# Implement Enterprise Resource Planning and Effective Corporate Performance Strategies through Supply Chain Management Intermediaries at Auto Parts Companies

Miftakul Huda[1], Agus Rahayu [2], Lili Adi Wibowo[3], Suryana Suryana[4], Disman Disman, Puspo Dewi Dirgantari[6], Yoga Religia[7]

[1,2.3.4.5.6.7] Universitas Pendidikan Indonesia, Bandung, Indonesia
miftakul.huda@upi.edu

**Abstract.** The advancement of science and technology has a significant impact on business development, and the most successful companies invest in web technology and implement e-business supported by existing infrastructure based on a well-functioning enterprise resource planning system. The automotive business method connects all information and activities inside and outside the company, and enterprise resource planning (ERP) systems and strategies are used by businesses as a method of operating information systems. This study will raise questions about the impact of ERP implementation on supply chain management and business performance and provide policy recommendations. The research method is causal association using SEM-AMOS analysis, and the data were primary data obtained through a questionnaire with closed questions using a semantic differential scale. The results demonstrate a beneficial relationship between ERP and supply chain management, with supply chain management benefiting from adopting a strategy, improving business performance, and supply chain management being an important intermediary factor in the impact of enterprise strategy and resource planning on business performance. Companies must improve their corporate culture to foster trust and commitment with their customers.

**Keywords:** Company Performance, ERP Strategy, Supply Chain Management.

## 1 Introduction

In today's highly competitive business landscape, companies must strive to produce high-quality products that meet consumer demand. A supply chain management (SCM) strategy can help organizations achieve a competitive advantage, improve performance, and maximize revenue. Previous studies have demonstrated the benefits of implementing Lean and Agile SCM strategies, which can lead to effective supply chain management. Effective SCM implementation can enhance a company's competitiveness [1; 2; 3; 4] Furthermore, SCM implementation has a direct impact on business performance [5; 1; 6; 2; 3]. In principle, there must be a balance between


R. Hurriyati et al. (eds.), *Proceedings of the 8th Global Conference on Business, Management, and Entrepreneurship (GCBME 2023)*,
Advances in Economics, Business and Management Research 288,
https://doi.org/10.2991/978-94-6463-443-3_154

demand and meeting market needs. To balance the two, supply chain management (SCM) is necessary. SCM is a process that unifies all operations, from the procurement of raw materials to the fulfillment of client demands.

Suppliers, producers, distributors, and wholesalers make up each component of the SCM and provide goods and services to consumers [7]. Through coordinating, integrating, and collaborating efforts in response to changes in information, demand planning, manufacturing capacity, and marketing strategies, Supply Chain Management (SCM) effectively meets its guiding principles.

Product development, new technology implementation, purchasing strategy, delivery and everything is connected [8]. The success of an organization depends on the ability of leaders to determine the right strategy [9;10].Strategy is the process of guiding the management of a company to achieve certain objectives [11]. In the context of SCM, strategy is a conceptual formula for determining the objectives and optimal configuration of the chain supply to achieve certain goals [12].

In today's interconnected global landscape, information flows at a rapid pace. The advancement of science and technology has significantly impacted enterprise growth, and companies can now utilize e-business methods to link all internal and external information and operations, enhancing data processing systems' flexibility, efficiency, and systemization. The ultimate goal is to better serve clients by meeting their demands and requirements more effectively. Responding promptly to changing business conditions is crucial for information systems, and utilizing IT in business operations can improve performance, leading to increased excellence and competitiveness. Integrating all internal operations and procedures through information systems can also ensure information security [13].

Using its production from manufacturing, distribution, and retail, Sparepart Company manufactures and provides original spare parts for cars. Fig. 1 show automotive demand and sales profile.

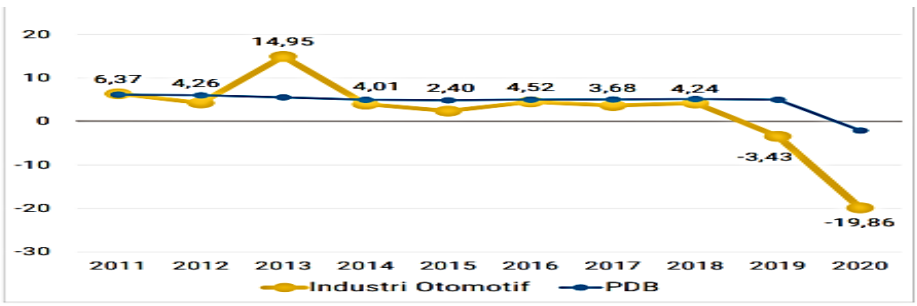


**Fig. 1.** Automotive demand and sales profile.

Fig 1. shows that the service level of spare parts demand decreased from 2017 to 2020. Based on the aforementioned circumstances, it is imperative to synchronize the SCM process from suppliers, manufacturing, and warehouse to direct customers. so that the subsequent stage can deliver a higher degree of service. Insufficient order fulfillment will prevent the completeness of the product from being maximized.

## 2 Method

This research is a applied in nature, utilizing quantitative primary data collected through a questionnaire survey method. The method employed is considered to be causal in nature, as it aims to understand the relationships between various factors in order to improve and increase efficiency. The data was measured using the semantic difference scale, which is a solid line ranging from point 1 to point 10, with point 1 representing the lowest value and point 10 the highest. The SEM-AMOS analysis method was employed in this study.

It is possible to examine multiple endogenous and exogenous variables simultaneously utilizing a set of procedures known as SEM. By using SEM, researchers are able to investigate the relationships between complex variables. In this particular study, the analysis included 100 samples, however, the recommended sample size for Covarian-SEM (CB-SEM) analysis as per the literature is between 200 to 800 samples [14]. The number of samples used in this study was 300 samples.

## 3 Result and Discussion

### 3.1 Result

Reliability tests are a series of examinations that gauge the internal coherence of variable formation indices, demonstrating the degree to which each index reflects common variable formation. There are two approaches to conducting these tests: variance extracted (VE) and composite (construct) reliability (CR). In order to be considered reliable, the profile confidence threshold must be 0.70 or higher, while the minimum extracted variance required is 0.50.

The results of the full model and revised model structural tests yielding goodness-of-fit data are listed in Table l.

**Table 1.** Goodness Of Fit.

| Goodness of Fit | Required acceptance limit | Result after modification of the model | Decicions |
|---|---|---|---|
| CMI | <2.00 | 1.370 | Good Fit |
| GFI | >0.90 | 0.881 | Marginal Fit |
| AGF | >0.90 | 0.864 | Marginal Fit |
| NFI | >0.90 | 0.960 | Good Fit |
| RFI | >0.90 | 0.932 | Good Fit |
| IFI | >0.90 | 0.908 | Good Fit |
| RMS | ≤0.08 | 0.033 | Good Fit |

A model is considered viable if it meets one of the goodness of fit (GOF) criteria [15] Goodness of fit can generally be assessed based on meeting at least five criteria [16;15]. This leads us to the conclusion that the entire model can be considered valid

and hypothesis testing can be performed to determine the significance of the interaction between the model variables.

The hypothesis is subsequently evaluated on the revised structural model and deemed suitable. A randomized subset of the overall population is then selected to generate a sample size equivalent to the original sample. The primary database can be utilized to produce multiple subsets using this methodology [17,16]. The viability of a model can be determined using 4–5 GOF criteria, specifically absolute fit indices, incremental fit indices, and analytical fit indices [18]. Structural model test shown in fig 2 as follow:

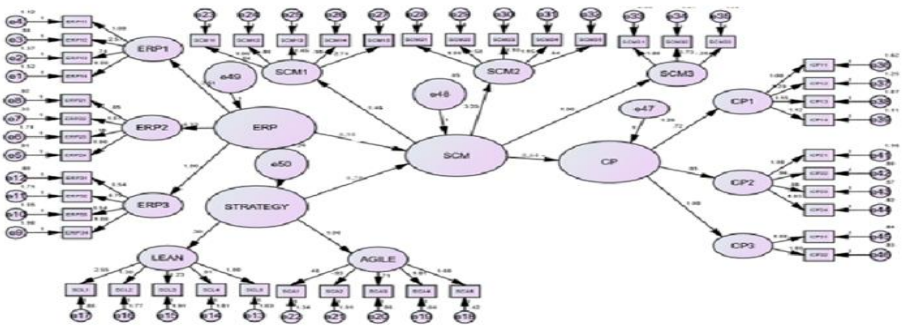


**Fig. 2.** Structural Model Test

Result of hypothesis test shown in Table 2 as follow:

**Table 2.** Hypotheis Tested Result

| Path | Estimate | S.E | C.R | P |
|---|---|---|---|---|
| SCM < ERP | .985 | .123 | 4.965 | *** |
| SCM < Strategy | .780 | .073 | 10.673 | *** |
| CP < SCM | .647 | .675 | .892 | *** |
| CP < ERP | .802 | 7.863 | .471 | *** |

The results of the hypothesis testing were conducted using a sample size of 300 samples, and all samples were found to be satisfied. Hypothesis 1 (H1) was accepted with an estimated parameter value of 0.985, and the indirect effect of Enterprise Resource Planning (ERP) on Company Performance (CP) was found to be 0.637 (0.985x 0.647). Hypothesis 2 (H2) estimated the value of the parameter to be 0.780, indicating an indirect impact of strategy on company performance of 0.505 (0.780 x 0.647). Hypothesis 3 (H3) was found to have an estimated parameter value of 0.647.

Then, the population replacement method is used to randomly select multiple subsamples with a sample size equal to the original sample size. Researchers can use this technique to generate multiple samples from the original data sets [19].

### 3.2 Discussion

The results of this study support previous studies showing that SCM (Lean, Agile, Hybrid) strategies have a positive impact on one`s SCM practice, specifically. Evidence shows that agile strategies influence SCM (integrated, agile, customer responsive) practices. Accordingly [20],strategy is important for the direct implementation of SCM, a cost leadership strategy requires a lean supply chain and a differentiation strategy requires an agile supply chain. Furthermore, Lean also applies when companies need to achieve cost leadership and efficiency, achieving horizontal network integration under long-term contracts and survival [21].

The results of this study support previous research, specifically [21] and [22] demonstrate that the results of this study confirm that the three dimensions of ERP (ERP1, ERP2 and ERP3) have a positive impact on performance. Empirically tested a framework that identifies the relationship between SCM practices, ERP systems, competitive advantage, and firm performance. Similarly, Yanbu University (YUC) in Yanbu City, Saudi Arabia, conducted a study to provide a conceptual framework of factors that can impact users of ERP systems in educational institutions.

The responses of the participants indicate that the spare parts company possesses the ability to foster relationships with clients, accept customer complaints via the call center, survey feedback, customer satisfaction, organize events and maintain awareness of customer needs. This suggests that the implementation of supply chain management (SCM) has had a significant positive impact on the commercial performance (CP) of the company, as the market desires products that are tailored to meet its needs.

## 4 Conclusion

This study demonstrates the positive impact of enterprise resource planning on supply chain management. The implementation of a cohesive strategy can lead to improved supply chain management and, in turn, better business performance. However, supply chain management has a more significant indirect impact on business success than enterprise resource planning. To balance the effects of enterprise resource planning and strategy on business success, organizations should place a strong emphasis on supply chain management. It is essential for businesses to foster a corporate culture that values customer loyalty and trust, as these are the organization's most valuable assets. Additionally, increased integration is more likely to be accepted and successful when there is consumer trust and participatory involvement from the workforce.

## References

1. Suharto, R. J. Analisa Pengaruh Supply Chain Management terhadap Keunggulan Bersaing dan Kinerja Perusahaan. *Bus. Account. Rev.* **1**, (2013).

2. Pramanan, Y. K. Analisa Pengaruh Supply Chain Management terhadap Keunggulan Bersaing dan Kinerja Perusahaan Manufaktur di Jawa Timur. *J. Ilm. Mhs. Univ. Surabaya* **4**, 1–19 (2015).
3. Handoko, B. L., Aryanto, R. & So, I. G. The Impact of Enterprise Resources System and Supply Chain Practices on Competitive Advantage and Firm Performance: Case of Indonesian Companies. in *Procedia Computer Science* (2015). doi:10.1016/j.procs.2015.12.112
4. Widyanesti, S. & Masyithah, S. Pengaruh Supply Chain Management Practices Dan Marketing Capability Terhadap Firm Performance Melalui Competitive AdvantagE. *Mix J. Ilm. Manaj.* (2018). doi:10.22441/mix.2018.v8i2.002
5. Ince, H., Imamoglu, S. Z., Keskin, H., Akgun, A. & Efe, M. N. The Impact of ERP Systems and Supply Chain Management Practices on Firm Performance: Case of Turkish Companies. *Procedia - Soc. Behav. Sci.* (2013). doi:10.1016/j.sbspro.2013.10.586
6. Blome, C., Paulraj, A. & Schuetz, K. Supply chain collaboration and sustainability: A profile deviation analysis. *Int. J. Oper. Prod. Manag.* (2014). doi:10.1108/IJOPM-11-2012-0515
7. Heizer, J. & Render, B. *Operations Management (Manajemen Operasi)*. (Salemba Empat, 2015).
8. Wisner, B., Gaillard, J. C. & Kelman, I. *Handbook of Hazards and Disaster Risk Reduction*. (Routledge, 2012).
9. Assauri, S. *Assauri, S. Manajemen Produksi dan Operasi*. (Lembaga FEUI, 2011).
10. Siregar, H., Rahayu, A. & Wibowo, L. A. Manajemen Strategi Di Masa Pandemi Covid-19. *Komitmen J. Ilm. Manaj.* (2020). doi:10.15575/jim.v1i2.10316
11. Nurjaman, R., Rahayu, A., Wibowo, L. A. & Widjajani, W. The role of strategic agility towards the firm performance of logistics service providers in Indonesia. *Manag. Sci. Lett.* (2021). doi:10.5267/j.msl.2020.9.046
12. Cuthbertson, R. *et al. Sustainable Supply Chain Management Practical Ideas for Moving Towards Best Practice*. (Springer, 2011).
13. Oleghe, O. System dynamics analysis of supply chain financial management during capacity expansion. *J. Model. Manag.* (2020). doi:10.1108/JM2-05-2019-0100
14. Wati, L. N. L. *Metodologi Penelitian Terapan, Aplikasi SPSS, EVIEWS, Smart PLS dan AMOS*. (Mujahid Press, 2017).
15. Widarjono, A. *Analisis Multivariat Terapan*. (UPP STIM YKPN, 2015).
16. Ferdinand, A. *Structural Equation Modeling*. (Badan Penerbit Universitas Diponegoro, 2014).
17. Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. . *Multivariate Data Analysis*. (Pearson Education, 2014).
18. Ferdinand, A. *Metode Penelitian Manajemen*. (BP Universitas Diponegoro, 2014).
19. Haryono, S. *Metode SEM Untuk Penelitian Manajemen Dengan AMOS LISREL PLS*. (Luxima Metro Media, 2017).
20. Huda, M. & Hartati, N. Implementasi Strategi Terhadap Supply Chain Management, Keunggulan Bersaing dan Kinerja Perusahaan. *J. Soshum Insentif* (2022). doi:10.36787/jsi.v5i1.646
21. Huda, M. Pengaruh Enterprise Resource Planning Terhadap Supply Chain Management dan Corporate Performance pada Perusahaan Korea Jababeka. *JSMA (Jurnal Sains Manaj. dan Akuntansi)* (2022). doi:10.37151/jsma.v14i1.86
22. Yang, C. & Su, Y. fen. The relationship between benefits of ERP systems implementation and its impacts on firm performance of SCM. *J. Enterp. Inf. Manag.* (2009). doi:10.1108/17410390910999602.