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# KEY VARIABLES INFLUENCING MAINTENANCE SERVICES OUTSOURCING IN THE AUTOMOTIVE SECTOR – COMPARING ASIAN AND EUROPEAN DYNAMICS

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**ABSTRACT:** This research investigated key aspects influencing maintenance services outsourcing in the automotive sector in Europe and Southeast Asia represented by Poland and Thailand respectively. The study focused on evaluating the factors that influence the decision of firms operating in the automotive sector to outsource their maintenance services to external service providers. The study population was the respondents working in the automotive sector in both countries. The study employed the survey research design making use of primary data. The study data was collected using a structured questionnaire from 407 and 398 respondents in Thailand and Poland respectively. The data was analysed using multi-group SEM. The results showed that trust, performance sustainability, continuous improvement, and quality of services offered have a positive and significant influence on maintenance services outsourcing in both Thailand and Poland. The results also indicated that both countries were invariant indicating that aspects influencing maintenance services outsourcing in the automotive sector were similar in Thailand and Poland. The research recommended that the trust level of the outsourced firm, the performance sustainability of the firm, the ability of the firm to propagate continuous improvement, and the quality of services offered by the firm outsourced should be considered by stakeholders in the automotive sector when making decisions about the outsourcing of maintenance services.

**KEYWORDS:** *Maintenance service outsourcing, automotive sector, trust, performance security, quality of service*

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## 1. INTRODUCTION

Outsourcing in business organizations refers to contracting an outside party to perform services for the organization that it does not have the staff competency to carry out or does not want its staff

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to devote resources for the service. Outsourced services are entirely done by the outside provider for the business and may include creating and delivering certain components within the business (Jasinska & Jasinski, 2018; McIvor, 2000). Outsourcing came into practice in 1989 and was perfected in the 1990s by companies aiming to cut down on overall operational costs and increase their profits. In the automotive industry, there is a growing demand for automotive producing companies to outsource production services to manufacture economical automobiles and ensure the gaining of competitive advantage in the marketplace. Outsourcing in the automotive industry involves cost-effective strategies in the automotive production process by using outside parties in the production process (Jasinska & Jasinski, 2018; Ketler & Walstrom, 1993). Many automotive companies often outsource automobiles as a strategy to increase research in the industry and delegate the non-critical production processes, while at the same time concentrating on core activities. Outsourcing in the automotive sector involves cooperation between automotive companies while achieving mutual benefits, including reduction of overhead costs and technology. For instance, when a company outsources some of its production processes, there is an increased reduction in labor costs, thus enabling the company to complete the tasks at reduced costs (Maley et al., 2015).

However, business organizations have various downsides to outsourcing strategies, including transaction risks, relationship risks, management risks, and out-of-control risks. For instance, outsourcing requires the signing of contracts that may take time and require extra efforts through legal firms. Also, the management risks involve possible threats to confidential business information from the outside party due to data breaches. Thus, effective outsourcing strategies need to take into account the identification and control of the risks (Bettis et al., 1992; Gómez et al., 2009).

Outsourcing of maintenance service involves the use of external suppliers in business maintenance activities. Many businesses opt to outsource maintenance where the activities for maintenance exceed the internal capacity, especially during peaks in demand for maintenance. Similarly, businesses opt for outsourced maintenance services where expected volumes in demand are too low to justify in-house capabilities (Al-Hammad et al., 2010; Tsang, 2002). The process of outsourcing maintenance services involves the company seeking maintenance services and an external company to perform maintenance activities.

In the automotive sector, outsourcing of the maintenance services involves various engagements leading to innovations in vehicle production and the incorporation of leading practices to ensure continued engagements. The maintenance outsourcing process involves various phases, including corrective and adaptive maintenance, including improvements in reliability readiness and applicability. The adaptive maintenance also involves installing regular upgrades that ensure continued support in vehicle manufacturing (Dimitrova et al., 2015; Chi et al., 2011). The other phase in automotive maintenance involves preventive maintenance to determine potential failures across applications through the Failure Mode and Affect Analysis (FMA). The automotive sector performs perfective maintenance, which is aimed at the identification of opportunities for improvement (Yang & Huang, 2000).

Businesses opt for maintenance outsourcing based on various factors. For instance, economic factors play a major role in the need for maintenance outsourcing; cost reduction is one of the important strategies for every business to increase profits. Thus, using the factor of cost reduction has been considered as the frequent decision factor. Similarly, decisions for maintenance outsourcing can be influenced by the need for increased speed of production implementation, improved quality requirements, and risk sharing to reduce overhead costs (Dimitrova et al., 2015; Ikediashi et al., 2015).

The automotive industries in Thailand and Poland play a vital role in developing their economies. In Thailand, the automotive industry has grown over the last 50 years to become one of the leading industries in Southeast Asia. In 2016, the Thailand automotive industry contributed approximately 12% to the country's overall GDP (Thailand Board of Investment, 2016). In Poland, the automotive industry is the second most important industry to the economy, and it contributes 15% of the country's exports (Jasinska & Jasinski, 2018). However, although Thailand and Poland are among the leading producers of vehicles, the countries, however, do not have their own brands of cars.

Outsourcing maintenance in the automotive industry is done as a management strategy to ensure long-term cost-saving, risk-sharing, and reduced downtimes for the firm. With the growth in the automotive industry in Thailand, there is also an increasing demand for maintenance outsourcing. The key areas in maintenance outsourcing involve corrective and adaptive maintenance to ensure improvements in reliability and readiness for the market. According to Sorsomboon and Intuwonges (2016), 55% of vehicles in Thailand are older than five years, which has led to the increased demand for outsourcing in areas such as maintenance and accessories. In Thailand's automotive sector, vehicle repairs are done by outsourcing parties, including independent repair centers, authorized car dealerships, importers and wholesalers.

In Poland, the automotive sector production process changes continue to increase the need for maintenance of vehicles in the markets. For instance, the key trends in the Polish automotive production process include automation, car-sharing, electrification, and connected cars (Słoniec et al., 2018). The changes, thus, affect not only the consumers but also the vehicle producers. The need for maintenance outsourcing in Poland's automotive sector is thus aimed at perfective maintenance to reduce batch cycles and identify opportunities for improvement. On the strengths of these, this study was undertaken to ascertain the factors that influenced outsourcing in the automobile industry in Thailand and Poland with a view to gaining new insights into the outsourcing process in both countries and factors that require the attention of managers in the automobile sector.

## **2. LITERATURE REVIEW**

Past research has documented the impact of organizational factors on job performance and satisfaction. The study by Yiing and Ahmad (2009) aimed to determine how leadership, organizational culture, conflict, and work ethic influenced employee work performances in the educational authority. The results from the study indicated that conflicts contributed negatively towards employee work performance. However, other factors such as leadership, organizational culture, and work ethic had a positive effect on employee work performance.

The process of outsourcing of maintenance services involves the engagement of third parties to perform activities that the sourcing firm initially performed. However, the decision to outsource maintenance services comes with various risks, including negative impacts on the internal staff, intellectual property, loss of skills and knowledge, and increased dependence on the suppliers, among other concerns (Gorla & Somers, 2014). Thus, various aspects are taken into consideration in decisions to outsource maintenance services.

One of such considerations is the service cost. The outsourcing of maintenance service involves seeking the services of external suppliers to perform functions that the outsourcing firm initially performed. Due to the changing nature of the maintenance services, it is crucial to search and select reliable business partners to outsource the required services (Nili et al., 2013). Service cost is thus one of the primary factors that influence the decision to outsource maintenance services. One of the

benefits of outsourcing maintenance services includes reductions in the overall operational costs to maximize profits. Some of the direct service cost in maintenance outsourcing involves payments made to the firms offering the outsourced services. Depending on the maintenance services required, the outsourcing firm should choose an outsourcing partner that will perform the services at a lower cost than using the in-house team. Similarly, the ad-hoc costs may influence outsourcing maintenance services, such as costs in negotiating the outsourcing contracts (Barthélemy & Quèlin, 2006; Arnold, 2000).

Another consideration to consider when making outsourcing decisions is trust. The process of maintenance services outsourcing involves interaction between the contracting parties and the signing of the outsourcing contract. Trust is an essential aspect in any interactions aimed at developing a transactional relationship. According to Hassanain et al. (2015), various challenges have been associated with the outsourcing strategies, including critical information security risks, where the outsourced firms may access sensitive business data through data breaches. Similarly, the outsourcing process leads the outsourcing firm to be susceptible to loss of intellectual property, loss of knowledge and skills of the internal staff, and possible dependability on the service suppliers. Trust thus relates to the level of positive belief about the reliability and dependability of the outsourced maintenance service suppliers. Nili et al. (2013) argues that trust makes it easy for the partnering firms through the maintenance service sourcing process. A high level of trust by the outsourcing firm on the service sourcing firm makes it easy to form a maintenance services outsourcing partnership.

Performance sustainability is also considered when making outsourcing decisions. Sustainable business performance involves harmonizing various core business activities to maximize profits, including financial, environmental, and social aspects. Decisions towards outsourcing of maintenance services by a firm are often influenced by the levels of its effect on the businesses' performance sustainability (Zomorodi, 2014). Sustainable performance is a management function that involves strategies to deliver the core objectives of the business. Thus while making the decision on the outsourcing of maintenance services by an automotive firm; there is a need to harmonize the key performance sustainability aspects such as identification of stakeholder interests, the establishment of the core business objectives, partnerships' responsiveness and development of business strategy (Hassanain et al., 2015). The automotive firms thus have to consider the performance strategies and how they will affect the outsourcing decisions for instance, determining whether maintenance services outsourcing supports the business's core objectives.

Technology is another important factor that influences the decisions in maintenance services outsourcing. With the changing nature of technological innovations, every business needs to incorporate the latest technologies to gain a competitive advantage. Automotive producing firms need to consider the technological benefits they stand to gain through Outsourcing and the effects on the overall business profits (Assaf et al., 2011). When considering maintenance services outsourcing, the contract should help the business to achieve flexibility with the changing technology. Similarly, the process of outsourcing maintenance services should help the business develop innovative ideas and improve the competitive advantage of the business. Thus, maintenance services outsourcing has the capability to increase the competitive advantage of businesses' through technology and will in turn lead to faster decisions (Singh & Gaur, 2018; Shen & Yu, 2013).

The quality of services offered by the outsourced firms also motivates the decision-making process in the outsourcing of maintenance services among automotive businesses. The quality of maintenance services involves quality assurances, quality improvement of the services, quality planning, and quality control. According to Roehrich (2008), quality of service is vital in business as

it determines customer satisfaction and, consequently, its success or failure. In this case, therefore, the quality of service is likely to influence the automotive firms' decision to outsource the maintenance services. High levels of quality of services are held in high regard. A business firm hoping to outsource maintenance services from a supplier with high-quality services is regarded as a potential improvement to the business and thus is likely to influence fast decision-making in the maintenance services outsourcing (Assaf et al., 2011). For firms to achieve increased competitive advantage through quality services, they should be able to improve quality requirements, improve service quality and achieve high-quality service.

One of the reasons why firms outsource some functions is the lack of expertise from the internal staff to effectively and optimally execute the needed service. The aim of every business involves the reduction of operational costs and the maximization of profits. Lack of internal expertise means the business is likely to incur extra costs in training its staff to perform the services that experienced workers can do through outsourcing, and there is no guarantee that stops the staff from seeking for better fortunes in other firms once they acquire the expertise (Braun et al., 2017), this could lead to endless cycle of expenditure for performing a particular task, hence the need to outsource. The advent of increased technological innovations has become vital in the automotive industry. For instance, the incorporation of predictive technologies by vehicle-producing firms has led to increased driving experiences. However, technology changes quickly, which can lead to the need for regular staff training on new technologies. However, outsourcing of these technological services is considered cost-effective where the internal staff lacks the expertise. A newer technology where the internal staff may lack expertise thus influences quick decisions to outsource the maintenance services instead of training the staff (Harland et al., 2005).

Businesses also have the opportunity to improve in areas that are likely to help the business gain a competitive advantage. Due to the limited nature of resources, Outsourcing is considered as the favorable way of ensuring continuous improvement and increasing their competitive advantage. According to (Braun et al., 2017), outsourced maintenance services can ensure continuous improvement when they are integrated into the business goals and objectives. Automotive producing firms thus achieve continuous improvement by identifying opportunities for improvement and the ability to measure and verify the improvements. Thus, the decisions on the need to outsource maintenance services in the vehicle industry can be accelerated by the services supplier's ability to ensure continuous improvement of the outsourcing businesses (McIvor, 2000).

Outsourcing of maintenance services in the automotive industry has been a common topic of research interest in recent times. Understanding the key factors influencing maintenance services outsourcing is vital in improving the businesses' competitive advantage and ensuring maximization of profits. Various studies into the aspects that influence outsourcing of maintenance services have been conducted in the past (Bandeira et al., 2015; Hassanain et al., 2015; Kakabadse & Kakabadse, 2000; Schenkl et al., 2014; Söderberg et al., 2017; Venkatesan, 1992). For instance, according to Schenkl et al. (2014), strategic factors influence the success of outsourcing maintenance services. From the study, the author articulated that automotive firms are likely to outsource maintenance services to achieve their strategic goals, such as focusing on the core business activities and access to modern capabilities that may not be presently available in the firm.

Similarly, Bandeira et al. (2015) articulates those decisions related to the outsourcing of maintenance services by automotive businesses are influenced by factors associated with management. Management factors associated with services include design control, and the speed of performance. With the changing nature of the competitive business environment in the automobile industry, management functions may be difficult to achieve, such as managing time and reducing

workload, which affects the overall business performance (Hassanain et al., 2015). The outsourcing of maintenance services by the automotive businesses aims to save management time to enable the businesses to focus on the core objectives by outsourcing the non-core maintenance services. Also, in some cases, the maintenance services may prove too difficult to manage where the services are complex, thus necessitating the need to outsource the services to more qualified management staff through outsourcing (Gandhi et al., 2012).

The need to create more value is another factor that influences the outsourcing of maintenance services by firms in the automotive sector. In the study by Al-Hammad et al. (2010), they inform that outsourcing maintenance services in the automotive industry creates more value for both parties involved in the contract. Outsourcing services come with various benefits for the outsourcing firm, including improved quality and reduction in maintenance risks. Quality of service is vital in organizational success as it determines customer satisfaction. The automotive firms can improve on the quality by considering the best quality of services obtained through outsourcing; for instance, the best quality is adopted while the non-desirable maintenance services are rejected. Increasing the quality of service by outsourcing businesses leads to the overall improvement of business service quality and, consequently, an improvement in business quality.

Inferring from Zomorodi (2014), economic factors primarily influence the outsourcing of maintenance services in the automotive industry. Businesses aim at increasing profits while ensuring reductions in operational costs. Often, some of the maintenance services in the automotive industry can be complex and may require additional resources. However, hiring additional labor to perform maintenance services is not often among the core objectives of these businesses, necessitating the need to outsource these services (Zomorodi, 2014). Thus, many businesses outsource their maintenance services to reduce the cost of labor and other operational costs. Also, outsourcing maintenance services to firms that incorporate the use of new technologies help save labor costs and consequently helps maximize the overall business profits.

Based on the critical review of literature, the conceptual framework, which acted as a guide to the analysis model, was developed. The conceptual framework is made up of 8 latent variables namely service cost (SC), trust (TI), performance sustainability (PS), continuous improvement (CI), technology used (TU), quality of service offered (QS), lack of internal expertise (LE) and outsourcing of maintenance service (MSO).

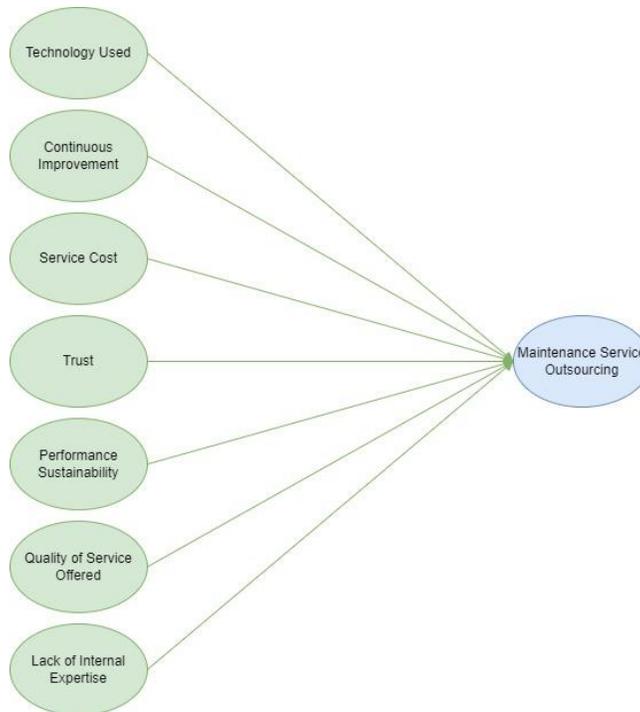


Figure 1 Conceptual Framework

### 3. METHODOLOGY

This research investigated the key aspects influencing outsourcing of maintenance service in the automotive sector in Thailand and Poland and compared the findings between the two countries. Therefore, the study populations were personnel working in the automobile sector in both countries. The Thailand Board of Investment (2016) puts the population of the personnel in the Thai automobile industry around 500,000 while the data for Poland suggests over 214,000 employees (Domański & Gwosdz, 2018). Due to the large number of the study population, a representative sample was used. The convenience sampling technique was used to identify the sample respondents. Data was collected using a structured questionnaire. The questionnaire comprised of Likert scale questions with 1=strongly disagree to 5 = strongly agree. A total of 700 questionnaires were distributed in both countries, of which 407 and 395 were successfully filled and returned for Thailand and Poland, respectively. The data was collected between January 1, 2018, and February 28, 2019.

Data analysis was carried out using several techniques; the data was analyzed using statistical software SPSS vs 20. The respondent’s demographics were evaluated using descriptive statistics. The model suitability was evaluated using confirmatory factor analysis (CFA). The averages of the observed variables were calculated to carry out the analysis of the relationship between the independent and dependent variables. The relationship between the independent and dependent variables was evaluated using Pearson’s Correlation Analysis.

### 4. RESULTS AND DISCUSSION

The section of descriptive statistics evaluated the characteristics of the respondent’s demographic, including age, gender, and education. The results, summarized in the table 1 below,

indicated that male gender dominated the industry in both countries, where in Thailand, it comprised of 72% while in Poland, it comprised of 64%. The results also revealed that the age group 26 – 35 years dominated the sector for both countries, whereas in Thailand, it comprised of 69% and 68% for Poland. Regarding the education level, majority of the respondents were those with high school education comprising 60% for Thailand and 85% for Poland.

**Table 1. Demographic Information of Respondents**

		Poland		Thailand	
		N	%	N	%
Gender	Male	253	64.1	294	72.2
	Female	142	35.9	113	27.8
Age (years)	18-25	93	23.5	68	16.7
	26-35	267	67.6	279	68.6
	36-45	25	6.3	45	11.1
	Above 45	10	2.3	15	2.2
Education	Below High School	9	2.3	12	2.9
	High School	335	84.8	244	60
	University or Higher	51	12.9	151	37.1

**Source:** Researchers' data

Before conducting the correlation analysis, it was considered critical to test the factor structure of the observed variables. This was done using confirmatory factor analysis (CFA). The CFA evaluated how well the measured variables represent the number of constructs. For Thailand, the CFA fitness indices indicated that CMIN/DF = 2.269, IFI = 0.925, TLI = 0.914, NFI = 0.862, CFI = 0.925 and RMSEA = 0.056. For Poland, CMIN/DF = 2.469, IFI = 0.928, TLI = 0.917, NFI = 0.884, CFI = 0.927 and RMSEA = 0.061. According to Awang (2012) RMSEA <0.08, was satisfied for both Thailand and Poland. According to Hair et al. (2010) CFI > 0.9, TLI > 0.9, IFI > 0.9, NFI > 0.9, Forza and Filippini (1998) indicted that Value greater than 0.80 suggests a good fit. The results show that the required thresholds were met, and all the fit indices were within the acceptable and satisfactory level. The relationship between the independent variables and the dependent variable was carried out using the Pearson Correlation Analysis, and the results are presented in the table 2 below.

**Table 2. Correlation Analysis for Poland**

	MSO	SC	CI	TU	TT	PS	QS	L_E
MSO	1							
SC	.570	1						
CI	.671**	.702**	1					
TU	.724**	.629**	.640**	1				
TT	.722**	.646**	.715**	.712**	1			
PS	.744**	.578**	.649**	.866**	.682**	1		
QS	.756**	.583**	.687**	.750**	.671**	.816**	1	
LE	.771**	.555**	.638**	.757**	.703**	.754**	.780**	1

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Note: \*\* Correlation is significant at the 0.01 level (2-tailed).

Listwise N=395

SC = service cost, TT = trust, PS=performance sustainability, CI =continuous improvement, TU=technology used, QS=quality of service offered, LE=lack of internal expertise, MSO=Outsourcing of maintenance service

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The relationship of interest was between Outsourcing of maintenance service (MSO), which was the dependent variable, and other independent variables. The results indicated a six out of the seven independent variables has a significant influence on MSO as follows: a positive and strong relationship between continuous improvements (CI) and outsourcing of maintenance service (MSO) ( $r=0.671$ ,  $p<0.01$ ,  $n=395$ ); a positive and strong relationship between technology used (TU) and outsourcing of maintenance service (MSO) ( $r=0.724$ ,  $p<0.01$ ,  $n=395$ ); a positive and strong relationship between trust (TT) and outsourcing of maintenance service (MSO) ( $r=0.722$ ,  $p<0.01$ ,  $n=395$ ); a positive and strong relationship between performance sustainability (PS) and outsourcing of maintenance service (MSO) ( $r=0.744$ ,  $p<0.01$ ,  $n=395$ ); a positive and strong relationship between quality of service offered (QS) and outsourcing of maintenance service (MSO) ( $r=0.756$ ,  $p<0.01$ ,  $n=395$ ); and a positive and strong relationship between quality of service offered (QS) and lack of internal expertise (LE) ( $r=0.771$ ,  $p<0.01$ ,  $n=395$ ). The results are illustrated in table 3 below.

**Table 3. Correlation Analysis for Thailand**

	MSO	SC	CI	TT	PS	QS	LE	TU
MSO	1							
SC	.540**	1						
CI	.605**	.704**	1					
TT	.591**	.610**	.680**	1				
PS	.649**	.559**	.598**	.605**	1			
QS	.681**	.597**	.639**	.622**	.765**	1		
LE	.634	.585**	.607**	.627**	.735**	.786**	1	
TU	.559	.556**	.542**	.556**	.807**	.675**	.690**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

b Listwise N=407

SC = service cost, TT = trust, PS=performance sustainability, CI =continuous improvement, TU=technology used, QS=quality of service offered, LE=lack of internal expertise, MSO=Outsourcing of maintenance service

After evaluating the relationship between the independent and dependent variables for Poland and Thailand independently, it was important to compare the variables relationship between the two countries and see the differences existing. The comparison is presented in the table below. The results as presented in table below shows that the independent factors that has significant and positive influence on outsourcing of maintenance services included continuous improvement (CI), trust (TT), performance sustainability (PS), and quality of service offered (QS). The results are illustrated in table 4 below.

**Table 4. Poland and Thailand Correlations**

Variables	Poland	Variables	Thailand
	MSO		MSO
MSO	1	MSO	1
SC	0.57	SC	.540**
CI	.671**	CI	.605**
TU	.724**	TU	0.559
TT	.722**	TT	.591**
PS	.744**	PS	.649**
QS	.756**	QS	.681**
LE	.771**	LE	0.634

From the findings of this research, several aspects could be discussed, with reference to the previous studies. For both Thailand and Poland, it was observed that four factors namely: trust, performance sustainability, continuous improvement and quality of services offered have a positive, strong and significant relationship with maintenance services outsourcing. Among the four factors, this research indicated that for the case of Thailand, quality of service was found to have the highest

effect on maintenance services outsourcing. For the case of Poland, quality of service as well had the highest influence, where one unit increase in trust would increase outsourcing of maintenance service in the automotive sector by 0.0.771 units. The statistics indicated that one unit increase in trust would result in a 0.722 increase in outsourcing of maintenance service in the automotive sector. These findings were confirmed by Hassanain et al. (2015) who indicated that trust is a critical aspect because the service providers may access critical information regarding the company, which may result to data breaches. According to Nili et al. (2013), trust makes it easy for the partnering firms through the outsourcing of maintenance services processes.

Also, previous research indicated that automotive firms consider quality of services offered to them as critical influencer to their decision making. According to Roehrich (2008), quality of service is vital in business as it determines customer satisfaction and, consequently, its success or failure. Outsourcing to a high-quality service provider is considered as a potential improvement to the business. In similar breath, the findings of this research were supported by Braun et al. (2017) who indicated that every business focuses on improving its performance and integrating continuous improvement to the process of services delivery is critical as far as business goals and objectives are concerned. It is important to recognize the differences observed in the results for Thailand and Poland. When service cost is a significant consideration factor in Thailand, it is not in the case in Poland. Centrally, while technology used is a significant influencer in Poland, it is not a significant consideration in Thailand. Considering the overall comparison between Thailand and Poland, the study indicated that both countries were invariant indicating that variables influencing outsourcing of maintenance services in the automotive sector are similar in both countries. This could be supported by the fact that most of the findings (as discussed earlier) are similar for both countries.

## **5. CONCLUSION AND LIMITATIONS**

This study was focused on investigating the key factors influencing outsourcing of maintenance services in automotive sector-comparing Thailand and Poland. The study was necessitated by the increasing demand of automotive expertise, increasing adoption of technology within the sector and the need for growth and competitive advantages. The study population comprised of stakeholders in the automotive sector in both countries. Primary data was used, and the analysis was conducted using CFA, and multi-group SEM. The findings of the research indicated that for both Thailand and Poland, it was observed that four factors namely: trust, performance sustainability, continuous improvement and quality of services offered have a positive and significant influence on maintenance services outsourcing. The results also indicated that both countries were invariant indicating that aspects influencing outsourcing of maintenance service in automotive sector were similar in Thailand and Poland. The study had two limitations. First, the study sample was selected based on convenience, hence may not be considered a non-biased representation of the population. Secondly, the study was conducted in automotive sector only, and therefore the application of the results to other areas should be made with reference to this fact.

From the findings of this research, and with reference to the previous studies, several recommendations were feasible, both from the managerial and theoretical perspectives. First, from a managerial perspective are four major factors that should be considered by stakeholders operating in automotive sectors in both countries. These are the trust level, the performance sustainability, the ability of the firm to propagate continuous improvement, and the quality of services offered by the firm outsourced to. Secondly, while the stakeholders in Thailand automotive sector should pay attention to technology application in the sector, stakeholders in Poland should pay attention to the

cost of outsourcing maintenance services. Firms operating in outsourcing maintenance services in the automotive sector should critically consider these factors. From the theoretical perspective, this research recommends that future studies should consider comparing more countries and variables to ascertain if the results will be consistent with these study findings.

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