An Empirical Examination of Formal and Informal Institutional Factors' Influence on Global Food Industry Sustainability Engagement

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Overview

- Chapter One: Introduction and Background
- Chapter Two: Sustainability Literature Review
- Chapter Three: Research Design and Methodology
- Chapter Four: Analysis and Results
- Chapter Five: Discussion and Conclusion

Study based on Yamamoto's (2019) George Fox University Doctor of Business Administration (DBA) dissertation.

Chapter One: Introduction

Introduction

- Research Problem
- Institution-Based View (IBV) Theoretical Framework (Peng et al., 2012)
- Significance of the Study
- Research Question:

How do formal and informal institutional factors influence the level of global food industry sustainability engagement?

Chapter Two: Literature Review

Sustainability Literature Review

- 1) Sustainability engagement and institutional factors
  - Bloomberg ESG (Bloomberg Finance L.P., 2019)
- 2) Food industry sustainability engagement and institutional factors
- 3) Institution-Based View (IBV) and sustainability engagement

Chapter Three: Research Design and Methodology

Research Design and Methodology

- Sample
- Variables
- Hypotheses
- Data Analysis and Methods

Sample

- Total 504 food firms (see Table 1)
- Mean sample set ESG score 26.41 (FY 2017)
- 4 GICS food industries (MCSI, 2019)
  - Sample size: 1) restaurants (106 firms) , 2) food retailing (103 firms), 3) beverages (61 firms), and 4) food products (234 firms)
  - Mean ESG scores: 1) restaurants (21.66) , 2) food retailing (24.04), 3) beverages (28.99), and 4) food products (28.95)
  - Standard deviation of firm ESG scores show variation

Sample

Table 1: Descriptive Statistics of the Four Food Industries by Global Industry Classification Standards (GICS) and Firm Sustainability Engagement Levels			
4 Food Industry Classifications by GICS	Food Firm Sustainability Engagement Levels (ESG Score)		
(9 Food GICS Sub-Industries)	M	SD	N
1) Restaurants	21.66	9.25	106
2) Food Retailing(food retail, food distribution, and hypermarkets & supercenters)	24.04	10.87	103
3) Beverage (brewers, distillers & vintners, and soft drinks)	28.99	14.19	61
4) Food Products (agricultural products, and packaged foods & meats)	28.95	12.94	234
Sample Set	26.41	12.38	504

Variables

- 1 Dependent Variable:
  - Bloomberg ESG score (Bloomberg Finance L.P., 2019).
- 6 Independent Variables:
  - 1) Environmental Performance Index (World Economic Forum, 2019),
  - 2) Food Loss and Food Waste Index (BCFN Foundation, 2019),
  - 3) Sustainable Agriculture Index (BCFN Foundation, 2019),
  - 4) Nutrition Challenge Index (BCFN Foundation, 2019),
  - 5) Uncertainty Avoidance Index (Hofstede Insights, 2019), and
  - 6) Long-term Orientation Index (Hofstede Insights, 2019).

Hypotheses (4 formal institutional factors)

- H1: *Higher levels of national environmental performance are positively related to levels of the food industry firm's sustainability engagement.*
- H2: *Higher levels of national food policy responsiveness to food loss and food waste are positively related to levels of the food industry firm's sustainability engagement.*
- H3: *Higher levels of national sustainable agriculture policies and implementations are positively related to levels of the food industry firm's sustainability engagement.*
- H4: *Higher levels of national food policy for responding to nutritional challenges are positively related to levels of the food industry firm's sustainability engagement.*

Hypotheses (2 informal institutional factors & food industry mean sustainability engagement)

- H5: *Higher levels of national culture's uncertainty avoidance are positively related to levels of the food industry firms' sustainability engagement.*
- H6: *Higher levels of national culture's long-term orientation are positively related to levels of the food industry firms' sustainability engagement.*
- H7: *Sustainability engagement levels of the four GICS food industries differ significantly.*

Data Analysis and Methods

- Simple Regression (See Figure 1: H1, H2, H3, H4, H5, & H6)
- Multiple Regression (See Figure 2: H1, H2, H3, H4, H5, & H6)
- One-way ANOVA and Post-hoc tests (H7)

Theoretical Constructs and Propositions

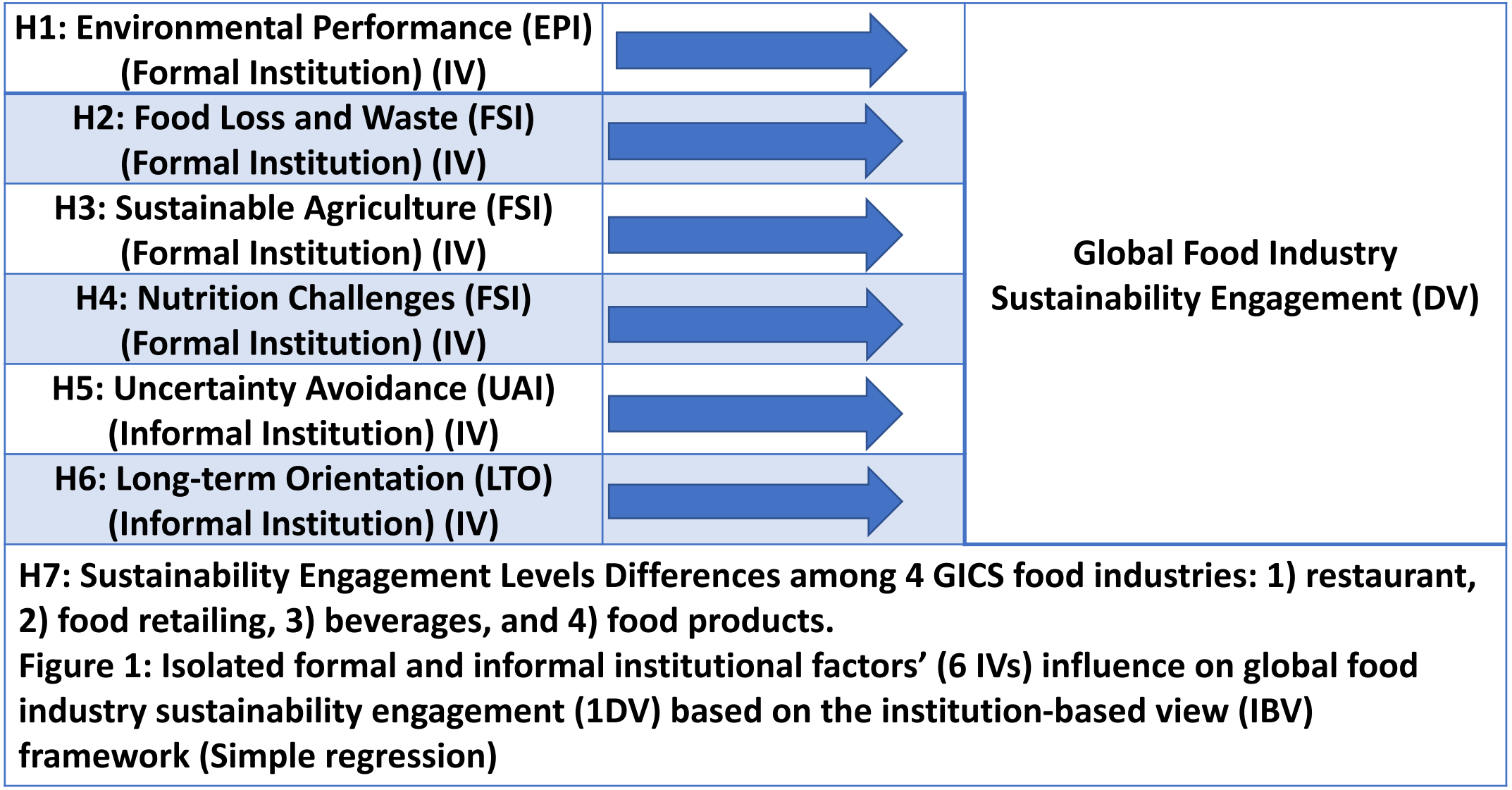

Figure 1: Isolated formal and informal institutional factors' (6 IVs) influence on global food industry sustainability engagement (1DV) based on the institution-based view (IBV) framework (Simple regression)

Theoretical Constructs and Propositions

H1: Environmental Performance (EPI) (Formal Institution) (IV)		**Global Food Industry Sustainability Engagement (DV)**
H2: Food Loss and Waste (FSI) (Formal Institution) (IV)		
H3: Sustainable Agriculture (FSI) (Formal Institution) (IV)		
H4: Nutrition Challenges (FSI) (Formal Institution) (IV)		
H5: Uncertainty Avoidance (UAI) (Informal Institution) (IV)		
H6: Long-term Orientation (LTO) (Informal Institution) (IV)		
H7: Sustainability Engagement Levels Differences among 4 GICS food industries: 1) restaurant, 2) food retailing, 3) beverages, and 4) food products.		

Figure 2: Combined formal and informal institutional factors' (6 IVs) influence on global food industry sustainability engagement (1DV) based on the institution-based view (IBV) framework (Multiple regression)

Chapter Four: Analysis and Results

Analysis and Results

- Analysis of individual institutional factors' influence (Simple regression)
- Analysis of combined institutional factors' influence (Multiple regression) (see Table 2)
- ANOVA and Post-hoc analysis

Analysis of Individual Institutional Factors' Influence (Simple regression)

- H1: National environmental performance and food firm sustainability engagement (not significant)
- H2: National responsiveness to food loss and food waste and food firm sustainability engagement (not significant)
- H3: National agriculture sustainability efforts and food firm sustainability engagement (**significant**)
- H4: National nutritional challenge efforts and food firm sustainability engagement (**significant**)
- H5: National uncertainty avoidance and food firm sustainability engagement (not significant)
- H6: National long-term orientation and food firm sustainability engagement (**significant**)

Analysis of Combined Institutional Factors' Influence (Multiple regression)

- H1: National environmental performance and food firm sustainability engagement (not significant)
- H2: National responsiveness to food loss and food waste and food firm sustainability engagement (not significant)
- H3: National agriculture sustainability efforts and food firm sustainability engagement (**significant**)
- H4: National nutritional challenge efforts and food firm sustainability engagement (not significant)
- H5: National uncertainty avoidance and food firm sustainability engagement (**significant**)
- H6: National long-term orientation and food firm sustainability engagement (**significant**)

Multiple Regression Results

Table 2: Multiple Regression Statistics of Institutional Factors' Influence on Food Firm Sustainability Engagement				
	Unstandardized B	Coefficients Standard Error	Standardized Coefficients ß	P-value
Formal Institutional Factors				
National Environmental Performance (H1)	0.178	0.098	0.160	0.069
National Food Waste and Food Loss Responsiveness (H2)	0.143	0.133	0.074	0.282
National Sustainable Agriculture Implementation (H3)	- 1.604	0.181	- 0.726	**0.000**
National Nutrition Challenge Responsiveness (H4)	- 0.054	0.234	- 0.032	0.816
Informal Institutional Factors				
National Uncertainty Avoidance (H5)	0.288	0.056	0.583	**0.000**
National Long-Term Orientation (H6)	- 0.137	0.059	- 0.305	**0.022**
Number of Cases	504			

ANOVA and Post-hoc Analysis

- H7: significant mean firm sustainability engagement differences between:

restaurant industry (21.66) and beverage industry (28.99),

restaurant industry (21.66) and food products industry (28.95), and

food retailing industry (24.04) and food products industry (28.95).

Chapter Five: Discussion and Conclusion

Discussion and Conclusion

- Literature Implications
  - Sustainability literature implications
  - Institution-based View (IBV) theory implications
  - Management practice implications
- Future Research
- Conclusion

Sustainability Literature Implications

- Food industry poses environmental influence (H1)
- Food waste and food loss have significant influence on environment (H2)
- Food firms comply with national sustainable agriculture policies (H3)
- Healthy food choice is lacking around the world (H4)
- Uncertainty avoidance culture has higher sustainability engagement (H5)
- Long-term orientation culture has higher sustainability engagement (H6)
- Sustainability engagement in 4 food industries vary (H7)

Institution-Based View (IBV) Theory Implications

- IBV framework needs more management strategy scholars to develop stronger institutional factor measurements to understand comparative institutional differences among nations
- Institutional factors used to measure food industry sustainability engagement in this study contributed to IBV literature
- New institutional factor measurements relative to food industry sustainability could develop from this study

Management Practice Implications

- Food industry focuses on profit-maximization through mass-production, which has negative environmental and social impact
- Governments, society, and businesses need to collaborate to encourage more sustainability engagement in various food supply chain operations
- Multiple perspectives from consumers, governments, and businesses need further examination
- Sustainability support programs may encourage more food firm sustainability engagement

Future Research

- 1) Study how Lean practice adoption leads to higher food firm sustainability engagement
- 2) Sustainability engagement in different food industry sectors over the years could be examined with different ESG databases
- 3) More efficient sustainability performance measurement needed within the food supply chain for comprehensive assessment
- 4) Study how executive commitment can improve food firm sustainability
- 5) Study which sustainability support programs lead to food firm cost-savings
- 6) Study which sustainability support programs lead to higher food firm sustainability engagement
- 7) Use GLOBE model (2016) instead of Hofstede to study national and organizational cultural influence

Conclusion

- Food supply chain relationships are diverse and complex
- Further examination needed to understand why sustainability engagement is low in food supply chain (Yamamoto, 2019)
- More research needed to encourage sustainability engagement in the global food supply chain

References

BCFN Foundation. (2019). Food and Nutrition Sustainability. Retrieved from http://foodsustainability.eiu.com/

Bloomberg Finance L.P. (2019). ESG data: Bloomberg impact report. Retrieved from https://www.bloomberg.com/impact/impact/esg-data/

GLOBE Project. (2016). Retrieved from http://www.globeproject.com

Hofstede Insights. (2019). National Culture. Retrieved from https://www.hofstedeinsights.com/models/national-culture/

MSCI. (2019). Global Industry Classifications Standard (GICS). MSCI. Retrieved from https://www.msci.com/gics

References

Peng, Y. S., Dashdeleg, A. U., & Chih, H. L. (2012). Does national culture influence firm's CSR engagement: A cross-country study. International Proceedings of Economics Development and Research, 58 (9).

World Economic Forum. (2019). About the EPI: Environmental Performance Index. Retrieved from https://epi.envirocenter.yale.edu/about-epi

Yamamoto, K. N. (2019). An empirical examination of formal and informal institutional factors' influence on global food industry sustainability engagement. (Dissertation). *Digital Commons.* Newberg, Oregon: George Fox University. https://digitalcommons.georgefox.edu/dbadmin/20/