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European Business Review
Global challenges, sustainable development, and their implications for organizational performance
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Article information:

To cite this document:
Busaya Virakul , (2015),"Global challenges, sustainable development, and their implications for organizational performance", European Business Review, Vol. 27 Iss 4 pp. 430 - 446
Permanent link to this document:
http://dx.doi.org/10.1108/EBR-02-2014-0018

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Global challenges, sustainable development, and their implications for organizational performance

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Abstract

Purpose – This paper aims to propose an effective response by business organizations to the impact of global challenges and sustainable development (SD). It also presents an overview model of organizational performance employing such an approach.

Design/methodology/approach – This paper is a conceptual work based upon a review of theories, research findings and reports gathered from relevant literature. The review yielded the following research framework: many countries are facing global challenges; these global challenges are affecting business organizations as external factors; SD is a concept employed to address these challenges; SD can be applied in business organizations through corporate social responsibility (CSR), corporate governance (CG) and sustainability policy and practices; and embedding CSR, CG and sustainability concepts at a strategic level is an effective response to global challenges.

Findings – Global challenges are impacting on business organizations and will continue to do so into the future. CSR, CG and sustainability concepts are increasingly being adopted by leading business organizations throughout the world. Embedding CSR, CG and sustainability concepts at a strategic level can sustain long-term organizational performance, as they help businesses face global challenges in a positive manner and maintain their position in societies on good terms with all stakeholders.

Research limitations/implications – Different cultural or socio-economic environments may limit the interpretation and application of the findings or propositions in this research.

Practical implications – How CSR, CG and sustainability concepts can be holistically implemented in business practices.

Social implications – The role of business in lessening the effect of global challenges and supporting SD is illustrated in the proposed model.

Originality/value – This paper demonstrates connections among the following critical influences on organizational performance: global challenges; SD; and CSR, CG and sustainability.

Keywords Corporate governance, Sustainability, Organizational performance, Corporate social responsibility, Sustainable development, Global challenges

Paper type Conceptual paper

Human society is now facing many serious challenges. These include rapid depletion of the world's natural resources, global warming, excessive consumption of goods and resources, accumulation of toxic waste and chemicals and an alarming increase in the

imbalance between demands for material resources and a finite planet (Glenn and Gordon, 2002; The Worldwatch Institute, 2012, 2013). It is widely accepted that our present generation has utilized as much as half of the natural resources, which, theoretically, should be available to future generations. If current challenges are not addressed in time, the well-being of human civilization may be severely endangered. The United Nations has requested the cooperation of both public and private agencies to deal with such perilous circumstances (Department of Economics and Social Development [DESA], 2013; United Nations, 2012; Richmond, 2012; United Nations World Commission on Environment and Development [UNWCED], 1987).

The business sector is a key player in addressing these issues, as it has enormous powers and resources to make changes for the better. Corporate social responsibility (CSR), corporate governance (CG) or good governance and organizational sustainability are the concepts created by leaders and thinkers in the business field to clarify the business sector's role as an active problem solver. This paper, therefore, examines previous research and reports on global challenges, sustainable development (SD), CSR, CG and organizational sustainability to identify their relations to, and implications for, business organizations. Based on a literature review, this paper proposes an approach to organizational performance in response to global challenges in the form of embedding CSR, CG and sustainability concepts at a strategic level. This paper is significant in that it provides confirmation of the role and importance of business and business ethics in effectively dealing with global issues.

Research questions, framework and methods

This paper is conceptual. It aims to address the following questions:

   Q1. What impact do global challenges and SD have on the business sector?

   Q2. How can business organizations most effectively respond to global challenges and sustainable development to improve their performance?

The content of the paper is organized according to the following framework. First, there is a description of the major global challenges the world is facing and how these challenges are affecting organizations. Second, details of actual cases are provided, so that readers can better understand the extent to which global challenges are affecting organizations and societies. Third, the concept of SD is explained, and reasons are presented as to why it has become a focal concept in efforts to deal with global challenges. Fourth, CSR, CG and sustainability are discussed to clarify their features and their contribution to an organization's performance. Fifth, an overview model of a holistic approach to organizational performance incorporating CSR, CG and sustainability concepts is described. The final part contains discussion and implications of the research proposal.

In constructing the research framework, the researcher conducted a literature review of four categories of resources:

   (1) information from local and international news agencies and social media relating to cases of global challenges;

   (2) reports from local and international organizations; e.g. KPMG International, Thai Universities for Healthy Public Policies and the United Nations and its affiliates;

(3) analytical information from on-line databases to determine the findings of academic research; and

(4) fundamental knowledge and theories relating to the research topics. On-line searches were conducted in electronic journal databases, using ABI/Inform Complete, available at the library of the National Institute of Development Administration.

Key words used for on-line searches include: *global challenges*, *sustainable development*, *CSR*, *CG*, *organizational sustainability*, *organizational performance*, *strategic level* and *model*. These terms were entered separately and jointly in multiple searches covering the period 2005 onward.

Papers selected for this research were based on the following:

• key words in topics;

• research methods and findings;

• reputation of the journal; and

• publication time (the more recent the more preferable).

Each paper selected was checked for credibility at the SJR SCImago Journal and Country Rank Web sites. Almost all of the academic papers used in this research are published in the SCImago ranking journals; if not, sources were examined thoroughly by the researcher to ensure their publication quality. Databases were searched several times using a combination of key words and the most appropriate articles selected after each search. The database search yielded more than 3,500 articles related to CSR and CG; CSR and organizational sustainability; CG and sustainability; and CSR, CG and sustainability. At the time of the database search, there were no articles on CSR, CG and organizational sustainability in relation to global challenges and SD, which is the topic of this article. This research, therefore, presents an original approach to business organization performance in relation to those two global trends.

Global challenges as external factors impacting organizations

"Global challenges", as defined by the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA) - Policy Development and Studies Branch (PDSB), is "any major trend, shock, or development that has the potential for serious global impacts" (UN-OCHA-PDSB, 2010, p. 4). Adapted from this definition, global challenges in this study similarly refer to factors, trends, causes, issues or circumstances which have the potential for threatening global stability. Global challenges usually involve natural resources, technology, environment, population, politics, air and water, energy, food and pollution. Over the past two decades, global challenges that have gained world-wide attention are limited natural resources, over utilization of natural resources, unbalanced ecological systems and climate change, harm from toxic products and waste, population increase and issues in technological advancement.

Concern over those global challenges is not new. For many decades, thinkers, scientists and researchers have been warning that the human race cannot continue to use natural resources at such a rate, or that consumption habits in some societies must change. Notable publications in this regard are "The limits to growth" (Meadows *et al.*, 1972; Meadows *et al.*, 2005), the "State of the World" (The Worldwatch Institute, 2012,

2013) and "Our Common Future" (UNWCED, 1987). Population increase; declining biodiversity; increased need for energy, clean water and food; climate change; and pollution are some of the major pressures commonly listed (Redclift, 2005; Richmond, 2012).

The United Nations, through the work of *The Millennium Project*, has identified 15 critical challenges for the world in the twenty-first century (The Millennium Project, 2010, 2013, 2014). Those challenges provide a framework for assessing and making global and local projections. The challenges identified are: SD and climate change, clean water, population growth, democratization, long-term perspectives, global convergence of information technology, rich–poor gap, health issues, capacity to decide, peace and conflict, status of women, transnational organized crime, energy, science and technology and global ethics. These challenges are interdependent; meaning, improving one challenge could make addressing others easier.

The UN-OCHA-PDSB (2010) investigates the impact of global challenges on the human community. Global challenges identified by OCHA-PDSB include: climate change, extreme poverty and inequality, financial and economic crisis, food crisis, water scarcity, energy security, migration, population growth and demographic shift, urbanization and health pandemics and infectious diseases. The World Economic Forum (WEF, 2012, 2013) categorized global risks into economic, environmental, geopolitical, societal and technological aspects. The WEF report in 2013 shows the top five risks most likely to manifest over the next ten years to be: severe income disparity, chronic fiscal imbalances, rising greenhouse gas emissions, water supply crises and mismanagement of an aging population.

Because resources, technology, laws and regulations, population and economy are common external factors affecting business organizations (Anthony *et al.*, 2002, p. 26; Desimone *et al.*, 2012, p. 37; Hartman and DesJardins, 2011, p. 211), global challenges have become significant issues for businesses – issues about which they need to be fully informed and participate in addressing. Unless they are properly managed, these global challenges may become external factors that reduce the potential of businesses to grow and expand. Businesses rarely function effectively in situations where their surroundings lack abundant natural resources, have income inequality, corruption or political unrest, health problems, a lack of clean water and energy, pollution and a poor environment, financial and economic crises or technological mismanagement. Global challenges can be changed for the better if business organizations decide not to carry out activities which contribute to those challenges.

Some selected cases pertaining to global challenges

Many cases illustrate the negative consequences of business activities which are either inappropriately carried out or which lack a careful consideration of stakeholders' benefits and long-term impacts. This section presents some selected cases to demonstrate the validity of concern over global challenges (see Table AI for a summary).

Map Ta Phut is a town in Eastern Thailand. It is located within what has been the country's largest industrial zone and port facility since the early 1980s. After 30 years of harboring thousands of companies operating businesses in petrochemicals, oil and gas, electricity, metal and other related industries, Map Ta Phut is one of the most highly polluted districts in Thailand. It has been the focus of ongoing initiatives to develop

long-term and adequate solutions to the problems that it has given rise to. (see more about the Map Ta Phut case at AlJazeerah English, 2010; Asia News Monitor [Bangkok], 2009; Thai Universities for Healthy Public Policies [TUHPP], 2011a, 2011b; "Thailand stays on […]", 2008; Tremblay, 2010; Van der Bruggen *et al.*, 2010).

Dawei Deep-Sea Port in Myanmar is an industrialization project on Myanmar's south coast. The full development of the project will cost approximately USD50 billion and, if completed according to plan, will be ten times the size of Map Ta Phut. It will then become Southeast Asia's largest industrial complex covering over 250 km^2. At present, this area of Myanmar is ecologically undisturbed and has an unspoiled coastline. There is a significant concern that the project will cause ecological damage similar to that of Map Ta Phut (see more of Dawei Project at Asia News Monitor [Bangkok], 2012; BBC News Asia-Pacific, 2011; EIU ViewsWire, 2012).

There are many dams built along the Mekong River which runs through China, Myanmar, Laos, Thailand, Cambodia and Vietnam. The *Xaiyaburi Dam Project*, which is still under construction, is located in northern Laos and will eventually cost USD3.5 billion. Its hydro-electric power plant is expected to be operational in 2019. However, there have been protests and law suits by people whose livelihoods have already been adversely affected by the dam. People and governments in Cambodia and Vietnam, countries located downstream from the dam, strenuously oppose the project (see more of dams along Mekong River at BBC News Asia, 2012; Damming the Mekong – Xayaburi, 2011; Ferguson *et al.*, 2011; Keskinen *et al.*, 2012; Kummu and Sarkkula, 2008; Li and He, 2008).

Extraction of natural resources in many developing countries is a global, profit-making activity. However, in most cases, the number of people who gain financial benefits from such activities are outnumbered by the people who suffer from health problems and are affected by environmental damage caused by improper extraction processes. Thailand, India, Myanmar, Indonesia and Tanzania are countries that have reported such cases. Usually, problems related to the extraction of natural resources in developing countries result from weak management systems among local communities, government institutions and business organizations (see more of natural resources extractions in Archer, 1999; Corben, 2012; Deepak and Sandhu, 2012; Newenham-Kahindi, 2011; Qin, 2012; Tole, 2010).

The melamine case in China illustrates business malpractice, which results in death and serious health problems, in this case, among infants. In 2008, one of the world's biggest dairy producers, the Sanlu Group, was found to be selling baby milk powder tainted with an industrial chemical "melamine". The chemical was deliberately added to the milk in place of a much more expensive protein ingredient. As a result, at least four infants died, and more than 250,000 children fell ill after consuming the tainted milk or derived dairy products. Tainted dairy products were reportedly found in other countries to which the product was exported including Tanzania in East Africa (see more of the melamine-tainted baby powder case at BBC News, 2009; Lim, 2013; Schoder, 2010).

The global financial crisis in 2008 and *the LIBOR-fixing scandal in 2012* crippled the global financial industry because of the failure of regulators, systems and management of both the government and business sectors in many countries. The 2008 crisis started from a subprime mortgage crisis in the USA, which caused the loss of trillions of dollars and eventually led to the 2008-2012 global recession. The LIBOR-fixing scandal, or the Barclay's scandal, is related to the 2008 financial crisis and caused more than USD10

billion in losses. It involved banks in the USA, UK, Europe and Asia (see more of the 2008 global financial crisis at BBC News, 2008; Ferguson and Marrs, 2010; "Inside Job winning […]", 2011; see more of the LIBOR-fixing or Barclay's scandal at BBC News Business, 2013).

SD: an approach to rectify global challenges
SD came to global attention with the Brundtland Commission's report on the global environment and development which was published in 1987 (Redclift, 2005). This report was created in response to the worldwide situation affecting human beings, the environment and non-human species. For more than 20 years, the SD concept has been increasingly recognized and adopted in response to the growing effect of global challenges. Many international organizations have been working toward expanding SD, and many definitions of SD have arisen. Following are some of the definitions of SD created by persons prominent in the field:

> Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNWCED,1987; the Brundtland Commission's report – Our Common Future).

> A key concept of sustainable development will be the integration of community and stakeholder concerns into economic and ecological concerns […] The goal of sustainable development is to ensure that four elements – basic needs, ecology, ecoefficiency, and community empowerment – plus the transgenerational element are considered in the decision-making process (Blackburn, 2000, p. 175).

> Sustainable development is the bridge between environmental, economic and social goals; between north and south; between governments, civil society and business; between science and policy; and between policy and action (Department of Economics and Social Development [DESA], 2013).

Some landmarks in the literature related to SD can be traced back to the early 1960s. Even five decades ago, many thinkers foresaw some of the global challenges that were emerging. Rachel Carson's *Silent Spring* (Carson, 1962) explains the destructive effects of the pesticide DDT on natural food chains. Hardin's (1968) *The Tragedy of Commons* discusses overpopulation, the finite nature of biological resources and the consequences of excessive exploitation of the world's limited resources shared in common. Ehrlich's (1968) *The Population Bomb* describes the alarming impact and damage resulting from the increase in the human population. Most of the concerns addressed in all these writings, even though written in the 1960s when most natural resources were not yet critically deficient, have become clearly apparent today.

SD is interpreted differently among different interest groups, but the literature review shows that SD is a concept promoting the following outcomes:

- to meet the needs of the present without overusing the resources belonging to future generations;
- to integrate all stakeholders' concerns and to ensure that four elements – basic needs, ecology, eco-efficiency and community empowerment – are considered in the decision-making process; and
- to blend and balance environmental, economic and social goals.

The world's population is projected to increase from 7 billion in 2011 to 9 billion in 2050 (UN News Centre, 2014). This is a critical factor influencing global challenges and the need for SD. Pertinent questions that are now being asked include: how will this world habitat feed 9 billion people? How often can human societies absorb effects derived from industrial complexes (such as the Map Ta Phut Industrial Zone or the Dawei Project); inappropriate extractions of minerals, oil and gas; contaminated foods or global financial crises? Reports on the impact of global challenges make the "sustainable development" concept – balancing the environment, economic factors and human well-being – convincing and acceptable to a growing number of people.

SD through CSR, CG and sustainability concepts

CSR, CG and sustainability of an organization have been concepts that gradually gained recognition within the business world in the early 2000s amid the collapse of WorldCom and Enron, and later during the global financial crisis in 2008. The concepts were suggested by business ethics scholars as key principles for keeping organizations both profitable and sustainable because they take all key stakeholders' interests and concerns into account. They help businesses avoid making one-sided and profit-only decisions which may eventually lead to the ruin of the business after public scrutiny. As stated in the *2013-2014 State of the Future* report:

> Because the world is better educated and increasingly connected, people are becoming less tolerant of the abuse of elite power than in the past (The Millennium Project, 2014, "2013-2014 State of the Future", Executive Summary, p. 2).

CSR is concerned with ethical behavior of businesses and their responsibility to primary and secondary stakeholders. CG, on the other hand, deals mostly with the selection, compensation and authority management of boards of directors and top management. CG is important in maintaining market confidence and organizational performance because it involves decision-makers and the decision-making process in organizations. Sustainability of an organization combines three areas of business activities – economic, environmental and social – into one common goal. That is to make an organization sustainable by supporting performance which is beneficial to the organization, the environment and the community. These three areas can be referred to as the "Triple Bottom Line", or the "Three Pillars of Sustainability", or "Triple P"– People, Planet, Profit (Elkington, 1999; Hartman and DesJardins, 2011, p. 493). Table I describes some important features of CSR, CG and sustainability in relation to businesses.

In relation to the selected cases mentioned above, if CSR, CG and sustainability concepts were adequately taken into account by businesses, the damages that resulted may not have reached the levels reported or may not have occurred at all. People living in the areas of Map Ta Phut, Dawei, Xaiyaburi or around mineral extraction areas may have been spared the suffering they have had to endure because of unsafe environmental surroundings. Consumers may not have died or become gravely ill from unsafe products such as in the Chinese melamine case, or possibly the world may not have had to go into recession because of global financial crises.

Embedding CSR, CG and sustainability concepts at the strategic level: a model for organizational performance

Based on the literature review and the author's previous research into effective organizational performance in response to global challenges and SD, this study

Concept	Features
CSR	*Definition*: A continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large (WBCSD, 2013, p. 3)
	Issues: Stakeholders' interests and benefits. Stake holders include (a) primary group–customers, employees, shareholders and investors, suppliers, governments, communities; (b) secondary group–the media and special interest groups, competitors (Clarkson, 1995; Virakul *et al.*, 2009)
CG	*Definition*: (a) The formal system of oversight, accountability, and control for organizational decisions and resources (Ferrell *et al.*, 2011, p. 89); (b) Corporate governance deals with the rights and responsibilities of a company's management, its board, shareholders and various stakeholders (OECD, 2013)
	Issues: Shareholder rights, executive compensation, composition and structure of the board of directors, auditing and control, risk management, CEO selection and termination decisions, integrity of financial reporting, stakeholder participation and input into decisions, compliance with corporate governance reform, role of the CEO in board decisions, and organizational ethics programs (Ferrell *et al.*, 2011, p. 92; Jones and Thomson, 2012)
Sustainability	*Definition*: An approach to business that considers economic, environmental, and social issues in balanced, holistic, and long-term ways that benefit current and future generations of concerned stakeholders (De Lange *et al.*, 2012, p. 151; Elkington, 1999; UNWCED, 1987)
	Issues: Economic, environmental, and social performance (Elkington, 1999; Global Reporting Initiatives [GRI], 2012; Hubbard, 2011; Manetti and Toccafondi, 2012; Pflieger *et al.*, 2005; Weber, 2005)

Table I.
Some important features of CSR, CG and sustainability in business organizations

proposes that CSR, CG and sustainability concepts be embedded at a strategic level. It also proposes that a strategic plan contains four elements in balance: *business or profits*, *CSR*, *CG* and *sustainability*. Combined with the core factors of strategic planning (vision, mission and direction), the four elements would guide the setting of policies, activities and the evaluation of organizational performance. Figure 1 illustrates an overview of a relevant research proposal.

Table II shows the theories and models used for constructing this research model. They are divided into two categories as follows:

(1) those in *organization development* and *human resource management and development* which study the place and impact of external factors on organizations; and

(2) those in CSR, CG and sustainability which study the relationships and impacts within organizations.

The model starts with management theories positing that external factors influence decision-making in organizations. Common external factors include the economy, technology, the labor market, laws and regulations, business competition, environment and culture and resources. Global challenges, which are external factors to organizations, include those of insufficiency (e.g. natural resources, clean water, energy, food), excess (e.g. toxic wastes, pollution, corruption) or problematic impact (e.g. rich–

Figure 1.
A model of
organization
performance
embedding CSR, CG
and sustainability at
the strategic level
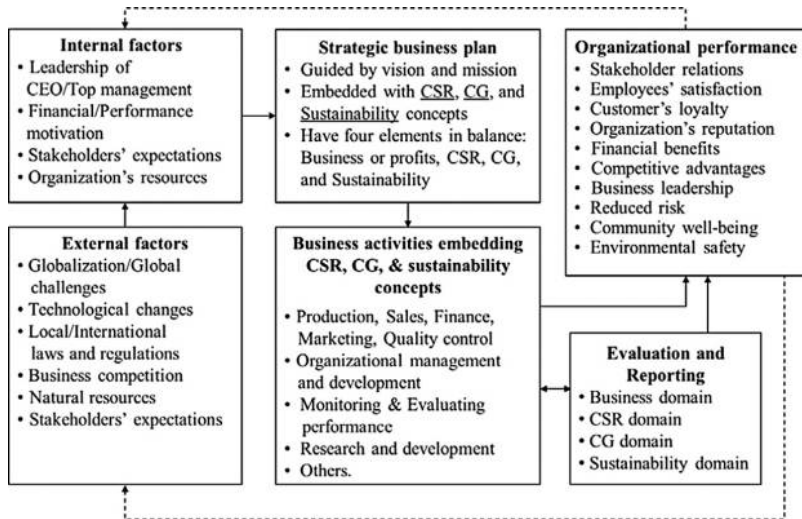
poor gap, technological crime, disease outbreak, financial crisis, global warming, political unrest, etc.).

Internal factors which are influenced by external factors shape an organization's goals, direction and activities and influence the formation of strategic business plans which, traditionally, have focused mostly on profits. This model proposes that CSR, CG and sustainability be included at a strategic level. The rationales of those four elements are as follows:

(1) *Business or profits*: To validate the organization's existence.

(2) *CSR*: To acknowledge the significance of stakeholders' opinions, participation and interests.

(3) *CG*: To oversee the use of authority and resources by decision-makers such as boards of directors, chief executive officers (CEOs) and top management.

(4) *Sustainability*: To blend and balance economic, environmental and social goals.

Embedding CSR, CG and sustainability concepts at a strategic level could sensitize all activities in an organization and ensure that they are carried on according to the organization's guiding principles. Also, when managers analyze CSR, CG and sustainability within a strategic framework, they are in a better position to decide how and which CSR, CG and sustainability concepts should be integrated into the companies' overall performance (Husted and Allen, 2006; Virakul *et al.*, 2009). The performance of business activities carried out according to a strategic plan should be monitored and reported on in four domains. The reports, if properly and accurately prepared, can be used as a communication tool between business organizations and their stakeholders. Outcomes of business activities which are embedded with CSR, CG and sustainability concepts can be categorized as "organizational performance" which impacts both the organization and society.

Domain	Subjects, models and sources
1. External factors and organization's strategy and performance	
Organization development	An organization as a system (Anderson, 2012, p. 65)
	The Burke-Lewin Model of Organizational Performance and Change (Anderson, 2012, p. 70; Burke, 2002)
	The Nadler-Tushman Congruence Model (Anderson, 2012, p. 72; Nadler and Tushman, 1983)
Human resource management and development	A model of employee behaviour (Desimone *et al.*, 2012, p. 37)
	The environment of human resource management (Anthony *et al.*, 2002, p. 26; Harris, 2000, p. 4; Mondy and Noe, 2005, p. 8)
2. CSR, CG and sustainability concepts and their relations to organization performance	
CSR	Multilevel and multidisciplinary model of corporate social responsibility (CSR): Predictors, outcomes, mediators, and moderators (Aguinis and Glavas, 2012, p. 952)
	A model of CSR activities in business organizations (Virakul *et al.*, 2009, p. 194)
	A model of corporate social responsibility (Hartman and DesJardins, 2011, p. 211)
CG	The framework for corporate sustainable development through an integrated management systems (IMS) approach (Asif *et al.*, 2011, p. 358)
	Disclosure reporting framework (Hubbard, 2011, p. 829)
	The twelve elements of building a model for measuring and monitoring the sustainability of corporate governance (Jones and Thomson, 2012)
Sustainability	Sustainability as an integral part of strategy (Bonn and Fisher, 2011, p. 13)
	A contextual model of strategic human resource management (SHRM) for organizational sustainability (Dubois and Dubois, 2012, p. 805)
	Models of integrating sustainability into the banking business (Weber, 2005, pp. 81-85)

Table II.
Sources used in
constructing the
current model of
business
performance

The outcomes or organizational performance mentioned in the related literature include: reputation, stakeholder relations, organizational capabilities, reduced risk, social performance, financial performance, community well-being and environmental safety (Aguinis and Glavas, 2012; Berns *et al.*, 2009; Huang, 2010; Kiron *et al.*, 2013). Financial benefits come when companies having a good reputation can thereby attract more investment because of investor trust. The outcomes of such business activities can be used by an organization's decision-makers as feedback to update and revise the strategic business plan. Organizational performance can contribute to lessening global challenges if – following CSR, CG and sustainability concepts – harmful business activities are minimized.

Discussion and implications
Reports from international agencies show that global challenges will continue to have an impact on human societies worldwide (The Millennium Project, 2014). The world's

ecological capacity is reported to be able to sustain good living conditions for 4.7 billion people (The Worldwatch Institute, 2013). Currently with 7.2 billion, and 9 billion projected for 2050 (UN News Centre, 2014), how we are going to handle these global challenges properly? This is an important question for people in all sectors. The model being presented here is an attempt to answer this question.

Some research studies in CSR, CG and sustainability show successful results from companies adopting these concepts. Other studies indicate neutral or even negative results. However, positive outcomes have been convincingly documented, and the trend is toward promoting CSR, CG and sustainability. In 2011, at least 95 per cent of the 250 largest global companies reported their corporate responsibility activities (KPMG, 2012; KPMG International, 2013). Good reputation, competitive advantage, employee/stakeholder trust and loyalty enhancement (Aguinis and Glavas, 2012, p. 952) as well as employee job and work–life satisfaction (Senasu and Virakul, 2015) have been reported as positive outcomes from CSR activities. A survey of business leaders, managers and executives showed that they saw tangible benefits derived from sustainability activities (Kiron et al., 2013).

In terms of the relationship among CSR, CG and sustainability, Huang (2010) found a positive connection between CG and CSR. It was found that effective CG improved the social and financial performance of the companies studied and that CG practices support CSR performance. Aras and Crowther (2008) suggest that good CG addresses the issue of sustainability in terms of social influence, environmental impact, organizational culture and finances. Young and Thyil (2014) report that CSR is a component of CG.

Hence, the model is timely in proposing an approach by business organizations to global challenges and SD by placing CSR, CG and sustainability concepts all together at a strategic level. However, future research studies are still needed to improve the model and relevant practices such as:

- the implementation process of concepts into business activities;
- evaluating and selecting performance indicators;
- critical issues in managing and reporting an organization's performance; and
- case studies of practices in small to medium-sized companies.

Such research could validate further the importance of CSR, CG and sustainability to an organization's performance as well as to the management of the concepts.

Conclusion
Because of the ongoing impact of global challenges and the reported benefits of CSR, CG and sustainability to organizations, the practice of embedding CSR, CG and sustainability at the strategic level is recommended to help business organizations manage such impacts appropriately. The model created in this research illustrates the proposed approach. More attention should now be given to improving the model, turning such concepts and knowledge into concrete action and developing mechanisms for monitoring outcomes and compiling effective reports.

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Appendix

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Case (countries affected)	Issues concerned
Map Ta Phut Industrial Zone and Port (Thailand)	Pollution, toxic wastes, health problems, underground and drinking water degradation, poor conditions of local environment
Dawei Deep-Sea Port (Myanmar)	Similar problems to those of Map Ta Phut Port and Industrial Zone (in Thailand), pollution, environmental degradation, forced migration and human rights of local people or minorities
Xaiyaburi Dam and other dams on Mekong River (China, Thailand, Burma, Laos, Cambodia, Vietnam)	Environmental changes along Mekong River, adverse effects on fish stocks and peoples' livelihoods
Exploitation of natural resources in developing countries (Thailand, India, Burma, Laos and other developing countries)	Improper/over utilization of natural resources, cultural-identity loss, forced relocations, degraded livelihood, environmental problems, conflicts of interests
The melamine scandal in 2008 (China)	Dangerous and poisonous substance, melamine in baby-milk powder; infant deaths
The global financial crisis in 2008 (USA and many countries in Europe and Asia)	Financial fraud by leading investment banks/institutes, global financial crisis
Global banking scandals/LIBOR-fixing Scandal/Barclay's Scandal in 2012 (UK, USA, South Korea, Japan, Singapore)	Fixing interbank lending rates, failing to stop money laundering activities, causing losses to pension funds, insurance companies, note-holders, entities and individuals

Table AI.
Summary of selected cases pertaining to global challenges

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Busaya Virakul holds a BSc and a DVM from the School of Veterinary Medicine, Chulalongkorn University, Bangkok, Thailand. She continued study in the USA and earned an MEd and PhD in Agricultural Education from the University of Minnesota. Before taking up teaching, she spent six years working with agribusiness companies. Her last position in the private sector was a human resource manager for a multinational company. She now teaches business ethics, leadership and human resources classes at the School of Human Resource Development, The National Institute of Development Administration, Bangkok, Thailand. Busaya Virakul can be contacted at: busaya@nida.ac.th