

How Supply Chain Mediates the Relationship between HRM Practices and Employee Performance?

Komala Lenda ^{#1}

^{#1}*Faculty of Economics and Business, YARSI University*

lenda.komala@yarsi.ac.id

Abstract-The basic goal of the present study is to examine the role of HR practices such as compensation, training and empowerment on the employee performance of public sector companies in Indonesia. The second aim of the ongoing study is to the investigation of the mediating role of supply chain management integration among the links of compensation, training, empowerment and employee performance of public sector companies in Indonesia. The questionnaire method has been adopted by the study to collect the data from the respondents while PLS-SEM has been employed for the data analysis. The results indicated that training and empowerment have a positive and significant link with the employee performance of the public sector organizations. The results also exposed that supply chain management integration significantly mediates among the links of HR practices such as compensation, training, empowerment and employee performance of public sector companies in Indonesia. These findings are suitable for the regulation development authorities along with upcoming researchers in terms of making regulation and future investigation related to HR practices, supply chain management and employee performance.

Keywords; *HR practices, Compensation, Training, Supply chain management, Employee performance*

1. Background

Human Resource Management is considered as one of the focusing areas of this era organizations. Departmentalization brings the revolution in the organizational structural changes. Now every organization prefers to work with departmentalization concept. It helps the organization in numerous ways like controlling of each department cost, measurement of the employee efficiency, the contribution of the department towards the organizational operations etc. Human Resource Management seeks and manages all the matters related to the manpower of any organization. Employees are considered as an asset of the organization. Organizations always remain in search of skilled employees as a skilled employee's performance strongly affects the organization performance. There are numerous studies reported on the employee's performance effect on the organization. Skilled employees are considered as the backbone of the organization. Most of the time there is a positive association witnessed in the literature [15]. The

organizations invest their maximum efforts to enhance its employee performance. Numerous tools are used as performance enhancement tools by the human resource management department. There are multiple factors considered by an employee while working with any organization. Literature witnessed that factors like salary, compensation, empowerment, training, benefits, organizational culture etc. strongly influence the performance of the employee. In this present investigation, the effect of Human Resource Management factors like compensation, empowerment and training on employee satisfaction will be considered. Here the supply chain management (Integration) is employed as a mediating variable.

Numerous departments exist within an organization which run and control it. These departments are further controlled by the top management of the organization. The overall performance of these departments is considered as the organization performance [23]. These departments are interlinked with each other to support and share the bug's falls in the operations [27]. These departments have a strong influence over each other. The manpower of each department is controlled by the human resource management department. The human resource management department time to time conducts different activities to motivate the employees with the intentions to enhance their performance. Another factor with bridge the human resource management department and employee performance is supply chain management. Supply chain management influences the entire system of the organization. The human resource management department connects the different departments. Its acts as material provided in the production department and on the other hand act as a distributor in the marketing section [5]. In the human resource management department, it dealt with SOPs and other organizational activities policies etc. Numerous times the human resource management reported as a mediator in the relationship between human resource management and employee performance. The integration of supply chain management plays a vital role in employee performance [16].

The employee of the modern world not only work for salary but several other factors also considered keenly like long term benefits, skills enhancement chances,

compensation etc. [5]. Once the employee receives the planned benefits from the organization it results in enhancement if its performance. The employees are attracted by the benefits offered to him. The human resource management department in this regards formulate different planes to not only retain but also for the motivation of the employees with the intentions to enhance their performance. The requirement of the employees varies individual to individual [18]. Some employees prefer the short term but other shows their interest in the long-run benefits. Here the human resource management department deals according to the individual requirement. Although the human resource management department prefers the employee demand on the other hand it also acts according to the financial condition of the organization. The human resource management department always prefers to have a skilled employee at minimum cost. The first element of the study is the compensation. Compensation plays a vital role in the enhancement of employee performance. It also is considered the motivation tool of the human resource management department. The employees never compromise over the compensation whereas the human resource management department put its maximum efforts to have the skilful employee at a minimal cost. Although many time the human resource management department revert its minimal compensation policy to retain a good employee. It's a very critical decision for the human resource management department. The second factor employed in the study which affects the organization performance is empowerment [17]. The decision making matters a lot for any individual which holds the key position in the organization. A key position holder in the organization which lacks the decision making powers is nothing but a puppet employee. Not only position matter but also the empowerment associated with the position holding matters a lot. The third factor employed in the study is employee training. It's a vital factor. It's the core duty of the human resource management department to conduct training activities for the employees for the improvement of their skills. Supply chain management (integration) is the key factor between both the human resource management department and employee performance.

2. Hypotheses development

Literature witnessed that the compensation received by any employee is the first factor considered by any employee while a selection of any employment. Both the human resource management department and employee strongly impact each other in this regards [3]. The employee prefers and employed maximum efforts to secure handsome compensation against his skills. On the other hand, there is a vice versa with the human resource management department. Many of the times the human resource management department go against their policy

when seeks a more skilled employee which can benefit the organization a lot. The organization never likes to lose a skilled employee [25]. In this context, the human resource management department time to time offers compensation in different forms to motivate their employee to boost their performance. Numerous times there is a positive association reported between compensation and the employee performance. The employee will perform better if will reward high as every individual in the world serves to earn [11]. The option for better always opens for the employee whereas the condition to retain and motivate the employee is also the duty of the human resource management department. The hypotheses derived from the above discussion are:

H1: There is a positive association between compensation and Employee Performance.

The right decision at the right time is the key to success. The organizations and their individuals are recognized by their decisions. The decision making is also a tool used by the human resource management department to evaluate the interpersonal skills of the employee. The employee who lacks the empowerment is nothing but a machine [10]. The duty of the organization is not only to hire but also to train them but also to empower them that much that they can have the decision according to the requirement. If the employee is fully empowered by the organization only then he can have the decision according to his/her mind to fulfil the requirement. The human resource management department will have to provide such policies to empower the employee so that he/she can have the perfect decision at the right time. Any wrong decision is taken by the individual at the wrong time will strongly influence the performance of the other department employees. The policies of the organizations must be formulated in such a way that each top management hired must be empowered to have all decisions according to the requirement.

H2: There is a positive association between empowerment & employee performance.

The world is changing rapidly. Those organizations which failed to change themselves according to the changing need of the organization are usually crushed by the competitors. Similar is the case with the employees of the organizations [3]. The organizations which not focused on the changing requirements of the employees usually nor developed a lot. Here the supply chain management department plays its vital role. The duty of the organization is not only to hire but also to train them with the passage of time to meet the changing requirements of the business world [11]. The human resource management department keeps in close touch with the changing needs of the market. Time to time the human resource management department organized the training activities to enhance the interpersonal skills of the employees [14]. The conduction of these activities strongly influences the performance of the employee. A

well-trained employee can perform better as a comparison with the employee which is not well trained. There must be a continuation in these types of training programs [14, 31]. These pieces of training are conducted according to the needs of the department. The organizations invest heavily in the training of the employees to enhance their skills to boost their performance.

H3: There is a positive association between training & employee performance.

The term supply chain management is secure much importance in the business world. Literature witnessed that supply chain management system of the organization influence all the departments of the organizations [28]. The supply chain management system influence in such a way that it creates the integration between the activities and the departments of the organization within the organization. The coordination between the organizations within the premises of the organization is conducted through supply chain management integration system [30]. The gaps create between the departments are squeezed by the supply chain management integration process. Integration between the departments is very necessary to be on the same page of all the departments of the organization. If no coordination between the departments will lead to a failure of the execution of the plan. The supply chain management system connects all the departments of the organization. It supports the marketing department in the form of distribution of the product. It also responds to timely provide the raw material etc. [6, 8]. The importance of supply chain integration witnessed as one of the strong influence factors on organization performance [24]. At one end the supply chain management supports the human resource management department, on the other hand, it also supports the operating activities of the organization. There are several activities performed by human resource management is supported by supply chain management. The integration of supply chain management is very necessary for the organization to keep their departments connected [13].

In the present study, the supply chain integration is employed as a moderating variable. Supply chain Integration has been a highly researched topic during the last 20 years, but no consensus has been achieved on how to measure supply chain integration and operationalization [19]. Some authors examined Supply chain Integration as a single construct [20, 26]. Are numerous activities performed by the supply chain management at a single time to support human resource management and other organization-related factors [7, 33]? However, supply chain integration multidimensional constructs have been developed due to the complex nature of the concept [28, 9]. The key to Supply chain Integration is to develop uninterrupted links with upstream suppliers and downstream customers along with total internal functional synergy [32]. Supply chain management plays a keen role

in coordination between human resource management and employee performance [4, 22]. [8]. [1]. Numerous times in the past the supply chain integration witnessed as the mediating variable on the relationship between human resources management practices and the performance of the employee [32]. The hypotheses derived from the above-given debate are:

H4: The supply chain Integration positively mediates the association amid compensation and employee performance.

H5: The supply chain Integration positively mediates the association amid empowerment and employee performance.

H6: The supply chain Integration positively mediates the association amid training and employee performance.

3. Methodology

The basic goal of the present study is to examine the role of HR practices such as compensation, training and empowerment on the employee performance of public sector companies in Indonesia. The second aim of the ongoing study is to the investigation of the mediating role of supply chain management integration among the links of compensation, training, empowerment and employee performance of public sector companies in Indonesia. The questionnaire method has been adopted by the study to collect the data from the respondents. The respondents have been selected by using simple random sampling while the survey has been distributed by personal visit to the public sector organization. In addition, PLS-SEM has been employed for data analysis due to the complexity of the framework. The variables that have been adopted include one mediating variable named as supply chain management integration (SCMI) that has four items, one dependent variable such as employee performance (EPR) that has five items. In addition, HR practices such as compensation (CM) that has seven items, training (TR) that has five items and empowerment (EP) that has eight items used as predictors in the study [12]. These variables are highlighted with their links in Figure 1.

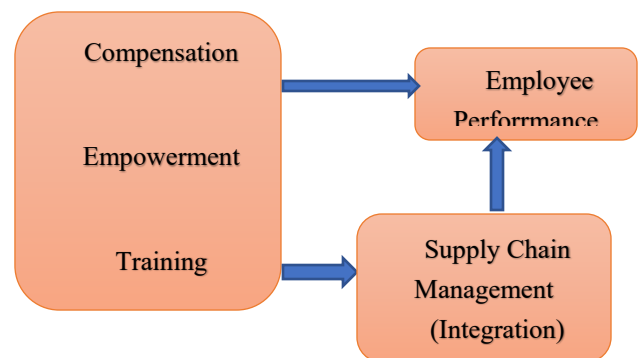


Figure 1. Research model

4. Results

The results revealed that convergent validity has valid and high correlation among items because values of Alpha are more than 0.70 along with CR while the values of loadings are more than 0.50 along with AVE. These values are highlighted in Table 1.

Table 1. Convergent validity

Items	Loadings	Alpha	CR	AVE
CM1	0.775	0.916	0.933	0.665
CM2	0.853			
CM3	0.789			
CM4	0.808			
CM5	0.822			
CM6	0.802			
CM7	0.856			
EP1	0.687	0.920	0.921	0.595
EP2	0.672			
EP3	0.814			
EP4	0.818			
EP5	0.832			
EP6	0.740			
EP7	0.838			
EP8	0.751			
SCMI1	0.891	0.923	0.946	0.813
SCMI2	0.910			
SCMI3	0.896			
SCMI4	0.910			
EPR2	0.791	0.848	0.897	0.686
EPR3	0.841			
EPR4	0.830			
EPR5	0.851			
TR1	0.865	0.898	0.929	0.765
TR2	0.876			
TR4	0.887			
TR5	0.870			

The results also revealed that discriminant validity has valid and no high correlation among variables because values of cross-loadings along with Fornell Larcker are meet the standards. These values are highlighted in Table 2 and Table 3.

Table 2. Fornell Larcker

	CM	EP	SCMI	EPR	TR
CM	0.816				
EP	0.326	0.771			
SCMI	0.406	0.320	0.902		
EPR	0.512	0.296	0.508	0.829	
TR	0.430	0.300	0.401	0.413	0.875

Table 3. Cross-loadings

	CM	EP	SCMI	EPR	TR
CM1	0.775	0.299	0.655	0.415	0.325
CM2	0.853	0.337	0.806	0.467	0.340
CM3	0.789	0.281	0.725	0.432	0.365
CM4	0.808	0.259	0.686	0.394	0.332
CM5	0.822	0.219	0.690	0.396	0.383
CM6	0.802	0.177	0.665	0.321	0.345
CM7	0.856	0.276	0.898	0.474	0.369
EP1	0.137	0.687	0.112	0.102	0.114
EP2	0.461	0.672	0.462	0.400	0.410
EP3	0.143	0.814	0.144	0.183	0.172
EP4	0.181	0.818	0.169	0.204	0.163
EP5	0.151	0.832	0.138	0.116	0.124
EP6	0.066	0.740	0.103	0.083	0.119
EP7	0.159	0.838	0.150	0.119	0.138
EP8	0.123	0.751	0.103	0.094	0.106
SCMI1	0.774	0.309	0.891	0.452	0.338
SCMI2	0.854	0.272	0.910	0.471	0.382
SCMI3	0.782	0.311	0.896	0.442	0.342
SCMI4	0.852	0.268	0.910	0.465	0.381
EPR2	0.455	0.253	0.447	0.791	0.372
EPR3	0.423	0.266	0.415	0.841	0.354
EPR4	0.394	0.219	0.407	0.830	0.304
EPR5	0.419	0.240	0.408	0.851	0.331
TR1	0.325	0.234	0.307	0.348	0.865
TR2	0.396	0.255	0.356	0.339	0.876
TR4	0.378	0.297	0.347	0.323	0.887
TR5	0.399	0.262	0.385	0.421	0.870

The results also revealed that discriminant validity has valid and no high correlation among variables because values of Heterotrait Monotrait (HTMT) ratios are less than 0.90. These values are highlighted in Table 4.

Table 4. Heterotrait Monotrait ratio

	CM	EP	SCMI	EPR	TR
CM					
EP	0.242				
SCMI	0.675	0.235			
EPR	0.574	0.230	0.572		
TR	0.472	0.232	0.437	0.467	

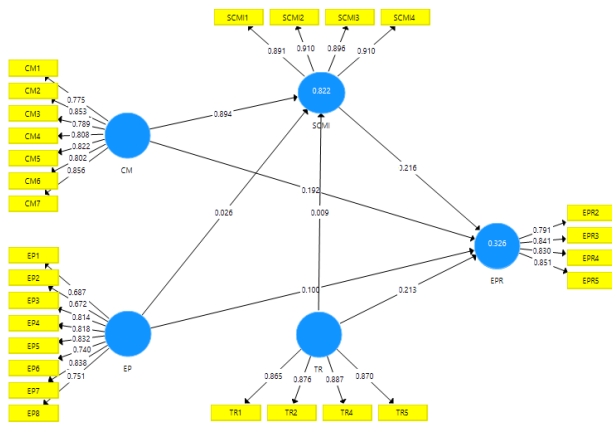


Figure 2. Measurement model assessment

The path analysis has shown that positive along with significant association among the training, empowerment and employee performance and accepts H2 and H3. However, compensation has insignificantly linked with employee performance and reject H1. In addition, supply chain management integration significantly mediates among the links of HR practices such as compensation, training, empowerment and employee performance of public sector companies in Indonesia and accept H4, H5 and H6. These links are highlighted in Table 5.

Table 5. Path analysis

Relationships	Beta	S.D.	t-statistics	p-values
CM -> EPR	0.192	0.122	1.579	0.059
EP -> EPR	0.100	0.061	1.656	0.050
SCMI -> EPR	0.216	0.127	1.703	0.046
TR -> EPR	0.213	0.058	3.699	0.000
CM -> SCMI -> EPR	0.193	0.114	1.690	0.047
EP -> SCMI -> EPR	0.106	0.024	4.417	0.025
TR -> SCMI -> EPR	0.102	0.034	3.000	0.041

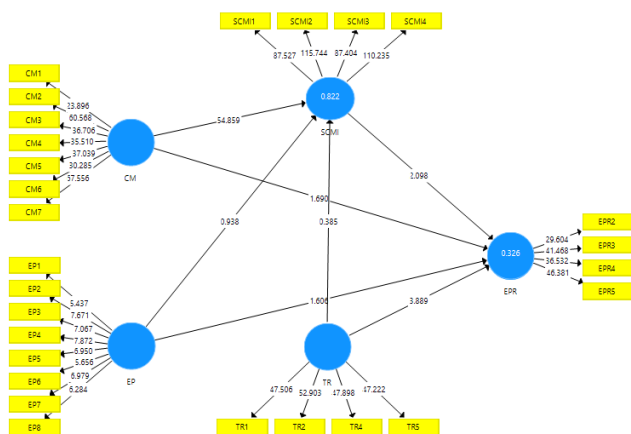


Figure 3. Structural model assessment

5. Discussion and conclusion

The results indicated that training and empowerment have a positive and significant link with the employee performance of the public sector organizations. These findings are matched with outcomes of [2] who also examined that training and empowerment practices of HR are necessary for the employee performance in the company. In addition, a study by [21] exposed that training is the essential part of HR practices that enhance the employee performance in the company and these findings are same as the outcomes of the ongoing study. The results also exposed that supply chain management integration significantly mediates among the links of HR practices such as compensation, training, empowerment and employee performance of public sector companies in Indonesia. These findings are also similar to the outcome of the Teixeira, [29] who also exposed that training along with supply chain practices has a greater impact on the employee performance of the organization. These findings are suitable for the regulation development authorities along with upcoming researchers in terms of making regulation and future investigation related to HR practices, supply chain management and employee performance. Thus, the present study has concluded that the public sector organization of Indonesia has implemented the effective practices of HR along with the supply chain that is the reason high employee performance in the organization. The present study has recommended that the upcoming studies should add private organization under investigation that enhances their study scope. In addition, the ongoing study also suggested that further study should add moderating impact in the model that is ignored by the ongoing study.

This article analyzes the supply chain, HRM, and employee performance variables. This article is in line with previous articles including: [34], [35], [41], [37]. HRM [34], employee performance [39], [36], [40], and [38].

REFERENCES

- [1] E. Afum, "Green manufacturing practices and sustainable performance among Ghanaian manufacturing SMEs: the explanatory link of green supply chain integration," *Management of Environmental Quality: An International Journal*, Vol. 8, No. 1, pp. 2-5, 2020.
- [2] I. Ahmad and S. R. Manzoor, "Effect of teamwork, employee empowerment and training on employee performance," *International Journal of Academic Research in Business and Social Sciences*, Vol. 7, 11, pp. 380-394, 2017.
- [3] N. Akter, "Employee training and employee development is the predictors of employee performance; A study on garments manufacturing sector in Bangladesh," *Journal of Business and Management*, Vol. 18, 11, pp. 48-57, 2016.

- [4] O. Alananzeh, "The impact of employee's perception of implementing green supply chain management on hotel's economic and operational performance," *Journal of Hospitality and Tourism Technology*, Vol. 3, No. 1, pp. 110-112, 2017.
- [5] Y. Apriani, "The effect of organizational culture and compensation on employee performance with satisfaction as intervening variables in the sub district office of south sipora mentawai islands regency," *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Vol. 8, No. 4, pp. 101-109, 2018.
- [6] C. Ataseven and A. Nair, "Assessment of supply chain integration and performance relationships: A meta-analytic investigation of the literature," *International Journal of Production Economics*, Vol. 185, pp. 252-265, 2017.
- [7] D. Das, "Development and validation of a scale for measuring Sustainable Supply Chain Management practices and performance," *Journal of Cleaner Production*, Vol. 164, pp. 1344-1362, 2017.
- [8] D. Das, "The impact of Sustainable Supply Chain Management practices on firm performance: Lessons from Indian organizations," *Journal of Cleaner Production*, Vol. 203, pp. 179-196, 2018.
- [9] T. De Vass, H. Shee, and S. J. Miah, "The effect of "Internet of Things" on supply chain integration and performance: An organisational capability perspective," *Australasian Journal of Information Systems*, Vol. 22, No. 1, pp. 16-18, 2018.
- [10] U. Faruk, "The effect of education and training to employee performance through leadership as intervening Variables at PT. hutama agung Jakarta Indonesia," *International Journal of Business and Applied Social Science (IJBASS)*, Vol. 4, No. 2, pp. 9-11, 2018.
- [11] J. Hanaysha, "Testing the effects of employee empowerment, teamwork, and employee training on employee productivity in higher education sector," *International Journal of Learning and Development*, Vol. 6, No. 1, pp. 164-178, 2016.
- [12] R. Hidayat and J. Budiartma, "Education and job training on employee performance," *International Journal of Social Sciences and Humanities*, Vol. 2, No. 1, pp. 171-181, 2018.
- [13] M. Hooshangi, "The mediation role of supply chain integration in relationship between employee commitment with organisational performance," *International Journal of Business Information Systems*, Vol. 24, No. 2, pp. 210-226, 2017.
- [14] A. S. M. M. Hoque, "Role of employee engagement on compensation system and employee performance relationship among telecommunication service providers in Bangladesh," *International Journal of Human Resource Studies*, Vol. 8, No. 3, pp. 46-47, 2018.
- [15] A. S. M. M. Hoque, "Role of employee engagement on compensation system and employee performance relationship among telecommunication service providers in Bangladesh," *International Journal of Human Resource Studies*, Vol. 8, No. 3, pp. 10-19, 2018.
- [16] M. S. Hussain, M. M. Mosa, and A. Omran, "The mediating impact of profitability on capital requirement and risk taking by Pakistani banks," *Journal of Academic Research in Economics*, Vol. 9, No. 3, pp. 433-443, 2017.
- [17] P. A. D. Juliarti, A. A. P. Agung, and I. N. Sudja, "Effect of compensation and work environment on employee performance with employee job satisfaction as an intervening variable," *International Journal of Contemporary Research and Review*, Vol. 9, No. 03, pp. 20553-20562, 2018.
- [18] S. D. Lestari, "The influence of work environment, competence and compensation on employee performance through intervening variable job satisfaction at bank BJB tangerang branch," *International Journal of Academic Research in Business and Social Sciences*, Vol. 8, No. 11, pp. 23-25, 2018.
- [19] M. Marimin, A. Wibisono, and M. A. Darmawan, "Decision support system for natural rubber supply chain management performance measurement: a sustainable balanced scorecard approach," *International Journal of Supply Chain Management*, Vol. 6, No. 2, pp. 60-74, 2017.
- [20] M. Mira, Y. Choong, and C. Thim, "Mediating role of port supply chain integration between involvement of human resource practices and port performance in Kingdom of Saudi Arabia," *Uncertain Supply Chain Management*, Vol. 7, No. 3, pp. 507-516, 2019.
- [21] M. Mira and K. Odeh, "The mediating role of authentic leadership between the relationship of employee training and employee performance," *Management Science Letters*, Vol. 9, No. 3, pp. 381-388, 2019.
- [22] F. Naway and A. Rahmat, "The mediating role of technology and logistic integration in the relationship between supply chain capability and supply chain operational performance," *Uncertain Supply Chain Management*, Vol. 7, No. 3, pp. 553-566, 2019.
- [23] M. T. Langa and K. K. Govender, "The need for agile relationship lending between small business and banks, towards a more engaged relationship: A case study in Khayelitsha, South Africa," *Asian Business Research Journal*, Vol. 4, pp. 29-34, 2019.
- [24] M. Nejati, S. Rabieci, and C. J. C. Jabbour, "Envisioning the invisible: Understanding the synergy between green human resource management and green supply chain management in manufacturing firms in Iran in light of the moderating effect of employees' resistance to change," *Journal of Cleaner Production*, Vol. 168, pp. 163-172, 2017.
- [25] N. Machdar, "Does CEO turnover affect stock market performance through company performance in Indonesian companies," *International Journal of Applied Economics, Finance and Accounting*, Vol. 4, No. 1, pp. 15-21, 2019.
- [26] A. A. Othman, "The relationship between supply chain integration, just-in-time and logistics performance: A supplier's perspective on the automotive industry in Malaysia," *International Journal of Supply Chain Management*, Vol. 5, No. 1, pp. 44-51, 2016.

- [27] G. A. P. E. D. Prihantari and I. B. P. Astika, "Effect of role overload, budget participation, environmental uncertainty, organizational culture, competence, and compensation on employee performance," *International research Journal of Management, IT and Social Sciences*, Vol. 6, No. 4, pp. 197-206, 2019.
- [28] S. Siriyannun, A. Mukem, and K. Jermstittiparsert, "Bridging workplace democracy and supply chain integration through high involvement of human resource practices," *International Journal of Supply Chain Management*, Vol. 8, No. 5, pp. 685-696, 2019.
- [29] A. A. Teixeira, "Green training and green supply chain management: evidence from Brazilian firms," *Journal of Cleaner Production*, Vol. 116, pp. 170-176, 2016.
- [30] S. Teoman and F. Ulengin, "The impact of management leadership on quality performance throughout a supply chain: an empirical study," *Total Quality Management & Business Excellence*, Vol. 29, No. 11-12, pp. 1427-1451, 2018.
- [31] H. Younis, B. Sundarakani, and P. Vel, "The impact of implementing green supply chain management practices on corporate performance," *Competitiveness Review*, 2016.
- [32] Y. Yu, B. Huo, and Z. J. Zhang, "Impact of information technology on supply chain integration and company performance: evidence from cross-border e-commerce companies in China," *Journal of Enterprise Information Management*, Vol. 6, No. 3, pp. 25-26, 2020.
- [33] X. Zhao, P. Wang, and R. Pal, "The effects of agro-food supply chain integration on product quality and financial performance: Evidence from Chinese agro-food processing business," *International Journal of Production Economics*, pp. 107-112, 2020.
- [34] A. Desfiandi, M. A. E. Yusendra, N. Paramitasari, & H. Ali, "Supply chain strategy development for business and technological institution in developing start-up based on creative economy," *International Journal of Supply Chain Management*, 2019.
- [35] S. Harini, Hamidah, M. R. Luddin, and H. Ali, "Analysis supply chain management factors of lecturer's turnover phenomenon," *International Journal of Supply Chain Management*, 2020.
- [36] A. Ma'ruf, "Sharia finance literacy and determinants on creative economy," *International Journal of Economics, Business and Management Studies*, Vol. 6, No. 1, pp. 19-25, 2019.
- [37] H. Mappesona, K. Ikhsani, and H. Ali, "Customer purchase decision model, supply chain management and customer satisfaction: Product quality and promotion analysis," *International Journal of Supply Chain Management*, 2020.
- [38] M. Ridwan, S. R. Mulyani, and H. Ali, "Building behavior and performance citizenship: Perceived organizational support and competence (case study at SPMI private university in west Sumatra)," *International Journal of Psychosocial Rehabilitation*, 2020.
<https://doi.org/10.37200/IJPR/V24I6/PR260195>
- [39] A. Rivai, Suharto, and H. Ali, "Organizational performance analysis: Loyalty predictors are mediated by work motivation at urban village in Bekasi City," *International Journal of Economic Research*, 2017.
- [40] P. E. S. Silitonga, D. S. Widodo, and H. Ali, "Analysis of the effect of organizational commitment on organizational performance in mediation of job satisfaction (Study on Bekasi City Government)," *International Journal of Economic Research*, 2017.
- [41] A. S. Sulaeman, B. Waluyo, & H. Ali, "Making dual procurement and supply chain operations: Cases in the Indonesian higher education," *International Journal of Supply Chain Management*, 2019.