



Applicability of Innovative Solutions for Faecal Sludge Collect & Transport Services (in Perception of Service Operators & Experts)

Presenting author: Ta Hung Anh¹

Co-author: Thammarat Koottatep¹, Chongrak Polprasert², Heli Marjanen³, Atittya Panuvatvanich¹

Organization: (1) Asian Institute of Technology, (2) Thammasat University, (3) Turku University



AIT
Asian Institute of Technology



Background Context

- Innovation solutions for FS C&T industry are lacked.
- Several innovation possibilities have been suggested but not yet applied (Chowdhry S. & Koné D., 2012).
- Testing innovative solutions is costly & time-consuming.



VIETNAM



THAILAND
tanungam.neo@gmail.com



FINLAND



Methodology

Literature review

- Innovative solutions for FS C&T services were reviewed.

Qualitative research

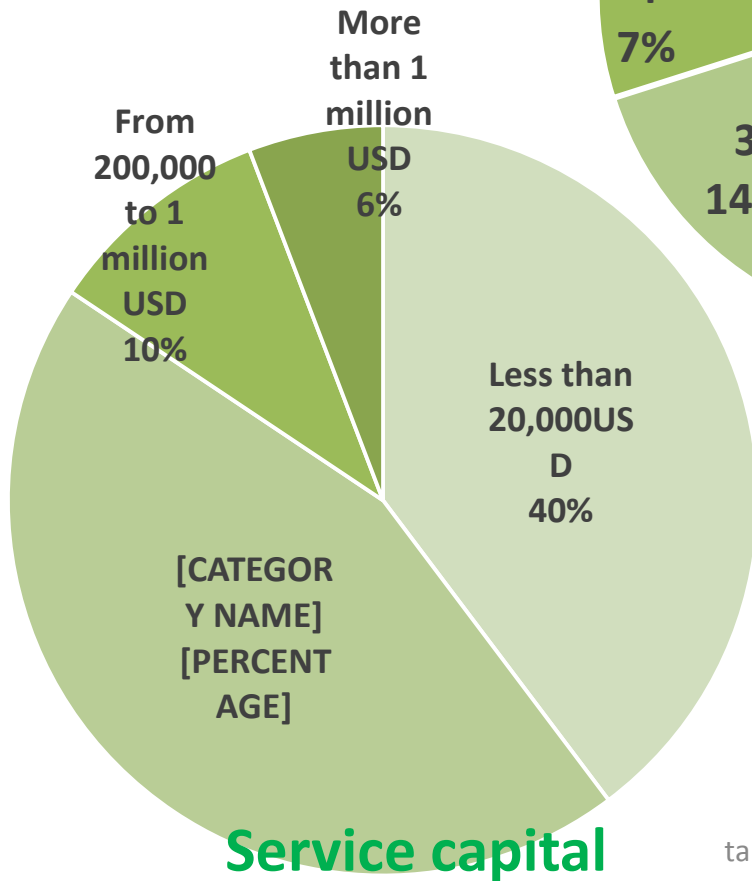
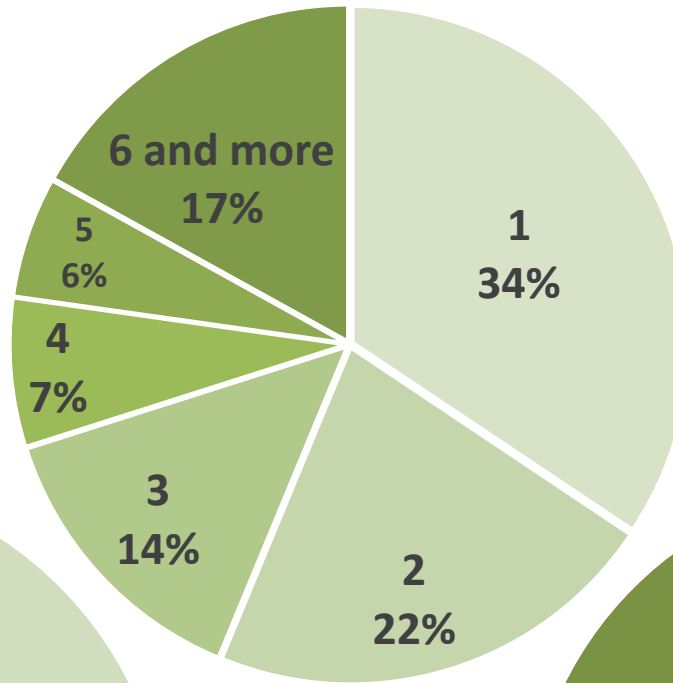
- Service provider In-depth interviews with 8 cases in Thailand, 6 cases in Vietnam and 1 case in Finland to suggest 8 innovative solutions (2014 – 2015).

Quantitative research

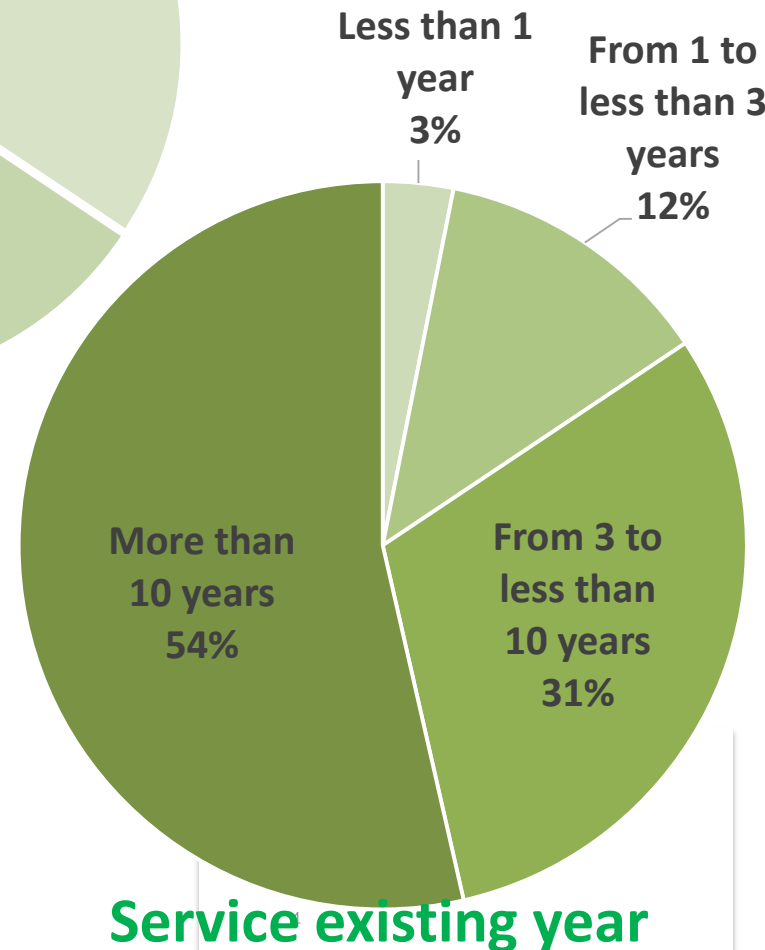
- Questionnaire survey with 224 service operators & experts in 25 countries in Asia, Africa, EU & South America.
- Data was analyzed by SPSS 16 with frequency analysis.

Findings: SERVICE CASES

Number of truck



Service capital



Service existing year

Findings: 8 INNOVATION SOLUTIONS

TECHNOLOGY	1. Improved truck having FS treatment function
	2. Logistics planning tools & GPS application for route tracking and optimization
	3. Transport distance pricing tool
	4. Volume measure device
KNOWLEGDE	5. Customer data management
	6. Environment friendly branding
RELATIONSHIP NETWORK	7. Transfer station and/or transfer truck
	8. Cooperative model linking the service providers



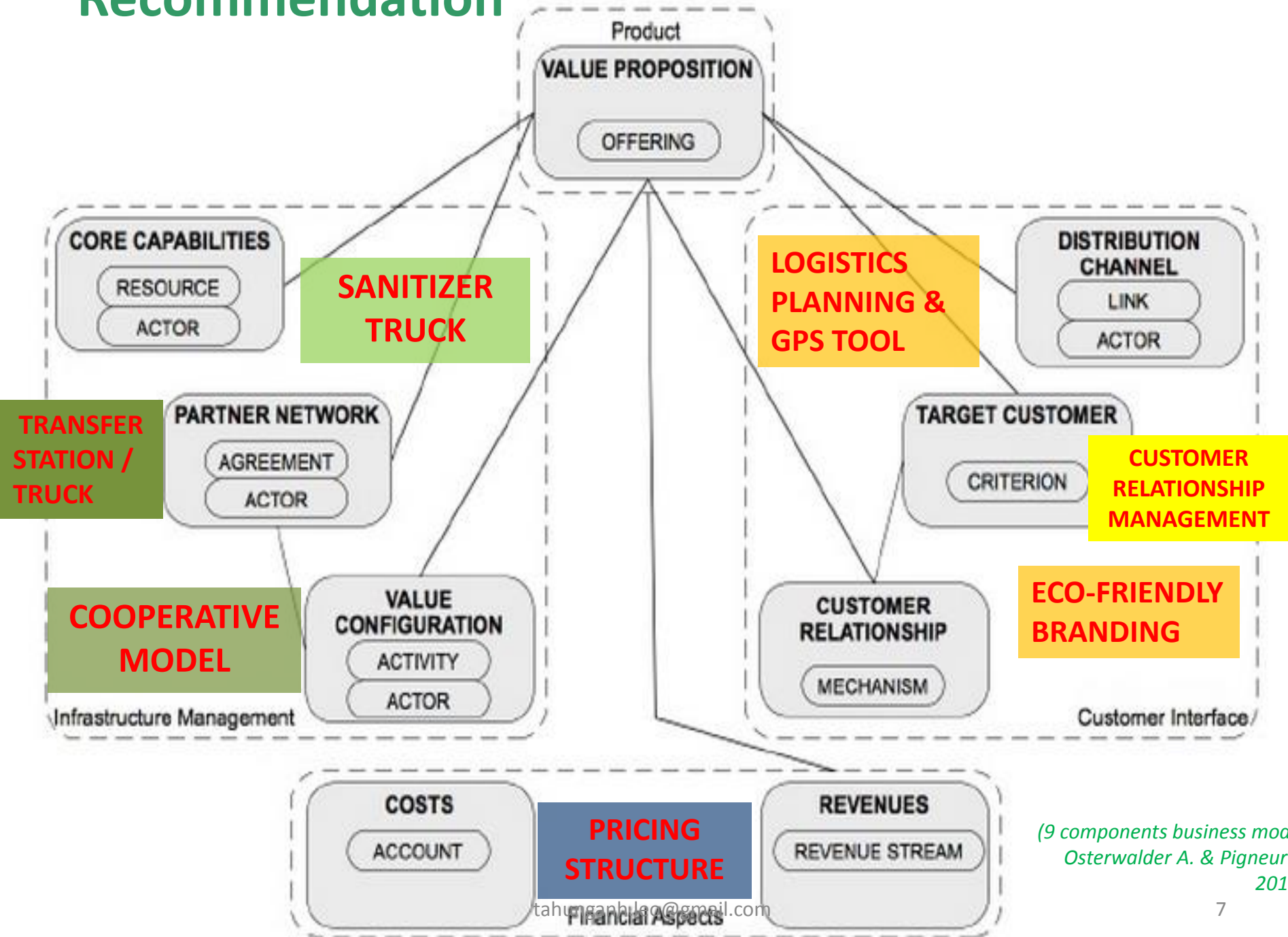
Findings: INNOVATIVE SOLUTION APPLICABILITY

Innovative possibilities	Mean Value of applicability	Standard Deviation σ
1. Environment-friendly Branding	5.65	1.32
2. Customer relationship management with customer profile management	5.42	1.33
3. Sludge volume pricing by measure device	5.38	1.37
4. Transport distance pricing by on routing application	5.20	1.49
5. Transfer station and/or transfer truck	5.12	1.58
6. Using logistics planning tools and GPS application to track and optimize route	5.08	1.56
7. Cooperative model to link the service providers	5.01	1.42
8. Using improved truck(s) with FS treatment function	4.89	1.66

- N = 224
- Likert scale: Absolutely not applicable 1 - Absolutely applicable 7



Recommendation



Conclusion

1. Due to technological barrier, the highest applicable: Environment friendly branding (5.65)
lowest applicable: Improved truck (4.89)
2. Customer relationship management & Environmental friendly branding are more acceptable & applicable with less technology involvement.

Benefit & Challenge

1. Profit & Cost effectiveness vs Eco- Friendly services.
2. Online “FSM UBER” application connecting service providers and customers.
3. Public Private Partnership (Administration control center)

Reference & Message

- Chapman, R. L., Soosay, C. & Kandampully, J. 2003 Innovation in logistic services and the new business model: A conceptual framework. *Managing Service Quality: An International Journal*, **12**(6), 358 - 371.
- Chowdhry S. & Koné D. 2012 *Business Analysis of Faecal Sludge Management: Emptying and Transportation*, Report, Bill & Melinda Gates Foundation, USA
- Mbéguéré M., Gning J. B., Dodane P.H. & Koné D. 2010 Socio-economic profile and profitability of faecal sludge emptying companies. *Resources, Conservation and Recycling*, **54**(2010), 1288–1295.
- Osterwalder A. & Pigneur Y. 2010 *Business model generation*, first edition, John Wiley and Sons, Inc., New Jersey

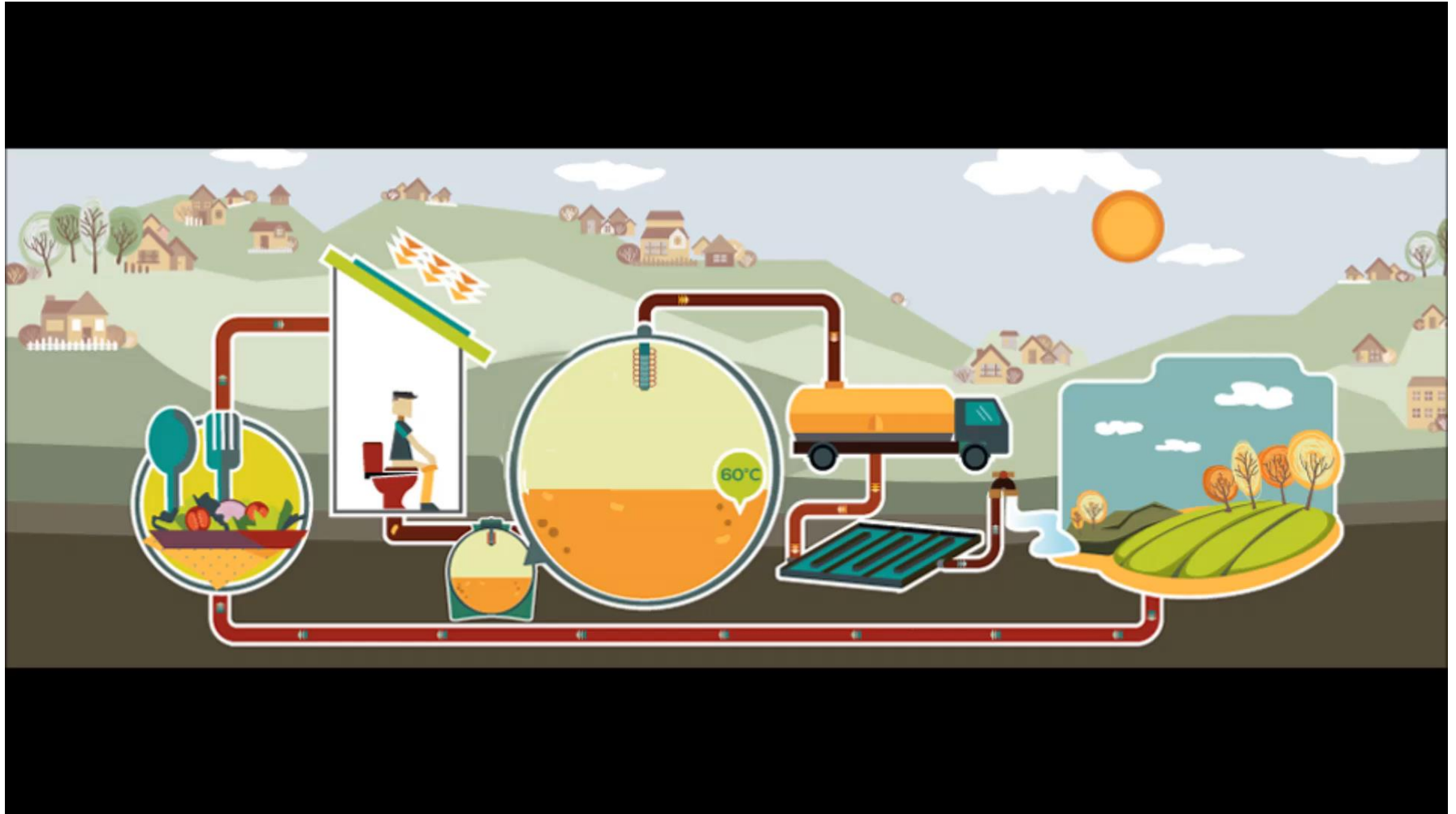


INNOVATION IS GREAT, APPLY IT IS GREATER.

tahunganh.leo@gmail.com



FSM IN THAILAND

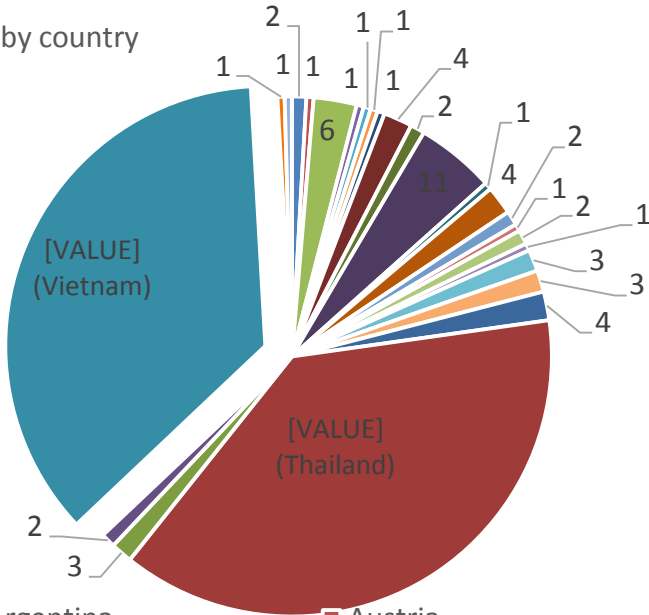


tahunganh.leo@gmail.com



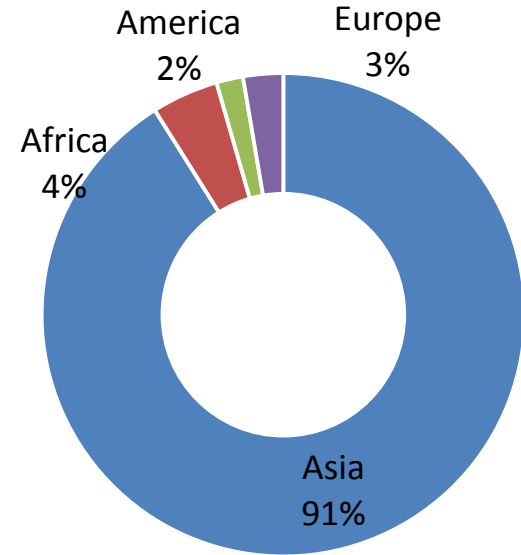
Respondent Profiles

Response by country

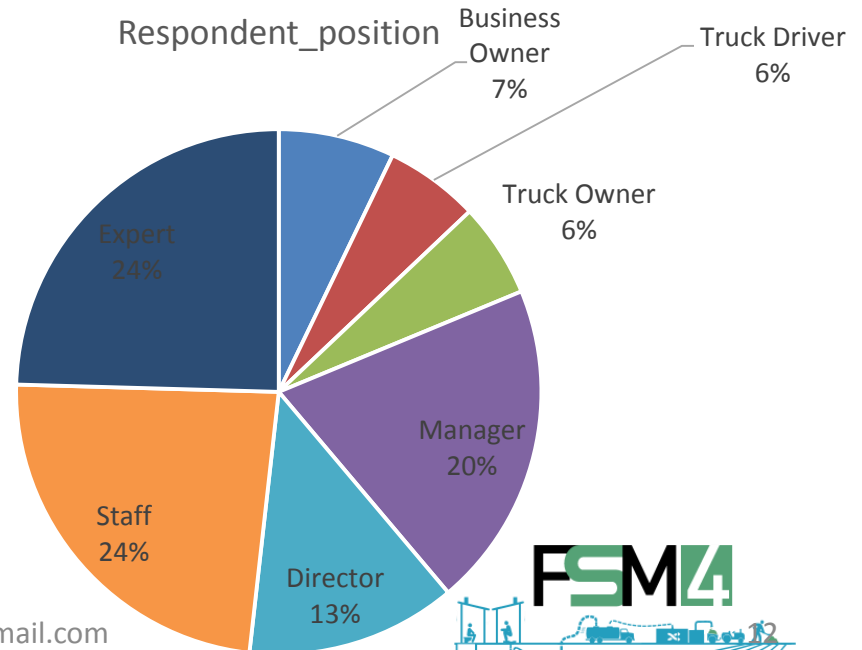


- Argentina
- Bangladesh
- Congo
- France
- Haiti
- Ireland
- Malawi
- Nepal
- Nigeria
- South Africa
- Uganda
- Vietnam
- Zimbabwe
- Austria
- Burkina Faso
- Finland
- Ghana
- India
- Kenya
- Mongolia
- Netherlands
- Pakistan
- Thailand
- United Kingdom
- Zambia

Response by continent



Respondent_position



tahunganh.leo@gmail.com

