

Role of environmental trade legislation in curbing use of illegal wood use in China and Vietnam



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Presentation Outline



- Background
- Research Focus
- Research Questions
- Survey Methodology
- Descriptive Analysis of Responses
- Factor Analysis
- Conclusions & Policy Implications

Background: The Issue of Illegal Logging



- **Illegal Logging**: The harvest, transport, purchase, or sale of timber in violation of local, national or international regulations [1]
- **Activities of specific concern include:**
 - Harvesting without authority in forest reserves
 - Harvesting in excess of concession permit limits.
 - Failure to report harvesting activity
 - Violations of international agreements



Economic Impacts

Extent of Illegal Logging

- 15-30% of global forest production [1]
 - 50-90% of volume in key producer countries
 - Only ~ 15% of these products are traded internationally [2]
- Estimated 5-10% of wood traded globally [3]



Economic Costs of Illegal Logging

- \$10 billion in lost government assets and revenue [4]
- \$5 billion lost from evasion of taxes and permitting fees
- \$46 billion annual losses to legal producers [5]
 - Value captured by perpetrators of illegal logging
 - Consumers which pay a lower price (7-16% reduction)

[1] INTERPOL/World Bank. 2009. Chainsaw Project: An INTERPOL perspective on law enforcement in illegal logging.

[2] CIE. 2010. A Final Report to inform a Regulation Impact Statement for the proposed new policy on illegally logged timber.

[3] Seneca Creek Associates. 2004. "Illegal Logging and Global Wood Markets: The Competitive Impacts on the US Wood Products Industry."

[4] The World Bank. 2006. Strengthening forest law enforcement and governance : addressing a systemic constraint to sustainable development.

[5] Park, M. 2010. "A Final Report to Inform a Regulation Impact Statement for the Proposed New Policy on Illegally Logged Timber."

Environmental Impacts

- **Decreased biodiversity & loss of endangered species**

- Valuable species high-graded (selectively logged)
- Shifts in species composition
- Loss of habitat and food sources

- **Increased erosion**

- Logging on steep and unstable slopes
- High sediment loads and soil degradation

- **Deforestation & clearing peat forests**

- ~ 20% of global CO₂ emissions [1]



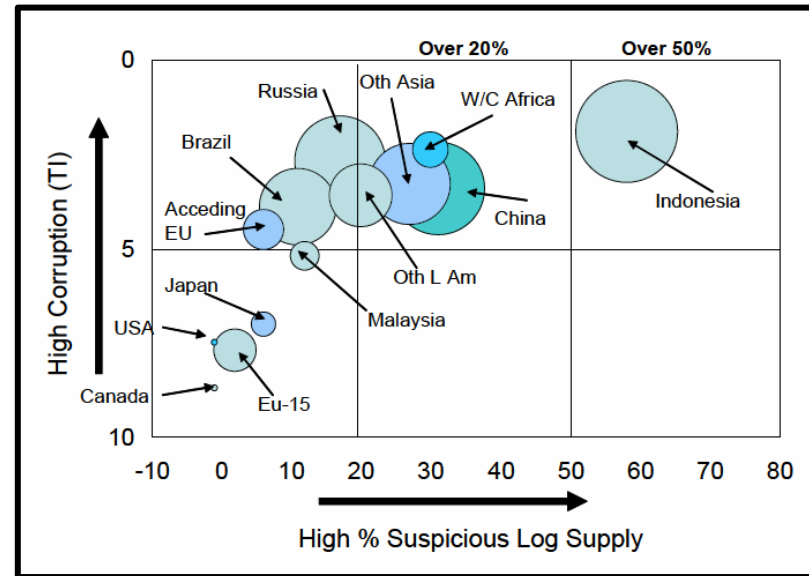
Social Impacts

Impacts on Local Residents

- Threatens one billion forest dependent people
- Marginalization and eviction of indigenous communities [1]
- Results in food insecurity and poverty

Organized crime and corruption

- Weak governance & high corruption ->
Highest proportion of illegal timber [2]
- Undermines rule of law & harms communities
- Financing for conflicts in Africa and SE Asia [3]
 - 'Conflict timber'
- **Estimated environmental and social costs**
~ \$60 billion a year [4]



Source: Seneca Creek Associates, 2004

[1] SUHAKAM. 2007. *Right to Land and Socio-Economic Development*. Human Rights Commission of Malaysia.

[2] Nellemann, C. 2012. *Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the World's Tropical Forests*. INTERPOL & UNEP.

[3] Thomson, J., and R. Kanaan. 2003. *Conflict Timber: Dimensions of the Problem in Asia and Africa*.

[4] Park, M. 2010. "A Final Report to Inform a Regulation Impact Statement for the Proposed New Policy on Illegally Logged Timber."

Responses to Illegal Logging



Timber Legality Regulations

- Japan – Goho-Wood – 2006
- USA – U.S. Lacey Act Amendment – 2008
- European Union – EU Timber Regulation- 2013
- Australia – Illegal Logging Prohibition Act– 2014



E.U. Timber Regulation (2013)



- Bans the import of illegal timber into the EU
- Voluntary Partnership Agreements (VPAs)
 - Bilateral agreements with exporting countries
 - Restrict illegal products from entering EU
- Incentives for producer countries to reform
 - Ensure access to EU Market
- ‘Due Diligence’: importers responsible for legality
 - Requires documentation of supply chain
 - Risk management measures: minimizing the risks of bringing illegal timber into market

Japanese Policy: “Goho-Wood” (2006)

- Only applies to government procurement
- No fines or penalties
- Verification through certification and documents at each transaction stage
- Only requires documents from immediate supplier



Australian Illegal Logging Prohibition Act (2014)

- Bans the import and trade of illegal timber
- ‘Due Diligence’ requirement (like EU)
- Seizure, forfeiture, fines, imprisonment
- New policy – limited time for businesses to respond



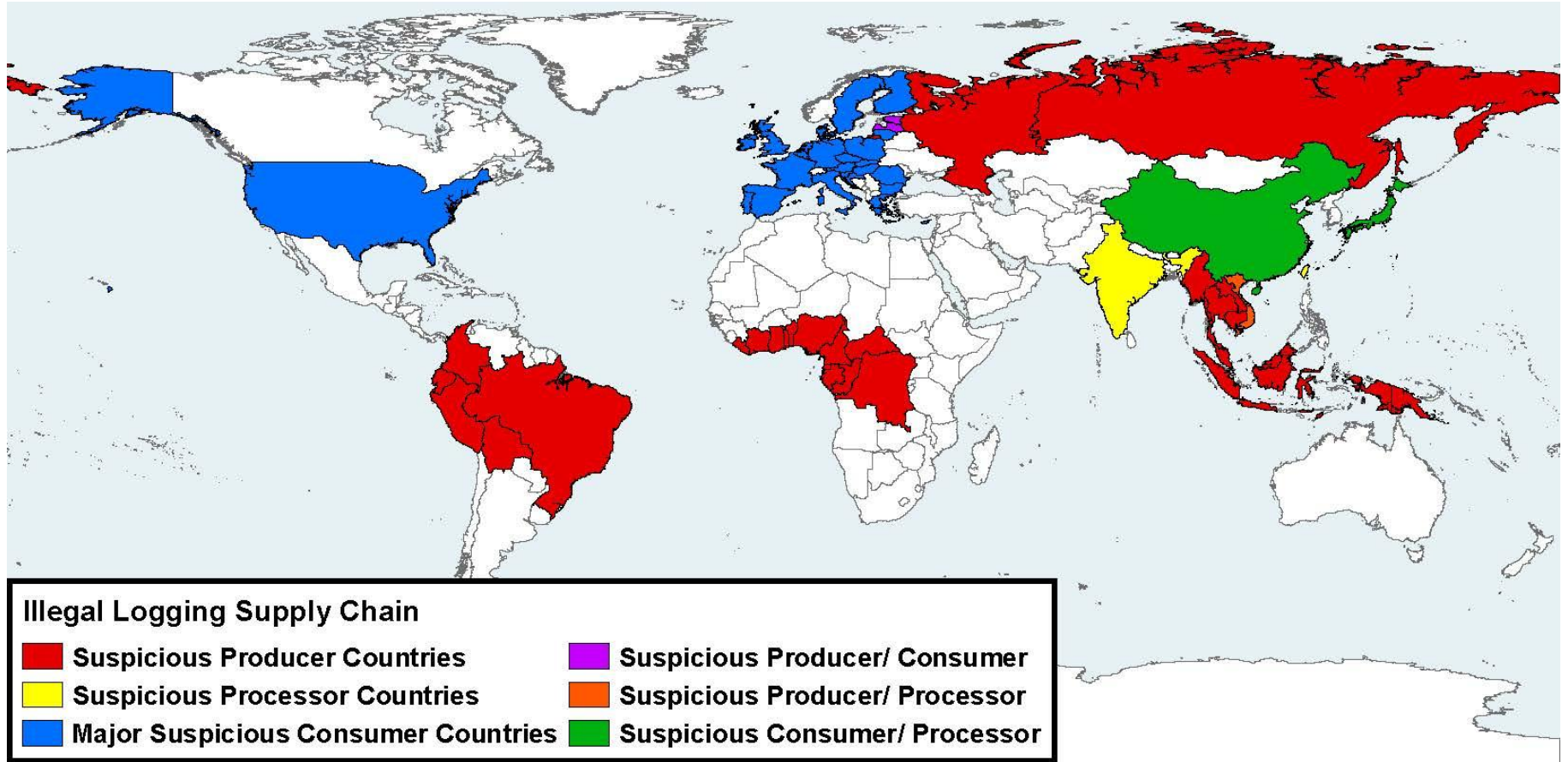
U.S. Lacey Act Amendment (2008)



- **1900**: Illegal to hunt or trade endangered animals and wild birds.
- Amendment bans the import of illegally harvested wood products
 - Must be legal under US and foreign laws
- “Due Care” standard
 - No document guarantees proof of legality
 - Compliance is a flexible concept
- Fines, forfeiture of goods, imprisonment



Research Focus



- **U.S., E.U., China and Japan: Consume > 80% illegally logged wood volume**
- **Producer countries > 15% exports suspect**
- **Processor countries > 15% suspected of being illegally sourced**
- **Focus on largest processing countries: China and Vietnam**



Research Objectives and Questions



Research Objectives:

- Clarify the effects of timber legality regulations on the Chinese and Vietnamese wood products industry

Research Questions:

- How are perceptions and awareness impacted by firms' demographic characteristics?
- How do perceptions and awareness of timber legality regulations differ between Chinese and Vietnamese wood processing firms?
- Have timber regulations led firms to shift away from regulated markets?
 - Regulatory Leakage

Survey Methodology

Tradeshows Attended:

CHINA

- March 2013 – Shanghai - DOMOTEX Asia/CHINAFLOOR Show
- Sept. 2013 – Shanghai - Furniture Manufacturing & Supply China Show
- March 2014 – Guangzhou - China International Furniture Fair

VIETNAM

- Sept. 2013 – Ho Chi Minh – Vietnam Wood Woodworking Industry Fair
- March 2014 – Ho Chi Minh - Vietnam International Furniture & Home Accessories Fair

Survey Instrument:

- Translated into Mandarin, Vietnamese
- Screening Questions – Company Managers
- **Target Population:**
 - ✦ Flooring/Furniture manufacturing companies
 - ✦ Wood product importer/exporters

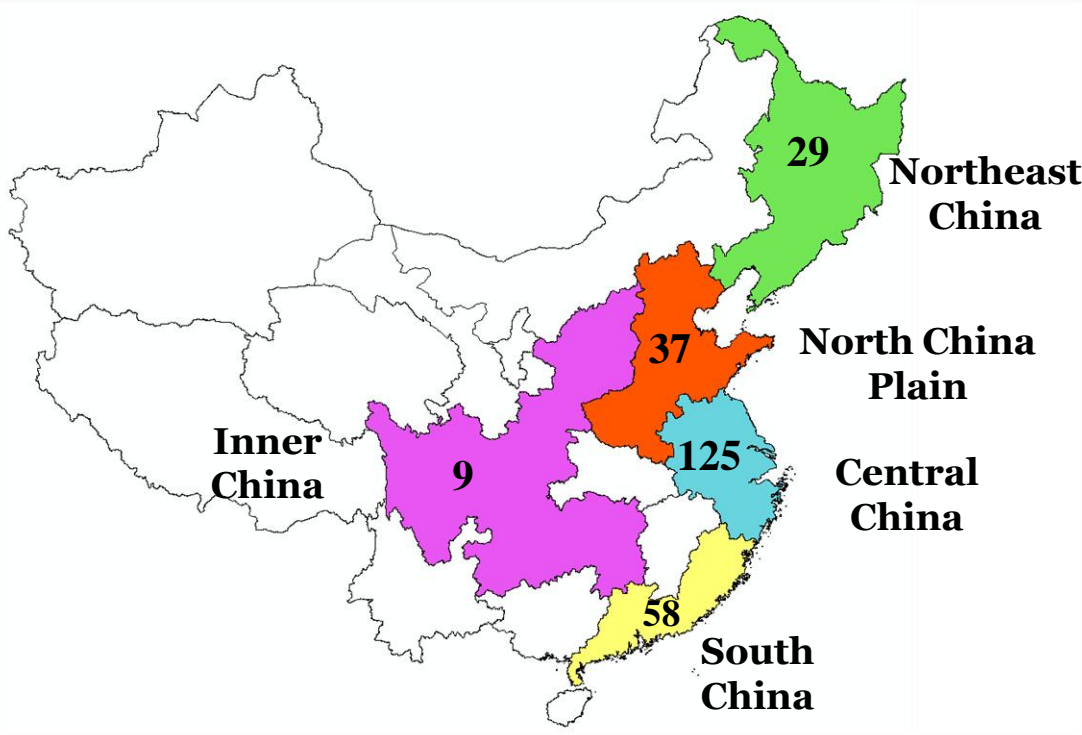
Analyses Performed



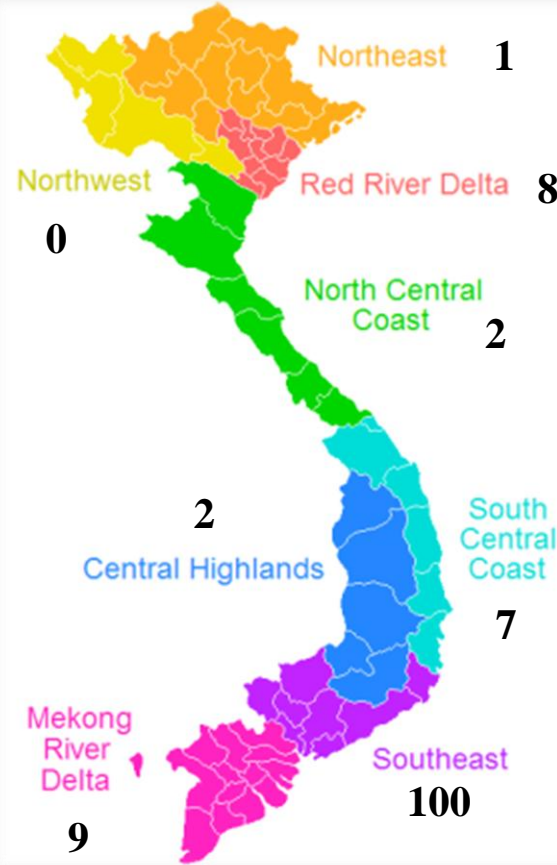
- Descriptive Analysis – Demographics & Survey Responses
- Logistic Regression – Chain-of-Custody Usage
- Factor Analysis of Perceptions and drivers of “shift”
- Multivariate Analyses
 - Hierarchical Cluster Analysis
 - NMDS & ANOSIM

Descriptive Analysis: Regional Distribution

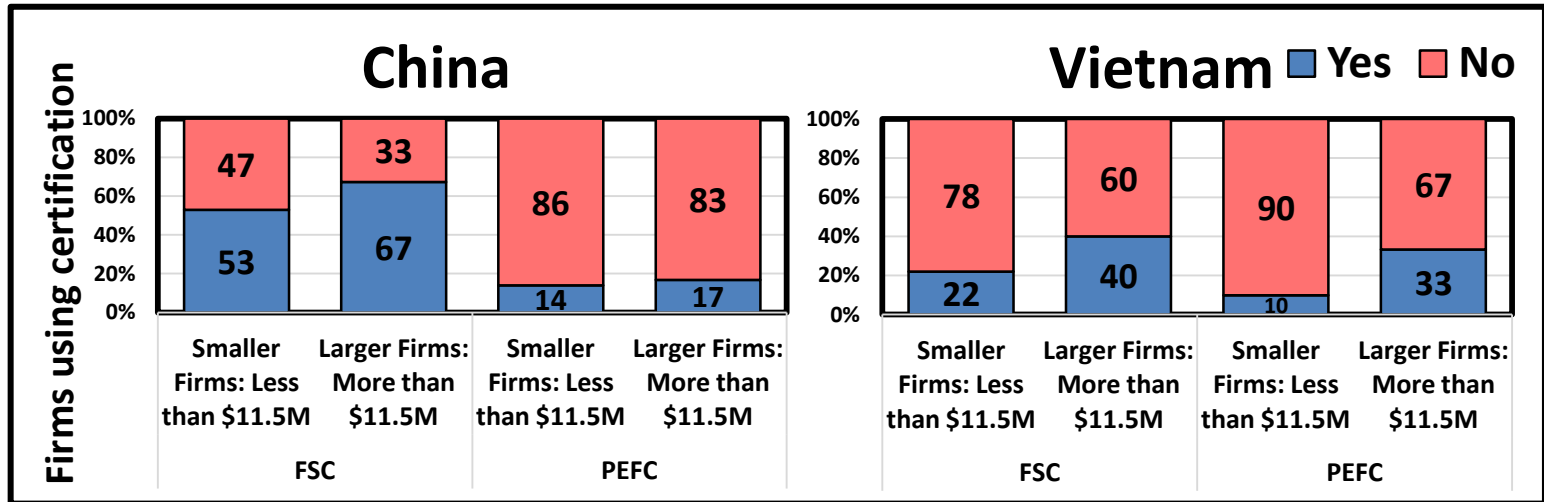
**Chinese
Responses: 262**



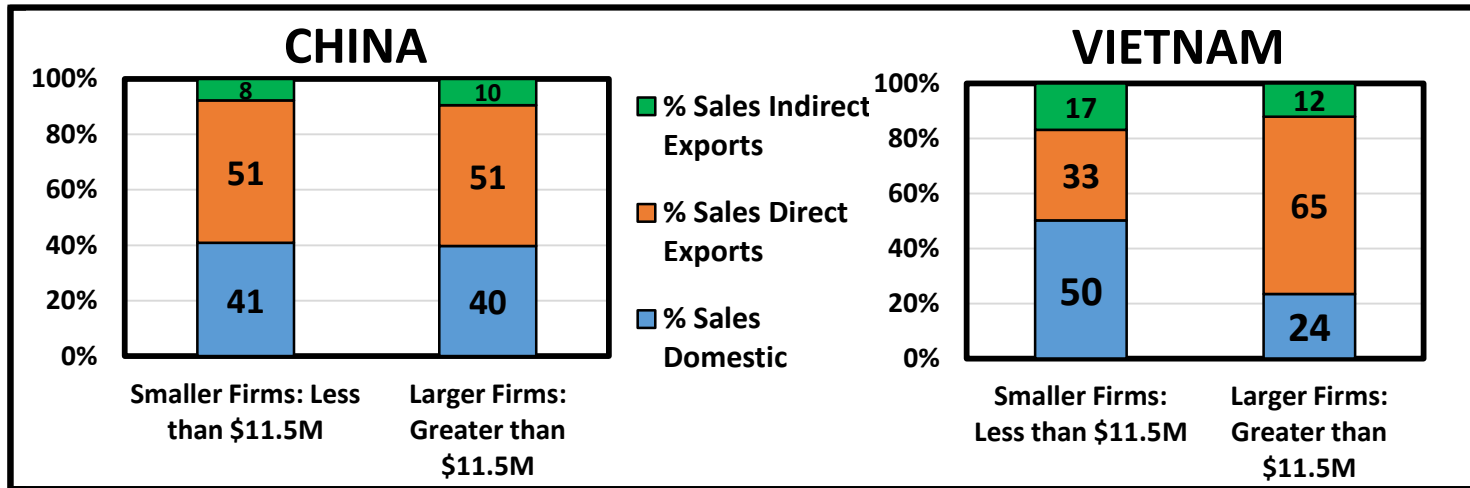
**Vietnamese
Responses: 134**



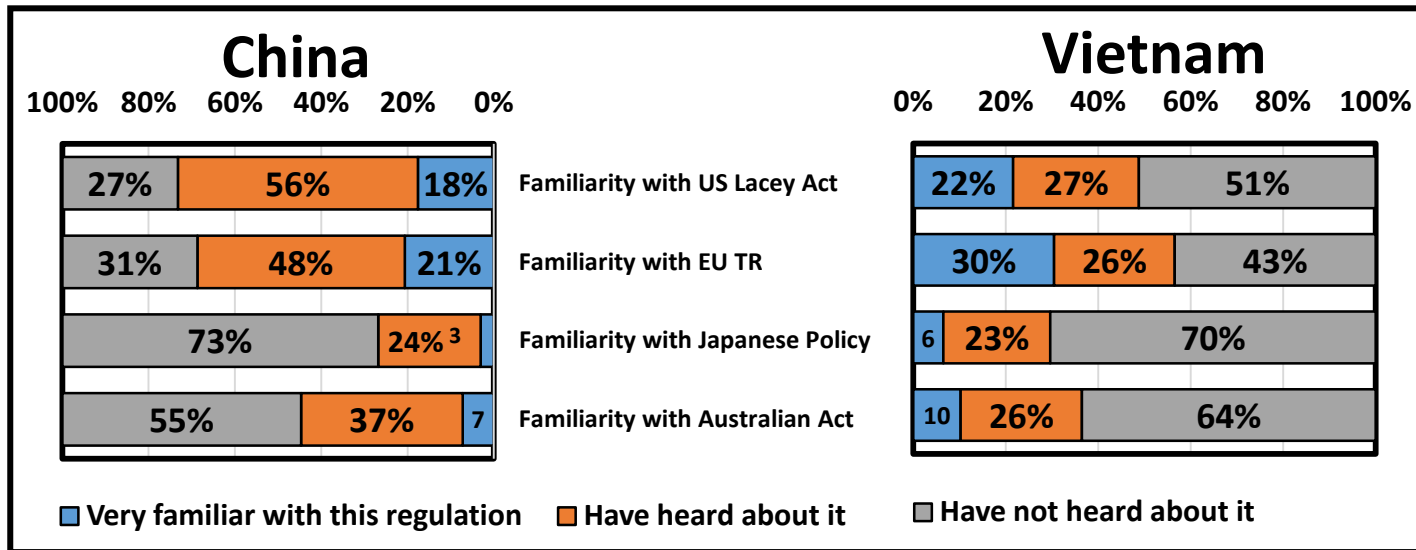
Obtained Chain-of-Custody (CoC) Certification



Channels of Distribution



Awareness of Timber Legality Regulations



Descriptive Analysis: Main Takeaways

- **China:** Awareness ↑ , Chain-of-Custody use ↑
- **Vietnam:** Awareness ↓ , Chain-of-Custody use ↓
- **Larger Firms:** % Direct Exports ↑ , Awareness ↑ , Chain-of-Custody ↑
- **Smaller Firms:** % Domestic Sales ↑ , Awareness ↓ , Chain-of-Custody ↓
- Significant interrelation between variables

Perception Factors

- Factor Analysis

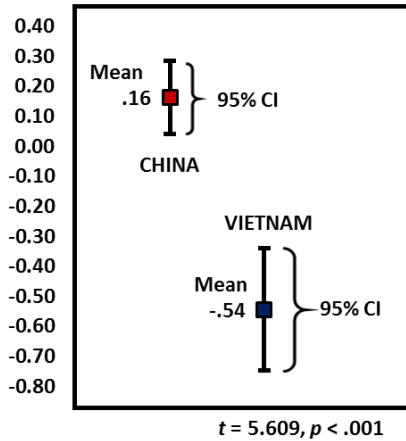
- Bivariate correlation

- Varimax rotation

- Three factor solution

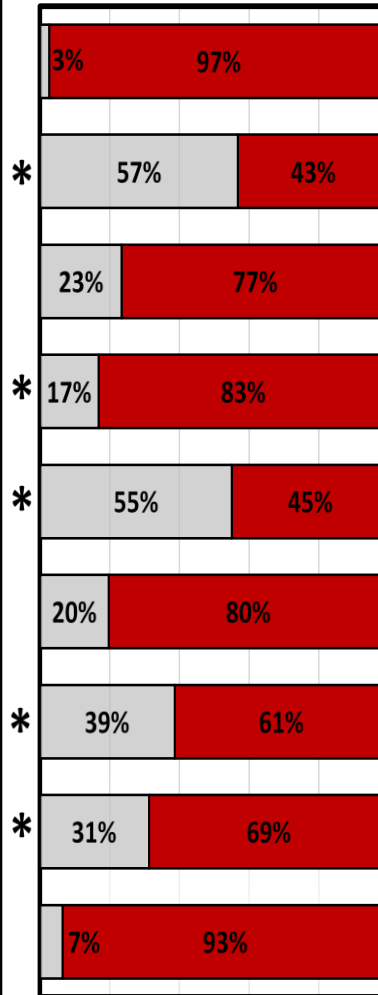
- Firms assigned composite scores for each factor

“Intend to Shift” Factor Score



CHINA

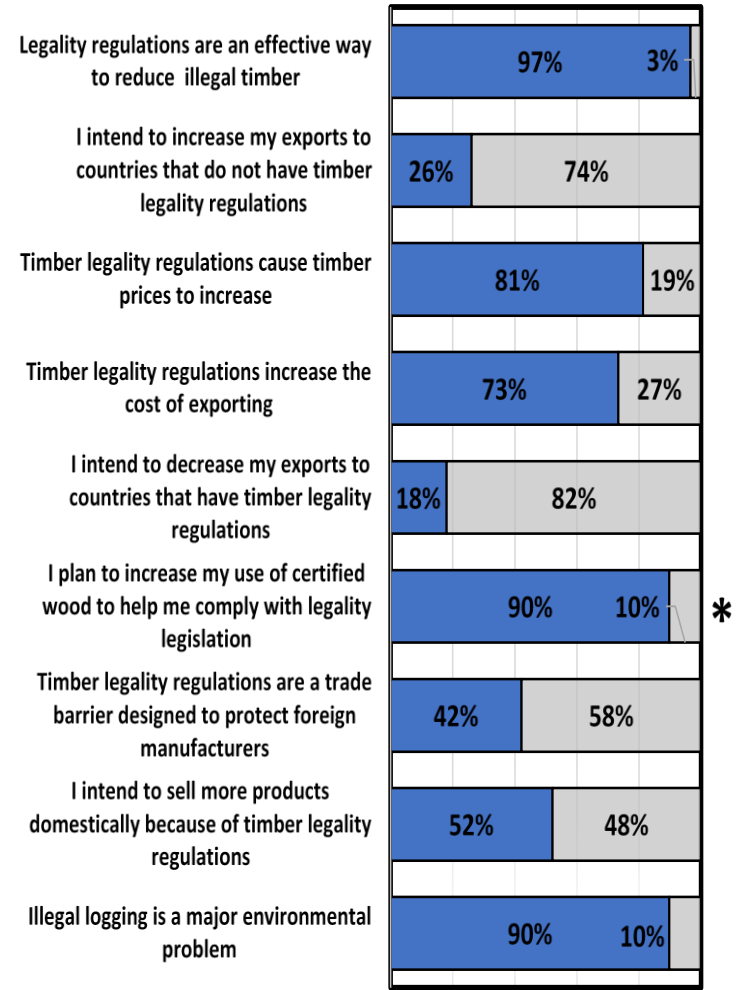
100% 80% 60% 40% 20% 0%



■ Agree □ Disagree

VIETNAM

0% 20% 40% 60% 80% 100%



* Significantly More Agree ■ Agree □ Disagree

Linear Regression

- Multiple linear regression with stepwise selection
 - Identify variables which significantly impact “Intend to Shift” Factor
- China: “Intend Shift” Drivers
 - Obtained FSC
 - Sales Domestic
 - Source US
 - Source Russia
 - Source SE Asia
- Vietnam: “Intend Shift” Drivers
 - Familiarity with Lacey Act
 - Sales US

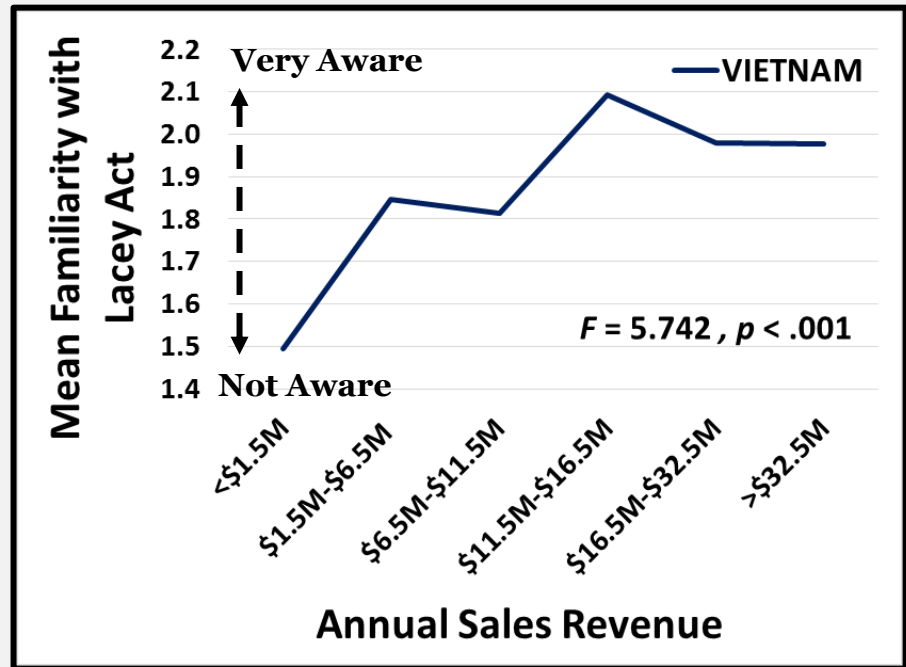
	China						Vietnam					
	Base Model			Stepwise			Base Model			Stepwise		
Coefficients	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>
Constant	.19	(.27)	.474	-.08	(.16)	.606	-.29	(.39)	.461	-.05	(.26)	.845
Furniture Manufacturer	.15	(.13)	.238				.21	(.28)	.463			
Obtained FSC	-.29	(.13)	.035 *	-.34	(.13)	.009 **	-.33	(.32)	.302			
Familiarity w/ Lacey Act	.08	(.10)	.442				-.42	(.17)	.018 *	-.28	(.12)	.027 *
Familiarity w/ EUTR	-.14	(.08)	.105				-.02	(.19)	.910			
Sales US: • Increased	-.23	(.17)	.185				.03	(.33)	.935	-.13	(.23)	.559
• Same	-.35	(.19)	.061				.47	(.45)	.305	.13	(.31)	.682
• Decreased	-.25	(.22)	.258				1.02	(.57)	.083	1.24	(.45)	.008 **
Sales Domestic: • Increased	.34	(.17)	.052	.37	(.16)	.024 *	.20	(.33)	.552			
• Same	.30	(.20)	.122	.16	(.18)	.384	.04	(.39)	.929			
• Decreased	.33	(.33)	.313	.25	(.31)	.429	.16	(.61)	.798			
Source US: • Increased	.39	(.15)	.011 *	.48	(.15)	.001 ***	.44	(.31)	.167			
• Same	.41	(.19)	.035 *	.35	(.19)	.069	.54	(.51)	.295			
• Decreased	-.15	(.28)	.607	-.12	(.28)	.655	1.01	(1.20)	.404			
Source Russia: • Increased	.35	(.15)	.025 *	.29	(.15)	.057	-1.27	(.99)	.203			
• Same	.09	(.19)	.638	.05	(.19)	.780	.55	(1.11)	.623			
• Decreased	.08	(.32)	.805	.06	(.30)	.848	-	-	-			
Source SE Asia: • Increased	-.20	(.16)	.211	-.33	(.15)	.030 *	.29	(.39)	.462			
• Same	.21	(.22)	.346	.14	(.22)	.525	.52	(.40)	.199			
• Decreased	-.03	(.33)	.922	-.09	(.31)	.774	.43	(.70)	.544			
Sales Domestic: • Increased	-.09	(.16)	.554				.02	(.31)	.942			
• Same	-.38	(.19)	.043 *				.28	(.36)	.444			
• Decreased	.09	(.29)	.750				-.44	(.76)	.565			
Model Fit												
N	250			250			62			70		
R^2_{total}	0.252			0.206			0.384			0.181		
$R^2_{adjusted}$	0.179			0.163			0.069			0.131		
<i>F</i>	3.483			4.732			1.218			3.634		
<i>df</i>	22			13			21			4		
<i>p</i>	< .001			< .001			0.287			0.01		
AIC	7.08			-4.52			24.12			-4.49		
BIC	15.83			0.65			19.76			-5.11		

Note. FSC = Forest Stewardship Council, PEFC = Programme for the Endorsement of Forest Certification
 * $p < .05$. ** $p < .01$. *** $p < .001$.

Factor Analysis: Main Takeaways - Vietnam



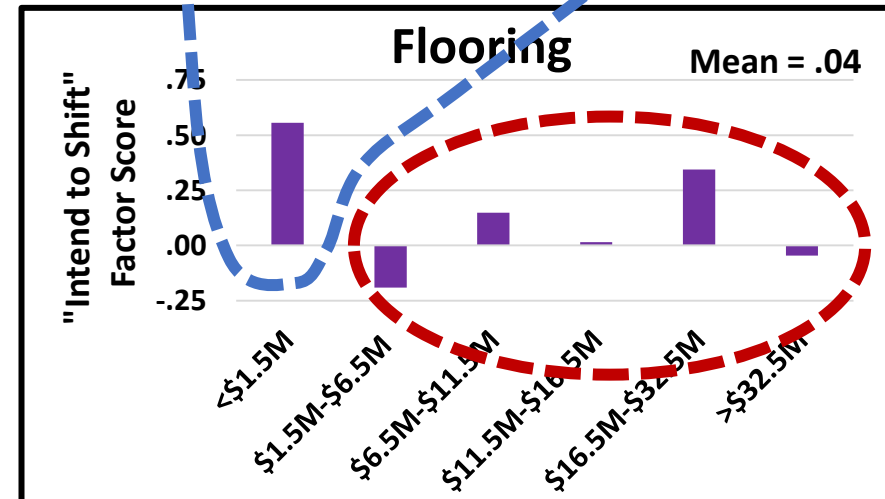
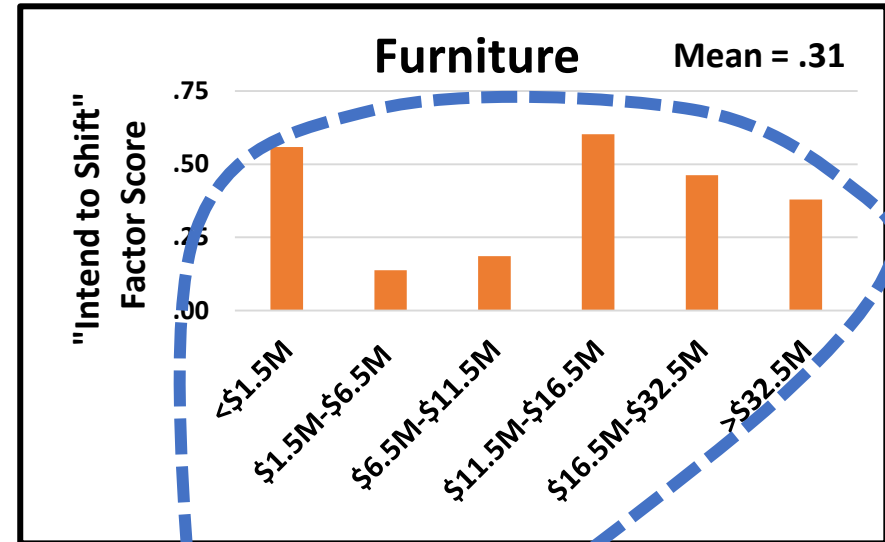
- Smaller % Intend Shift ~ 17%
- Firms which Intend to Shift:
 - Actively Decreasing Sales to the U.S.
 - Low Awareness of U.S. Lacey Act
- Awareness of Lacey Act & Firm Size
 - Large firms increasing sales to U.S.
 - ✦ Significantly more aware of Lacey Act
 - Small firms decreasing sales to US
 - Significantly less aware of Lacey Act



Factor Analysis: Main Takeaways - China

- Large Group Intends to Shift
 - ~ 54%
- “Intend to Shift” related to both:
 - Annual Sales Revenue
 - Main Business Type
 - Furniture
 - Flooring
- Segment into 2 distinct groups
 - High “Intend to Shift”
 - Low “Intend to Shift”

High “Intend to Shift”



Low “Intend to Shift”

Factor Analysis: Main Takeaways - China

- **High “Intend to Shift”**

- Furniture Firms and Small Firms
 - Increasing Domestic Sales
 - Increased Sourcing from Russia
 - Increasing Sourcing from U.S.
 - Lower use of Certification
 - Low Awareness of Regulations

- **Low “Intend to Shift”**

- Larger Flooring Firms
 - Decreased Sales Domestic
 - Decreased Sourcing Russia
 - Increased sourcing SE Asia
 - Higher Usage FSC
 - Higher Awareness U.S Lacey Act

- **Segmenting of the market:** Domestic Focus & Export Focus

- **Domestic Market Focus**

- Less concern about legality regulations
- Challenging to impact through policy

- **Export Market Focus**

- Greater concern for legal compliance
- Opportunity to impact through policy

Conclusions



- **Demographic characteristics strongly impact business practices**
 - Larger Firms: Export focus → higher awareness → CoC certification usage
 - Smaller Firms: Domestic focus → lower awareness → less CoC usage
- **Timber Legality Regulations are impacting large firms**
 - Larger firms → Aware → using chain-of-custody certification
 - ✦ Maintain or expand their relationship with consumers in regulated markets.
 - Small firms: less aware → pursuing unregulated markets
- **Division in wood products industry → Supports theory of regulatory leakage**
 - Pro-regulation → Larger → 'Regulations are Effective' → don't Intend to shift
 - Anti-Regulation → Smaller → Regulations are a trade barrier → Intend to shift
- **Division between Chinese and Vietnamese firms**
 - Chinese firms → 54% intend to shift → towards Domestic market
 - Vietnamese → only a small group intend to shift → lack of awareness

Long Term Policy Recommendations



- Multi-pronged approach
 - **Changes to current timber legality regulations**
 - ✦ Increased funding for monitoring and enforcement
 - ✦ Greater adoption of collaborative programs (like EU)
 - **Improved Forest Governance**
 - ✦ Producer and Processor Countries -> Binding regulations at national level
 - ✦ Strengthen monitoring and enforcement of imports and exports
 - ✦ China plays a critical role
 - ✦ May require global accord with national signatories
 - Significant international pressure
 - **Long-term support for training and outreach**
 - ✦ Build awareness of regulations and options for compliance
 - ✦ Government programs or industry partnerships

Limitations and Future Research



Limitations

- Regulations less than 10 years old
 - Effects not fully realized
- Study only focuses on China and Vietnam
 - Does not represent all processing countries
- Convenience sampling method
 - Firms at tradeshows may be larger, better informed than whole population
 - Best available data

Future Research

- Repeat study after 5-10 years
 - Allow firms to adjust to policies
- Expand study to include Thailand, India and Indonesia
 - More insight into smaller firms and less mature markets

Acknowledgements

- **Research Funding**

- USDA Federal-State Marketing Improvement Program
 - USDA's McIntire Stennis Program:
 - USDA National Needs Fellowship program

- **Survey Implementation**

- Softwood Export Council
 - International Travel
- American Hardwood Export Council
 - Survey Venue

Thank You!