.64	0.60	0.84
Determination (R ²)									
Dependent Variable	INT	ENG	REA						
Coefficient	0.69	0.64	0.81						
Determination(R ²)									
Variable	DT	RB	SVC						
Coefficient	0.82	0.66	0.72						
Determination(R ²)									
Correlation Matrix of ETA and KSI									
Latent Variable	DT	RB	SVC	DC					
DT	1.00								
RB	0.74	1.00							
SVC	0.90	0.77	1.00						
DC	0.91	0.81	0.85	1.00					

Remark: DE = direct effect, IE = indirect effect, TE = total effect

Table 2: Casual Effect of Exogenous Variables and Endogenous Variables

In dynamic capability, it was found that the direct effect of dynamic capability on service value creation was statistically insignificant with a path coefficient of -0.03. Hence, H1 was rejected. When indirect effect and total effect were analyzed, it was found that the indirect effect of dynamic capability through digital transformation and R&D performance on service value creation was statistically significant with a path coefficient of 0.88. The total effect was significant with a path coefficient of 0.85. Therefore, H4 and

H5 were confirmed. The direct effect of dynamic capability on digital transformation was found to be statistically significant with a path coefficient of 0.91. Thus, H2 was supported. The direct effect of dynamic capability on R&D performance was also found to be statistically significant with a path coefficient of 0.81. Consequently, H3 was confirmed.

In digital transformation, the direct effect of digital transformation on service value creation was found to be statistically insignificant with a path coefficient of 0.74. Hence, H6 was supported.

In R&D performance, the direct effect of R&D performance on service value creation was found to be statistically insignificant with a path coefficient of 0.25. However, the level of effect was low. Nonetheless, H7 was supported.

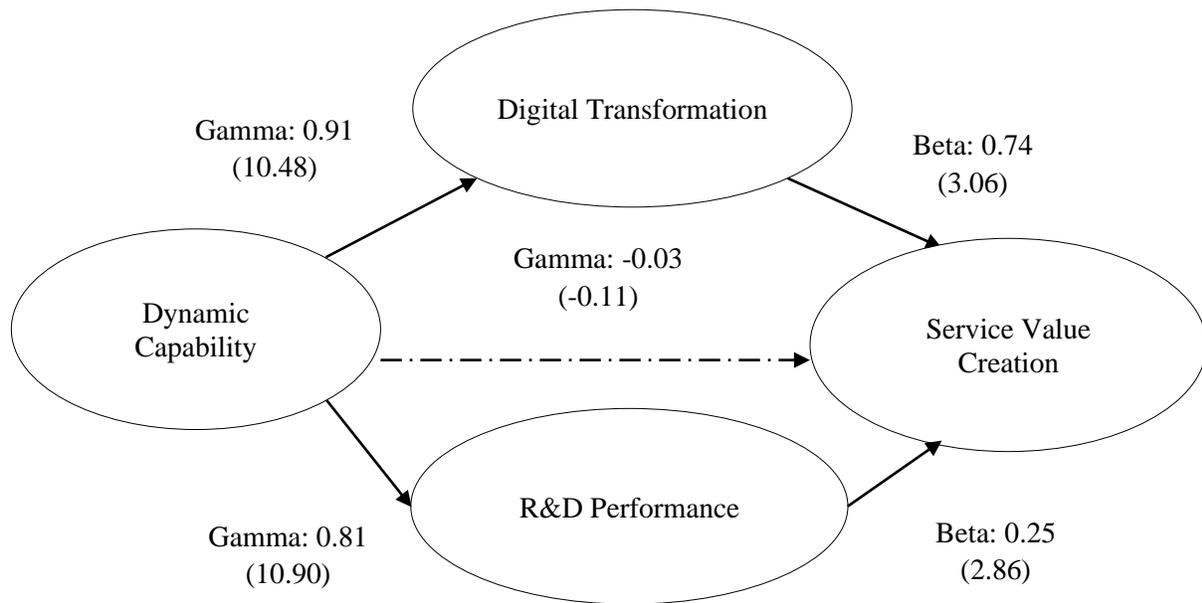


Diagram 2: Causal Influence of Exogenous Variables on Endogenous Variables

5. Discussion

From the research, it was found that dynamic capability has no direct influence on the service value creation of road transport service providers in Thailand. Dynamic capability has an indirect influence on service value creation through digital transformation and R&D performance. This is consistent with the research of Eisenhardt & Martin (2000) which claimed that dynamic capabilities are not the only source of competitive advantage and success of business. For competitive advantage to be acquired and business success to be achieved, quality and suitable resources must also be acquired. Internal resources that firms possess are different based on the firms' development and origin (Teece, 2018a; Krzakiewicz, 2013). Therefore, it is not guaranteed that all firms can achieve dynamic capability as it also depends on the type of resources they acquire. In addition, value creation occurs when business model and dynamic capability are aligned. If they are not aligned, resources cannot be reconfigured to deliver value to customers (Teece, 2018a).

It is concluded that dynamic capability has direct influence on the digital transformation of road transport service providers in Thailand. The 3 dimensions of dynamic capabilities which are adaptive,

absorptive, and innovative capability also positively influence the digital transformation of the road transport service providers in Thailand. This is consistent with the study of Sasmoko et al (2019) which stated that dynamic capability, particularly in terms of innovation and adaptability can lead to digital transformation. Mihardjo & Rukmana (2018) also supported that highly competitive and dynamic markets can influence the development of capabilities, transforming organizations in the digital age.

It is supported that dynamic capability directly influences R&D performance of road transport service providers in Thailand. The 3 dimensions of dynamic capability which are adaptive, absorptive, and innovative capability also positively influence R&D performance of the road transport service providers in Thailand. This is supported by Schmidt & Scaringella (2020) study which indicated that dynamic capability indirectly influences innovation which leads to disruptive innovation. Therefore, organizations must build dynamic capability to innovate and stimulate organizational change. Teece (2018a) also affirmed that that dynamic capability and strategic management are interdependent. Dynamic capability needs to be developed to transform business and encourage innovation.

It is affirmed that digital transformation directly influences service value creation of the road transport service providers in Thailand. The 3 dimensions of digital transformation which are digital marketing, digital business, and digital operation also positively influence service value creation of the road transport service providers in Thailand. This is consistent with the study of Malar et al. (2019) which supported that digital transformation helps organizations by offering online services using new technology, leading to value creation. Dugstad et al (2019) identified that adoption of technology in organizations can be beneficial in creating collaborative strategies driving value creation for the organization and its customers.

The findings confirmed that R&D performance directly influences service value creation of the road transport service providers in Thailand. The 3 dimensions of R&D performance which are customer, innovation, and financial perspective have a positive direct effect on service value creation of the road transport service providers in Thailand. This is consistent with the research by Kruger et al. (2018) which illustrated that co-creation of R&D design from innovation perspective leads to value co-creation in business. Polese et al. (2018) also specified that managing R&D from customer perspective leads to resource exchange, value co-creation, and sustainability among stakeholders.

It is demonstrated that dynamic capability has an indirect influence on the service value creation of road transport service providers in Thailand through digital transformation and R&D performance. As dynamic capability is driven by the ability to adapt, absorb knowledge, and innovate, firms with dynamic capability are receptive to changes, leading to willingness to improve R&D to respond to market. In addition, with the advent of digital era, utilization of technology is becoming more important, driving digital marketing and change in business operation. Firms that incorporate technology and digital marketing in their products and services stand to meet customer needs and create more value for customers (Kruger et al., 2018; Barile et al., 2020). This leads to development in R&D and better understanding of how R&D can be utilized to co-create value (Teece, 2018b). If R&D is conducted from innovation perspective, it will have a positive effect on value co-creation and business sustainability (Polese et al., 2018).

6. Implications

The findings of this research can be used by road transport service providers in strategic management. Road transport service providers must focus on utilizing technology, investing in R&D, and developing dynamic capability. This will lead to service value creation resulting in business sustainability.

Road transport service providers should emphasize on building dynamic capability in terms of adaptability. It will allow them to respond to dynamic changes in the market, giving them a competitive advantage. In addition, absorptive capability should be fostered among employees. This will allow them

to gain new knowledge and share critical information among colleagues, which can be used in creating new products and services and responding to customer demand.

Road transport service providers should also pay attention to digital transformation in terms of digital marketing. They should develop online marketing channels and improve their business operation by linking product delivery with services. Use of technology should be incorporated in business operation to reduce time and costs and increase efficiency.

Road transport service providers should stress on improving R&D performance in terms of customer perspective. This will allow them to meet customer need quickly and effectively. They should also focus on innovation leading to new product offering and increase in work efficiency.

7. Future Research Directions

Future research should focus on other variables that may affect service value creation of road transport service providers such as psychology, service marketing strategy, and customer relationship management. Furthermore, it should also highlight the competitive capability of road transport service providers in integrated logistics activities for transportation and distribution, namely product knowledge, understanding customer needs, pricing, and product delivery. This can help road transport service providers become more aware of different needs of customers and develop their capabilities. In addition, this research was conducted in the context of Thailand. Therefore, the findings cannot be generalized as the scope is limited. Future research could be conducted in other context such as ASEAN region or developing countries for the findings to be further validated and generalized.

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