Implementation Effect of Green Manufacturing Strategy In to Fmcg And Automotive Companies Through Impact Consideration Toward Environment, Economy And Social

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ABSTRACT

Environment, economy and social factor which are usually called triple bottom line is inseperable from sustainable development operation. In fact many companies are striving only for financial benefit without considering the environment and social condition. Therefore a research model is designed to determine the variables affecting environment, economy and social. The model is designed with structural equation modeling (SEM) path analysis using analysis of moment structure (AMOS) software. The model consist of (i) antecedents variable: human resources (HR), natural resources (NR), information technology (IT), (ii) behaviour variable: green manufacturing strategy application (PGMS), green management (GM), production process technology (PPT), corporate social responsibility (CSR), and (iii) consequence variable: driving forces-pressure-state-impact-response (DPSIR). The purpose of this research is to analyze the indirect effect of the variables toward DPSIR environment, economy and social. For HR + NR + IT + PGMS + GM + PPT + CSR -> DL model, there is indirect effect from IT to DL and from GM to DL through mediating variable PGMS. For HR + NR + IT + PGMS + GM + PPT + CSR -> DE and HR + NR + IT + PGMS + GM + PPT + CSR -> DS model, there isn't indirect effect from all of the variable through mediating variable PGMS. Moreover, HR, NR and IT variable have 60.1% effect on PGMS, while GM, PPT and CSR variable are added the HR, NR, IT, GM, PPT and CSR have 98.8% effect on PGMS. HR, NR, IT and PGMS variable have 97.2%, 76.9% and 64.0% effect on DL, DE and DS, while GM, PPT and CSR variable are added the HR, NR, IT, PGMS, GM, PPT and CSR have 97.9%, 77.5% and 96.1% on DL, DE and DS. With addition of GM, PPT and CSR variable, the effect from HR, NR, IT and PGMS increase. 60% of FMCG companies have increased in DL variable, 36.4% of automotive companies have increased in DL variable, 50% of FMCG companies have increased in DE variable, 63.6% of automotive companies have increased in DE variable, 70% of FMCG companies have increased in DS variable and 36.4% of automotive companies have increased in DS variable. So, GM, PPT and CSR variable should be added for FMCG companies and not for automotive companies.

Keywords: green manufacturing strategy, sustainable development, triple bottom line, path analysis, SEM, AMOS

PREFACE

As the time keeps changing, development concept that had focused only on economic growth has developed into sustainable development. Sustainable development concept is a development that meets the needs of present without compromising the ability of future generations to meet their own needs. According to Elkington (1998), which is cited by Hall et al (2010), the operation of sustainable development can't be separated from environment, economy and social factor or commonly known as triple bottom line.

Environment factor is related to the company's way of using natural resources and treating the waste which impact the natural preservation. Economy factor is related to the company's ability to gain as much profit as possible without considering the environment and social factor. Social factor is related to company's responsibility toward society.

In this research, green manufacturing strategy implementation supports the human resources, natural resources and information technology variable. With the support from green manufacturing strategy implementation, human resources, natural resources, information technology, green management, production process technology and corporate social responsibility variable is expected to have indirect effect toward DPSIR environment, social and economy variable.

In order to prove that statement, researcher will design model to solve existing problems in the three factors above with the object of research on Fast Moving Consumer Goods (FMCG) and automotive companies which are listed on Indonesia Stock Exchange (IDX). This model is designed with structural equation modeling (SEM) path analysis using analysis of moment structure (AMOS) software for its data processing and analysis.

RESEARCH METHOD

In order to solve the problems mentioned before, some research steps have to be done, such as observation, identification and formulation of the problem, data collection, data processing and analysis which can be seen more complete in figure 1.

Observation

The first step is observation. In this step, observation is being carried out toward Fast Moving Consumer Goods (FMCG) and automotive companies in Indonesia. Observation is done by reading the companies' annual report year 2011 which are obtained from Indonesia Stock Exchange (IDX) website.

Identification and Formulation of the Problem

After observation has been done, then the problem that is going to be researched can be known, which is whether natural resources, human resources, information technology, green management, production process technology and corporate social responsibility variable have indirect effect toward DPSIR environment, economy and social through mediating variable green manufacturing strategy implementation.

Data Collection

The next step is data collection. The data collected are secondary data which are obtained from companies' annual report. The companies that are being observed are all Fast Moving Consumer Good (FMCG) and automotive companies in Indonesia which are listed on Indonesia Stock Exchange (IDX) and published annual report year 2011. Data that are being observed in annual report such as: human resources, natural resources, information technology, green manufacturing strategy implementation, green management, production process technology, corporate social responsibility, DPSIR environment, economy and social.

Data Processing

The next step is data processing. Data that have been collected above are processed with linear regression and correlation, multiple regression and correlation, and path analysis method structural equation modeling (SEM). For this data processing, MS Excel and Minitab software will be used as comparison to analysis of moment structure (AMOS) software.

Analysis

After data processing, the next step is analysis. The results from data processing are analyzed to decide whether to accept or reject hypothesis. Furthermore the results are analyzed to confirm whether there is any indirect effect between the variables.

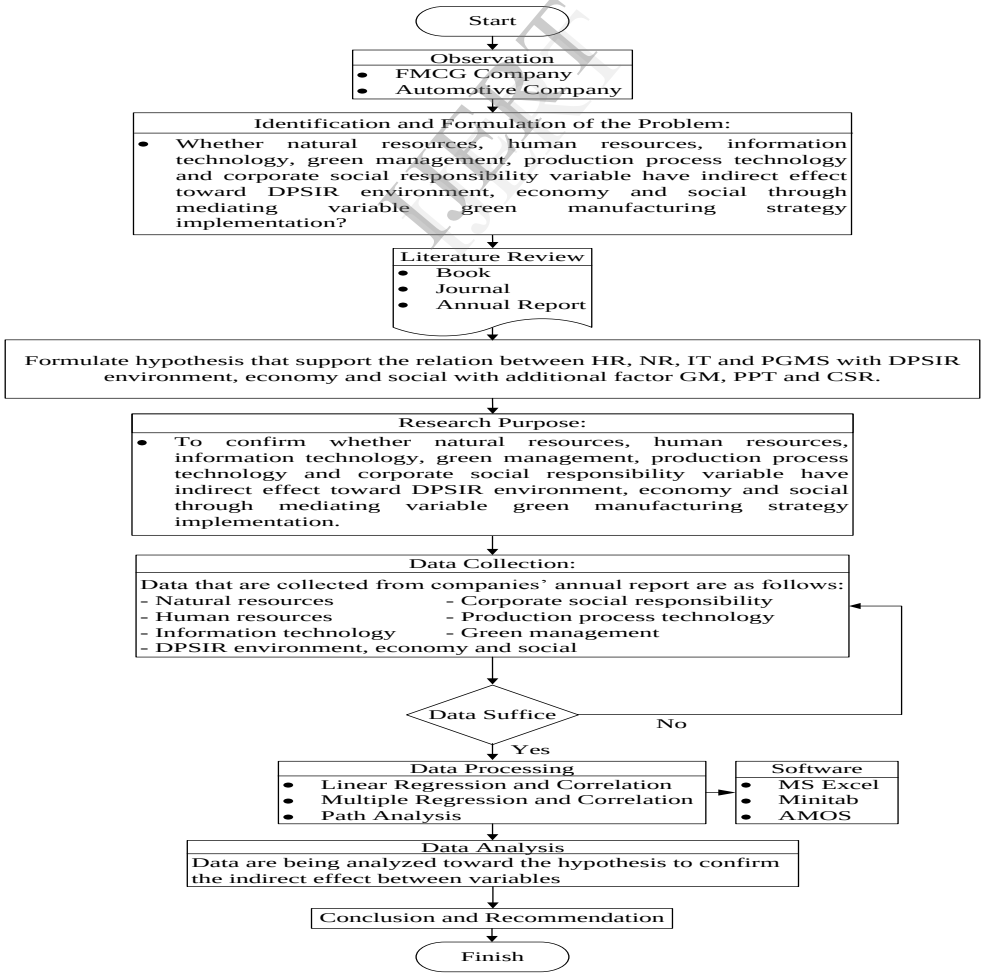

Figure 1 Metodologi Penelitian

RESULT AND DISCUSSION

Data collected from companies' annual report year 2011 are as follows:

1. Human resources

   Human resources data collected from annual report include: human resources development strategy, program and training to improve employees' ability, other program which support employees' welfare.
2. Natural resources

   Natural resources data collected from annual report is company's role in using natural resources for the needs of the production process.
3. Information technology

   Information technology data collected from annual report include: area of business, market segments and number of employee of the company.
4. Green manufacturing strategy implementation

   Green manufacturing strategy implementation data collected from annual report include: greening program by planting trees, waste treatment, hold program and campaign in order to raise the civilian's awareness toward environment.
5. Green management

   Green management data collected from annual report include: company's strategy to create cleaner production process and product which is environmental friendly, treat or reduce waste, and make plans to restore environment.
6. Production process technology

   Production process technology data collected from annual report include: Number of factory owned by company, production capacity, and technology applied in production process.
7. Corporate social responsibility

   Corporate social responsibility data collected from annual report include: hold free clinic to help preserve health, give scholarship to increase education, hold a charity program, participate in the celebration of religious holidays, give guidance and loan for middle-low business.
8. DPSIR environment

   DPSIR environment data collected from annual report include: reduction of global warming, reduction of pollution, greener environment and the preservation of environment.
9. DPSIR economy

   DPSIR economy data collected from annual report is the gross profit of the company.
10. DPSIR social

    DPSIR social data collected from annual report include: health improvement, education improvement, and civilian's welfare improvement.

Data that have been collected are given score according to the determined scale, the score are as the following table:

Table 1 Annual Report Data Scoring

	HR	NR	IT	PGMS	GM	PPT	CSR	DL	DE	DS
Astra International Tbk	10	3	10	9	9	5	9	8	10	8
Astra Otoparts Tbk	7	2	10	7	7	10	7	7	8	5
Indo Kordsa Tbk	6	6	2	1	1	4	3	1	3	3
Goodyear Indonesia Tbk	3	4	2	6	6	3	5	6	2	5
Gajah Tunggal Tbk	5	4	10	4	3	5	3	3	10	3
Indomobil Sukses International Tbk	3	3	6	3	3	3	3	3	10	3
Indospring Tbk	3	3	2	2	2	3	2	2	3	2
Multistrada Arah Sarana Tbk	2	3	2	0	0	6	2	0	6	2
Nipress Tbk	5	3	1	1	2	4	4	1	1	4
Prima Alloy Steel Universal Tbk	0	4	1	0	0	5	0	0	1	0
Selamat Sempurna Tbk	6	2	5	3	3	6	5	2	5	5
Akasha Wira International Tbk	5	2	2	3	3	2	1	3	2	1
Cahaya Kalbar Tbk	1	2	1	1	1	3	1	1	2	1
Delta Djakarta Tbk	2	7	1	2	2	4	5	2	4	5
Indofood CBP Sukses Makmur Tbk	5	5	10	4	4	2	7	4	10	6
Indofood Sukses Makmur Tbk	4	2	10	3	2	2	9	4	10	6
Multi Bintang Indonesia Tbk	1	7	1	1	1	1	2	1	10	2
Prasidha Aneka Niaga Tbk	1	2	2	0	0	2	3	0	2	3
Nippon Indosari Corpindo Tbk	5	6	1	0	0	2	2	0	4	2
Sekar Laut Tbk	1	2	1	2	2	0	1	2	1	1
Ultra Jaya Milk Industry Tbk	1	6	2	2	2	3	2	2	7	2

Table 2 Symbol Description

Symbol	Description	Symbol	Description
HR	Human resources	NR	Natural resources
IT	Information technology	GM	Green management
PPT	Production process technology	CSR	Corporate social responsibility
PGMS	Green manufacturing strategy implementation	DL	DPSIR environment
DE	DPSIR economy	DS	DPSIR social

Hypothesis model used in this research are as follows:

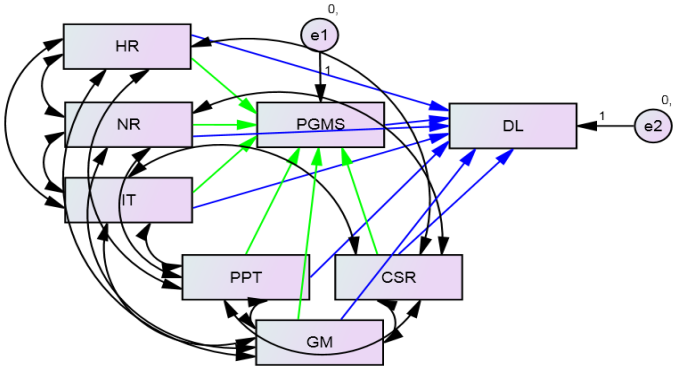

Figure 2 Model HR + NR + IT + PGMS + GM + PPT + CSR -> DL

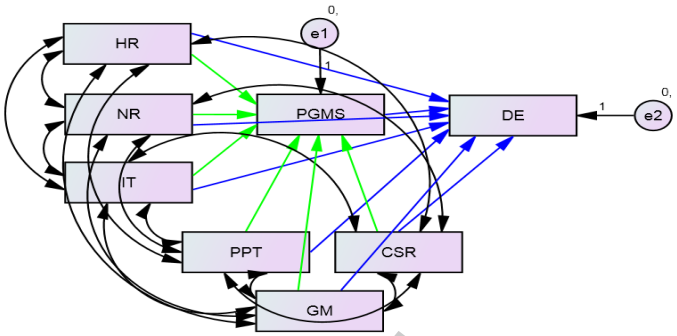

Figure 3 Model HR + NR + IT + PGMS + GM + PPT + CSR -> DE

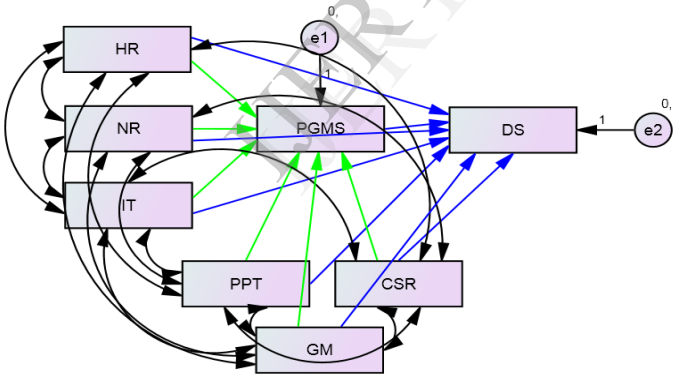

Figure 4 Model HR + NR + IT + PGMS + GM + PPT + CSR -> DS

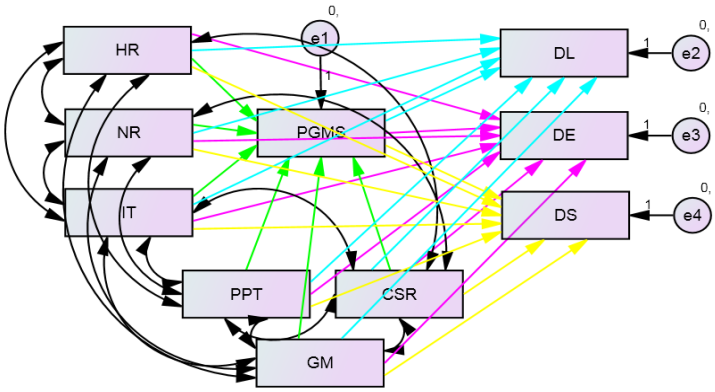

Figure 5 Model HR + NR + IT + PGMS + GM + PPT + CSR -> DL + DE + DS

Table 3 Correlation, Regression and p-value Calculation

	HR + NR + IT + PGMS + GM + PPT + CSR -> DL			HR + NR + IT + PGMS + GM + PPT + CSR -> DE			HR + NR + IT + PGMS + GM + PPT + CSR -> DS		
	Excel	Minitab	AMOS	Excel	Minitab	AMOS	Excel	Minitab	AMOS
R Square	0.979	0.979	0.979	0.775	0.775	0.775	0.961	0.961	0.961
Adjusted R Square	0.968	0.968		0.654	0.654		0.940	0.940	
F	88.711	88.71		6.389	6.39		45.764	45.76	
p-value									
DL/DE/DS	0.381	0.381	0.261	0.981	0.981	0.977	0.816	0.816	0.769
HR -> DL/DE/DS	0.170	0.170	0.071	0.374	0.374	0.254	0.480	0.480	0.368
NR -> DL/DE/DS	0.573	0.573	0.473	0.013	0.013	0.000	0.214	0.214	0.105
IT -> DL/DE/DS	0.751	0.751	0.688	0.003	0.003	0.000	0.507	0.507	0.397
HR -> PGMS			0.225			0.225			0.225
NR -> PGMS			0.618			0.618			0.618
IT -> PGMS			0.000			0.000			0.000
GM -> PGMS			0.000			0.000			0.000
PPT -> PGMS			0.409			0.409			0.409
CSR -> PGMS			0.453			0.453			0.453
PGMS -> DL/DE/DS	0.016	0.016	0.000	0.754	0.754	0.691	0.503	0.503	0.393
GM -> DL/DE/DS	0.933	0.933	0.916	0.766	0.766	0.706	0.387	0.387	0.267
PPT -> DL/DE/DS	0.469	0.469	0.354	0.647	0.647	0.561	0.816	0.816	0.768
CSR -> DL/DE/DS	0.067	0.067	0.013	0.718	0.718	0.647	0.000	0.000	0.000

Table 4 Standardized Direct Effects and Standardized Indirect Effects Calculation

	HR + NR + IT + PGMS + GM + PPT + CSR -> DL			HR + NR + IT + PGMS + GM + PPT + CSR -> DE			HR + NR + IT + PGMS + GM + PPT + CSR -> DS		
	STE	SDE	SIE	STE	SDE	SIE	STE	SDE	SIE
HR -> DL/DE/DS	-0.138	-0.092	-0.046	-0.176	-0.194	0.018	0.079	0.064	0.016
NR -> DL/DE/DS	-0.011	-0.024	0.013	0.397	0.402	-0.005	0.072	0.076	-0.004
IT -> DL/DE/DS	0.149	-0.030	0.179	1.070	1.139	-0.069	-0.149	-0.088	-0.062
HR -> PGMS	-0.046	-0.046	0.000	-0.046	-0.046	0.000	-0.046	-0.046	0.000
NR -> PGMS	0.013	0.013	0.000	0.013	0.013	0.000	0.013	0.013	0.000
IT -> PGMS	0.179	0.179	0.000	0.179	0.179	0.000	0.179	0.179	0.000
GM -> PGMS	0.938	0.938	0.000	0.938	0.938	0.000	0.938	0.938	0.000
PPT -> PGMS	-0.023	-0.023	0.000	-0.023	-0.023	0.000	-0.023	-0.023	0.000
CSR -> PGMS	-0.032	-0.032	0.000	-0.032	-0.032	0.000	-0.032	-0.032	0.000
PGMS -> DL/DE/DS	1.005	1.005	0.000	-0.386	-0.386	0.000	-0.345	-0.345	0.000
GM -> DL/DE/DS	0.913	-0.030	0.943	-0.012	0.349	-0.362	0.104	0.428	-0.324
PPT -> DL/DE/DS	-0.058	-0.034	-0.023	-0.063	-0.072	0.009	-0.007	-0.015	0.008
CSR -> DL/DE/DS	0.109	0.141	-0.032	-0.074	-0.086	0.012	0.969	0.958	0.011

Where STE is standardized total effects, SDE is standardized direct effects and SIE is standardized indirect effects.

Table 5 R square Calculation

HR + NR + IT + PGMS -> DL + DE + DS	R square
HR + NR + IT -> PGMS	0.601
HR + NR + IT -> DL	0.972
HR + NR + IT -> DE	0.769
HR + NR + IT -> DS	0.64
HR + NR + IT + PGMS + GM + PPT + CSR -> DL + DE + DS	R square
HR + NR + IT + GM + PPT + CSR -> PGMS	0.988
HR + NR + IT + PGMS + GM + PPT + CSR -> DL	0.979
HR + NR + IT + PGMS + GM + PPT + CSR -> DE	0.775
HR + NR + IT + PGMS + GM + PPT + CSR -> DS	0.961

Table 6 Increasing Calculation of DL, DE and DS Variable

	DL	DE	DS
Astra International Tbk	0.40155	-1.4329	-0.1754
Astra Otoparts Tbk	-0.5917	0.31217	0.84044
Indo Kordsa Tbk	-0.3027	1.52065	0.12557
Goodyear Indonesia Tbk	-0.0913	1.37181	-0.2926
Gajah Tunggal Tbk	0.4575	1.16625	-0.6462
Indomobil Sukses International Tbk	-0.1501	-2.678	-0.3207
Indospring Tbk	-0.123	0.09405	0.03891
Multistrada Arah Sarana Tbk	0.00547	-2.8969	-0.2105
Nipress Tbk	-0.0115	0.66433	-0.0143
Prima Alloy Steel Universal Tbk	-0.0522	2.72685	0.32351
Selamat Sempurna Tbk	0.7889	-1.0102	-0.7347
Akasha Wira International Tbk	-0.4224	-0.0782	0.38858
Cahaya Kalbar Tbk	0.04659	-0.1046	0.06091
Delta Djakarta Tbk	0.18746	1.05463	-0.3534
Indofood CBP Sukses Makmur Tbk	0.00068	2.39105	-0.1144
Indofood Sukses Makmur Tbk	-0.469	-0.5019	0.63195
Multi Bintang Indonesia Tbk	0.08529	-3.9121	0.28974
Prasidha Aneka Niaga Tbk	0.38857	0.91883	-0.5366
Nippon Indosari Corpindo Tbk	-0.1753	0.09907	0.31671
Sekar Laut Tbk	0.07824	1.20638	0.18121
Ultra Jaya Milk Industry Tbk	-0.051	-0.9112	0.20123

In this hypothesis testing, p-value is used to determine the decision. If p-value is less or equal to alpha then reject H_0, but if p-value is more than alpha then accept H_0. Confidence interval that is being used is 95% so the alpha is 0.05.

H_0: There is no direct relation between the variables

HR + NR + IT + PGMS + GM + PPT + CSR -> DL

H_1: There is direct relation from HR to DL

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to DL.

H_2: There is direct relation from NR to DL

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from NR to DL.

H_3: There is direct relation from IT to DL

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from IT to DL.

H_4: There is direct relation from HR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to PGMS.

H_5: There is direct relation from NR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from NR to PGMS.

H_6: There is direct relation from IT to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from HR to PGMS. The direct effect from IT to PGMS is 0.179.

H_7: There is direct relation from GM to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from GM to PGMS. The direct effect from GM to PGMS is 0.938.

H_8: There is direct relation from PPT to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to PGMS.

H_9: There is direct relation from CSR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from CSR to PGMS.

H_{10}: There is direct relation from PGMS to DL

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from PGMS to DL. The direct effect from PGMS to DL is 1.005.

H_{11}: There is direct relation from GM to DL

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from GM to DL.

H_{12}: There is direct relation from PPT to DL

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to DL.

H_{13}: There is direct relation from CSR to DL

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from CSR to DL. The direct effect from CSR to DL is 0.141.

According to the thirteen hypotheses above, there is no direct relation from HR to DL, from NR to DL, from IT to DL, from HR to PGMS, from NR to PGMS, from PPT to PGMS, from CSR to PGMS, from GM to DL and from PPT to DL. So, there is no indirect effect from HR to DL, from NR to DL, from PPT to DL and from CSR to DL through mediating variable PGMS, but there is indirect effect from IT to DL and from GM to DL through mediating variable PGMS. The indirect effect from IT to DL is obtained from the multiplication of 0.179 with 1.005, which is 0.179 and the indirect effect from GM to DL is obtained from the multiplication of 0.938 with 1.005, which is 0.943.

HR + NR + IT + PGMS + GM + PPT + CSR -> DE

H_{14}: There is direct relation from HR to DE

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to DE.

H_{15}: There is direct relation from NR to DE

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from NR to DE. The direct effect from NR to DE is 0.402.

H_{16}: There is direct relation from IT to DE

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from IT to DE. The direct effect from IT to DE is 1.139.

H_{17}: There is direct relation from HR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to PGMS.

H_{18}: There is direct relation from NR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from NR to PGMS.

H_{19}: There is direct relation from IT to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from IT to PGMS. The direct effect from IT to PGMS is 0.179.

H_{20}: There is direct relation from GM to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from GM to PGMS. The direct effect from GM to PGMS is 0.938.

H_{21}: There is direct relation from PPT to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to PGMS.

H_{22}: There is direct relation from CSR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from CSR to PGMS.

H_{23}: There is direct relation from PGMS to DE

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PGMS to DE.

H_{24}: There is direct relation from GM to DE

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from GM to DE.

H_{25}: Terdapat hubungan langsung dari PPT ke DE

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to DE.

H_{26}: There is direct relation from CSR to DE

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from CSR to DE.

According to the thirteen hypotheses above, there is no direct relation from HR to DE, from HR to PGMS, from NR to PGMS, from PPT to PGMS, from CSR to PGMS, from PGMS to DE, from GM to DE, from PPT to DE and from CSR to DE. So, there is no indirect effect from HR to DE, from NR to DE, from IT to DE, from GM to DE, from PPT to DE and from CSR to DE through mediating variable PGMS.

HR + NR + IT + PGMS + GM + PPT + CSR -> DS

H_{27}: There is direct relation from HR to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to DS.

H_{28}: There is direct relation from NR to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from NR to DS.

H_{29}: There is direct relation from IT to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from IT to DS.

H_{30}: There is direct relation from HR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from HR to PGMS.

H_{31}: There is direct relation from NR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from NR to PGMS.

H_{32}: There is direct relation from IT to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from IT to PGMS. The direct effect from IT to PGMS is 0.179.

H_{33}: There is direct relation from GM to PGMS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from GM to PGMS. The direct effect from GM to PGMS is 0.938.

H_{34}: There is direct relation from PPT to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to PGMS.

H_{35}: There is direct relation from CSR to PGMS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from CSR to PGMS.

H_{36}: There is direct relation from PGMS to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PGMS to DS.

H_{37}: There is direct relation from GM to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from GM to DS.

H_{38}: There is direct relation from PPT to DS

According to comparison between p-value and alpha, the decision is accept H_0. So, there is no direct relation from PPT to DS.

H_{39}: There is direct relation from CSR to DS

According to comparison between p-value and alpha, the decision is reject H_0. So, there is direct relation from CSR to DS. The direct effect from CSR to DS is 0.958.

According to the thirteen hypotheses above, there is no direct relation from HR to DS, from NR to DS, from IT to DS, from HR to PGMS, from NR to PGMS, from PPT to PGMS, from CSR to PGMS, from PGMS to DS, from GM to DS and from PPT to DS. So, there is no indirect effect from HR to DS, from NR to DS, from IT to DS, from GM to DS, from PPT to DS and from CSR to DS through mediating variable PGMS.

According to Table R square Calculation, HR, NR and IT variable have 60.1% effect on PGMS, while GM, PPT and CSR variable are added the HR, NR, IT, GM, PPT and CSR have 98.8% effect on PGMS. HR, NR, IT and PGMS variable have 97.2%, 76.9% and 64.0% effect on DL, DE and DS, while GM, PPT and CSR variable are added the HR, NR, IT, PGMS, GM, PPT and CSR have 97.9%, 77.5% and 96.1% on DL, DE and DS. With addition of GM, PPT and CSR variable, the effect from HR, NR, IT and PGMS increase. 60% of FMCG companies have increased in DL variable, 36.4% of automotive companies have increased in DL variable, 50% of FMCG companies have increased in DE variable, 63.6% of automotive companies have increased in DE variable, 70% of FMCG companies have increased in DS variable and 36.4% of automotive companies have increased in DS variable

CLOSING

Conclusion

The conclusion in this research are as follows: (1) for HR + NR + IT + PGMS + GM + PPT + CSR -> DL model, there is no indirect effect from HR to DL, from NR to DL, from PPT to DL and from CSR to DL through mediating variable PGMS, but there is indirect effect from IT to DL and from GM to DL through mediating variable PGMS. The indirect effect from IT to DL is obtained from the multiplication of 0.179 with 1.005, which is 0.179 and the indirect effect from GM to DL is

obtained from the multiplication of 0.938 with 1.005, which is 0.943; (2) for HR + NR + IT + PGMS + GM + PPT + CSR -> DE model, there is no indirect effect from HR to DE, from NR to DE, from IT to DE, from GM to DE, from PPT to DE and from CSR to DE through mediating variable PGMS; (3) for HR + NR + IT + PGMS + GM + PPT + CSR -> DS model, there is no indirect effect from HR to DS, from NR to DS, from IT to DS, from GM to DS, from PPT to DS and from CSR to DS through mediating variable PGMS; (4) HR, NR and IT variable have 60.1% effect on PGMS, while GM, PPT and CSR variable are added the HR, NR, IT, GM, PPT and CSR have 98.8% effect on PGMS; (5) HR, NR, IT and PGMS variable have 97.2%, 76.9% and 64.0% effect on DL, DE and DS, while GM, PPT and CSR variable are added the HR, NR, IT, PGMS, GM, PPT and CSR have 97.9%, 77.5% and 96.1% on DL, DE and DS. With addition of GM, PPT and CSR variable, the effect from HR, NR, IT and PGMS increase; (6) 60% of FMCG companies have increased in DL variable, 36.4% of automotive companies have increased in DL variable, 50% of FMCG companies have increased in DE variable, 63.6% of automotive companies have increased in DE variable, 70% of FMCG companies have increased in DS variable and 36.4% of automotive companies have increased in DS variable.

Recommendation

The recommendation in this research are as follows: (1) for HR + NR + IT + PGMS + GM + PPT + CSR -> DL model, HR, NR, PPT and CSR variable should be erased from the model because they don't have indirect effects toward DL through mediating variable PGMS; (2) for HR + NR + IT + PGMS + GM + PPT + CSR -> DL model, NR, GM, PPT and CSR can also be erased so that HR and IT variable can have indirect effect toward DL through mediating variable PGMS; (3) for HR + NR + IT + PGMS + GM + PPT + CSR -> DE model, HR, NR, IT, PPT and CSR variable should be erased from the model because they don't have indirect effects toward DE through mediating variable PGMS; (4) for HR + NR + IT + PGMS + GM + PPT + CSR -> DS model, NR, IT, GM, PPT and CSR variable should be erased from the model because they don't have indirect effects toward DS through mediating variable PGMS; (5) for HR + NR + IT + PGMS + GM + PPT + CSR -> DS model, HR, NR, GM, PPT and CSR variable can also be erased so that IT variable can have indirect effect toward DS through mediating variable PGMS; (6) GM, PPT and CSR variable should be added added for FMCG companies and not for automotive companies.

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