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A Comparative Study of Public Sector Sustainable Procurement Practices, Opportunities and Barriers

Md. Mazharul Islam[*] and Chamhuri Siwar[**]

The reported study was conducted to compare and contrast current sustainable procurement (SP) practices including the main opportunities of, and barriers to, engagement with SP between two countries, Australia and Malaysia. The results are based on data collected from surveys using a standard questionnaire in both countries. The result shows that some SP practices are evident in public sector procurement practice and that the extent and nature of SP practices varies significantly between two countries. In particular, Australian public organizations placed stronger emphasis on safety aspects of SP while Malaysia placed greater importance on diversity. However, Malaysian public sector organizations came out ahead on most dimensions of SP practices. The public sector organizations in both countries reported that financial pressures is the most significant barrier to SP implementation whilst organizational efficiency and transparency provided optimal opportunities for implementing SP practices. This study provided practical insights into whether and how government policies are being implemented in both countries.

JEL Codes: Q*56*, M14*,* H1

1. Introduction

Government expenditure is having a significant share of her GDP's in each country around the world because countries in both developed and developing regions are using public procurement to pursue social goals such as reduce unemployment rate, raise labour standard, provide employment opportunities for disable persons, and promote gender, racial and ethnic equality (McCrudden 2004). Spending is now at historically high levels of 40% of gross domestic product (GDP) in OECD countries (Hall 2010), 49.1% of GDP in 27 European countries (Eurostat 2012) and rising in developing countries. We often think of government play role as regulating market participants, sometimes encouraging markets through competition law, or restraining them through minimum wage laws. But Government also increasingly play a role as active participants in the market itself, purchasing public works, suppliers, and services (McCrudden 2004). Due to importance of the public sector expenditures, initiatives on sustainable public procurement have flourished from the beginning of 20th century.

Public procurement was identifies as one important instrument for stimulating more environmentally sound goods and services and called country governments to promote public procurement policies that encourage development and diffusion of environmentally sound goods and services (WSSD 2002). Moreover, United Nations

[*]Mazharul Islam, Lecturer, Department of Strategy, International Business and Enterprise, Swinburne University of Technology, BA Building, John Street, Level 10, Hawthorn, Melbourne, Vic 3122 Australia, Tel: +613 92148606
[**]Chamhuri Siwar, Professor, Institute for Environment and Development (LESTARI), University Kebangsaan Malaysia. Tel: + (60 3) 89214154, Fax: (+603) 89255104, Email: csiwar@ukm.my

(2008) has stated that sustainable public procurement has emerged as a powerful way to stimulate more sustainable consumption and production patterns for society at large and more generally to contribute to the achievement of sustainable development goals. In response to the call of World Summit on Sustainable Development (WSSD 2002), various governments, international and regional organizations and networks includes International Green Purchasing Network (IGPN), Local Governments for Sustainability (ICLEI), North American Green Purchasing Initiative of the Commission for Environmental Cooperation (CEC NAGPI), UNEP(2008b), ILO/ITC have been active in promoting sustainable public procurement through various policies, awareness raising, toolkit development and capacity building activities. For example: in 2003, the European Commission adopted a Communication on Integrated Product Policy (IPP), which recommended that Member States increase the level of green public procurement and elaborate national action plans that set targets and outline the concrete measures to implement this policy. In 2005, the UK government stated its goals to be amongst the leaders in Europe on sustainable procurement by 2009. SP services, products and processes are in place for London's 2012 Olympic Games (Gilbert 2011). Thus, sustainable procurement is considered as the new link between environmental, economic and social factors being taken into account in purchasing decisions, and thereby portrays the concept of sustainable development in practical and feasible ways.

As the importance of sustainable procurement (SP) in establishing and maintaining a global sustainable development and competitive position is realised, there has been an increasing interest by governments to become involved in making their procurement more sustainable as purchaser and at the same time regulator. As a result, SP, including ethical procurement (Wild & Li 2011) and e-procurement (Angeles & Ravi 2007) has become a fast-growing field of interest in corporate and government organizations across many parts of the world and emerging area of research. The number of sustainable procurement studies has increased (Fossgard-Moser 2003; McCrudden 2004; Michelsen, Fet, & Dahlsrud 2006). A related and more established body of literature is the environmental purchasing literature (Walker et al. 2006) which has been predominantly conducted in private sector organizations, particularly in manufacturing industries. The studies tend to focus on environmental issues in procurement (Simpson & Power 2005; Stonebraker & Liao 2006; Srivastava 2007; Svensson 2007) and the development of tools to assist green procurement policy implementation (Günther & Scheibe 2005; Günther & Scheibe 2006; Li & Geiser 2005) rather than addressing social and economic aspects, and SP practices in the public sector organizations. Most of the works referenced above have been based on UK, Europe (western), USA and Japan.

There is no study has been conducted to examine about the extent to which SP policies and practices are embedded within the practice of public procurement professionals between developed and developing countries. Although, the overall pattern, nature and context public expenditure relating to purchases of goods and services differ between countries due to several reasons such as legal framework, budget system and accounting practices, political commitment, technical capacity, both management and strategy design (United Nations 2008). Furthermore, SP issues have long been neglected in developing economies as opposed to available data from developed economies. Comparative analysis of public sector SP practices, opportunities and barriers between developed and developing nations provided fresh

input into the SP discourse. There is, therefore, a need for studies to be reported of the findings from other countries. In this paper, attempts are made to fill gaps found in the literature.

Like most other countries, Australia and Malaysia have committed themself to sustainable development practices and generated procurement policies and practices that encourage the development and dissemination of environmentally sound goods and services. For example, in Australia, the leading organization at the local level is the ECO-Buy programme of the Municipal Association of Victoria, which works with local councils to increase the purchasing of recycled, climate-friendly, water saving, non-toxic and other green products (United Nations 2008). Similarly, Malaysian government is stimulating local industry through maximum use of local materials and resources and technology transfer, supporting Bumiputera (indigenous) business, and promoting local service industries. Though a number of programmes and initiatives have been taken by both countries and a wide array of initiatives is under way aiming to support the deployment of SP practices but very little is known about the extent to which SP policies and practices are embedded within the practice of public procurement professionals (Walker & Brammer 2009). This study has conducted to identify the differences and similarities of procurement director's/manager's perception with SP practices, opportunities and barriers between Australia and Malaysia. Both Malaysia and Australia share a similar system of government; that is a system of government grounded in the British Westminster System. Likewise, both Malaysia and Australia are federal states and hence each country also faces issues associated with Federal-State relations. Moreover, Malaysia and Australia are part of the same region, therefore facing the same regional issues. These reasons provide a logical framework for Malaysia and Australia to consider, and learn from, the government practices of both countries. The research also provided a consistent and shared base of evidence to guide sustainable procurement programs and policy planning in both countries Australia and Malaysia.

The remainder of the paper is structured as follows. In the next section, we review relative positions of the Malaysian and Australian public sectors and the wider literatures on SP practices, barriers, and opportunities, into which our study contributes. Subsequently, we outline our empirical methods, including an analysis of the sample before presenting our results and discussion. We then discuss practical implication and limitation. A final section discusses the conclusion.

2. Literature Review

2.1 Overview of Public Sector in Australia and Malaysia and a General Comparison

Public sectors today hold sizeable share of economic activity in a number of developed and developing economies, which includes France, Japan, Germany, Italy, Australia, South Korea, China, Malaysia, Philippines, Indonesia, Sri Lanka and India. Public sectors contribute sizeably to the gross domestic product and investment and a sizeable portion of the workforce in the economy in a wide range of developed and developing countries (Dun and Bradstreet 2008). Public sector has a large capacity to influence the economy through spending. Preferential procurement

thus places government in an incredible powerful position to help key drivers within economy (Wu 2007).

Australia and Malaysia have almost the same population size which is around 20 million (Karim et al., 2007). However, in terms of the economic and public sector indices, there are large differences between these countries. Like other countries, public sector plays a major role in the Australian and Malaysian economy, with levels of contribution to GDP and employment considerably exceeding other individual sectors. Yet, perhaps the most distinctive feature of public sector is its changing role in the Australian and Malaysian economy. In Australia's current population of almost 20 million around half are employed. Of this 10 million, a little over 1.5 million, or around 15 per cent, are employed by government. This public sector workforce is made up of the three levels of government-national (federal or Commonwealth), state and local government-of which the state government workforce is by far the largest at around 73 per cent of the total (APS 2003). Similarly, total public sector expenditure was 510.16 billion in 2010 with growth rate 6.23 per cent (IMF 2011). In particular, Australian governmental entities, state and federal, spent around $132 billion on procurement activities in 2011(OECD 2011). On the other hand, the structure of the Malaysian economy has achieved a remarkable change from public sector base to private sector participation after independence in 1957. But the public sector is still playing a major role in the Malaysian economy. The public sector expenditure has been increased to $76.48 billion in 2010 with 6.29 per cent growth rate (IMF 2011). In particular, Malaysian governmental entities, state and federal, spent over $27.1 billion on procurement activities (WTO 2010).

Presently, the public sector having more challenges for sustainable development as prime consumers of goods and services. Table 1 reported that Australian public sector expenditure on goods and services is more than five times of Malaysian public sector whilst government of both countries are often the single biggest customer within a country. At the same time public sector for both countries are growing positively. In this point of view, governments of both countries can potentially use their purchasing power in order to achieve desirable environmental and social outcomes, and to influence the behaviour of private sector organizations.

Table 1: An Overview of the Relative Positions of the Malaysian and Australian Public Sectors for 2010 is presented in

	Australia	**Malaysia**
GDP (US$)	1235.54 billions	237.96 billions
Public sector expenditure	510.16 billions	76.48 billions
Public sector expenditure growth (%)	6.23	6.29
Public sector share of GDP (%)	37.16	31.08

Source: IMF, World Economic Outlook Database, August 2011

Note: National currency has converted to US dollar with the exchange rate in 5th of September 2012

2.2 Practices, Barriers and Opportunities of Sustainable Procurement

This section of the study reviews the SP practices, barriers to implementing SP, and the opportunities of implementing SP in public and private sector organizations discussed in the existing literature. The literature is developing rapidly on this area and there remains much to learn about the level of adaptation of SP practices by organizations and the barriers that are facing to implementing SP practices as well as the opportunities having by the organizations for implementing SP practices. This section begins with has looked at the international context to SP practices i.e. at what steps are being taken by government to encourage SP. The literature identifies the five common aspects of SP. These include concern for the environment, diversity, philanthropy, human rights, and the safety implications of products and services (Carter & Jennings 2004). These five aspects were extended to include buying locally and buying from small suppliers by Walker and Brammer (2009). All these aspects considers the design and packaging of products, purchasing from small and local suppliers, their potential for recycling or reuse, safety, labour rights, carbon reductions in the movement of products to facilities, and the willingness of suppliers to commit to waste reduction goals. In addressing SP practices, this study adopts all these dimensions used by previous studies.

The degree of adoption and implementation of SP policies may significantly vary across countries with regard to the economic, cultural and political conditions of the respective country (IISD 2004). For example, European Commission (2005) revealed that degree of development of sustainable public procurement were outstanding in Austria, Denmark, Finland, Germany, the Netherlands, Sweden and the United Kingdom than the rest of European countries. To extend the literature on this particular area, this study investigated the nature and extent of current SP practice and how this varies across a developed and newly developed country.

In addition, the adoption and implementation of SP policies may have a substantial effect on reducing the adverse environmental and social impact of business operations. In addition, SP practices have the potential to improve work conditions such as labour standards, promote health and safety, alleviate global environmental issues to assist disadvantaged groups in society, encourage foreign investment, secure the employment of a generation, alleviate social problems in other parts of the world, and enhance an organization’s image. The literature shows that SP practices include: improving efficiency and transparency, improving compliance, financial savings, meeting goals and targets, improving the work environment, and contributing to the modernization and international competitiveness of local industry, thus reducing use of natural resources including improving the quality of air and water (Aitken 2002; DEFRA 2006; OECD 2003; UNEPa 2008).

This part of this section summarises information that relates to ‘barriers’ to SP. The existing literature highlights significant barriers to the development, adoption and implementation of organizational SP with barriers significantly varying across countries and sectors. For example, Walker and Brammer (2009) report that financial constraints rank highly in the United Kingdom, while in the rest of the world product, quality and availability of sustainably produced alternatives rank as number one. Nevertheless, a common finding of many studies according to Preuss (2007) is that financial constraints in the form of cost/price, lack of budget, and lack of resources,

pose the largest barrier to adopting SP practices. At the same time, UN (2008) reported that lack of training for public procurement officers has been identified as the single most important barrier to the implementation of SP practices in OECD countries.

Other contributing obstacles stated in existing literature are a lack of awareness (Reijniers & Tazalaar 2008), decentralised/devolved purchasing structures (Alliance & Derek 2006; Aitken 2002), conflicting priorities, culture/attitude (such as the mindset and commitment of the organization and its staff to sustainable development), time pressure, lack of pressure to act (Reijniers & Tazalaar 2008), the lack of long term organizational observations (Dickinson, McDermott, & Platten 2008), lack of top management commitment (Powell et al. 2006; Forster & Miller 2004), concerns about the quality of 'sustainable' products, supplier availability, the election cycle, conflicting environment/social factors (Walker & Brammer 2009), product availability (Walker & Brammer 2009; Li & Geiser 2005), lack of guidance (Powell et al. 2006), lack of contract management (Min & Galle 2001), and lack of political support (Christoph 2003; DEFRA 2006).

3. Research Methodology

3.1 Survey Design and Sample

To address the research objectives, this study utilizes a mixed methods approach comprised of quantitative and qualitative techniques. The main advantage of using mixed methods is that triangulation is enhanced, which is the substantiation of research results so as to increase the study's validity and achieve greater depth and insights into the phenomenon under investigation (Rocco et al. 2003).

A questionnaire was developed using two established validated instruments. Additional items were included relating to procurement director's/manager's perception of opportunities to implementing sustainable procurement. This study used of measurement scales developed in a previous study of Purchasing Social Responsibility (PSR) (Carter & Carter 1998; Carter & Jennings 2004) and SP Practices (Walker & Brammer 2009) which has the advantage of utilising a scale of proven reliability and validity. PSR construct consisting of five unique dimensions: the environment, diversity, human rights, philanthropy, and safety and SP construct consisting of 'procurement from local at small firms' dimension.

A review of the literature merged with data generated from interviews with procurement directors/managers informed the development of a new instrument with 15 items to capture the dimension opportunities of implementing sustainable procurement. This study anchored 52 closed items to Likert-type scales with responses from 1 (strongly disagree) to 5 (strongly agree). In addition, six open items were included to uncover the procurement directors or managers' workplace experiences and perceptions on sustainable procurement. The use of open items allows researchers to gain a better understanding of the underlying relationships identified by the respondents (Yin 1994). Responses to open items provide researchers with rich explanations of processes in specific contexts (Rocco et al. 2003). To address demographic characteristics, this study included 11 items at the end of the questionnaire.

A stratified sampling method was used for sampling decisions. A postal survey was distributed to 400 procurement directors/senior managers across eight selected public sector organizations in Australia and Malaysia in March of 2011. This survey was sent a second time to organizations by email that did not respond to the initial mailing. A total 43 surveys (30 from Malaysia and 13 from Australia) were returned as undeliverable because the recipient had changed address or branch has been closed and 98 surveys were returned (50 from Australia and 48 from Malaysia) completed for a response rate of 27.5%. This is acceptable as the literature advocates that a response rate in excess of 20 % is acceptable for postal surveys (Hair et al. 2006, pp. 1-899). But I cannot be absolutely sure how many survey questionnaires ultimately reached procurement directors/senior managers. It is difficult to be precise regarding the final rate of response. However the authors ensured that the procurement directors/senior managers were truly involve with company procurement process.

3.2 Data Analyses

The study has conducted confirmatory factor analysis and explored the reliability of the factors identified using Cronbach's alpha. Broadly this analysis confirmed the validity and reliability of the dimensions of SP identified by Carter and Jennings (2004) and Walker and Brammer (2009) and the author of this study. Cronbach's coefficient α is the most widely used test of internal consistency (Bryman & Cramer 1999). Reliability tests were conducted for all the instruments studied and *F* test in reliability analysis is used to measure the uniqueness of the instruments. Summary results of the tests are presented in Table 2 which indicate that the instruments studied in the study are internally consistent and each of the instruments is unique and not a repetition. Reliability scores were higher than 0.70 and exceeded the acceptable minimum value of a = 0.60 (Yusuf et al. 2004) thus indicating the reliability of the instrument in the Malaysian context.

Table 2: Reliability of Constructs Used in This Survey

Constructs	Australia			Malaysia		
	α	*F*	*p*	α	*F*	*p*
Sustainable Procurement practices	0.84	14.70	.000	0.90	9.86	.000
Opportunities to implementing sustainable procurement	0.87	7.99	.000	0.93	6.80	.000
Barriers to implementing sustainable procurement	0.86	7.59	.000	0.75	4.94	.000

The qualitative data was analysed using thematic analysis (Creswel 2003). The themes were extracted and coded until a saturation of themes was attained (Miles & Huberman 1994). The rationale of this approach is that the quantitative component provides a general understanding of the research problem, and the qualitative component exploring the perceptions of the respondents in greater depth provides support for, and greater understanding of, the primary purpose (Creswell & Plano 2007). The qualitative data set was used to provide support for the primary purpose of the mixed methods through seeking additional information to explain the statistical results of the primary data set. A multivariate analysis has conducted to provide a useful complement to the descriptive snapshot.

To examine the differences between groups, the most appropriate and exclusively used statistical tool is analysis of variance (ANOVA) (Gelman 2005). Even though ANOVA is generally considered suitable for continuous (dependent) variables, many studies have successfully used ANOVA for ordinal type data such as from the Likert scale (Essa & Fortune 2008). Consequently the study used ANOVA analysis to compare the differences between Australian and Malaysian public sector organization's SP practices, opportunities of and barriers to implementing SP practices.

4. Results and Discussion

As the principal objective of this study is to explore the differences in SP practices including the main opportunities of, and barriers to, engagement with SP between Australian and Malaysian public sector organizations, this section begins with procurement practices i.e. at what steps are being taken by public sector organizations to encourage SP. Subsequently the study highlight barriers to greater involvement in SP and opportunities of implementing SP. Mean values for each item are presented along with any significant differences identified between the two countries established via an ANOVA test.

4.1 Comparison of Public Sector Sustainable Procurement Practices

SP practices may vary systematically across countries according to differences in the emphasis of policy, focus, cultures and the particular constraints that specific country face (IISD 2004). The respondents were asked to rate the importance of a list of SP practices that are embodied in current practice of their organization on a Likert scale ranging from 1 for strong disagreement to 5 for strong agreement. The findings of the nature and degree to which 16 aspects of SP were currently well established within an organization's procurement practices are presented in Table 3. The findings reported that interestingly the public sector organizations in both countries adopted the same aspects of sustainable procurement purchasing practices on a priority basis, i.e. they purchase from local and small suppliers, ensure that the supplier is operating in a safe manner, ensure that sweatshop labour is not being used, ensure the safe incoming movement of product to organization facilities, and they reduce packaging materials. However, the Malaysian public sector organizations have adopted more aspects of SP practices and have significantly higher mean value than the counterpart Australian public sector organizations except safe incoming movement of product to organizations and reduce packaging materials aspects. It is understandable, as Malaysia is a newly emerging industrial country (Mahmood 2000) and as it has to compete harder in the international market, it placed significantly more emphasis on SP practices (compared with Australia). This result is strongly aligned with the public sector procurement guideline of Australia which recommended considering packaging of products is important for sustainability issue. It appears that Malaysian public sector placed priority on business performance aspects whilst Australian public sector on environmental aspects of SP.

Table 3 shows that the Australian public sector organizations placed highest priority on ensuring the safe transportation of product to organisation and ranked buying from local suppliers as number two. On the other hand Malaysian public sector organizations focused on buying from local suppliers and ranked as number one

procurement practice whilst buying from small companies as number two. Table 3 also indicates that the Australian public sector organizations have no significantly ($p = 0.351$) higher mean value than Malaysian public sector organizations to ensuring the safe transportation of product to organisation. In contrast, Malaysian public sector organizations have a significantly ($p = 0.031$) higher mean value than Australian public sector organizations on buying from local suppliers. Different socio-economic goals of different governments could be the reason for placing the different priorities of SP practices. For example, Malaysia has long used significant preferences in public procurement to further sensitive developmental policies targeted at improving the economic strength of native Malays who are mainly involve with small business (McCrudden 2006). Malaysian government limits procurement to domestic sources unless one is not available. All supplies contracts with a value between RM 10,000 and RM 100,000, and works contracts up to RM100,000 were reserved for *bumiputera* (Native Malays) means local suppliers and at least 30 percent of contracts were set aside for *bumiputera* contractors (McCrudden 2004). On the other hand, Australian Government's procurement framework is designed to support the activities of agencies in the delivery of government programs and services such as building quality infrastructure and delivering quality employment services (Australian Government 2009).

Table 3: Means and ANOVA Significance for Sustainable Procurement Practices

Practice	Australia	Malaysia	*F* sig
Uses a life-cycle analysis to evaluate the environmental friendliness of products and packaging	2.82	3.48	0.004
Has a formal minority and women owned business enterprise (MWBE) supplier purchase program	2.24	3.17	0.000
Participates in the design of products for recycling or reuse	2.66	3.19	0.024
Ensures the safe incoming movement of product to our facilities	4.18	4.04	0.351
Purchase from MWBE define suppliers	2.26	3.19	0.000
Volunteers at/for local charities	3.04	3.56	0.046
Asks suppliers to commit to waste reduction goals	3.45	3.50	0.340
Purchases from small suppliers	2.60	3.81	0.001
Visits suppliers' plants to ensure that they are not using sweatshop labour	2.62	3.31	0.006
Participates in the design of products for disassembly	2.20	3.31	0.000
Asks suppliers to pay a 'living wage' greater than a country's or region's minimum wage	2.64	3.19	0.016
Donates to philanthropic organizations	2.90	3.31	0.081
Ensures that suppliers' location are operated in a safe manner	3.40	3.90	0.021
Ensures that suppliers comply with child labour laws	3.16	3.79	0.007
Purchases from local suppliers	3.70	4.15	0.031
Reduces packaging material	3.65	3.46	0.107

To place the results for Australia and Malaysia in a wider international context, a comparison was made with results from the world's leading developed countries. In Table 4, the top five SP practices that are embedded within the practice of public procurement professionals of Australian and Malaysian public sector organizations are compared with the UK, USA, CANADA and Western Europe as reported by Brammer and Walker (2007). It can be seen that other than Australia, all countries placed purchases from local suppliers on top of the SP practices priority list. Australian government has serious concern on protecting the health or safety of persons, or the environment than support and encourage of local suppliers. For example, Ministry for Environment recommended ensuring the minimization of resource consumption and waste associated with the production, delivery, use and disposable of products and services purchased by government (Commissioner for Environmental Sustainability 2006). Consequently Australian government does not impose automatic import licensing (WTO 2007). However, purchases from local suppliers still are the second most important SP practice for Australia. The authors acknowledge the limitation of comparing with Brammer and Walker's findings as that study was conducted in 2007.

Table 4: Comparison of SP Practices (Degree of Importance Indicates by Rank)

Rank	UK*	Western Europe*	USA/ Canada*	Australia	Malaysia
1	Purchases from local suppliers	Purchases from local suppliers	Purchases from local suppliers	Ensures the safety incoming movement of products to organization facilities	Purchases from local suppliers
2	Purchases from small suppliers	Purchases from small suppliers	Purchases from small suppliers	Purchases from local suppliers	Ensures the safety incoming movement of products to organization facilities
3	Ensures the safety incoming movement of products to organization facilities	Reduces packaging materials	Purchases from MWBE suppliers	Reduces packaging materials	Ensures that suppliers' locations are operated in a safe manner
4	Ensures that suppliers comply with child labour laws	Ensures the safety incoming movement of products to organization facilities	Ensures the safety incoming movement of products to organization facilities	Asks suppliers to commit to waste reduction goals	Purchases from small suppliers
5	Ensures that suppliers' locations are operated in a safe manner	Asks suppliers to commit to waste reduction goals	Has a formal minority and women owned business enterprise supplier purchase program	Ensures that suppliers' locations are operated in a safe manner	Ensures that suppliers comply with child labour laws

* Source: Author 2012, Brammer & Walker 2007

It is interesting that SP practices are relatively similar in UK and Malaysia with a greater emphasis on purchasing from small/local companies, and worker safety whilst Australia and Western Europe placed greater emphasis on environmental aspects of procurement. At the same time, SP practice in the US and Canada is characterised by a much greater adoption of buying companies that owned and operated by ethnic minorities and women. As most of the SP leading countries consider purchases from local suppliers and small companies as the main SP practice, it can be concluded that the policy makers of public sector organizations in Australia and Malaysia consider focusing more on 'buy from small and local suppliers' as well as retain an environmental focus and address future policy iterations in order to achieve sustainable development.

4.2 Comparison of Assumed Barriers to Implementing Sustainable Procurement

The respondents were requested to show the level of agreement to the barriers to SP activities in their organization that have to be overcome in order to implement SP. The summary of the information relates to 'barriers' to SP is listed in Table 5 on a scale between 1 and 5. It can be seen that mean values for all of the barriers are well above 3.0 in Malaysia while the mean values of 50% of barriers are below 3.0 in Australia. It indicates that the public sector organizations in both countries agreed with barriers suggested in this study survey whilst Malaysian respondents were more agreed than Australian respondents. The pattern of opinion is generally the same for both countries. It is clear from Table 5 that both countries reported that the most problematic barriers are in essence financial. Similarly, the procurement directors in UK public sector organizations identified financial viability as the most important barriers to the implementation of SP. Most of the respondents felt that they were held back by additional costs of more sustainable options, perceptions of inability to offset whole cost, and simple lack of resources and budget to do anything other than what is conventionally expected. Respondents reported that sustainably produce products are more expensive than competitor products. For example, two typical respondents from Australia and Malaysia respectively highlighted that:

> *Production cost is higher for sustainably produce products such as biodegradable and reusable bags than plastic bags. Thus cost factors play a role in that choice. Cost can be a barrier to selection of green options.*
> *Higher price claim by suppliers of green products due to higher production costs and distance of sources for environmentally friendly products. Thus as a public funded organizations, it is difficult to make selection for green products.*

Table 5 also stated that though the pattern of opinion is generally the same for both countries but there are significant differences in perceptions between two countries in all barriers of SP practices ($p<0.01$). The Malaysian respondents placed all barriers more important than Australian respondents. Some professed barriers are disproportionately significant in Malaysia. For example, concerns with attitude/culture, political support, and lack guidance are ranked relatively highly. Australian respondents are disagreed with these barriers while Malaysian respondents considered these as significant barriers. Australian respondents believe that guidelines, culture/attitude, top management commitment, political support and long term view for SP is exist. This statement strongly supported by the Commissioner for Environmental Sustainability (2006) report by highlighting that Australian government has developed an extensive environmental purchasing guide, environmental purchasing checklists, and a range of other tools for procurement officers and these are available on the department's website. On the other hand, Malaysian respondents highlighted managerial, cultural, political and informational issues as other important blockers of SP. For example, two typical respondents from Australia and Malaysia respectively highlighted that:

> *I believe there is quite a lot guidelines, commitment of top management, political support and information about long tern benefits of SP in Australia however until legislation increases it will be difficult for major corporate*

organizations to justify the cost premiums that are often associated with SP.
There are very minimum efforts to pursue SP by the private and government actors in Malaysia.

Table 5: Means and ANOVA Significance for Barriers of Sustainable Procurement Practices

Barriers of SP Practices	Australia	Malaysia	*F* sig	UK*
Cost/Price	3.56(1)	4.15(1)	0.010	1
Awareness	3.45(2)	3.92(5)	0.003	2
Lack resources	3.14(7)	3.81(8)	0.001	3
Lack budget	3.28(6)	3.96(4)	0.002	4
Decentralised/devolved	2.92(10)	3.46(16)	0.010	4
Conflicting Priorities	3.06(8)	3.71(11)	0.004	5
Perceptions of cost	3.44(3)	4.08(2)	0.006	6
Attitude/Culture	2.97(9)	3.98(3)	0.000	6
Lack long term view	2.48(15)	3.67(13)	0.000	6
Lack top management commitment	2.42(16)	3.35(18)	0.000	7
Quality criteria	3.32(4)	3.75(9)	0.027	8
Supplier availability/ awareness	3.06(8)	3.69(12)	0.001	8
Lack political support	2.62(14)	3.50(15)	0.000	9
Time pressure	3.34(3)	3.83(7)	0.018	9
Lack guidance	2.66(13)	3.73(10)	0.000	10
Product availability	3.30(5)	3.85(6)	0.009	11
Lack pressure to act	2.34(18)	3.44(17)	0.000	11
Nothing	2.36(17)	3.19(19)	0.000	11
Election cycle	2.36(17)	3.44(17)	0.000	11
Lack of contract management	2.88(12)	3.50(15)	0.006	12
Conflicting environmental /social factors	2.90(11)	3.60(14)	0.001	12

Note: Parentheses value refers the rank of barriers to SP, * Source: Walker & Brammer 2009

On the other hand, Australian procurement directors placed ‘awareness’ as number two barriers though each state has developed policies on environmental procurement and guidelines and Web tools to increase awareness (Johnson 2004). The respondents believe that the existing efforts of states to increase awareness are not adequate. For example, one remarkable response was:

There are some efforts have been taken by each state to increase awareness on sustainability and sustainable buying procedures in last few years but these are inadequate, uncoordinated and lack of sectoral linkages; therefore, failing to leverage their full potential to increase awareness level on SP for mass peoples.

It is very interesting to see from Table 5 that the perceptions of Australian and UK public sector organization's procurement directors/senior managers on barriers are almost similar while the perceptions of Malaysian procurement directors/senior managers are different. So we may say that responses of procurement directors/senior managers from three countries suggest that barriers to implement SP differ across countries and country status such as developed and developing. Developing countries which just beginning the work on SP tend to cite 'soft' barriers-awareness, lack of guidance, culture/attitude amongst staff.

4.3 Comparison of Assumed Opportunities of Implementing Sustainable Procurement

To discover the opportunities that Malaysian and Australian public sector organizations experiencing, respondents were asked to rate the importance of a list of opportunity factors that impact on the competitive advantage of their company, using a Likert scale ranging from 1 for strong disagreement to 5 for strong agreement. Comparison of opportunities of SP that reported by procurement directors/senior managers in two countries is presented in Table 6 which suggests that procurement directors/senior managers in both countries employ opportunities of SP suggested in the questionnaire. Australian public sectors ranked meeting goals and targets as the number one opportunity of SP and improve air and improve organization's/council's public image as number two. However, mean scores of these opportunities are close (4.02 and 3.87 respectively). This findings are clearly supported by Environment Protection Authority Victoria (2005) with a statement that the incorporation of procurement practices geared towards environmental sustainability produced positive outcomes for business (such as enhanced organization reputation, goals and target) and for the environment (such as air and water quality). On the other hand, Malaysian public sectors ranked improve efficiency and transparency as the number one opportunity and meeting goals and targets as number two. These perceptions of Malaysian public sector procurement directors/senior managers are quite similar with the aim of Government's procurement policies. For example, procurement aims to support Malaysia's goals and targets of achieving developed-nation status through efficient, effective, transparency practices without compromising on quality (APEC 2009). The differences for almost half of the opportunities that listed in the survey questionnaire in mean scores between two countries is minimal and statistically insignificant. However, Malaysian public sectors placed significantly more importance on almost all opportunities of SP than Australian public sectors.

While this study focuses on Australian and Malaysian public sector organizations, the observations are relevant to other countries as well, if not directly applicable, since the basic SP problems are generic. In particular, apparent links between organizational performance and adoption of certain practices will hold globally.

Table 6: Means and ANOVA Significance for Opportunities of Sustainable Procurement Practices

Opportunities of SP Practices	Australia	Malaysia	*F* sig
Financial savings	3.74	4.15	0.019
Improve efficiency and transparency	3.82	4.19	0.018
Improve compliance	3.84	4.15	0.056
Improve working environment	3.86	4.00	0.391
Improve air and water quality	3.82	3.94	0.554
Reduce use of natural resources	3.64	3.63	0.944
Improve working conditions: labour standard, health & safety	3.54	4.02	0.011
Assist disadvantaged groups in society	3.34	3.77	0.033
Contribute to the modernization and international competitiveness of local industry	3.40	4.06	0.000
Encourage foreign investment	2.64	3.67	0.000
Employment generation	3.26	3.73	0.017
Alleviation of global environmental problem	3.74	3.81	0.730
Alleviation of social problem in other parts of the world	3.14	3.71	0.013
Improve organization's/Council's/ public image	3.87	4.06	0.230
Meeting goals and targets	4.02	4.17	0.343

Table 7: Comparison of Respondent's Concept about Sustainable Procurement

Knowledge of sustainable procurement	Australia (%)	Malaysia (%)
Do not know	3	13
Spending and investing process to maximize net benefits for the company and wider world.	19	16
Acquisition of goods and services on the best possible terms after considering the benefits and impacts on environmental, social and economics.	36	15
Producing, purchasing and working process which is not a threat to the environment.	20	20
Spending and investment process typically associated with environmental policies.	5	6
Using renewal resources	7	15
Producing and buying things that cost effective	4	6
The use of products that was produced by safe producers. The product must also be ascertain that it come from sustainable source.	2	4
Value for money	2	2
Fair and transparent	1	1
Buying and maintaining goods and services that needed.	1	2

All respondents were requested to describe their understanding and level of knowledge of SP by an open question. These questions were kept open for the respondents so they could provide their own opinions and suggestions. The results of thematic analysis presented in Table 7.

Their responses suggest that a considerable number of Malaysian procurement directors/senior managers (13%) do not know what SP is while almost all Australian procurement directors are having knowledge of SP. Only a small proportion of the sample procurement directors in both countries Australia (36%) and Malaysian (20%) held a wider view of SP as a standard procurement process, which takes environmental, social and economic aspects into account.

For example, a classic response was:

> *SP is the 'acquisition of goods and services on the best possible terms after considering the benefits and impact on the environment, society and economy.'*

The remaining ratio of respondents in both countries expressed narrow or incorrect knowledge of SP where most of the respondents considered SP as a profit and environment issue. For example, some typical responses were:

> *SP means 'spending and investing process to maximize net benefits for the company and wider world.' SP means 'producing, purchasing, and working process which is not a threat to the environment'.*

So we may draw a conclusion that the knowledge of Australian public sector procurement directors/senior managers on SP is well ahead of Malaysian counterpart. Australian state governments have already developed procurement guidelines, web tools, help lines, published books, organized conferences, and publicized through journals to increase awareness on SP (IISD 2007). It could be the reason for the difference on knowledge level of SP between procurement directors/senior managers of Australia and Malaysia.

To gather information about procurement director's/senior manager's perception of sustainable activities in their daily life, procurement directors/senior managers were asked to describe their daily activities that might fall under the banner of sustainable practices. Table 8 provides an insight into the most commonly identified activities encountered in sustainable practices and the subset of these behaviours and summarises the extent to which respondents feel their daily activities might fall under the banner of sustainable practices. The results clearly stated that all Australian respondents are well concerned about their daily activities and identified the subset of these sustainable activities whilst majority of the Malaysian respondents (29%) reported that they do not know or are not addressing any activity, which may be considered environmentally friendly or sustainable.

Overall, it appears that most respondents in both countries engage in sustainable practices in terms of energy use, thrown food and organic materials into waste bin, separate recycling materials rather than other activities. It is very interesting that respondents of both countries have given the same priority of their daily activities which is considered under the banner of sustainable practice. For example, highest

numbers of Australian (70%) and Malaysian (41%) procurement directors/senior managers practices separate recycling materials in separate containers. However, Australian procurement directors/senior managers placed water conservation practices as number three rank whilst only 2% of the Malaysian practices water conservation. Lack of water is the most important environmental problem is facing by Australian government (State Government Victoria 2008) could be the main reason to place higher rank on water conservation by Australian procurers.

Table 8: Respondents Daily Sustainable Activities and Subset of the Activities

Subset and Activities	Australia (%)	Malaysia (%)
No/Unsure	0	29
ENERGY		
Turned off power point when I don't need to use and buy energy and fuel saving electrical appliances and other things (Save electricity and fuel)	48	31
WATER		
Use less water for all activities (Save water)	42	2
WASTE AND RECYCLING		
Avoided using plastic bags to carry shopping home	10	7
Avoided buying products with lots of packaging and no biodegradable packaging when doing shopping	8	2
Thrown food and organic materials into waste bin	40	37
Separated recycling materials in separate container	70	41
Used recycling and renewable goods	19	11
Producing special vehicle for solid waste collection and cleansing	0	0
DISCUSSION/ADVOCACY		
Talk to people to share knowledge of sustainable procurement and tell them how to be more environmental friendly	15	20
Donate money to one or more environmental organizations	10	5

5. Practical Implication and Limitation

The study contributes to the growing body of research addressing sustainability public sector contexts as this study is the first to analytically evaluate the nature of SP in public sector organizations in both Australia and Malaysia. This study made four particular contributions. First, the study analysis focuses on how practice in SP in public sector organisations vary between developed and developing countries particularly between Australia and Malaysia with existing research in other countries. Secondly, provides practical insights into whether and how government policies are being implemented in both Australia and Malaysia. Thirdly, the study also focuses the particular nature of SP barriers in the public sector across developed and developing

countries and the challenges faced by these organisations. Finally, the analysis of our study systematically evaluates the opportunities for the implementing of SP.

The study experiences from a number of limitations that future work might seek to remedy. First, this study may not represent the population because of small sample size. Due to the small sample size, I am not in a position to provide any suggestions to Australian and Malaysian policy makers relative to SP policy based on the findings of this study. Second, the study respondents are volunteers in the survey method and hence may to some degree be more interested in or engaged with SP than other organisations. Third, this analysis is cross sectional and therefore provides only a snapshot of SP practice in the organisations and countries I studied. This study may recommend that if future studies with larger population samples provide similar results, policy makers may consider focusing more on 'buy from small and local suppliers' as well as retain an environmental focus and address future policy iterations.

6. Conclusion

Sustainable procurement constitutes a significant lever for public sector organizations to accelerate the shift towards more sustainable consumption and patterns, and more generally to contribute to the achievement of sustainable development goals. The present study was undertaken to explore the current level of SP practice adopted by Australian and Malaysian public sector organizations and the comparison of these practices between these two countries. The result of this study uncovers significant variation between Australia and Malaysia in the extent and emphasis of SP practices. Malaysian public sector organizations appear to be significantly ahead of Australia on many facets of SP practices. Our result also showed that governments are widely using the power embodied in public procurement activities to further social and environment policy goals.

Australian public sector procurement directors/senior managers reported that Australia has focused almost exclusively on raising awareness and developing tools for SP but no prevailing effort appears to realize the systematic embedding of environmental and social elements into the procurement process. This discussion suggests that if governments are committed to more widely and deeply embedding sustainability in procurement practice, Australian public sector organizations now need to consider launching pilot procurement efforts to demonstrate theory in practice, with many training programs for procurers and policy-makers establishing performance targets and objectives. On the other hand, procurement directors/senior managers of Malaysian public sector organizations stated lack of awareness of SP in the country and fragmented nature of initiatives that have been implemented. This result suggests that Malaysian public sector organizations may consider focusing on raising awareness and developing tools for SP. As procurement directors/senior managers in both countries placed financial viability is the main barrier to engage with SP. This shortcoming should be addressed by the public sector organizations through reducing budgetary and financial barriers by providing for whole-life costing. In terms of opportunities for implementing SP, Malaysian organizations placed significantly more importance on the efficiency and performance of their companies while Australian organizations considered environmental benefits as the best opportunity of SP like other developed countries. Taken together, these observations

suggest that there remains much to be done to take the implementation of SP further by both countries while Malaysia's objective of achieving developed nation status by the implementation of procurement policies and Australian government has already made a commitment to SP as part of broader environmental and social policy agendas.

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