

Systematic Implementation	(2-tailed) N		.000 121
Waste Management (Reuse and Recycle) Effectiveness	Pearson Correlation Sig. (2-tailed) N	.525** .000 121	1 121

B. Reduce and Reuse Application Level In the Organization

From Table 5.6 shows the correlation value is 0.368 and sig. (P - value) is 0.000. The results show the strength of this correlation is weak and the relationship is significant. Thus the study accepted the null hypothesis (H0), and the alternative hypothesis is rejected (HA).

Table 5.6 : **. Correlation is significant at the 0.01 level (2 - tailed)

		Reuse and reduce Systematic Implementation	Reduce and Reuse Application Level In the Organization
Reuse and reduce Systematic Implementation	Pearson Correlation Sig. (2-tailed) N	1 121	.368** .000 121
Reduce and Reuse Application Level In the Organization	Pearson Correlation Sig. (2-tailed) N	.368** .000 121	1 121

C. Reduce and Reuse Relevant Policy

Table 5.7 shows the correlation is 0.634 and sig. (P - value) is 0.000. The results show the strength of the correlation is good and the relationship is significant. Thus the study accepted the null hypothesis (H0), and the alternative hypothesis (HA) is rejected.

Table 5.7 : **. Correlation is significant at the 0.01 level (2 - tailed)

		Reuse and reduce Systematic Implementation	Reduce and Reuse Relevant Policy
Reuse and reduce Systematic Implementation	Pearson Correlation Sig. (2-tailed) N	1 121	.634** .000 121
Reduce and Reuse Relevant Policy	Pearson Correlation Sig. (2-tailed) N	.634** .000 121	1 121

D. Technique and Technology

Table 5.8 shows the correlation is 0.670 and sig. (P - value) is 0.001. The results show the strength of the correlation is good and the relationship is significant. Thus the study accepted the null hypothesis (H0), and the alternative hypothesis (HA) is rejected.

Table 5.8 : **. Correlation is significant at the 0.01 level (2 - tailed)

		Reuse and reduce Systematic Implementation	Technique and Technology
Reuse and reduce Systematic Implementation	Pearson	1	.670**
	Correlation Sig. (2-tailed)		.000
	N	121	121
Technic and Technology	Pearson	.670**	1
	Correlation Sig. (2-tailed)	.000	
	N	121	121

E. Stakeholders Awareness

Table of 5.9 shows the correlation is 0.907 and sig. (P - value) is 0.001. The results show the strength of the correlation is good and the relationship is significant. Thus the study accepted the null hypothesis (H0), and the alternative hypothesis (HA) is rejected.

Table 5.9 : **. Correlation is significant at the 0.01 level (2 - tailed)

		Reuse and reduce Systematic Implementation	Stakeholders Awareness
Reuse and reduce Systematic Implementation	Pearson	1	.907**
	Correlation Sig. (2-tailed)		.000
	N	121	121
Stakeholders Awareness	Pearson	.907**	1
	Correlation Sig. (2-tailed)	.000	
	N	121	121

6. Conclusion and Recommendation

There are some findings found from this research. From the correlation analysis, the result could be concluded that the entire hypotheses are positively associated with the implementation of systematic implementation of reuse and recycle practices in the construction industry. Based on overall results, found stakeholders awareness variable have very strong relationship with 0.907 value. The table shows a list of hypotheses with 'r-value' and 'p-value':

Table 6.1 : List of the Hypothesis with the Values of r and p

	Alternative Hypothesis	r	p	Result
HA 3(1)	There is a positive relationship between Waste Management (Reuse and Recycle) Effectiveness and Reuse and reduce Systematic Implementation	0.525	0.000	Significant
HA 3(2)	There is a positive relationship between Reduce and Reuse Application Level In the Organization and Reuse	0.368	0.000	Significant

	and reduce Systematic Implementation			
HA 3(3)	There is a positive relationship between Reduce and Reuse Relevant Policy and Reuse and reduce Systematic Implementation	0.634	0.000	Significant
HA 3(4)	There is a positive relationship between Technic and Technology and Reuse and reduce Systematic Implementation	0.670	0.010	Significant
HA 3(5)	There is a positive relationship between Stakeholders Awareness and Reuse and reduce Systematic Implementation	0.907	0.000	Significant

7. Suggestions and Improvements

Based on the research findings, among the suggestions and views obtained are including unskilled workers and professional in the construction projects should have knowledge and skills to handle construction materials and must practice waste management especially when they are at the construction site. The respondents also suggested that the waste management approach of construction materials are included in the contractual obligations towards more efficient waste management. At the same time, the local authorities are encourage to increase the numbers of Recycling Site specifically on construction waste materials. Other suggestions towards improving the waste management approaches are include :

- i. Makes reuse and recycling more simple and easy to practice.
- ii. Provide appropriate disclosure to the parties involved on reuse and recycle.
- iii. Providing guidelines, criteria, methods of work, checklists, and related training.
- iv. Increase agency/organization to monitor the reuse and recycle management at the construction sites.

Based on respondents' views, they are concerned of the basic knowledge related to the implementation of the reuse and recycle approaches at the construction sites.

9. Acknowledgement

We would like to thank the Malaysia's Ministry of Higher Education (MOHE) who funded this research through Research Acculturation Collaborative Effort (RACE) grant.

References

- Begum, R., Siwar, C., Pereira, J., & Jaafar, A.H. (2006) A. H. A benefit–cost analysis on the economic feasibility of construction waste minimisation: The case of Malaysia. Resources, Conservation and Recycling, *Elsevier Science Ltd.*, 48, (1), 86-98.
- CIRIA, (2001). *Sustainable Construction: company indicators*. Report No. C563, Published in the UK.
- Coventry, S., Woolveridge, C., & Patel, V. (1999). *Waste minimisation and recycling in construction - boardroom handbook*, Special Publication, vol. 135, CIRIA, London.
- Kibert, C. J., (2008). *Sustainable Construction –Green building Design and Delivery*. Hoboken, NJ., John Wiley.
- Nagapan, S., Rahman, I. A., Asmi, A., Memon, A. H., & Latif, I. (2012). Issues on construction waste: The need for sustainable waste management. In *Humanities, Science and Engineering (CHUSER), 2012 IEEE Colloquium on* (pp. 325-330). IEEE.
- Ngoc, U. N., & Schnitzer, H. (2009). Sustainable solutions for solid waste management in Southeast Asian countries. *Waste management*, 29(6), 1982-1995.
- Nitivattananon, V., & Borongan, G. (2008). Report on reduce, reuse and recycle (3r) practices in construction and demolition waste management in Asia. *Asian Institute of technology, school of Enviornment, Resources and development, Thailand*.

- Shen, L. Y., & Tam, W. Y. V. (2002). Implementing of environmental management in the Hong Kong construction industry. *International Journal of Project Management*, 20 (7), 535-543.
- Tam, W.Y.V., & Tam, C.M. (2008). Evaluations of existing waste recycling methods: a Hong Kong study. *Building and Environment*, 41, 164– 166.
- Wilburn, D.R., & Goonan, T.G., (1998). *Aggregates from natural and recycled sources*. Geological Survey circular 1176, 36.

Biography

Wan Nadzri Osman obtained a Bachelor of Science in Housing Building and Planning (HBP) from Universiti Sains Malaysia (USM) in Construction Management in 2006 and subsequently obtained a Master of Science in Project Management in 2007 also from the same university. After graduation, he started to work as a Research Assistant in the School of Housing, Building and Planning. Subsequently served as Corporate and Logistics Manager in Kolej Teknologi dan Antarabangsa (KTP) before joining Universiti Utara Malaysia (UUM) in the School of Technology Management and Logistics (STML) and subsequently completed a PhD in 2013 in the field of Technology Management. Currently a senior lecturer in STML and seconded to the Centre for University-Industry Collaboration (CUIC) in 2014 as Chairperson for Innovative-Industrial Collaboration Division. In 2011, research grants with the title of Supply Chain Management In Construction Industry has won the best research in UUM. Have a keen interest in research primarily involves the construction field, including Sustainability in construction, Green Technology Practices in the construction, Waste Management in the construction industry as well as Value Management in construction projects.

Mohd Nasrun Mohd Nawi is an Associate Professor and he is a specializes in the area of integrated design and construction management. He holds a PhD the field of Construction Project Management from the University of Salford, UK. As an academician and a fully qualified Building Surveyor, he has been active in research and consultation works relating to the areas of Industrialised (offsite) and Modern Method of Construction, Integrated Design Delivery Solution (i.e. Integrated Project Delivery, Lean Construction, Building Information Modelling), Sustainable (green) Construction, Life cycle costing & Value Management, Building Performance (i.e. Energy Management and Audit) and Management of Technology. Besides being involved actively in various academic activities, he is also an active author with various publications especially in the area of Construction and Technology Management.

Rohaizah Saad is a Senior Lecturer in School of Technology Management and Logistics (STML). She obtained her PhD in management at UUM and specialized in Quality Management, Quality Tools and Continuous Improvement activities. She joined UUM in May 2006 and lectured for undergraduates, postgraduates and supervises the Phd and DBA candidates. Besides her academic achievements, Dr Rohaizah is also a Member of Malaysia Institute of Management (MIM). Currently, she is appointed as Malaysian Qualifications Agency (MQA) Assessment Panel for Management and Operation Management Programs. Her main research area and publications are in Quality Management Continuous Improvement activities. Prior joining UUM as academician, Dr Rohaizah was with the industries for 20 years started as an Assistant Accountant, Accountant, Finance and Admin Manager and Quality Manager in various industry among all manufacturing, financial and distribution organization. Her working experience also include as key senior staff of the ISO 9001 team. She help organization to be certified with ISO 9001. After that she become ISO 9001 consultant to few of organization such as Gah Manufacturing Sdn Bhd.