

The Effect of Transformational Leadership on Firm Performance through ERP Systems and Supply Chain Integration in the Food and Beverage Industry

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Abstract

This study examines the effect of transformational leadership on company performance using ERP technology and supply chain integration in food and beverage companies. The survey uses a questionnaire designed using a 5-point Likert scale. As many as 100 questionnaires were distributed to 100 food and beverage companies domiciled in the region of Surabaya, East Java, Indonesia. Respondents were from the supervisor and upper level as considered the most knowledgeable person in the company. The number of valid data is 55 respondents representing 55 companies from 100 respondents. Data analysis using Smart PLS. The results of the data analysis show that transformation Leadership does not directly affect firm performance; transformation Leadership does not affect supply chain integration. ERP System application influences firm Performance, supply chain integration influences firm performance, ERP system application affects supply chain integration. An additional finding is that transformational leadership indirectly affects firm performance through ERP system applications. This result enriches the insight for the manager in enhancing firm performance. This paper also contributes to the current research in the field of supply chain management.

Keywords: ERP System; Firm Performance; Supply Chain Integration; Transformational Leadership.

1. Introduction

Food and beverage company is a company that is included in fast-moving consumer goods (FMCG) products with fast demand and many consumers. FMCG has a short product lifetime characteristic, requiring data integration between precise and accurate functions and good external integration. The success of a company's supply chain is determined by the company's ability to integrate processes into a series of business processes. SCI is a process in the supply chain of interrelated companies, where there is an external integration, namely with customers and suppliers, while internal integration exists between departmental functions within the company (Leuschner et al., 2013). The challenge in SCI is how to coordinate activities between supply chains network with various supply chain partners. Manufacturing companies can use integration to increase efficiency and effectiveness (Tarigan et al., 2018). Manufacturing companies must increase internal processes and develop collaborative networks with all supply chain partners to generate profits (Birasnav & Bienstock, 2019). SCI management requires a reliable leader who can support the supply chain within business functions to produce high-quality products and increase customer satisfaction. The presence of transformational leadership can understand the impact of employee participation in

SCI. Transformational leadership is believed to create trust in the community through motivation, creativity, fostering a positive environment for learning, and increasing linkages (Birasnav et al., 2015).

Flexible and responsive SCI in the company can improve firm performance, but it depends on the ability of the supply chain to integrate the distribution flow and information carried out by the company (Tseng & Liao, 2015). SCI also concentrates on introducing new technologies to ensure a smooth flow of information and products or services in the supply chain. ERP system as sophisticated technology comes with benefits such as information management that offer an improvement on the supply chain, through integrated and smooth flow of information, from suppliers through and distribution (Tarigan et al., 2018; Mehrjerdi, 2010). ERP system coordinates or integrates system capacity with company-wide resources to obtain information systems that support business (Tarigan et al., 2020; Agha et al., 2019). ERP system implementation is considered complex, challenging, and has many issues to emerge the potential risk for the company. Transformational leadership makes employees and companies more creative in using ERP systems, increasing the user's self-reliance in applying the ability to use ERP (Elkhani et al., 2014). Successful leaders in implementing ERP systems in companies can undoubtedly feel the benefits of ERP

systems for the entire company. IT applications such as ERP systems can assist companies in improving their business processes, providing sufficient infrastructure that facilitates the exchange of data and information smoothly and accurately (Agha et al., 2019).

ERP systems improve firm performance by reducing waiting times and costs, controlling all activities in the company, monitoring materials, orders, schedules, finished inventory, and providing other important information for the company (Mehrjerdi, 2010). An ERP system can help the company process to conduct SCI by integrating the entire supply chain partners (Hwang & Min, 2015)). Companies need to realize that overall firm performance is not only based on resources such as financial assets, raw materials, and others, but also intangible resources, namely human resources that produce knowledge, productivity, innovation, and company reputation (Masa'deh et al., 2016). Project manager influences firm performance through the ability to manage all company resources to adapt to changes and face challenges, which then increase firm performance and ERP systems and SCI that is useful for improving firm performance (Tarigan et al., 2018). Based on the results of the explanation above, it can be determined that transformational leadership can improve company performance on company performance through ERP because companies with transforming leadership will be able to accelerate the integration between cross-functional departments. Good internal integration and external integration can also be built with transformational leadership to make the right decisions according to the determined strategy, improving company performance.

Based on previous studies, it appears that transformational leadership, ERP systems, and supply chain integration will improve firm performance in the context of supply chain management. On the other hand, the previous study shows that the works are only interested in the direct impact of these variables on firm performance. To the best of the author's knowledge, there is no study dealing with the relationship of those constructs simultaneously. This work examines the multiple relationships between those four variables in a single model to investigate the effect of transformational leadership on firm performance through ERP system and supply chain integration. The novelty of this research is the creation of a model for improving firm performance by practicing transformational leadership, adopting ERP systems, and implementing supply chain integration. Furthermore, this study was carried out amid the Covid-19 pandemic covering the population of the manufacturing industry in East Java,

Indonesia. This study may also help business executives improve firm performance in the sense of supply chain management. This research may also enrich and reinforce the current supply chain management theory.

2. Literature Review

The ability of company management to manage and manage the company's organization properly will impact company performance. The project manager is a leadership style with high abilities that can influence vision, mission, strategy, and organizational culture (Tarigan et al., 2018). Leaders' efforts in developing the performance of their members to achieve goals or visions and missions and goals that lead to company development (Masa'deh et al., 2016). ERP systems can be used as a system of information technology (IT) operations, including information from all company functions, allowing guns to be managed to have a broader scope and sufficient data for analysis (Mehrjerdi, 2010). Transformational leadership can inspire and stimulate intellectual suppliers, making the question also tend to be more confident that the company is to be transparent and honest. So that the company can increase the trust in the interests of companies and customers willing to invest, innovate, and cooperate with the company (Birasnav & Bienstock, 2019). The charisma possessed by transformational leadership can improve confidence and identify external partners to the company to right to participate with companies. Transformational leadership plays a key role front and center for generating and observing rap out the information in developing a critical capability needed for firm performance (Masa'deh et al., 2016). Transformational leadership could enable us to innovate and adapt to development and change, improving firm performance (Birasnav et al., 2015).

H1: Transformational leadership influences firm performance.

Transformational leadership is charismatic to increase the confidence of members to be more confident and enthusiastic in implementing ERP systems through providing support and special attention, providing feedback on the usefulness of ERP systems, and increasing members' self-efficacy when using ERP (Elkhani et al., 2014). The results of Chou (2019) also revealed that transformational Leadership influences ERP systems, where the efficacy of transformational leadership increases commitment to the company and supports change, which ultimately fosters the attitudes of employees who support ERP

systems as well. Transformational leadership's importance in adopting ERP systems was realized, which advised companies to develop leadership skills by providing development or training programs for transformational leadership (Chou, 2019). Transformational Leadership influences ERP systems, with leadership efforts in encouraging members to be effectively involved in implementing ERP systems to achieve results and expected benefits (Agha et al. 2019).

H2: Transformational Leadership influences ERP system implementation.

Transformational leadership influences SCI in internal integration, customer integration, and supplier integration (Birasnav & Bienstock, 2019). This research reveals that proper Leadership and SCI are essential elements for companies to increase agility in operation. Transformational leadership is essential in the use of advanced technology in the production process, resulting in the integration of supply chain partners (Birasnav et al., 2015). Transformational leaders are known for their charisma through trust that mediates relationships or cooperation with supply chain partners. Through trust, a relationship can be more robust and longer. Leadership in a company that emphasizes maximizing the integration with suppliers and customers will increase market responsiveness.

H3: Transformational leadership influences supply chain integration (SCI).

Adopting ERP systems within the enterprise can help companies become more developed, competitive and generate advantages or benefits. The results of Njihia et al. (2014) revealed that ERP systems influence firm performance. Companies have to adopt a low-cost approach that focuses on strategies to provide products or services at the right time in the right place, namely, ERP systems (Tarigan et al., 2020). As a form of technological development, ERP systems have become essential, and their benefits must be realized for companies in managing their business processes (Ince et al., 2013). Increasing firm performance can be through the implementation of a system of information technology (IT) to integrate all the activities and functions of the company, which is called the ERP (Tarigan et al., 2018).

H4: Adoption of the ERP system influences the firm's performance

The dizziness of the firm's performance and achievement of the competitive advantage of a company is not only achieved through the relationship between organizations, such as strategic alliances,

mergers, and acquisitions but through the SCI should be oriented in order to respond to customer demand with res pound shifts (Tseng & Liao, 2015). Companies with a supply chain that pitch in excellence well will be able to manage the entire business process collaboratively so that firm performance can be more effective and efficient (Mehrerdi, 2010). BSR integration disclosed to improve cooperation, satisfaction, understanding, and trust in relationships between companies and suppliers that impact sales growth and increase market share. It is essential to realize cooperation between departments to make strategies, set goals, share information, and work together to solve the problem through internal integration.

H5: Supply chain integration influences firm performance.

The scope of internal integration also extends to collaborative internal supply chain collaboration, resulting in an acceptable SCI (Leuschner et al., 2013; Tarigan et al., 2020). The ERP system also enhances the company's ability to make effective decisions and significantly integrate and improve all partners' operational synchronization in the supply chain. The adoption of ERP systems in the supply chain depends on companies' leadership in overcoming obstacles or problems that are convinced to improve supply chain companies' efficiency (Hwang & Min, 2015). For sustainability, the use of ERP systems can effectively improve our supply chain in many ways, such as integrating internal business processes, increasing the flow of information, improving product quality, improving corporate relations, and collaboration. ERP systems also make the company more spots of the bell, responsive to customers, and ultimately reduce inventory and operating costs, all of which is the entirety of an effective and efficient SCI (Leuschner et al., 2013).

H6: ERP system influences supply chain integration.

Based on the literature review and hypothesis developed, the research model and related hypotheses are shown in Figure 1.

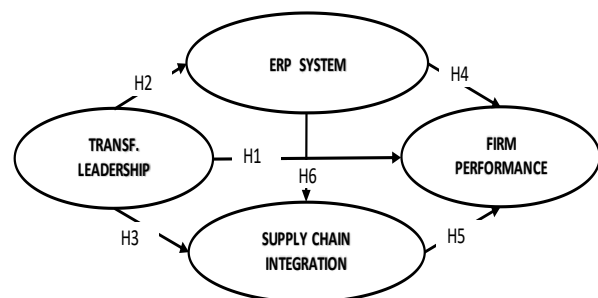


Figure 1. The Research Model

3. Methods

The quantitative research method is a research method based on the positivism philosophy, used to examine specific populations or samples, with statistical data analysis to test the hypotheses that have been inferred (Sugiyono, 2018). The population is all manufacturing companies in the city of Surabaya as the population. Data is collected from medium and large-scale food and beverage manufacturing companies that use enterprise resources planning (ERP) application systems. The questionnaires were distributed to as many as 100 companies of food and beverage manufacturing in Surabaya. Of 100, 55 questionnaires were considered valid for further analysis.

The researcher determines the measurement of the construct for transformational leadership is a leader who establishes a reliable figure (Birasnav & Bienstock, 2019). The measurement items used were eight items, leaders who can be trusted, become role models, leaders committed to goals, leaders with communication skills, rational leaders, leaders with the ability to solve problems, leaders who can give personal attention, and leaders who can provide guidance. The second variable, the Enterprise resources planning (ERP) system, is an integrated application set that can collect, record, manage and interpret data and information from activities in manufacturing companies (Tarigan et al., 2018; Birasnav & Bienstock, 2019). There are five ERP system measurement items; they are ERP systems that have a quality system for processing data and information, the use of ERP systems that produce quality information, the results of ERP systems that provide satisfaction to users, the information generated contributes to the impact of individuals and information the resulting impact on the company's contribution. Supply chain integration (SCI) measures the extent to which the relationship in the supply chain with the company Leuschner et al., 2013), which includes integrating with consumers, suppliers, internal and external partners. Supply chain integration (SCI) was assessed using ten items of measurement. The ten items consist of problem-solving ability, accurate information availability, production plans provision, periodic sales estimates, risk-sharing with suppliers and customers, use of technology-based information exchanges, logistics activities integration with partners, cooperation with suppliers and customers results in minimal logistical costs, long-term cooperation with suppliers and customers, and fair rewards distribution with partners.

Firm performance results from manufacturing companies in management, economics, and marketing that provide competitiveness, efficiency, and

effectiveness for the company. Firm performance assessment adapted from Tseng and Liao (2015) using seven measurement items. The seven items include reports of sales increases within the company, market development strategies within the company that produces impacts, efficient reduction of total company costs, financial performance targets as planned can be achieved, the ability to answer customer questions reliably, the speed of time in dealing with customer complaints and customers are satisfied with the services provided by the company. Analysis of the data used Smart Partial Least Square software. Hypothesis testing is done by assessing the t value result from the bootstrapping. Bootstrapping is a recalculation with randomly created data sampled (Ghozali, 2014).

4. Results

Respondents who filled in returned the questionnaire to the researcher as many as 55 questionnaires. The characteristics of respondents by the department are shown in Table 1.

Table 1. Profile of Department

No.	Department	amount	Percentage
1	Operational	5	9%
2	PPIC	10	18%
3	Production	14	25%
4	Purchasing	8	14.5%
5	Quality Control	2	4%
6	Research & development	2	4%
7	Sales marketing	6	11%
8	Supply Chain	8	14.5%
Total		55	100%

The result of a descriptive analysis based on the score of the respondent's answer to each statement item is also provided, as shown in Table 2.

The measurement model (outer model) is first assessed to ensure that those indicators assigned for those research variables are valid and reliable. The PLS technique examines the outer model by assessing the indicators' factor loading, cross-loading, and reliability. Table 2 demonstrated the result of the outer model assessment. The result indicated that all the factor loading of each item is more significant than 0.50 as the recommended minimum acceptable value. This result proves that all indicators are valid in terms of convergent validity. Another measurement for validity is discriminant validity, but the analysis results indicated that all factor loading of each indicator is greater than the cross-loading with other variables. Hence, those indicators are also considered valid in terms of discriminant validity. The last assessment for

Table 2. Indicators validity and reliability

Item	Indicator	Mean	Factor Loading	Composite Reliability
Transformational Leadership				0.901
x.1a	trust	4.39	0.558	
x.1b	respect	4.35	0.621	
x.1c	modeling	4.22	0.784	
x.2a	commitment to goals	4.35	0.736	
x.2b	communication	4.07	0.648	
x.2c	enthusiam	4.26	0.653	
x.3a	rationality	4.06	0.676	
x.3b	problem solving	4.15	0.653	
x.4a	personal attention	3.69	0.768	
x.4b	mentoring	4.07	0789	
ERP System				0.888
Y1.1A	System quality	4.07	0.645	
Y1.1B	Response time	4.07	0.521	
Y1.2A	Information quality	4.20	0.801	
Y1.2B	Information useful	4.00	0.808	
Y1.3A	User satisfaction	3.93	0.698	
Y1.4A	Individual impact	4.24	0704	
Y1.4B	Individual productivity	3.85	0.534	
Y1.5A	Organizational impact	4.22	0702	
Y1.5B	Business process impact	3.98	0717	
Supply Chain Integration				0.953
Y2.1A	Internal problem solving	4.00	0.852	
Y2.1B	Internal information	4.15	0.793	
Y2.2A	Supply contract	4.15	0.802	
Y2.2B	Forecasting	4.24	0821	
Y2.2C	Risk sharing	4.06	0880	
Y2.2D	Partnership	3.89	0711	
Y2.3A	Information exchange	4.11	0.773	
Y2.3B	Information technology-based	4.19	0837	
Y2.4A	Logistics integration	4.13	0888	
Y2.4B	Logistics cost reduction	4.26	0826	
Firm Performance				0.845
Z.1A	Sales growth	4.24	0.622	
Z.1B	Market development strategy	4.15	0.621	
Z.2A	Cost reduction	3.91	0.633	
Z.2B	Planned production cost	3.98	0.735	
Z.3A	Customer satisfaction	4.28	0702	
Z.3B	Reputation	4.30	0818	

the outer model is reliability. Table 2 also showed the value of reliability for the block indicator of each variable. As shown in Table 2, composite reliability values are greater than 0.70 as a recommended minimum acceptable value. Hence, all indicators are considered reliable (Ghozali, 2014).

Table 3. Coefficient of Determination R²

Variabe	R-square
ERP application	0.335
Supply Chain Itegration	0.183
Firm Performance	0.440

Table 3 illustrated that the R-Square value for ERP system applications is 0.335, which means that

the percentage of ERP system applications can be explained by transformational leadership of 33.5%. At the same time, the R-Square value for supply chain integration is 0.183, which means that the percentage of supply chain integration can be explained by transformational leadership and ERP system application of 18.3%. Furthermore, the R-Square firm performance value is 0.440, which means that the percentage of firm performance can be explained by transformational leadership, ERP system application, and supply chain integration of 44%. The R-square for firm performance as a dependent variable is considered at a moderate level. This result proves that the model could improve the firm performance at a moderate level.

The subsequent analysis is hypothesis testing. The Smart PLS technique examines the hypothesis by assessing the t value after bootstrapping technique. The result of the analysis is shown in Table 4.

Table 4. Hypothesis Testing Result

Hypothesis	Path Coefficient	t-value	Remarks
Transformation Leadership → Firm Performance (H1)	0.096	0.531	Not Supported
Transformation Leadership → ERP Application (H2)	0.579	5.834	Supported
Transformation Leadership → Supply Chain Integration(H3)	0.065	0.384	Not Supported
ERP Application → Firm Performance (H4)	0.504	3.246	Supported
Supply Chain Integration → Firm Performance (H5)	0.332	2.423	Supported
ERP Application → Supply Chain Integration(H6)	0.387	2.950	Supported

The hypothesis is empirically supported when the t value of the path coefficient is greater than 1.96 (critical t value for a significant level of 5%). The path coefficient value for the effect of transformational leadership on firm performance is 0.096, with a t value of 0.531, which is less than the t value of 1.96. So, it can be concluded that in this study, transformational leadership has not been able to significantly influence firm performance, with a significant level of 0.05. The path coefficient value for the effect of transformational leadership on ERP system application is 0.579, with a t value of 5.843, which exceeds the t-statistics value of 1.96. So, it can be concluded that there is a significant influence between transformational Leadership on ERP system application. This result means that an increase in transformational leadership will influence the significance of the ERP system application.

The path coefficient value for the influence of transformational leadership on supply chain integration is 0.065, with a t value of 0.384, which is less than the t-statistics value of 1.96. So, it can be concluded that in this study, transformational leadership has not been able to significantly influence supply chain integration, with a significant level of 0.05. The path coefficient value for the effect of ERP system application on firm performance is 0.504, with a t value of 3.246, which exceeds the t-statistics value of 1.96. So, it can be concluded that there is a significant influence between ERP system application and firm performance. This result means that an increase in the ERP system will influence the significance of the Firm performance, with a significant level of 0.05. The path coefficient value for the influence of Supply chain integration on firm performance is 0.332, with a t value

of 2.423, which exceeds the t-statistics value of 1.96. So, it can be concluded that there is a significant influence between supply chain integration on firm performance. This result means that an increase in ERP system application will influence the significance level of firm performance, with a significant level of 0.05. The path coefficient value for the effect of ERP system application on supply chain integration is 0.387, with a t value of 2.950, which exceeds the t-statistics value of 1.96. It can be concluded that there is a significant influence between ERP system applications on supply chain integration. This finding means that an increase in ERP system applications will influence supply chain integration, with a significant level of 0.05. The research model and related analysis results are demonstrated in Figure 2.

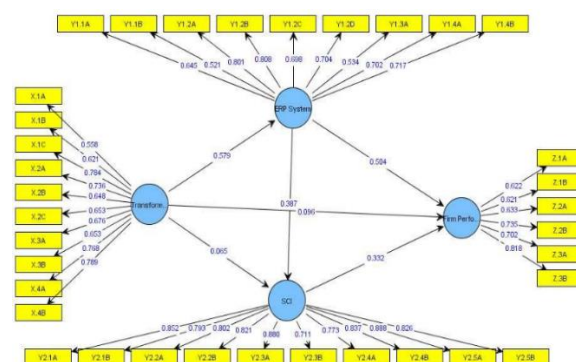


Figure 2. Research Model and Analysis Result

Based on the direct hypothesis result, the indirect effect of transformational leadership on the firm performance through ERP application and supply chain integration can be interpreted. Table 4 indicated that transformational leadership positively affects ERP system application with a path coefficient value of 0.579. At the same time, ERP system applications also affect firm performance with a coefficient of 0.504. These two direct relationship results imply that transformational leadership indirectly affects firm performance through ERP application mediation. So it can be concluded that transformational leadership has an indirect effect on firm performance through ERP system application. On the contrary, transformational leadership does not indirectly affect firm performance through supply chain integration. This finding results from the fact that transformational leadership does not influence supply chain integration since the t value is $0.384 < 1.96$, as shown in Table 4. This finding implies that transformational leadership does not indirectly affect firm performance through supply chain integration even though the supply chain integration directly affects firm performance. Based on the above

results, this study indicated that transformational leadership only affects firm performance through ERP application. It concludes that transformational leadership only improves firm performance by applying the ERP system in the company system.

5. Discussion

The result of Smart PLS data processing shows that transformational leadership has no influence on firm performance, which is the path coefficient value of 0.096 with a critical ratio value of 0.531. This result is not aligned with the previous study as discussed previously (Tarigan et al., 2018; Masa'deh et al., 2016; Mehrjerdi, 2010; Birasnav & Bienstock, 2019; Masa'deh et al., 2016; Birasnav et al., 2015). This finding shows that in this study, transformational leadership does not affect firm performance. Transformational leadership is described by one of the indicators with the highest loading factor (0.789), which is the ability of leaders to provide guidance (mentoring). While firm performance is depicted with one of the indicators with the highest loading factor (0.818), namely the reputation owned by the company (reputation), however, in this study, it can be concluded that leaders who can guide employees within the company have not been able to provide an increase or influence on the company's reputation. Excellent or lousy guidance given by leaders to employees has not described the good and bad reputation owned by the company. The result also shows that transformational leadership influences ERP system applications, with a path coefficient value of 0.579 and a *t* value of 5.834. This result proved that; transformational leadership influences the ERP system application. Transformational leadership is described by one of the indicators with the highest loading factor (0.789), namely leaders' ability to provide guidance (mentoring). This result is consistent with previous research (Elkhani et al., 2014; Chou, 2019). At the same time, the ERP system application is illustrated by one of the indicators with the highest loading factor, which is 0.808, the ERP application to produce useful information. The leaders who can guide employees in ERP applications, ERP systems can produce useful information.

Transformational leadership does not affect supply chain integration. This result shows that transformational leadership does not affect supply chain integration. Transformational leadership is described by one of the indicators with the highest loading factor results, which is 0.789, the ability of leaders to provide guidance (mentoring). In contrast, supply chain integration is depicted with one of the indicators with the

highest loading factor, which is 0.888, which explains the company's logistical activities that are well integrated between supply chain partners (logistic integration). The leaders who can guide employees within the company have not produced good integration in the company's logistics activities with supply chain partners. This finding is contrary to previous studies (Njihia et al., 2014; Tarigan et al., 2020; Ince et al., 2013)

The other results show that ERP system application influences firm performance, where the value of the path coefficient is 0.504 with a critical ratio value of 3.246. This finding proved that ERP system applications affect firm performance (Njihia et al., 2014; Tarigan et al., 2020; Tarigan et al., 2018). ERP system application is depicted with one of the indicators with the highest loading factor (0.808), the ERP application to produce useful information. At the same time, firm performance is depicted with one of the indicators with the highest loading factor, which is 0.818, which explains the reputation owned by the company (reputation). The ERP system application that produces useful information to be managed for the company can affect the company's reputation later. The information obtained from the ERP system will undoubtedly be beneficial for companies to build internal business processes, which will impact the company's external circumstances in the public's eyes.

Furthermore, supply chain integration influences firm performance, with the path coefficient value is 0.332, with a critical ratio value of 2.423. This finding shows that supply chain integration affects firm performance (Tseng & Liao, 2015; Mehrjerdi, 2010). Supply chain integration is illustrated by one indicator with the highest loading factor, which is 0.888, which explains the company's logistical activities that are well integrated between supply chain partners (logistic integration). In comparison, firm performance is depicted with one of the indicators with the highest loading factor, which is 0.818, which explains the reputation owned by the company.

Besides, ERP system application influences supply chain integration. This result shows that the ERP system application affects supply chain integration (Hwang & Min, 2015; Leuschner et al., 2013). ERP system application is depicted with one of the indicators with the highest loading factor, which is 0.808, explaining the ERP application to produce useful information. At the same time, supply chain integration is depicted with one of the indicators with the highest loading factor, which is 0.888, which explains the company's logistical activities that are well integrated between supply chain partners (logistic integration).

On the indirect relationship of the ERP application and supply chain integration, the interpretation is discussed as follows. To improve firm performance, it requires the application of information technology such as the ERP application. Companies can own and use data and information managed conveniently, accurately, complete, and valuable through the ERP system application. In this study, it was found that the ERP system application produces valuable information so that the company can use it to run the company's business processes. Smooth business processes with accurate and reliable information can increase firm performance by generating a good reputation in the public's eyes. However, an ERP system application itself is not easy to use, so it requires a reliable leader, namely transformational leadership. Transformational leadership is considered a person who is open to the development of information technology and can charisma to guide and motivate employees to use the ERP system at work. Employees who are capable and proficient in ERP system applications will undoubtedly produce good performance and productivity, improving firm performance. This study found that transformational leadership, which can provide guidance or learning to employees who perform ERP system applications, can make employees more confident, skilled, and proficient in using ERP systems. So that later in the ERP system application, it can process and produce useful information for use.

6. Conclusions

The present study was designed to empirically investigate the effect of transformational leadership on firm performance through ERP systems and supply chain integration in the consumer goods industry. The following conclusions can be drawn from the present study. The results showed that practicing transformational leadership in food and beverage companies in Surabaya has not directly influenced firm performance. Transformational leadership in food and beverage manufacturing companies in Surabaya directly influences ERP applications. The results showed that transformational leadership does not influence supply chain integration directly. The results also showed that the application of ERP directly influences supply chain integration and firm performance. The ERP application is an information technology that collects and facilitates the flow of vital information needed by the company; namely, the ERP system produces essential and valuable information that can provide immediate improvement to supply chain integration in managing collaborative logistics

activities and equitable risk sharing supply chain partners. Transformational leadership affects firm performance only through ERP application. This work provides insight for the manager that transformational leadership should be realized in establishing an ERP system and adopting supply chain integration to improve the firm's performance. Transformational leadership only indirectly improves firm performance through ERP application and supply chain integration. This study also reinforces and extends the acceptance of the previous study in the food and beverage industry in East Java, Indonesia. This study has a limitation on the population and research variables. Future research is suggested to involve more variables such as supply chain risk and also other industry sectors.

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