

Building Supply Chain Leaders in Creating Business Performance: A Rasch Model Approach

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Abstract— The logistics and supply chain is an emerging business in the world. As the "network" business process, the supply chain business depends on the critical success factor that is human resources. This research is conducted using the Rasch Model Approach to examine the supply chain employees in the telecommunication industry in Indonesia. The supply chain business performance indicates the overall success of the supply chain employees. One of the employee performances is OCB since OCB has interpersonal impacts. The research results show that supply chain employees with transformational supply chain leaders have higher measure values in organizational citizenship behavior (OCB). Using the Rasch Model Approach, it is proven transformational supply chain leaders can be a leadership strategy in creating supply chain business performance.

Keywords— *Supply Chain Management, Organizational Citizenship Behavior, Transformational Leadership, Rasch Model*

1. Introduction

Modern organizations have experienced increasing competition. Globalization, technological change, politics, and economics are the competitive factors that have a significant impact on the business process[1]. As an organization consists of people; therefore, the organization will always deal with humans to carry out all its activities in obtaining an organization's goals efficiently and effectively[2].

The logistics industry has emerged significantly in most countries. The purpose of logistics is the supply of service or products to the customers at the right time, with the right quantity, in the right quality at the right cost and in the right place [3]. The core of

logistics is about satisfying the customer's needs [3]. The supply chain is the activity that facilitates interaction between partners and business aspects such as inventory, quick response, reducing operational costs to increase value through connecting from suppliers towards customers[4]. Effective human resources management is a critical element in the logistics and supply chain industry. A practical human resource encourages innovation and sustainable competitive advantage in supply chain industry[3].

The term business performance indicates the overall success of the company in achieving strategic goals within the specified period. The critical resource of the company is human resources, which means the company's employees. Consequently, business performance is the collection of employees' performances. An employee performance defines as the accomplishment of assigned tasks. It is the result of work quality and work quantity that can be achieved by the employees based on the responsibilities given. Therefore the employee performance indicators are work quality, work quantity, work effectiveness, and work behaviors that have interpersonal impacts such as organizational citizenship behavior (OCB) [5], [6]. To be able to achieve success in SCM, the company requires human resources with specific skills such as team building, problem-solving, and leadership [3].

Over the past three decades, transformational leadership has emerged as one of the predominant paradigms to understand leadership effectiveness [7]. Transformational leadership is an approach in which leaders motivate followers to perform above and beyond the call of duty[7], [8]. Transformational leaders can transform followers' values, needs, preferences, aspirations into extra-role behavior, known as Organizational Citizenship Behavior (OCB). OCB refers to discretionary behavior that supports task performance by enhancing the organizational environment [7]. Transformational leadership is fostering employee creativity and

empowering them to take responsibility for achieving organizational goals[8].

Organizational Citizenship Behaviors (OCB) is one of the significant determinants that contribute to overall organizational effectiveness and sustainability in the competitive environment especially in the network business like supply chain business [9]. Specifically, OCB will increase the performance and productivity of the organization's members and organization as a whole entity[9]. Employees' extra-role behaviors are indispensable for today's fast-changing companies [10]. Leaders must be able to shift employees' behaviors and attitudes for organizational development [10]. Leadership is a prominent factor in determining the organization's success. Strong leadership is needed in carrying out an organization's activities and supported by management capability to optimize efficiency and effectiveness [2].

Many scholars have examined leadership in the research. It is the ability to influence the behavior of individuals in the workplace. Leadership is a process of social influence that can increase effectiveness in organizations[11]. Leaders naturally influence employees. They also help them to achieve goals within the organization. Leaders who adopt transformational leadership are better in motivating employees to perform beyond expectations [11]. Effective supply chain leaders provide more benefits to business performance. A sufficient supply chain leader is the one who can inspire employees to engage in behaviors that have positive outcomes for the organization. Transformational leadership becomes an essential aspect of leadership research since transformational leaders can enhance positive work-related results such as OCB. Therefore, this research aims to examine transformational leadership, which can influence employees' OCB in supply chain business.

2. Literature Review

2.1 Supply Chain Management

The term Supply Chain Management (SCM) was first coined in the early 1980s as an emerging management discipline. SCM is the most effective tool for companies to improve their competitive advantage and business performance. The outcomes of SCM are business stability, business growth, and prosperity[3]. SCM can define as the "network" that links organizations, industries, and economies. It is the complex organizational networks that are involved, through upstream and downstream linkages that produce value in the form of products and services [3]. SCM is the entire business process as one system. It is the performance of each supply chain member such as

suppliers, warehouses, customers, employees that affect the overall performance of the supply chain [3]. There are some key success factors in SCM. One of them is the ability to establish a management leadership strategy[3]. To be able to achieve success in SCM, the company requires human resources with specific skills such as team building, problem-solving, and leadership. Other capabilities are flexibility, innovation ability, and adaptability in the roles and the reorganization[3]. Those capabilities will create the supply chain workforce that has the technical, managerial, and behavioral competencies to empower the supply decisions and policies [12].

2.2 Transformational Leadership

Leadership is the ability to influence followers in getting tasks and assignments done in the workplace. It also has a significant role in fostering and enhancing employees' behaviors in organizations [10]. Leadership has no universal definition since there are numerous contextual factors; therefore, the term indicates various connotations to assorted individuals [10].

Downtown first coined the term of transformational leadership in 1973[13]. Yet, Burns' work, in 1978, led to the emergence of transformational leadership as an essential approach in leadership [14][8][15]. In 1985, Bass expanded the concept of transformational leadership. Bass explained that transformational leaders could inspire and activate subordinates to perform and attain objectives beyond regular hopes [13].

Transformational leadership theory emphasizes the emotions, values, and importance of leadership directed toward fostering employee creativity. Burns explained transformational leadership as a relationship in which leaders and followers raise one another to higher levels of morality and motivation [14][15]. Other scholars developed Burns' work and described transformational leadership has an impact on the followers, such as trust, admiration, and loyalty towards the leader who encourages them to perform beyond expectations [15].

Scholars have developed transformational leadership for the last 20 years. It frequently named as the new paradigm or the new leadership tactic[14]. Transformational leadership gives a role model to the employees that can motivate them to be creative and innovative. Transformational leadership emphasizes a relation-based performance such as ethical practices, cooperation, fair competition, and a selfless approach toward goal attainment [14].

Transformational leadership defines as a leadership style that includes the organizational change to achieve the goals based on the changes in organizational situations, both from the internal and

external environment [16]. A transformational leader can transform the subordinates in four ways. The first is Idealized Effect, which means role models or giving examples in terms of behaviors, attitudes, commitments, and achievements. Inspirational motivation is second. It means motivating by clear and straightforward communication about the expectations, challenges, and goals. The third is intellectual stimulation, which means creating a conducive atmosphere for the development of innovation and creativity. The fourth is individualized consideration, which means encouragement by acting as a mentor or a coach to the needs of each subordinate to support them in achieving goals and improving their capabilities. Transformational leaders can create trust, innovative ideas, creativity, empathy, and social awareness within the group [1], [2], [7]–[9], [16]. The first dimensions and indicators of transformational leadership are Inspirational Motivation. A leader with an inspirational motivation means leaders who can motivate the subordinates to work better, can give a solution to the problem, can grow subordinates' confidence in doing work, can appreciate the work results, can convince the subordinates to achieve the company's goals. The second is Idealized Influence (Charisma). An idealized influence (charisma) leader means a leader who can gain respect and pride from the subordinates, can make a comfortable atmosphere among team members, can set high working standards. The third is individual consideration. It means a leader can support subordinates' personal development, can treat subordinates with a personal touch, can listen to the subordinates' difficulties, can create good communication among the team, and can solve problems based on various points of view. The last one is a leader with intellectual stimulation. It means a leader who has broad perspectives in solving problems, can encourage the subordinates to be more creative and innovative in getting work done, and dare to take risks for the decisions made [1], [2], [7]–[9], [16].

Some scholars explained that transformational leadership is to motivate subordinates to perform

beyond the exchange of reward and exceed the expectations. Researchers found out that leaders' behaviors are more important in achieving high extra-role performance, such as OCB [1], [7], [9].

2.3 Organizational Citizenship Behavior

Organizational Citizenship Behavior (OCB) defined as an extra-role behavior that is beyond the described roles and responsibilities [1]. OCB is a discretionary behavior that does not link to the formal reward system, but it can lead to organizational effectiveness. OCB has five dimensions. Those are altruism, civic virtue, conscientiousness, courtesy, and sportsmanship. Altruism refers to the act of being helpful, while civic virtue means active participation in dealing with organizational issues by offering ingenious ideas to support corporate growth. Conscientiousness explains the behaviors that following regulatory rules, such as working on time and effective. Courtesy relates to problem prevention, and sportsmanship refers to the act of tolerance [1], [9], [10]. The indicators of altruism are about helping others without expecting anything in return. Next is Conscientiousness. The indicators are taking responsibilities. Courtesy has indicators such as teamwork. Also, sportsmanship has indicators such as tolerance. The last one is Civic Virtue, which means active participation.

Based on the literature review, this research aims to examine the OCB of supply chain employee based on transformational supply chain leaders' behaviors.

3. Research Methodology

The research examines the OCB among supply chain employees in telecommunication industry based on transformational supply chain leaders' behaviors. It is unidimensional research. The variables tested are transformational leaders' behaviors, and OCB. The dimensions of transformational leader behaviors are idealized effect, inspirational motivation, intellectual stimulation, and individualized consideration. While the dimensions of OCB are altruism, civic virtue,

Table 1. Summary Statistics Transformational Leadership

SUMMARY STATISTICS	PERSON		ITEM	
	Total Score	Measure	Total Score	Measure
Mean	58.3	2.95	524.7	0.00
S.D.	5.4	1.83	9.6	0.38
Max.	71.0	7.44	547.0	0.53
Min.	41.0	-1.76	511.0	-0.87
Reliability	0.85		0.70	
Cronbach Alpha	0.90			

conscientiousness, courtesy, and sportsmanship, it is also quantitative research without experimental designs. The data were collected using questionnaires based on the literature review. The questionnaire made were used to measure transformational leader's behaviors and OCB. The research variables will be analyzed using the Rasch Model with the application of Winstep software version 3.73, including the validity and the reliability of the questionnaire items.

Rasch Model Analysis is a method that allows ordinal data from Likert Rating scales questionnaires to be converted into interval data [17]. The Rasch model is the most appropriate method for quantitative analysis in the field of human sciences since the research instruments used will produce ordinal data. Rasch model analysis is based on the probability that allows respondents' responses to be accurately predicted on all items according to the measurement model. The Rasch Model changes the item scores measured on a Likert rating scale which is an ordinal

reliability as a whole is 0.90, meaning that there is excellent interaction between the items and the respondents' responses [18]. Next, the person reliability is 0.85 implies the consistency of the respondents' answers is very strong, and the item reliability is 0.70, meaning that the research instrument's items are fair good. Both values mean on table 2 explain that there is a firm consistency in respondents' responses, and the quality of the items is good enough to measure the transformational leadership. [18]. Other supporting statistical data are INFIT MNSQ and OUTFIT MNSQ. Both MNSQ mean values from the person and items are 0.90. As the ideal value is 1.00, so the closer the value is to 1.00, the better. Additionally, there are INFIT ZSTD and OUTFIT ZSTD. Both ZSTD mean values from the person and items are -0.2 and -0.7. As the ideal value is 0.00, so the closer the value is to 0.00, the better [18]. The next test is about the instrument items test. The research instrument was created based on the

Table 2. Summary Statistics of Reliability Transformational Leadership

SUMMARY STATISTICS	PERSON				ITEM			
	INFIT		OUTFIT		INFIT		OUTFIT	
	MNSQ	ZSTD	MNSQ	ZSTD	MNSQ	ZSTD	MNSQ	ZSTD
Mean	0.90	-0.2	0.90	-0.2	0.99	-0.2	0.90	-0.7
S.D.	0.59	1.5	0.62	1.5	0.24	1.7	0.30	1.6
Max.	3.04	5.2	3.25	5.1	1.64	3.9	1.72	3.2
Min.	0.01	-2.5	0.01	-2.5	0.69	-2.7	0.58	-2.6

data, into an interval scale called "unit of opportunity logarithms" (logit) [17].

The research instrument was developed based on literature reviews and research reviews. Transformational leadership has been four dimensions with eighteen indicators, and OCB has five dimensions with fifteen indicators. Those items are statements on the research instrument. Before collecting the data, the items on the research instruments were tested using Rasch Model Analysis with the application of Winstep software version 3.73. The first examined was the research instruments of transformational leadership. It would categorize the respondents who had transformational leaders and who did not have transformational leaders.

The result on table 1 shows that the mean person measure is +2.95 logit. This shows the mean value of the respondents in the transformational leadership instrument. Mean values greater than 0.00 logit means respondents tend to agree with most items in the instrument. It can be implied that more respondents have considered their leaders to have transformational leadership. The Alpha Cronbach of the instrument

literature review. Four dimensions of transformational leadership consist of eighteen indicators. The transformational leadership dimensions are: inspirational leadership (indicator TL1 – TL5), idealized influence (charisma) (indicator TL6 – TL10), individual consideration (indicator TL11 – TL15), and intellectual stimulation (indicator TL16 – TL18) . The Transformational Leadership indicators are mentioned in the table 3 below.

Table 3. Transformational Leadership Constructs and Items

Construct	Item	Code
Inspirational Motivation	My superior motivates me to work better	T 1
	My superior gives me a solution to the problem I was having	T 2
	My superior grows my confidence in doing work	T 3
	My superior appreciates the results of my work	T 4

Construct	Item	Code
	My superior gives me confidence that the company's goals will be achieved	T 5
Idealized Influence (Charisma)	My superior gets respect from the employees directly	T 6
	I am proud of my superior	T 7
	My superior makes me feel comfortable when I discuss in every issue	T 8
	My superior sets high standards of work for the organization	T 9
	My superior instils a sense of pride as long as I joined him	T 10
	My superior gives me advice that was very important for my personal development	T 11
Individual Consideration	My superior treats me as a private individual, not just a member of an organization	T 12
	My superior listen to the difficulties and complaints I experienced	T 13
	My superior always communicates with his employees	T 14
	My superior helps me solve problems from various points of view	T 15
Intellectual Stimulation	My superior thinks broadly in solving problems	T 16
	My superior encourages me to always be creative and innovative in getting work done	T 17
	My superior dares to take risks from the decisions taken	T 18

The research instrument was tested using MISFIT ITEM. The validity test results on table 6 show that there are no items that are outliers since all logit values are below 2,00 [18]; therefore, all items can be indicators in the research instrument.

Another indicator of the validity and reliability of the research instrument is the unidimensionality Test. It measures a variety of research instrument items.

Table 4. Instrument Unidimensionality Transformational Leadership

Instrument Unidimensionality	Empirical
Raw Variance explained by measures	37.6%
Unexplained Variance in 1 st contrast	8.8%
Unexplained Variance in 2 nd contrast	6.2%
Unexplained Variance in 3 rd contrast	5.9%
Unexplained Variance in 4 th contrast	4.7%
Unexplained Variance in 5 th contrast	4.6%

The results show that raw variance data is 37.6%. It means that the research instrument can measure the research variable since it is higher than 20% [18]. Moreover, the unexplained variance numbers are below 10%; it implies that there is less than 10% unexplained variance of the research instrument. In other words, the research instrument can measure the research variable with the various items [18]. Another validity test for the research instrument is the Rating Scale. It is a test that carried out to examine the ranking of the selections used, which is confusing or not for the respondents.

Table 5. Rating Scale Transformational Leadership

Category Label	Score	Observed Average	Andrich Threshold
1	1	-0.37	None
2	2	0.56	-2.76
3	3	1.97	-1.68
4	4	4.52	4.44

The table 5 above mentions that the average observation starts from logit -0.37 for the choice of score one (strongly disagree), then the choice of rating two (disagree) is logit 0.56 then increases to the fourth choice (strongly agree) with logit 4.52. It implies that the respondents can choose with certainty the category in the research instrument, showing by the increasing logit values. The Andrich Threshold validates the choices category. The values of Andrich Threshold show that it moves from none to positive value sequentially. It means that the options in the research instrument are valid for the respondents.

The second research instruments that examined was Organizational Citizenship Behavior (OCB).

Table 6. Validity Test Results Transformational Leadership

Items	OUTFIT MNSQ (logit)	Items	OUTFIT MNSQ (logit)	Items	OUTFIT MNSQ (logit)
T1	0.75	T7	0.67	T13	1.04
T2	0.69	T8	0.62	T14	0.78
T3	0.69	T9	1.37	T15	0.97
T4	0.68	T10	1.04	T16	1.11
T5	0.69	T11	0.58	T17	1.23
T6	0.73	T12	1.72	T18	0.79

The result on table 7 shows that the mean person measure is +2.69 logit. It shows the mean value of the respondents in the OCB instrument. Mean values greater than 0.00 logit means respondents tend to agree with most items in the instrument. It can be implied

Other supporting statistical data are on table 8. It is about INFIT MNSQ and OUTFIT MNSQ. Both MNSQ mean values from the person and items are more than 0.90. As the ideal value is 1.00, so the closer the value is to 1.00, the better. Additionally, there are

Table 7. Summary Statistics of OCB

SUMMARY STATISTICS	PERSON		ITEM	
	Total Score	Measure	Mean	Total Score
Mean	44.4	2.69	Mean	44.4
S.D.	3.8	1.89	S.D.	3.8
Max.	55.0	7.73	Max.	55.0
Min.	37.0	-0.84	Min.	37.0
Reliability	0.80		0.93	
Cronbach Alpha	0.85			

that more respondents have done the OCB activities. The Alpha Cronbach of the instrument reliability as a whole is 0.93, meaning that there is excellent interaction between the items and the respondents' responses [18]. Next, the person reliability is 0.80 implies the consistency of the respondents' answers is

INFIT ZSTD and OUTFIT ZSTD. Both ZSTD mean values from the person and items are -0.1, -0.2, and -0.5. As the ideal value is 0.00, so the closer the value is to 0.00, the better [18].

The next test is about the instrument items test. The research instrument was created based on the literature

Table 8. Summary Statistics of Reliability OCB

SUMMARY STATISTICS	PERSON				ITEM			
	INFIT		OUTFIT		INFIT		OUTFIT	
	MNSQ	ZSTD	MNSQ	ZSTD	MNSQ	ZSTD	MNSQ	ZSTD
Mean	0.92	-0.1	0.91	-0.1	0.99	-0.2	0.91	-0.5
S.D.	0.61	1.2	0.70	1.2	0.21	1.2	0.32	1.4
Max.	3.32	2.5	4.03	2.3	1.39	1.9	1.56	2.0
Min.	0.05	-1.8	0.04	-1.7	0.74	-1.9	0.53	-2.2

fair strong, and the item reliability is 0.93, meaning that the research instrument's items are very good. Both values indicate that there is a firm consistency in respondents' responses, and the quality of the items is very good to measure the OCB of supply chain employees in telecommunication industry [18].

review with five OCB dimensions consist of fifteen indicators. The OCB dimensions are altruism (indicator O1 – O3), conscientiousness (indicator O4 – O6), courtesy (indicator O7 – O9), sportsmanship (indicator O10 – O12), civic virtue (indicator O13 – O15).

Table 10. Validity Test Results OCB

Items	OUTFIT MNSQ (logit)	Items	OUTFIT MNSQ (logit)	Items	OUTFIT MNSQ (logit)
O1	0.77	O6	0.54	O11	0.56
O2	1.10	O7	0.64	O12	0.82
O3	2.54	O8	1.25	O13	1.31
O4	0.85	O9	0.68	O14	0.67
O5	0.67	O10	1.15	O15	0.68

The research instrument was tested using MISFIT ITEM. The validity test results show that there is one item that is an outlier since the logit values are more than 2,00 [18]; therefore, only 14 items that can be the indicators in the research instrument.

Table 9. OCB Constructs and Items

Construct	Item	Code
Altruism	I am happy to help colleagues who need help without expecting anything in return	O1
Altruism	I am happy to replace a colleague who are absent / need rest	O2
Altruism	I am willing to work overtime to help my coworkers to get their work done without being paid overtime	O3
Conscientiousness	I feel satisfied when my work is finished on time	O4
Conscientiousness	I will finish every assignment with full responsibility	O5
Conscientiousness	I dare to take any risk to be responsible to carry out the results of joint decisions	O6
Courtesy	I try to establish relationships with my coworkers	O7
Courtesy	I invite my colleagues to have lunch together to share the obstacles or problems encountered in completing their assignments	O8

Construct	Item	Code
Courtesy	I reminded my friend not to forget completing his/her assignment	O9
Sportsmanship	I am easily adaptable to changes in the company	O10
Sportsmanship	I accept the duties and company policies	O11
Sportsmanship	If the company enforces a new policy and is not following my opinion. I will adjust and implement the policy	O12
Civic Virtue	I regularly participate in activities held by the company where I work	O13
Civic Virtue	I am interested in finding relevant information that can be useful for the company	O14
Civic Virtue	I always give my best for the company's progress going forward	O15

Another indicator of the validity and reliability of the research instrument is the unidimensionality Test. It measures a variety of research instrument items.

Table 10. Instrument Unidimensionality OCB

Instrument Unidimensionality	Empirical
Raw Variance explained by measures	39.7%
Unexplained Variance in 1 st contrast	9.8%

Instrument Unidimensionality	Empirical
Unexplained Variance in 2 nd contrast	7.2%
Unexplained Variance in 3 rd contrast	6.3%
Unexplained Variance in 4 th contrast	5.6%
Unexplained Variance in 5 th contrast	5.3%

The results show that raw variance data is 39.7%. It means that the research instrument can measure the research variable since it is higher than 20% [18]. Moreover, the unexplained variance numbers are below 10%; it implies that there is less than 10% unexplained variance of the research instrument. In other words, the research instrument can measure the research variable with the various items [18]. Another validity test for the research instrument is the Rating Scale. It is a test that carried out to examine the ranking of the selections used, which is confusing or not for the respondents.

Table 11. Rating Scale OCB

Category Label	Score	Observed Average	Andrich Threshold
1	1	-0.87	None
2	2	0.35	-2.74
3	3	2.12	-2.11
4	4	5.08	4.85

The table above mentions that the average observation starts from logit -0.87 for the choice of score one (strongly disagree), then the choice of rating two (disagree) is logit 0.35 then increases to the fourth choice (strongly agree) with logit 5.08. It implies that the respondents can choose with certainty the category in the research instrument, showing by the increasing logit values. The Andrich Threshold validates the choices category. The values of Andrich Threshold show that it moves from none to positive value sequentially. It means that the

Table 12. The Most Frequent to The Least Frequent Transformational Leader

Items	Measure (logit)	Items	Measure (logit)	Items	Measure (logit)
TL10	0.57	TL14	0.14	TL8	-0.13
TL13	0.57	TL4	0.90	TL11	-0.13
TL15	0.36	TL17	0.90	TL16	-0.13
TL6	0.30	TL18	0.90	TL3	-0.24
TL12	0.30	TL5	-0.80	TL1	-0.93
TL9	0.19	TL7	-0.13	TL2	-0.93

options in the research instrument are valid for the respondents.

Both research instruments are valid and reliable to assess the transformational leadership and OCB among supply chain employees in telecommunication industry in Jakarta, Indonesia.

The respondents of this research are 199 supply chain employees who worked in telecommunication industry in Jakarta, Indonesia. After the data were collected, only 131 respondents could be examined further. The respondents consist of 56% male and 44% female. Their age is 21% around the twenties, 51% around thirties, 25% around forties, and 2% around fifties. The respondents' educational background is 8% high school graduates, 12% diploma graduates, 67% has a bachelor's degree, and 13% has a master's degree. Their job levels are 42% staff, 27% officer, 17% supervisor, and 15% manager. The tenure of respondents is 42% less than five years, 12% around five years tenure, 38% around ten years tenure, 8% around twenty years tenure. The respondents' work status is 86% permanent employees, 44% contract-based employees, and 0,7% probation-based employees. The last category is an employee's remuneration. 15% of respondents have compensation for around five million rupiahs, 39% around ten million rupiahs, 33% around fifteen million rupiahs, and 14% around twenty million rupiahs.

4. Analysis and Discussion

The first analysis is to examine the most frequent transformational supply chain leader's behavior to the least frequent transformational supply chain leader's behavior based on the items. Table 12 implies that the most frequent transformational supply chain leader's behavior for the telco supply chain employees is giving a solution to the problem (TL2). It means the supply chain employees reputes the leaders as a problem solver in the supply chain working process. It is a part inspirational motivation dimension. And the least frequent transformational supply chain leader's behavior for the telco supply chain employees is instilling a sense of pride as the subordinates join the leaders (TL10). It is a part of idealized influence (charisma). It infers that the telco supply chain employees have little pride towards the leaders.

The following analysis is to examine the most frequent OCB of supply chain employees and the least frequent OCB of supply chain employees.

transformational supply chain leaders. The DIF result shows that the item has a probability value less than 0,05 (5%).

Table 13. The Most Frequent to The Least Frequent OCB

Items	Measure (logit)	Items	Measure (logit)	Items	Measure (logit)
O2	1.42	O10	0.49	O7	-0.95
O9	1.03	O6	0.32	O15	-0.95
O13	0.82	O14	0.04	O4	-1.48
O12	0.77	O1	-0.35	O5	-1.48
O8	0.71	O11	-0.40		

Based on the table 13, it implies that the most frequent OCB for telco supply chain employees is completing every assignment with full responsibility (O5). It means that telco supply chain employees aware of their responsibilities of the duties assigned. It is a part conscientiousness dimension. And the

The following analysis is to examine the OCB of supply chain employees with transformational supply chain leaders and with non-transformational supply chain leaders. The result on table 15 proves that the mean measure of supply chain employees with transformational supply chain leaders is higher

Table 14. DIF (Differential Item Functioning) OCB

Items	Probability Value	Items	Probability Value	Items	Probability Value
O1	0.260	O7	1.0000	O12	0.3386
O2	1.0000	O8	0.8386	O13	0.2652
O4	0.2099	O9	0.4457	O14	0.1366
O5	0.2099	O10	0.4550	O15	0.3241
O6	0.0498	O11	0.7404		

least frequent OCB for the telco supply chain employees is being happy to replace a colleague who does not enter/rest (O2). It is a part of altruism dimension. It infers that the telco supply chain employees do not feel happy in substituting their colleagues' works. The subsequent analysis is to examine the OCB of supply chain employees based on the transformational supply chain leader's behavior items.

than the mean measure of supply chain employees with non-transformational leaders. Also, the measure is higher that the average measure of all supply chain employees.

As mentioned in the literature review, an employee who has a transformational leader will do more positive work behavior such as OCB. The results show that 47% of telco supply chain employees value that their superior has transformational supply chain leader's behavior, while 53% of employees value their superior do not have transformational supply chain leader's behavior. The DIF Test (Differential Item Functioning) test results of the OCB of telco supply chain employees' measure shows that there is one OCB indicator that shows differences between supply chain employees with transformational supply chain leaders and with non-transformational supply chain leaders.

Table 15. OCB Based on Leader Type

Type of Employees	Mean Measure
Supply chain employees with transformational supply chain leaders	3.53 logit
Supply chain employees with non-transformational supply chain leaders	1.95 logit
Mean in total	2.69 logit

The item that show differences is item about taking any responsibilities of the team decisions. It is a part of conscientiousness which connects to responsibilities. This result implies that there is a difference between supply chain employees with transformational supply chain leaders and with non-

The subsequent analysis is to examine the OCB of supply chain employees with transformational supply chain leaders and with non-transformational leaders based on the OCB items.

The comparison results on table 16 show that the average OCB measure of supply chain employees with transformational supply chain leaders is higher than the average OCB measure of supply chain

The supply chain business performance indicates the overall success of the supply chain employees. One of the employee performances is OCB since OCB has interpersonal impacts. The supply chain

Table 16. The Comparison of OCB Items

Code Item	Average measure (logit)		Code Item	Average measure (logit)	
	TL	NTL		TL	NTL
O1	2.26	2.19	O9	2.10	1.97
O2	2.07	1.89	O10	2.18	2.04
O4	2.57	2.21	O11	2.36	2.11
O5	2.57	2.21	O12	2.13	2.01
O6	2.16	2.10	O13	2.20	1.94
O7	2.44	2.19	O14	2.33	2.03
O8	2.18	1.99	O15	2.48	2.16

employees with non-transformational supply chain leaders. The results show that all OCB items of supply chain employees with transformational supply chain leaders have higher average measure than supply chain employees with non-transformational. Specifically, supply chain employees with transformational supply chain leaders are more willing to work overtime to help coworkers in getting the work done without being paid. It is a part of the altruism dimension. Besides, supply chain employees with transformational supply chain leaders feel more satisfied in completing the tasks assigned on time. It is a part of the conscientiousness dimension. The research results also show that the most impactful supply chain leader's behavior is the inspirational motivation. Those behaviors are motivating the subordinates to work better, giving the solution the work problem that the subordinates face, and growing confidence in doing work.

The research analysis supports the previous results of some scholars that examine the transformational leadership as a motivator for subordinates to perform beyond the exchange of reward and exceed the expectations. Researchers found out that leaders' behaviors are more important in achieving high extra-role performance, such as OCB [1], [7], [9], [11].

5. Conclusion

The logistics and supply chain is an emerging business in most countries in the world as the purpose is the supply of service or products to satisfy the customer's needs. The supply chain facilitates the interaction between partners and business aspects; therefore, effective human resources management is a prominent element in the logistics and supply chain industry.

SCM, as the "network" business process, involves the complex organizational networks through upstream and downstream. The entire business in SCM depends on the critical success factor that is human resources.

needs human resources with high quality of work behavior such as OCB since OCB can lead to supply chain effectiveness. The supply chain employees with OCB show the work behaviors such as altruism that refers to the act of being helpful, and civic virtue means active participation in dealing with organizational issues by offering ingenious ideas to support corporate growth. Conscientiousness means following regulatory rules, such as working on time and effective. Courtesy relates to problem prevention, and sportsmanship refers to the act of tolerance. Those work behaviors can highly support the supply chain business as a network business.

One of the impactful supports to gain success in SCM is the ability to establish a management leadership strategy, specifically team building, problem-solving, and supply chain leadership. This research proves that the average OCB measure of supply chain employees with transformational supply chain leaders are higher than the average OCB measure of supply chain employees with non-transformational supply chain leaders. The results show transformational supply chain leaders can support the supply chain employees to have higher OCB. As a whole, a supply chain leader who has the problem-solving skill is the most impactful motivator to boost OCB. One leader's indicator that needs to be improved in the sense of pride. Based on the research results, the supply chain employees in the telecommunication industry still have little pride towards the leaders.

The research results also prove supply chain employees with transformational supply chain leaders are more willing to work overtime to help coworkers getting the work done without being paid. Besides, supply chain employees with transformational supply chain leaders feel more satisfied in completing the tasks assigned on time. Therefore, effective Human Resources Management (HRM) practices in supply change management are paramount.

HRM needs to develop supply chain employees' necessary skills and maximize supply chain

employees' performance in business performance as a whole. The integrated HRM in supply chain business thrives innovation efficiency, flexible organizational structure, and new skills advancement. Specifically, HRM practices in supply chain management can develop supply chain training an re-training, work motivation, employee commitment, supply chain empowerment, supply chain leadership, which can positively contribute to business performance in the supply chain industry.

Furthermore, HRM policies in supply chain management can encourage the right reward and benefits for supply chain employees, supply chain managers, and supply chain, teams. Eventually, HRM policies will contribute significant improvements in logistics and supply chain management since human resources are the crucial element for supply chain sustainability performance. The core of supply chain business lies on the network, which can give added values to satisfy customers' needs; therefore, it is necessary to develop a humanitarian supply chain organization. Transformational supply chain leadership can support the humanitarian supply chain organization since the leaders can integrate the decision-making process attached to supply through strategic development to the entire process as one system. The performance of each supply chain organization member affects the overall performance of the supply chain business.

Due to the research limitation, it is better to improve the research instruments to measure transformational leadership and OCB in supply chain industry. The research instruments still need more items to measure the variables deeper. Besides, it is also better to add more respondents from other supply chain business field.

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