

## **Fostering Sustainable Economic development through Public Sector Innovation: What is the missing link?**

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### **Abstract:**

**Innovation is synonymous to development! Unlike in the developing economies, innovation has been widely used as an engine of economic growth to boost developed economies. The present study investigates the nexus between economic development and public sector innovation in the developing countries, especially in Africa. The study reviews the literature on relationship between innovation and economic development in order to develop a conceptual framework for public sector in the developing countries. In addition to this, the study has policy implications especially for government, policy makers and public sector practitioners towards improving the living standard of the citizens. The study concludes by stating measures that can be used to improve economic development through public sector innovation. The paper recommends for further empirical study to corroborate the findings in the present study on the role of public sector innovation in fostering sustainable economic development.**

**Keywords:** *Creativity, Developing Countries, Economic Development, Economic Growth, Innovation, Public Sector, Africa.*

### **Introduction**

Public sector innovation is now recognised as very critical to sustainable economic growth and development (Koch and Hauknes, 2005; Damanpour and Schneider, 2008). The reason for such recognition arises from the fact that, innovation creates a platform under which organisations develop competitive edge. Therefore, it is argued that, public sector innovation can play an important role in creating public value to the citizen. This is because, public sector is massive and dominate the social, political and economic landscape of many economies worldwide (Arinaitwe, 2007; OECD, 2007). It is noted that, the performance of public sector organisations that form the fundamental rubric of social, economic and political development of the people is very critical to the economic development process. It is also well documented that, economic growth can be used to achieve economic development and also to attain sustained poverty reduction in the developing economies (OECD, 2007). Currently there is growing awareness among policy-makers that innovation activities are the main drivers of sustainable economic development and as well as a potential factor in meeting global health and environment challenges such as global warming (OECD, 2007; Toner, 2010). Therefore, public sector innovation acts as a catalyst in achieving the desired economic growth and development in any country which thrives to be globally competitive.

Despite the recognition of public sector innovation as an important driver of economic growth, scholars have neglected the sector for many years (Hartley, 2005; Mulgan, 2007; OECD, 2007; Toner, 2010). The reason for such neglect was attributed

to the fact that, innovation is seen as emanating from the private sector and therefore, its application in the public sector organisations is not found desirable (Hartley, 2005). In addition to this, the concept of public sector innovation also is complex, thus making the study more challenging. Perhaps the challenges regarding the concept have been compounded furthermore by numerous definitions given to innovation by scholars. This has seen many scholar questions as to what really constitute innovation? For example, OECD (2007) defines innovation as the implementation of a new or significantly improved product (goods / services), or a process, a new marketing method, or a new organisational method in business practices, workplace or external relations. Similarly, the Audit Commission (2007) defines innovation as practices undertaken by organisations in order to improve the product or service they provide, characterised by; change, novelty and action. While Mulgan (2007) for example, puts it as the generation of new ideas that must be implemented and to bring a positive impact on public value. However, in order to have an understanding of sustainable development, it would be appropriate to define what is meant by sustainable development. The definition of sustainable development which was amended in 1997 by the International Union for Conservation of nature in its (World Conservation Strategy) in Brandland report of the World Commission on Environment and Development was considered as, "the development that meets the needs of the present without compromising the ability of the future generation to meet their own needs". According to this definition, sustainable development is based on three pillars (Robertson and Skordis, 2004) including sustainable economic development, social development and environmental protection, conservation or

preservation. In order to accomplish the purpose of the present study, public sector innovation is conceptualised as the generation of new ideas that work with the aim to create public value to the citizen. This is because public sector is an agency that represent government in the provisions of public goods to the citizens. Therefore, in this study, public sector means, a government or a state corporation created by an Act of Parliament. This offers us a good working definition for public sector innovation because public sector are created for a specific purpose, that is to deliver public goods (Clark, Good, and Simmonds, 2008). It is therefore, appropriate to focus on the citizens as the primary recipient of public sector value creation.

Based on the two concepts (sustainable economic development and public sector innovation), we define sustainable innovation, as those innovative activities that are in line with the three pillars of sustainable development mentioned earlier. Therefore, for the simultaneous application of the two concepts, we define sustainable innovation as new ideas that are technologically based; and such must be able to contribute to people's standard of living now without jeopardising the three pillars of sustainable development. This definition is in line with the definitions of sustainable development and public sector innovation given earlier in this study.

As developing economies particularly in Africa struggle with economic development challenges, it is imperative for them to strengthen and transform their public sector to adopt a more private sector practices and approaches to solving problems in order to deliver public goods. However, care must be taken not to overhaul the private sector practices and approaches into the public sector without proper alignment with the structure of the public sector itself. This is because both sectors operate in a different environment with different objectives and purposes. Hence, such misalignment may not prove useful to public sector in the long run to reap the benefits associated with innovation activities.

A study conducted by INSEAD (2011) on the Global Innovation Index, paints a gloomy picture on the continent's ability to innovate, because the continent featured so poorly among the other continents. Whereas, innovation is not only due to one sector of economy being active, but a combination of other sectors too, the INSEAD (2011) study on Global Innovation Index rated the surveyed African countries based on the following factors namely: Institutions (Political environment, Regulatory environment and Business environment); Human Capital and Research (Education, Tertiary, Research and Development); Infrastructure (ICTs, Energy, General infrastructure); Market sophistication (Credit, Investment, Trade and competition); Business sophistication (Knowledge workers, Innovation linkages, Knowledge absorption); Scientific outputs (Knowledge creation, Knowledge impact, Knowledge diffusion), and Creative outputs (Creative intangibles, creative goods and services). Ranking African countries on the above factors to determine their innovation outputs, they found that African countries were far below compared to the rest of the world. Whereas in Africa, the majority of the countries are well endowed with abundant resources (both natural and human resources), still African countries cannot

manage to innovate. There are a number of reasons behind the failure to innovate in Africa. Various studies have identified major problems due to poor performance of African economies as; corrupt leadership among the top civil servants and politicians (Kamarck, 2003; Oyelaran-Oyeyinka and Sampath, 2007)), shortage of working capital, lack of foreign direct investments (FDIs), obsolete technologies, political instability (Oyelaran-Oyeyinka and Sampath, 2007)), poor management, and education systems (Damanpour and Schneider, 2008). Bommert (2010) and NAO (2008) also identified; poor health facilities, poor infrastructures, increasing population, inadequate education facilities, housing shortages in the urban centres, provision of clean drinking water, shortage of electricity to the general population, and security for the citizens. Based on all these problems, African countries can only attain sustainable economic development by being creative and innovative in order to eliminate or reduce the impact of these problems. Therefore, this begs the questions; how can public sector innovation address the issues raised above vis-a-vis sustainable economic development? To what extent can public sector innovation foster economic development in developing countries? What strategies can be used by developing countries to enhance public sector innovation capacity for sustainable economic development?

The paper addresses the contribution of public sector innovation to the economic development of a country with particular interest in the developing economies like Africa. Therefore, to advance our knowledge, we argue in favour of public sector innovation as a catalyst to economic development. Hence, the paper develops a conceptual framework based on the extensive literature review as indicated in Figure 1. In the conceptual we try to establish the links between variables considered important spurring innovation in the public sector for sustainable economic growth and development.

#### **A Framework for Modelling Public Sector Innovation for Economic Development**

It well documented that public sector innovation occurs when the public sector make minor improvements and adaptations to improve a product or production process, leading to productivity improvements (INSEAD, 2011). The conceptual framework (Figure 1) shows the relationship between drivers, public sector innovation, economic growth, economic development and feedback loop. Public sector innovation is driven by the desire to improve the services that are being given to the public in the name of public goods. Therefore, the response to the public needs become the driving force to innovation activities of the public sector organisations, which in turn triggers economic growth in terms of the Gross Domestic Product (GDP), resulting in the sustainable economic development (overall improvement of standard of living of the people, infrastructure, water, transport and communication, health facilities, reduction in the level of poverty, quality of education). It goes without saying that, the public sector mandate is to provide those services which are prescriptive to their very nature of establishment. These services may be the provision of health services, road network, electricity, clean safe drinking water, quality education for the citizens and security.

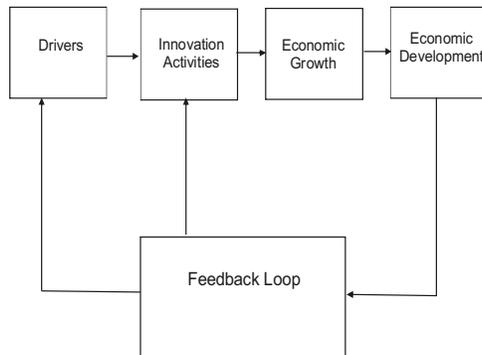


Figure 1: A framework for modelling public sector innovation

#### Political Environment

The political environment plays an important role in providing a conducive business environment in which trade and business thrives side by side. Moreover, politics shape the business environment through appropriate trade policies that support the market functions both at national and international levels. On the other hand, the political environment can also be a recipe for chaotic and unfriendly to trade business to thrive. To understand the role of political environment, the author looked at it in three dimensions: Stable political government; policy formulation and effective judiciary system (Matthews, Lewis and Cook, 2011). Critical analysis of stable government reveals that, political elites should first, create the stable business environment for a transition to an innovation driven economy. It goes further to say, the stable business environment will ensure that organisations function with minimal interruptions. It is this stable government that provides conducive a business environment under which innovative actors freely exchange the much needed information and communication necessary for transfer of innovative ideas across the various sector within an economy (Aldair, 2009). In addition to this, the stable business environment provide a vehicle and infrastructure in which innovation diffusion take place. Therefore, the role of government is to dismantle, reduce and minimise potential barriers, obstacles and restrictions (Goh, 2005). Government also has public obligation to remove impediments which organisations encounter, and to address organisations concerns in the pursuit of innovation (Goh (2003). In addition to this, government must ensure that, policy formulation covers a broad range of economic activities in an economy, for example, industrial policy making focusing on innovation driven economy strategy is very critical to spur innovation spirit in the entire economy. The author argues that, policy formulation must have a strong link to the National Innovation Systems (NIS) in order to create a culture based on the spirit of innovation in the public sector. In the conceptual framework (Figure 1), we demonstrate the government role in creating an enabling business environment through effective industrial policy formulation favourable to innovation, stimulate not only innovation in the public sector, but also lead to economic growth.

A proper and effective judiciary system capable of handling and putting into place mechanisms on deciding on the cases surrounding Intellectual Property Rights (IPR) is very critical for the innovators. However, this can only be effective if the policy makers enact Intellectual Property Rights that protect the innovators against infringements on their innovative ideas. Furthermore, the government must clearly spell out the ownership of innovative ideas and how the proceeds from such innovation out comes are shared. It is only through this that, public sector employees will be motivated to innovate. Juma and Yee-Cheong (2005) further add that, IPR systems need to be designed to take into account the special needs of the developing countries. They go on to caution against enacting overly protective systems, which they say could only constrain creativity and innovation in the economy.

A political system that provides a conducive business environment in which business flourishes, hence stability of the government coupled with, policy formulation and implementation, that are industrial friendly is likely to boost the capacity of the public sector to deliver quality services. Such services by public sector can enhance the standard of living of the citizens. Hartley (2005) states that, close connection to the political system means that public service organisations need to consider governance innovations, such as new political arrangements in local government as well as changes in the organisational and arrangements for the planning and delivery of services. This political system has been missing in most African countries, which also can be the reason why most public sector have failed to innovate and contribute to the economic development of some particular countries.

#### Human Capital and Research and Development

The level and standard of education and research activity in a country are the prime determinants of innovation capacity of a nation (INSEAD, 2011; OECD, 2007). The calibre of the workforce that get employed in the public sector organisations are drawn from various educational institutons. However, studies have it that, developing countries still struggle to cope with provision of education to all, leave alone tertiary that is the heart of technology assimilation. Also in Africa education sector performance does not feature so well as compared to the rest of the world. The reason for this poor performance is the low budgetary allocation to education and inadequate support for education for all citizens by the majority of governments. This has led to a mass drop out at elementary and secondary school levels. The continued drop out has denied most countries to produce enough manpower to meet the countries need. On the other hand, higher education is crucial for economies to move up the value chain beyond simple production processes and products (INSEAD, 2011; OECD, 2007), a situation which is still prevalent among the developing nations particularly in Africa.

Whereas there is plenty of support that innovation spur economic growth, this has not been the case with the public sector particularly in Africa. Public sector should embark on training its manpower in order to increase their ability to carry out Research and Development (R&D), that is vital for public

sector innovation capacity. For instance, Eggers and Singh (2008) state that, public sector need a dynamic workplace that acknowledge and implement the ideas of employees, or else employees may get the signal that their ideas are not being heard. Similarly, public sector need to take the advantage offered by the nation's diverse workforce in terms of background because innovation depends on the ability to see things differently (Padayachie, 2009). This assertion is very true of the US that long recognised the importance of diversity for example, National Aeronautics and Space Administration (NASA) and Silicon Valley where almost half of the scientists and engineers are from India, China and other Asian countries. However, this is an area that most African countries have featured so badly due to corrupt leadership at the top who favours their kins men and relatives for plum jobs. This has only not denied the public sector the much needed manpower, but also created political sycophants whose jobs is to enrich themselves at the expense of the general public. For example, Kenya during President Arap Moi's reign, most of the public sector collapsed due to nepotisms and corruption which substituted merit in appointments into public office.

An indepth review of literature reveals that, innovation requires substantial investment in Research and Development (R & D) and education. This is because, there is correlation between investments in R&D, and Innovation and education in general. In the framework (Figure 1), it is indicated how R & D can revolutionise innovation in the public sector which trigger economic growth. Similarly, investment in sciences and maths education will ensure the country have stocks of qualified scientists that can pursue R & D for Innovation. It should be noted that, quality higher education system positively affects innovation through increased expertise and intellectual capacity that ultimately benefit public sector in its quest for innovation. This is critical, being that public sector organisations are massive and involved in the large service delivery of public goods such as ; roads, water, electricity and security . In order to provide quality public goods to the citizens, public sector can use innovative practices and ideas to improve on the quality of public goods at minimum costs of production.

#### **Innovation Activities**

Public sector innovation is never a one stop shop, but rather a process where many actors interact with the sole aim of exchanging useful ideas generated either as an individual, group or policy making decisions. During this stage, actors exchange ideas, information and knowledge that is put into action. In the conceptual framework (Figure 1), innovation activities indicate the stage where policy-makers, politicians, public sectors managers, Research and Development (R & D), Universities, and private sector which through networks and partnerships form a potent of innovation (Hartley, 2005; OECD, 2009). The process here involves the management of information, knowledgement and their implementation, which shape the ideas of individual, groups and organisations with the aim of gaining consensus building among the actors (Aldair, 2009; Bland, Bruk, Kim and Lee, 2010). This involves incubation of ideas generated and getting those ideas that can work being implemented fully for the purposes of commercialisation. The

proceeds from such commercialisation put into good use and accountability will spur economic growth which ultimately with good governance result in sustainable economic development in a country. This is one of the most important link between sustainable economic development and public sector innovation. Therefore, we argue that, public sector innovation can only spur sustainable economic development if there is transparency and accountability in governance.

Studies have revealed that, public sector innovation must have two important outcomes or expectations (Band, Bruk, Kim and Lee, 2010). Firstly , as shown in Figure 1, innovation within public sector should represent a new idea or approach to an issue, which challenges the prevailing wisdom (Light, 1998) in Bland et al.(2010). Secondly, innovation within the public sector, should accomplish two things; advance the public good, and create public value (Bland et al., 2010). The outcome of innovation always leads to improved technology, method, process, product and new technology. This has been viewed as critical to economic performance and improved social welfare of the people. In fact, the empirical evidence supports the assertion that, innovation outcome is linked to sustainable economic growth and development (Schumpeter, 1914; OECD, 2009; Bland et al., 2010; Clark and Juma, 2002; Solow, 1956;1957). This is because innovation involves investment in R & D, education, training and technologies amongst other factors that is aimed at producing usable new knowledge (OECD, 2009). It should be noted that, the implementation of the usable knowledge generated, will majorly depends upon clear drivers, strong incentives, good ideas, and absence of barriers to their implementation.

#### **Economic Growth**

Economists have long accepted that economic growth depends on various factors. Among them are a country's rate of saving, increases in the stock of productive inputs and technical change. Innovation bears mostly directly on technical change, and this is a major determinant of economic growth (LeBel, 2008). The literature is full of support that successful public sector innovation results in new products and services, gives rise to new markets, generate growth for enterprises, and creates customer value (Innovation Framework Report, 2004; Kamarck, 2003; Damanpour and Schneider, 2008). In addition to this, previous studies (Fartash and Davoudi, 2012; Solow, 1956;1957) also, support the theory that, innovation leads to economic growth. Similarly other studies ( OECD, 2011; Fartash and Davoudi, 2012) also contend that public sector innovation can be used to improve the welfare of the nation. In fact, Schumpeter (1912) classified innovation into five categories: first innovation involve the intriduction of a new good; secondly introduction of a new method of production; thirdly introduction of a new market; fourthly , conquest of a new source of supply of raw materials or half-manufactured goods and lastly implementation of a new form of organisation. In Figure 1, we argue that, after implementation takes place at innovation activities stage, innovation outcome should be seen in the form of increase in the public value or commercialised product (good or service), whose value should add to the GDP. Therefore, we hypothesise that, innovation outcome can either

be a new product, process, method, or technology which should yield revenues for the public sector.

#### **Economic Development**

It is said that, economic development depends on a number of factors. Such factors are: the degree of transparency and accountability of the political elites, effective and efficient infrastructures, real positive economic growth, funding R & D, the effective governance of financial institutions amongst others (LeBel, 2008). According to the conceptual framework (Figure 1.), we contend that, in order for a country to achieve full sustainable economic development, then its institutions (public and private sectors) must collaborate with the intention to innovate. This is because, innovation does not depend on a particular one sector of the economy in isolation being active, but rather all the sectors of the economy (Merx-Chermin and Nijhof, 2005). Therefore, innovation collaboration among various sectors will accelerate the rate of economic growth that will eventually trigger real sustainable economic development. This is what we referred to as complimentary action between public and private sectors. However, this is only possible, if the public sector adopt approaches such as entrepreneurial activities. Schumpeter, the father of innovation once said that, "innovation depends first and foremost on the entrepreneurs". Entrepreneurs are tirelessly seeking for opportunities to exploit and never afraid of risk taking. They are always developing new and existing services, technologies, administrative techniques and new improved strategies (Kearney, Hisrich and Roche, 2008). Therefore, the innovative capability of the public sector can only be attained if the public sector managers or industry captains adopt entrepreneurial skills (OECD, 2007; LeBel, 2008). The current evidence suggests that, innovation performance is positively related to sustainable economic growth, and the rate of public sector innovation can promote sustainable economic development (Dong, 2010). In short, sustainable economic development through public sector innovation can only be achieved through effective and efficient management of the public institutions. This will require appropriate public policy that allow for public sector managers to take risks in order to innovate. In addition, this will unlock the creativity and ambition of public sector workers to innovate. We therefore, opine that, public sector innovation can be used to foster sustainable economic development through improved products and services to the people.

Economic development hinges upon the efficient and effective infrastructures which can only be provided for by the innovative public sector. For example, the public sector innovation can address the issue of food security to ensure the country has enough and adequate food for its citizens through adoption of innovative ideas, application of appropriate farm technologies such as biotechnologies. Agricultural innovation will ensure enough impetus for farmers to venture into farming because of better returns associated with innovation outcomes. Innovative public sector also facilitate the delivery of welfare services at both national and local levels, through partnerships with private sector. The case for public sector innovation arises from the fact that the majority of most developing countries, specifically in Africa, are still grasping with many social, economic, and political challenges such as public services, both ageing and

increasing population, and changing nature of public health which are having negative impact on the governments (Aldea-Partanen, 2008). Despite all these challenges, the literature reveals that, public sector innovation can help alleviate these problems through adoption of innovative practices. However, it should be cautiously noted that, public sector innovation alone cannot bring about any economic development, unless the proceeds from economic growth are well put into good use for the purposes of general development. This can be achieved through transparency and accountability by public sector managers and political elites.

#### **Feedback Loop**

The conceptual framework (Figure 1) shows how public sector innovation outcomes can be evaluated and monitored in order to create sustainable innovation in the public sector. Feedback loop gives information from environment that is fed back into the system (public sector) in order to accelerate the rate of innovation. Whereas economic growth spurs economic development through efficient use of the proceeds from the economic growth, feedback loop informs the public managers to gain knowledge on the impacts of their innovation activities in the economy. For example, the feedback loop help in detecting whether the proceeds from innovative activities have been put into good use through gauging if there is significant economic development recorded in the economy or not. This enables public sector managers and government officials to have a first hand information on which sector of the economy has received positive economic development through public sector innovation. Therefore, the feedback loop acts like a gap analysis in the framework for the public sector innovation, which inform the public sector management and government about the gaps in the innovation output. This aids in taking corrective measures with the intentions of spurring innovation for sustainable economic development. The measures of the outcome can either be in the form of improved health facilities, education, infrastructures, and improved living standard of the people in the economy.

#### **Conclusions and Implications**

The purpose of this paper was to investigate the nexus between sustainable economic development and public sector innovation. Critical analysis of the public sector literature reveals that, sustainable economic development is significantly related to public sector innovation. The paper reveals a relationship between sustainable economic development and public sector innovation (Figure 1). In the developing economies, where public sector still dominates major economic activities, stimulating public sector innovation is likely to spur economic growth and effective management of the proceeds will translate into sustainable economic development of a nation. This is because public sector innovation creates a spill over which acts as a platform through which other industries can be created, hence job creation. Therefore, to spur sustainable economic development, the paper advocates for the formulation of friendly innovation policy, industrial policy, training of the national workforce, a strong support for R & D, creation of a National Innovation Systems (NIS), and a strong Intellectual Property Rights (IPRs) regime. Intellectual Property Rights

regime, will protect innovators from imitators and give credit to those innovators who have created new products or services.

However, the present caution against focusing on R & D only without implementing the outcomes of such research and development activities to address the national need. This is because R& D can result in an innovative outcome, if it is implemented. Perhaps, this is an area in which African countries should explore further in order to spur public sector innovation, because most researches done in the Universities are rarely implemented. Lack of implementation of innovative ideas from such research activities from public institutions can only demoralise researchers. Therefore, the present study advocates for uptake of the research outputs by both public and private sectors and their diffusion. It is through the diffusion of innovation that third sector of the economy is created that can generate employment opportunities to cater for mass unemployment in the developing countries.

There is also need for deliberate investments in education, particularly in science and maths as the world currently moves towards digital age in order to create a national workforce capable of not only technological uptake and compliance, but also who can create new technology. The developing nations should emulate developed world who have long recognised the importance of public sector innovation to sustainable economic development. In fact, the future belongs to those countries which will be able to produce competent scientists that are driven by the passion to create new knowledge with the purpose of solving societal problems.

The present study has implications for the policy makers, public sector managers, public sector practitioners and researchers. Policy makers have the obligation to create not only enabling innovation environment, but also to craft the innovation policy that is linked to National Innovation System strategy in order to coordinate innovation activities at national level. More so, public sector managers need to put in place conducive management practices that support employees to become creative and innovative. The present paper contributes to the theory and practice with regards to sustainable economic development and public sector innovation in the developing countries specifically Africa. Apart from the theory building, the paper develops a conceptual framework that can be used to guide public sector innovation in order to spur sustainable economic development.

#### REFERENCES

AFRODAD (2007). African Forum and Network on Debt and Development. Tanzania's Experience with Privatisation Policies. Harare. Zimbabwe.

Aldair, J. (2009). Leadership for Innovation. How to organise team creativity and harvest ideas. KOGAN PAGE. U.S.A.

Aldea-Partanen, A. (2008). Social innovation in service delivery to youth in remote and rural areas. *International Journal of Innovation and Regional Development*, Vol.3 No.1, pp.63-81.

Arinaitwe, R.(2007). Forum on innovation and modernisation of public sector services and governance in Africa. African Training and Research Centre in Administration for Deevlopment. Tangier. Morocco, 18-19, June 2007. Accessed on: 10-6-2012. Available at: [unpan1.un.org/intradoc/groups/public/.../UNPAN027353.pdf](http://unpan1.un.org/intradoc/groups/public/.../UNPAN027353.pdf).

Audit Commission (2007). Seeing the light. Innovation in local public services. Accessed on: 10-3-2012. Available at: [www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/Innovation\\_main%20report.pdf](http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/Innovation_main%20report.pdf).

Bland, T., Bruk, B., Kim, D., and Lee, K.T. (2010). Enhancing Public Sector Innovation: Examining the Network-Innovation Relationship. *The public Journal: The Public Sector Innovation Journal*, Vol. 15 No.3, pp. 1-17.

Bommert, B. (2010). Collaborative Innovation in the Public Sector. *International Public Management Review*, Vol. 11 No.1, pp. 15-33.

Clark, J., Good, B., and Simmonds, P. (2008). Innovation in the public and third sectors, Innovation Index Working Paper. Access on: 10-9-2011. Available at: [www.Technopolis-group.com](http://www.Technopolis-group.com).

Clark, N., and Juma, C. (2002). Innovation systems, institutional change and the new knowledge market: implications for third world agricultural development Available at: <http://dx.doi.org/doi:10.1080/10438590200000004>.

Damanpour, F., and Schneider, M. (2008). Characteristics of Innovation and Innovation Adoption in Public Organisations: Assessing the Role of Managers. *Journal of Public Administration Research and Theory*: 19:495-522.

Dong, Y. (2010). The role of innovation in economic growth: evidence from China. *International Journal of Innovative Management, Information and Production*, Vol. 1 No.1, pp.110-120.

Eggers, W.D., and Singh, K.S. (2009). The Public Innovator's Playbook: Nurturing Bold Ideas in Government. Deloitte Research. Accessed on: 21-3-2012. Available at: [www.deloitte.com/assets/.../dtt\\_ps\\_innovatorsplaybook\\_100409.pdf](http://www.deloitte.com/assets/.../dtt_ps_innovatorsplaybook_100409.pdf).

Fagerberg, J., and Godinho, M.M. (2003). Innovation and catch-up. Paper presented at the Workshop, "The Many Guises of Innovation: We have learnt and where we are heading", Ottawa, October, 23-24, 2003, organised by Statistics Canada. Canada. Accessed on: 30-3-2012: Available at: <http://www.duo.uio.no/publ/tik/2004/17037/wp24.pdf>.

Fargerberg, J., Srholec, M., and Verspagen, B. (2009). Innovation and Economic Development. Working Paper Sries No. 2009-032. United Nations University-Maastricht Economic and Social Research and Training centre on Innovation and Technology, Keizer Karelplein, 19, 6211 TC Maastricht, The Netherlands. Accessed on: 23-7-2012. Available at: [www.merit.unu.edu/publications/wppdf/2009/wp](http://www.merit.unu.edu/publications/wppdf/2009/wp).

Fartash, K., and Davoudi, S.M.M. (2012). Innovation

- Management with emphasis on Technological System. *Arth Prabhand: A Journal of Economics and Management*, Vol.1 Issue 4, ISSN 2278-0629.
- Glor, E. (2008). Toward Development of a sustainable Theory of Public Sector Organisational Innovation. *The Innovation Journal: The Public Sector Innovation Journal*, Vol. 13 No.3, pp.1-28.
- Goh, A.L.S. (2003). Evolution of Industrial Policy-Making in Support of Innovation: The case of Singapore. *International Journal of Innovation and Learning*. Vol. 1 No.4, pp. 1-28.
- Goh, A.L.S. (2005). Promoting Innovation in aid of Industrial Development: The case of Singaporean Experience. *International Journal of Public Sector Management*, Vol.18 No.3, pp. 216-240.
- Hartley, J. (2005). Innovation in Governance and *Public Services: Past and Present. Public Money and Management*, (25) 1: 27-34.
- INSEAD (2011). The Global Innovation Index. Accelerating Growth and Development. INSEAD. Fontainebleau. France. ISBN: 976-2-9522210-1-6.
- Juma, C., and Ye-Cheong, (2005). Innovation: Applying knowledge in development. ISBN: 1844072185.
- Kamarck, E.C. (2003). Government Innovation Around the World, Ash Institute for Democratic Governance and Innovation, November 2003. Accessed on: 10-3-2012. Available at: [www.inovacione.al/Inovacione/Materialet\\_files/Government%20Innovation%20around%20the%20World.pdf](http://www.inovacione.al/Inovacione/Materialet_files/Government%20Innovation%20around%20the%20World.pdf).
- Kearney, C., and Hisrich, R., and Roche, F. (2008). A conceptual model of public sector corporate entrepreneurship. *International Entrepreneurship Management Journal*, 4:295-313.
- Kline, S., and Rosenberg, N. (1986). An Overview of Innovation. Accessed on 24-7-2012. Available at: [www.nap.edu/openbook/0309036305/html/275](http://www.nap.edu/openbook/0309036305/html/275).
- Koch, P., and Hauknes, J. (2005). Innovation in the Public Sector. Publin Report No. D20. On Innovation in the public sector. Accessed on: 20-3-2012: Available at: [thelearningnetwork.net/.../PUBLIN-publicsectorinnovation.pdf](http://thelearningnetwork.net/.../PUBLIN-publicsectorinnovation.pdf)
- LeBel, P.(2008). The role of creative innovation in economic growth: Some international comparisons. *Journal of Asian Economics*, doi:10.1016/j.asieco.2008.04.005.
- Light, P. (1998). Sustaining Innovation: Creating Non-Profit and Government Organisations That Innovate Naturally. San Francisco: Josef-Bass Inc.
- Matthews, M., Lewis, C., and Cook, G.(2011). Public Sector Innovation: A review of the Literature. Report on a project carried out to support the preparation of an ANAO Better Practice Guide on Public Sector Innovation. Accessed on 23-7-2012. Available at: [www.anao.au/uploads/documents/Supplement\\_Literature\\_Review.pdf](http://www.anao.au/uploads/documents/Supplement_Literature_Review.pdf).
- Merx-Chermin, M., and Nijhof, W.J. (2005). Factors influencing knowledge creation and innovation in an organisation. *Journal of European Industrial Training*, Vol.29 No.2, pp. 135-147.
- Mulgan, G. (2007). Social Innovation. How it is, why it matters and how it can be accelerated. Working Paper. Oxford. SAID BUSINESS SCHOOL. Accessed on: 10-6-2012. Available at: <http://www.sbs.ox.ac.uk/centres/skoll/research/Documents/Social%20Innovation.pdf>
- National Audit Office (NAO). (2008). Innovation Across Central Government, Report by the Comptroller and Auditor General HC 12 Session 2008-2006 26 March. Accessed on 15-3-2012. Available at: [www.nao.uk/0809/innovation](http://www.nao.uk/0809/innovation).
- OECD.(2007). Innovation and Growth. Rationale For An Innovation Strategy. Accessed on : 2/4/2012: Available at: [www.oecd.org/edu/cei/40908171.pdf](http://www.oecd.org/edu/cei/40908171.pdf).
- OECD. (2009) Interim Report on the OECD Innovation Strategy. An Agenda For Policy Action On Innovation. Accessed on: 5/4/2012. Available at: <http://www.oecd.org/site/innovationstrategy/43381127.pdf>.
- OECD. (2011). Fostering Innovation to Address Social Challenges. Workshop Proceedings. OECD Innovation Strategy. Accessed on: 10-5-2012: Available at: [www.oecd.org/dataoecd/37/11/47861327.pdf](http://www.oecd.org/dataoecd/37/11/47861327.pdf).
- Oyelaran-Oyeyinka, B., and Sampath, P.G. (2007). Innovation in African Development: Case studies of Uganda, Tanzania and Kenya. World Bank Study. Accessed on : 20-3-2012. Available at: [www.wb.org](http://www.wb.org).
- Padayachie, R. (2009). Innovations to improve Public Service Delivery. *The Public Sector Innovation Journal*, Vol.1 No.1, pp 1-72. ISSN: 2075-6054.
- Robertson, P., and Skordis, J. (2004). International Trade in Services and Sustainable Development: The Case of Tourism in South Africa. Ed. By Cassim, R., Jackson, W., and Gavera, L. Trade Knowledge paper. International Institute for Sustainable Development. Accessed on: 12-5-2012. Available at: [www.hsrepress.ac.za/downloadpdf.php](http://www.hsrepress.ac.za/downloadpdf.php).
- Schumpeter (1914). Schumpeter on the Economics of Innovation and the Development of Capitalism. IBSN 1-84542 – 445 – X.
- Siddique, N. A. (2007). Public service innovations, policy transfer and governance in the Asia-Pacific region: The Malaysian experience. *JOAAG*, Vol. 2 No.1.
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70 (1): 65-94. doi: 10.2307/1884513.
- Solow, R. M. (1957). Technical Change and the Aggregate Production Function. *The Review of Economics and Statistics*, Vol. 39, No. 3 (Aug., 1957), pp. 312-320.
- Toner, P. (2010). Innovation and Vocational Education. *The Economic and Labour Relations Review*, Vol. 21 No. 2, pp 75-98.
- Wu, Y. (2011). Innovation and Economic Growth in China. Discussion Paper No. 10.10. The University of Western Australia. Accessed on 16-7-2012. Available at: [www.scribd.com](http://www.scribd.com).

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