

**THE EFFECT OF LEADERSHIP STYLE STRATEGY AND INNOVATION
STRATEGY ON COMPETITIVE ADVANTAGES AND IMPLEMENTATION OF
INDUSTRY 4.0**

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Abstract

The phenomenon of the Industrial Revolution 4.0 has become a global and national agenda in almost all countries of the world. The leadership style strategy and innovation strategy are expected to be able to create competitive advantage and Industry 4.0 implementation. This study aims to analyze the influence of variables to answer the question of how the leadership style strategy and innovation strategy can create competitive advantage and the implementation of Industry 4.0 in the manufacturing industry. This research provides theoretical implications as well as managerial implications regarding the strategic steps that Industry needs to take to implement Industry 4.0 through a leadership style strategy and an innovation strategy to create competitive advantage. The population in this study is the Medium and Large Industries engaged in the automotive, electronic and food and beverage industries which are spread in the districts of Bekasi, Karawang and Purwakarta, West Java Province of Indonesia. The result show there is a positive and significant influence between the leadership style strategy on innovation strategy, leadership style strategy on competitive advantage, innovation strategy on competitive advantage and leadership style strategy, innovation strategy as well as competitive advantage on Industry 4.0 implementation.

Key word : Leadership Style Strategy, Innovation Strategy, Competitive Advantage and Industrial Revolution 4.0 that customers will remember said good.

1. Introduction

Currently the industry in the world is heading towards the Fourth Industrial Revolution ("4IR") or familiar with the "Industrial 4.0". Industry 4.0 internationally as the Industrial Internet of Things aims to create smart, self-regulating and interrelated industrial values (Kang et al., 2016) and ensure the future competitiveness of the manufacturing industry (Kagermann et al., 2013; Lesi et al., 2014). Competitiveness or competitive advantage can be created through a leadership strategy and the development of an innovation ecosystem so that it can compete globally. Talent and innovation empowered through a culture of cooperation and deep transformational leadership are the main requirements for business success in inter-personal and inter-organization digitalization value chains (Semolic, 2018). Schumacher et al (2016) identify the characteristics of leadership, customer, product, culture, people, governance and technology strategies to determine the maturity of the Industry 4.0 concept.

Industry 4.0 requires digital marketing that not only challenges the company's capacity to innovate but also requires new organizational strategies and models and changes throughout the organization in physical infrastructure, operations and technology, human resources and management practices (Gilchrist, 2016). Industrial forces over the past 60 years such as Germany, the United States and Japan have quickly lost the competitive advantage of their production to developing countries spearheaded by China, India and Brazil (EKOIQ, 2014 in Yuksel & Sener, 2017). Pressures of persistent competition in the manufacturing industry in Germany by Asia and South America that make competitors call for commitments by industry to secure Germany as a production area and also to maintain its position against low-wage countries (Prinz et al, 2017). Indonesia itself according to the World Economic Forum Committee in the 2018 Global Competitiveness Index is ranked 45, up 2 ranks compared to 2017, but Indonesia is still below of Singapore, Malaysia and Thailand as countries in the ASEAN Region.

Leadership is a talent needed to build global competitiveness during the industrial

revolution 4.0. Achieving equality, sustainability and shared growth is possible but requires proactive and far-sighted leadership (Schwab, 2018). Ghobakhloo (2018) states that the transition of digitalization and Industry 4.0 requires committed leadership and the location of fundamental resources. Industry 4.0 is developing in regions and countries with sufficient competence, available resources, transformational leadership, healthy and sustainable corporate culture to create favorable business conditions (Steyn & Semolic, 2017).

In addition to leadership, innovation is important in facing competition in the Industrial Revolution 4.0 era and is one of the pillars in measuring competitive advantage. Success in creating competitive advantage and producing good performance is very dependent on the company's success in innovating (Kalliapien & Hilman, 2014). This study of innovation is also supported by the opinion that innovation directly influences company performance (Kaliappen & Hilman, 2014; Siagian et al, 2017). Innovation is very important as a driver of productivity growth and value creation in Industry 4.0 which is at the core of the most developed economic growth agenda and more and more developing countries to understand what makes a country innovative (Schwab, 2018).

Meanwhile some previous studies and research also found a weak relationship or a negative relationship between leadership styles with the creation of innovation through the creativity of workers. Because of their charisma and narcissistic tendencies, transformational leaders tend to be overly optimistic in terms of their own ability to influence and control others which negatively impacts the creativity of followers especially when influence or control is too high (Walton, 2013; De Villiers, 2014 and Jiang & Ma, 2018). Several studies have examined the relationship between a competitive market environment with innovation, moreover the world has entered the era of the "Industrial 4.0" revolution, but innovation, competitiveness and future survival have a negative effect on the tendency of manufacturing companies to implement "Industry 4.0" (Muller et al, 2018).

2. Literature Review

2.1 Leadership

Leadership is one of the most important elements and must be met to achieve the goals of the institution with the highest efficiency and effectiveness (Shobaki et al, 2017). Leadership is the process by which an individual motivates or influences others to achieve organizational goals (Kesting et al, 2016). According to Amankwaa & Tsede (2015) in Lee et al (2017) leadership is the process of influencing others to carry out certain tasks to achieve organizational goals set. The essence of strategic leadership is managing human and social capital by gaining access to key resources such as alliances with partner companies' social capital and the ability to build great human capital teams as important corporate resources (Hitt & Ireland, 2002 in Mahdi & Almsafir, 2014). Whereas leadership style controls interpersonal, rewards and punishments that shape employee behavior, motivation and attitudes that have an impact on organizational performance (Pufi et al, 2014 in Fiaz et al, 2017). Bass (1995) divides leadership into two namely transactional leadership style and transformational leadership style. Transactional leadership style has the following characteristics:

- 1) Clarifies terms of contract.
- 2) Enforces compliance to rules and standards.
- 3) Arranges contractual agreements about target and work quality.
- 4) Mengawasi karyawan dalam bekerja untuk memastikan bahwa pekerjaan dilakukan sesuai ketentuan dan efektif.
- 5) Isolates work from the changing environment.
- 6) Uses contingent rewards to influence motivation.
- 7) Ensures the equity of the rewards.

While the characteristics of transformational leadership are:

- 1) Idealized influences are the role models that are shown to followers and the traits adored by followers from their leaders.
- 2) Intellectual stimulation is a leader who develops the competence of followers by providing challenges and questions

so that followers think of looking for new ways of doing work.

- 3) Individual consideration is a leader who pays attention to the needs of his employees and helps and supports employees so that they can advance and develop in their careers.
- 4) Inspirational motivation is the nature of leaders who provide inspiration in working, inviting employees to realize a shared ideal so that their lives and work become meaningful.

2.2 Innovation

Porter (1990) in Siagian et al (2016) innovation is a way for companies to win competitive advantage and improve company performance on an ongoing basis with the keywords in innovation is creativity in making changes and commercial value. According to Hurley & Hult (1998) in Bayraktar (2016) innovation is the ability of organizations to adopt and apply new ideas, products and processes. West & Farr (1990) in Ancok (2017) defines innovation as the deliberate introduction and application of ideas, processes, products and procedures to new units that implement them that are designed to benefit individuals, groups, organizations and the wider community. Cottam et al (2001) in Sumardi & Riyadi (2017) that innovation is an alternative strategy for organizations to survive in a dynamic and fluctuating environment. Trott & Paul (2008) in Siagian et al (2016) defines innovation as the management of all activities related to the process of idea creation, technology development, manufacturing and marketing of a product, manufacturing process or new equipment.

According to Hauschildt & Solomon (2011) and Vahs & Brem (2013) in Maier et al (2015) innovation can be classified in 4 dimensions:

1. Trigger is how innovation is induced which consists of:
 - a. Induction pull (pull induction), indicating innovation developed and introduced to the market because of certain market demand. This innovation can be identified by market research.
 - b. Push induction (induction), shows the innovations that are developed

and introduced in the market without depending on the needs of each market. This innovation is usually a technical novelty that has not been developed by the customer.

2. Area is the type of innovation that is like what you want to do. Areas of innovation include products, processes and services.
3. Change is the extent to which these changes occur including:
 - a. Additional innovation (incremental innovation) is a change with the realization that is relatively fast and with little risk. Can be a newer version of an established product and is needed to help companies stay competitive in the short term.
 - b. Radical innovation is a breakthrough change which creates new markets and achieves high growth rates and high risks.
4. Novelty is how new innovations are created. Is innovation new to the world or new to the company?

2.2 Competitive Advantage

Competitive advantage is defined as any company is very good when compared with the competitors, when the company can do something that rival companies are not able to do or have something that is an embodiment of competitive advantage (David, 2016). According to Porter (2005) in Syafarudin (2016), competitive advantage is a strategy that provides benefits from companies that work together to compete more effectively in the market. Porter in David (2016) explained that there are five strategic business forces that determine market attractiveness and create competitive advantage: *the threat of new entrants, the bargaining power of suppliers, the threat of substitute products, the bargaining power of buyers and competitors among industry members*. Li et al (2006) in Syafarudin (2016) competitive advantage can be defined as the company's ability to create value that cannot be imitated by competitors.

Porter in David (2015), the main strategy of competitive advantage in facing market competition is *the cost leadership strategy, differentiation strategy and focus*

strategy. The cost leadership strategy is a strong competitive tool in cases where consumers are price sensitive. Differentiation strategy is an important factor when customer needs are very diverse and cannot be met with standard products. The purpose of this strategy is to create a product or service that will differentiate significantly from competitors' products or services. A focus strategy means that the company chooses to sell its products and services to narrow or small market segments where buyers have special preferences or requirements. Barney (2015) there are four attributes that can be used to analyze an organization's competitive advantage, namely *valuable, rare, imitable and organization (VRIO)*. Based on the VRIO framework, the company's main competence is valuable resources that are owned in the formation of new products and technological processes that enhance the effectiveness and efficiency strategy (Grant, 2013 in Maier et al, 2015).

2.3 Industry 4.0

Nowdays the industry in the world is heading towards a new industrial era known as "The Era of the Industrial Revolution 4.0". The world talked about the concept of Industry 4.0 and its implementation in each country. Some countries such as Germany, the United States and Canada have begun to study and assess the application of Industry 4.0 technology. In China with the name "Made in China 2025" and in France with the name "La Nouvelle France Industrielle" (Kagermann et al, 2013; Zhou, 2017; Li, 2018, Muller et al, 2018; Frank et al, 2018; Kravchenko & Kyzymenko, 2019). In Brazil a program called "Towards Industry 4.0 (Rumo a Industria 4.0)" (Frank et al, 2018) and Indonesia with "Making Indonesia 4.0".

Merkel (2014) argues that Industry 4.0 is a comprehensive transformation of all aspects of production in the industry through the merger of digital and internet technologies with conventional industries. Industry 4.0 is an industrial environment where all entities are always connected and able to share information with each other (Schlechtendhal et al, 2015). Industry 4.0 as has been known internationally as the Internet of Things (IoT) industry which refers to the integration of the Internet of Things technology into industrial

value creation that enables producers to fully utilize digital value, connecting, smart and decentralized value chains (Kagermann et al., 2013; Kiel et al., 2016). Industry 4.0 can be understood as the result of increasing company digitalization mainly related to the manufacturing process (Kagermann et al., 2015; Schumacher et al., 2016; Kocsi & Olah, 2017).

Industry Concept 4.0 allows companies to have flexible manufacturing, process and analyze large amounts of data in real time, improve strategic and operational decision making (Kagermann et al., 2013; Porter & Hepplemenn, 2014; Schwab, 2016). Human and cultural dimensions are a fundamental part of the adoption of Indonesia 4.0 because of the values and strengths of people in organizations (Schwab, 2017). Whereas the culture of innovation and continuous improvement is a culture that embraces changes and developments in new opportunities (Fatorachian & Kazemi, 2018; Kraemer et al., 2015; Roden et al., 2017; Stock & Seliger, 2016).

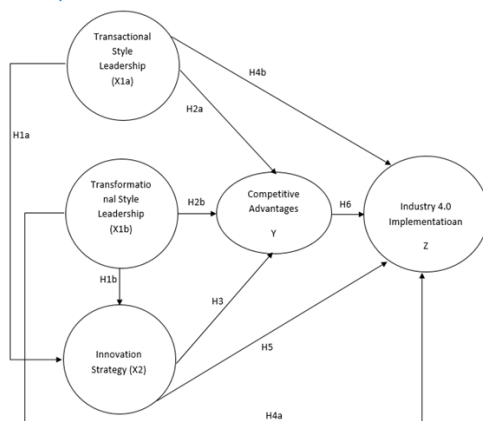


Fig.1 Research Framework

Methodology and Data Collection

The primary data collection method is done by using the questionnaire method to get data about the dimensions of the construct being developed in this study. Research uses the Likert scale method as a data collection tool to measure a person's attitudes, opinions or perceptions. Likert scale contains a number of questions with response categories and then a person's score on the scale is calculated by adding up the number of responses given (Silalahi, 2015). The scale in this study is by

giving scores between 1 (low) to 5 (high) to obtain interval data.

1	2	3	4	5
Strongly	Disagree	Netral	Disagree	Strongly Agree

The population in this study was 479 medium and large industrial companies spread throughout the industrial area in Bekasi, Karawang and Purwakarta districts of West Java Province. The types of companies in this study are automotive, electronics, food and beverage companies. Of the total population, only 218 companies were sampled for the distribution of questionnaires calculated based on the Yamane approach. Of the total sample, only 166 companies were subjected to research because 52 respondents from the company did not provide responses or return the questionnaire given and incomplete data then analyzed their suitability for the research model developed from the theoretical framework using Confirmatory Structural Equation Model (SEM) and AMOS 22.0 analysis.

4. Hasil Penelitian

Untuk mengetahui bagaimana kondisi dan tingkat kesesuaian masing-masing variabel-variabel tersebut, maka peneliti membuat pengkategorian dalam garis interval sebagai berikut:

- Jumlah keseluruhan responden adalah 200 orang dan untuk nilai skala pengukuran terbesar adalah 5 sedangkan nilai skala pengukuran terkecil adalah 1.
- Diperoleh rata-rata skor ideal adalah $5 \times 200 = 1000$ dan rata-rata skor terkecil $1 \times 200 = 200$. Adapun nilai persentase terkecil adalah $(200:1000) \times 100\% = 20\%$.

Diperoleh nilai rentang $100\% - 20\% = 80\%$ jika dibagi 5 skala pengukuran akan didapat nilai interval persentase sebesar 16%, maka kategori interpretasi skor dapat dilihat pada tabel dibawah ini:

Table 1
Characteristic of Respondents

Gender	Qty	%	Role	Qty	%
1 Men	132	80%	5 Quality Control	28	17%
Women	34	20%	Production	37	22%
	166		HRD	17	10%
Working Period			Engineering	47	28%
2 3 - 5 years	27	16%	IT	6	4%
6 - 10 years	56	34%	Supply Chain	6	4%
10 - 20 years	68	41%	Purchasing & Logistic	8	5%
> 20 years	15	9%	Sales & Marketing	12	7%
	166		Others	5	3%
Education Background				166	
3 Master	22	13%	Industry		
Bachelor	110	66%	6 Electronic	46	28%
Diploma	34	20%	Automotive	97	58%
	166		Food & Beverage	23	14%
Title				166	
4 Director	4	2%	Number of Employee		
Manager	63	38%	7 20 s.d. 99 orang	55	33%
Assistant Manager	49	30%	> 100 orang	111	67%
Supervisor	50	30%		166	
	166				

2.4 Measurement Model

The validity test results show that each leadership style strategy indicator (A11-A28), innovation strategy indicator (B9-B17), competitive advantage indicator (C18-C26) and

industry implementation indicator 4.0 (D27-D35) used in this study has a correlation coefficient greater than r-table for n-166 respondents with a df value of 164 that is 0.128. Thus it shows that all indicators as a measure of each construct of these variables are valid.

Tabel 2
Validity Test Result

Item	Leadership Style Strategy (X1)	Innovation Strategy (X2)	Competitive Advantage (Y)	Implementation of Industri 4.0 (Z)	Remark
A11	0.654				Valid
A12	0.672				Valid
A13	0.702				Valid
A24	0.640				Valid
A25	0.663				Valid
A26	0.647				Valid
A27	0.759				Valid
A28	0.569				Valid

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Item	Leadership Style Strategy (X1)	Innovation Strategy (X2)	Competitive Advantage (Y)	Implementation of Industri 4.0 (Z)	Remark
B9		0.553			Valid
B10		0.608			Valid
B11		0.538			Valid
B12		0.551			Valid
B13		0.530			Valid
B14		0.571			Valid
B15		0.514			Valid
B16		0.665			Valid
B17		0.525			Valid
C18			0.150		Valid
C19			0.580		Valid
C20			0.443		Valid
C21			0.511		Valid
C22			0.567		Valid
C23			0.609		Valid
C24			0.481		Valid
C25			0.466		Valid
C26			0.582		Valid
D27				0.379	Valid
D28				0.629	Valid
D29				0.502	Valid
D30				0.560	Valid
D31				0.497	Valid
D32				0.558	Valid
D33				0.595	Valid
D34				0.327	Valid
D35				0.356	Valid

df > 0.128 =Valid

The reliability test was carried out using the Cronbach's Alpha technique with a sample of 166 respondents. Test results using Alpha Cronbach mean that all of the

instruments are greater than 0.7. This shows that these measurements can provide consistent results if the measurements are taken again on the same subject (Table 3).

Table 3
Reliability Test Result

Variable	Cronbach's Alpha	Remark
Leadership style strategy	0.887	Reliabel
Innovation strategy	0.846	Reliabel
Competitive advantage	0.793	Reliabel
Implementation of Industry 4.0	0.792	Reliabel

$\alpha > 0.7$ = Reliabel

2.5 Structural Model

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Based on SEM models that have been fit, it can be tested on the hypotheses raised in this study. Results of SEM analysis of the full model can be seen from Figure 2 and Table 4. Chi-Square value is 3,245 with the recommended significant level of acceptance being $p > 0.05$ the chi-square value decreases after modification. Based on the research results obtained by chi-square of 3,245 then the model is good fit declared. Probability value is 0.0675 greater with a cut-off value of > 0.05 then the model is good fit declared. CMIN / DF value is 1,865 smaller with a cut-off value

of < 2.00 then the model is good fit declared. GFI value is 0.912 greater with a cut-off value of > 0.90 then the model is good fit declared. AGFI value is 0.911 greater with a cut-off value > 0.90 then the model is good fit declared. TLI value is 0.905 greater with a cut-off value > 0.90 then the model is good fit declared. CFI value is 0.901 greater with a cut-off value > 0.90 then the model is good fit declared. RMSEA value is 0.025 greater with a cut-off value < 0.08 then the model is good fit declared.

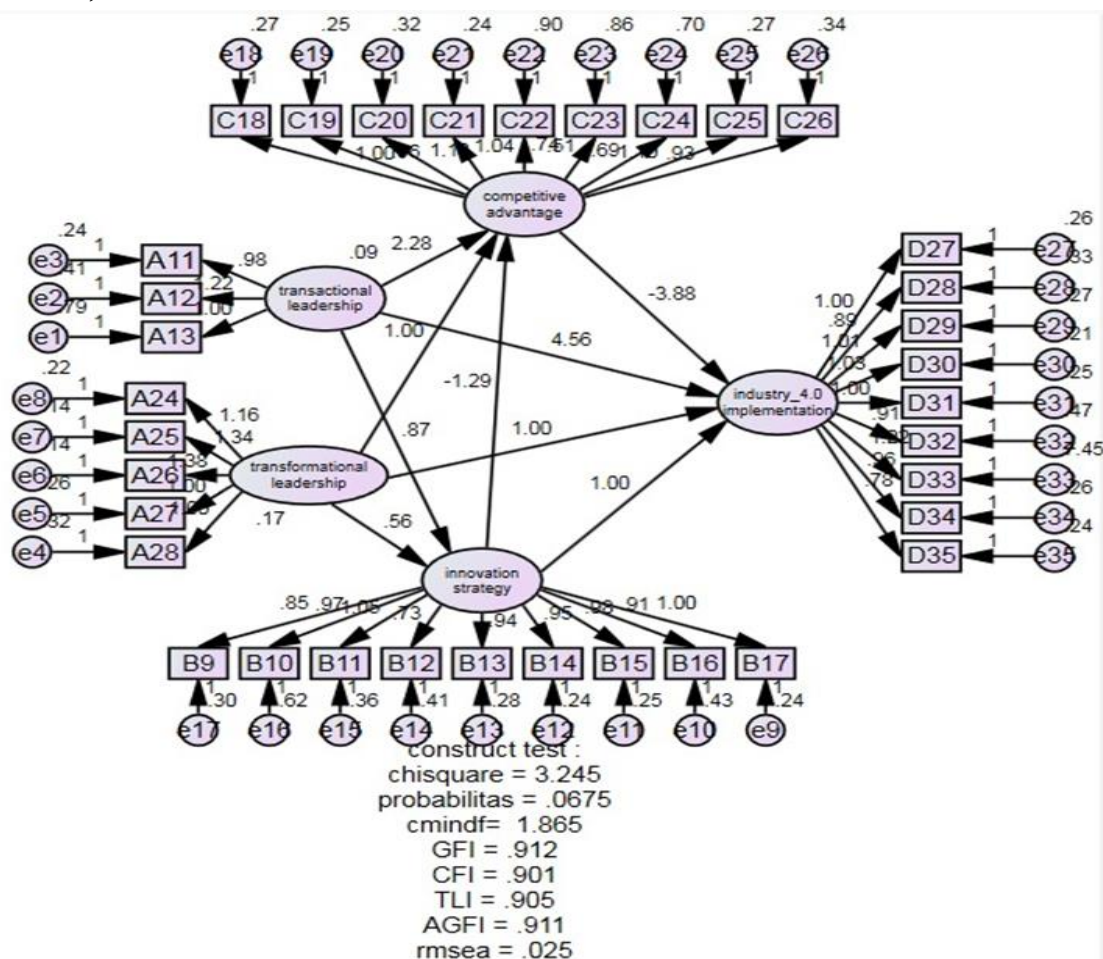


Fig. 2 Full Model SEM

Table 4
 Goodness of Fit Index

Goodness of Fit Index	Cut-off Value	Default Model	Evaluasi Model
Chi-Square	Semakin kecil, semakin baik	3,245	<i>Good Fit</i>
Probability	$\geq 0,05$	0,0675	<i>Good Fit</i>
CMIN/DF	$\leq 2,00$	1,865	<i>Good Fit</i>
GFI	$\geq 0,90$	0,912	<i>Good Fit</i>
AGFI	$\geq 0,90$	0,911	<i>Good Fit</i>
TLI	$\geq 0,90$	0,905	<i>Good Fit</i>
CFI	$\geq 0,90$	0,901	<i>Good Fit</i>
RMSEA	$\leq 0,08$	0,025	<i>Good Fit</i>

Hypothesis testing is done by looking at the value of C.R (critical ratio) contained in the Amos 22.0, the regression weight shown in table 5.

Table 5
Estimasi Parameter Regression Weight Modification

		Estimate	S.E.	C.R.	P	Label
Innovation_Strategy	<--- Transformational_Leadership	.564	.098	5.753	***	par_31
Innovation_Strategy	<--- Transactional_Leadership	.874	.212	4.130	***	par_32
Competitive_Advantage	<--- Transactional_Leadership	2.277	.583	3.906	***	par_33
Competitive_Advantage	<--- Transformational_Leadership	.912	.134	6.808	***	
Competitive_Advantage	<--- Innovation_Strategy	-1.293	.321	4.031	***	par_34
Implementation of_ Industry 4.0	<--- Transactional_Leadership	4.563	1.760	2.592	.010	par_35
Implementation of_ Industry 4.0	<--- Transformational_Leadership	.739	.183	4.045	***	
Implementation of_ Industry 4.0	<--- Innovation_Strategy	.687	.162	4.246	***	
Implementation of_ Industry 4.0	<--- Competitive_Advantage	-3.878	1.216	3.189	.001	par_36

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	Estimate	S.E.	C.R.	P	Label
4.0					
P < 0.05 = significant					
CR > 1.967 = positive effect					

The effect of estimation parameters for testing the transactional leadership style strategy on the creation of competitive advantage shows the value of C.R. of 3,906 is greater than 1,967 and the probability value of 0,000 is less than 0.05. Effect of estimation parameters for testing transformational leadership style strategies on the creation of competitive advantage shows the value of C.R. of 6,808 is greater than 1,967 and the probability value of 0,000 is less than 0.05. The effect of the estimated parameters for testing the innovation strategy on competitive advantage shows the value of C.R. of 4,031 is greater than 1,967 and the probability value of 0,000 is less than 0.05. Effect of estimated parameters for testing transformational leadership style strategies on Industry 4.0 implementation shows the value of C.R. of 4,045 is greater than 1,967 and the probability value of 0,000 is less than 0.05. Effect of estimated parameters for testing the transactional leadership style strategy on Industry 4.0 implementation shows the value of C.R. of 2,592 is greater than 1,967 and the probability value of 0.010 is smaller than 0.05. The effect of the estimated parameters for testing the innovation strategy on the implementation of Industry 4.0 shows the value of C.R. of 4,246 is greater than 1,967 and the probability value of 0,000 is less than 0.05. Effect of estimation parameters for testing competitive advantage on Industry 4.0 readiness for implementation shows the value of C.R. of 3,189 is greater than 1,967 and the probability value of 0.001 is smaller than 0.05.

3. Discussion

The results showed that the transactional leadership style strategy and transformational leadership influence the innovation strategy. This is consistent with research conducted by [Faraz et al \(2018\)](#) which states that transactional leadership has a positive effect on innovative work behavior. , this is in accordance with the research of [Hui et al \(2018\)](#) and [Naguib & Naem \(2018\)](#) which states that transformational leadership has a positive effect on the innovation process that can foster interpersonal trust that affects corporate innovation. Transactional leadership and transformational leadership also influence the creation of competitive advantage. This is consistent with the research of [Siagian et al \(2018\)](#) which states that transactional leadership has a positive and significant influence on competitive advantage.

Innovation strategy can also encourage companies to create competitive advantage through innovations that have been developed by the company. [Anning & Dorson \(2016\)](#) which states that the innovation process is positively related to the company's competitive advantage and encourages the creation of corporate competitiveness Talent and innovation empowered through a culture of cooperation and deep transformational leadership become the main preconditions for business success in inter-personal digitalization value chains and between organizations ([Semolic, 2018](#)). Success in creating competitive advantage and producing good performance is very dependent on the company's success in innovating ([Kalliapen & Hilman, 2014](#)). The automotive, electronics and food and beverage industries in the Industrial Estate in West Java agree that both transactional and transformational leadership styles can encourage innovative performance so as to

create a competitive advantage for the company.

This research also proves a positive influence between the leadership style strategy, innovation strategy and competitive advantage possessed by companies in the implementation of Industry 4.0. Jabbour et al (2018) study that management leadership plays an important role in industry integration 4.0. Through corporate commitment driven by good leadership can support Industry 4.0 implementation policies. Pradhan & Pradhan (2015) which states that there is a positive relationship between transformational leadership and organizational commitment. Bibby & Dehe (2018) which states that innovation openness is one of the conceptual frameworks in industry 4.0. The convergence of Industry 4.0 technology towards a platform of sustainable development goals is possible but requires innovation and supporting policies (Bonilla et al, 2018). Schwab (2018) in The Global Competitiveness Index 4.0 Report 2018 evaluates the factors that determine the level of productivity in the face of competition or competition in the era of the industrial revolution 4.0, one of which is innovation capability. With innovation the company will create low-cost products, diverse products and products that focus on

certain segments. Porter in David (2016) states that the strategy of excellence in facing market competition is cost leadership, differentiation strategy and focus strategy. With competitive advantage, companies are expected to survive in global competition in the Industrial 4.0 era.

4. Conclusion and Recommendation

Transactional and transformational leadership style strategy have a positive and significant influence on innovation strategies. Transactional and transformational leadership style strategy also have a positive and significant influence on the creation of a company's competitive advantage. Innovation strategy has a positive and significant influence on the company's competitive advantage. While the transactional and transformational leadership style strategy have a positive and significant influence on the implementation of Industry 4.0. The innovation strategy has a positive and significant influence on the company towards the implementation of Industry 4.0. Likewise competitive advantage has a positive and significant influence on companies towards the implementation of Industry 4.0. Thus, all the hypotheses in this study were accepted as shown in table 6.

Tabel 6
Summary of Hypothesis Test Results

Hypothesis	CR and P Values	Result
H1a = Transactional leadership style strategy has a positive and significant effect on the Innovation strategy.	CR = 4,130 P = 0,000	Accepted
H1b = Transformational leadership style strategy has a positive and significant effect on the Innovation strategy.	CR = 5,753 P = 0,000	Accepted
H2a = Transactional leadership style strategy has a positive and significant effect on creation of competitive advantage of companies.	CR = 3,906 P = 0,000	Accepted
H2b = Transformational leadership style strategy	CR = 6,808	Accepted

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has a positive and significant effect on creation of competitive advantage of companies.	P = 0,000	
H3 = The innovation strategy has a positive and significant effect on the competitive advantage of the company.	CR = 4,031 P = 0,000	Accepted
H4a = Transformational leadership style strategy has a positive and significant effect on the company towards the implementation of Industry 4.0.	CR = 4,045 P = 0,000	Accepted
H4b = Transactional leadership style strategy has a positive and significant effect on the company towards the implementation of Industry 4.0.	CR = 2,592 P = 0,010	Accepted
H5 = The innovation strategy has a positive and significant effect on the company towards the implementation of Industry 4.0.	CR = 4,246 P = 0,000	Accepted
H6 = The competitive advantage has a positive and significant effect on companies towards the implementation of Industry 4.0.	CR = 3,189 P = 0,001	Accepted

From the results of this study, we suggest that future studies can classify or make the level of each industry in the industry 4.0 implementation process in order to obtain a comparative picture of the level of readiness of each manufacturing industry. Future research needs to consider variables that are thought to

influence competitive advantage and implementation of industry 4.0 such as people (human capital) & culture (Schwab, 2017), products and services as well as technology. Future research needs to analyze government policy factors in the process of implementing Industry 4.0.

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