

Calling For Diversity In Health Care Executive Suites And Evaluation Of Effects On Efficiency Using Data Envelopment Analysis

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ABSTRACT

Adequate diversity in the leadership of health care organizations is a problem that potentially affects overall performance. In this paper, we propose the application of data envelopment analysis (DEA) and strategic human information systems to determine how diversity affects the efficiency, stability, and long-term viability of health care organizations at the organization level. Data envelopment analysis could also be applied within a given health care organization to examine how the organization's diversity make-up in its various departments affects relative efficiencies across the departments. After presenting a brief introduction of DEA, we provide examples of inputs and outputs used in a proposed DEA analysis. We also propose the use of strategic information systems in health care organizations in developing countries at both organization and departmental levels. We suggest that both developed and developing countries would benefit from using these tools as they seek to control costs and improve health care systems.

Key Words: Diversity, health care organizations, data envelopment analysis, efficiency, developing countries, sub-Saharan Africa

INTRODUCTION

The United States of America is home to individuals from diverse racial and ethnic backgrounds. Between 1980 and 2000, the country's population grew vastly differently for the different ethnic and racial populations in the United States. While the Caucasian population grew by nine percent, African-American, Native American, Hispanic, and Asian Pacific-Islander population grew by 28%, 55%, 122%, and 190% respectively (U.S. Census Bureau, 2001). The U.S. Census predicts that by 2030, four out of every ten Americans will be identifiable as a member of a racial or ethnic minority group (Dreaschlin, 2007). These population changes are also found in the workforce. The population explosions in developing countries are even higher. Whether or not an organization is actively planning to handle changes in a diverse workforce, trends indicate that it is an issue that needs to be addressed sooner or later.

Diversity not only entails employing different faces to fulfill quotas, but requires the arduous task of creating an environment where all employees are able to reach their career goals; it also calls for creating an environment of honesty, mutual support, and trust. Diversity is not just about doing the right thing but is considered a display of ethical behavior (Guillory, 2004). Although there are various social and theoretical ideologies concerning the need for diversity, an organization needs to understand how the composition of its workforce impacts the organization's strategic goals.

Many U.S. organizations have embraced, due to either external or internal pressures, the need to have a diverse workforce (Dass and Parker, 1999). Seventy-five percent of the *Fortune 500* firms report having some formal diversity programs aimed at increasing non-majority employees (Gilbert and Ivancevich, 2000). All organizations have to prioritize their ability to focus on their weaknesses and change them. Businesses are using more heterogeneous teams to provide a broader perspective on problems and solutions. Businesses understand that there is a need for diversity; however, the pressure to increase profitability may result in programs to increase diversity postponed indefinitely or even cancelled. Although customer satisfaction and other factors are measurable, it is difficult to determine how diversity either hinders or supports survival of the organization (Robinson and Dechant, 1997).

The need for diversity and its effects on the organization may include: savings in costs, winning the competition for talent, and driving business growth (Robinson and Dechant, 1997). Diversity can result in cost savings by decreasing turnover, decreasing absenteeism, and reducing the number of lawsuits. Winning the competition for talent can relate to being able and willing to maintain a competitive advantage by recruiting, developing, and retaining a diverse workforce. The drive for business growth can relate to improving the specific markets through cultural understanding, increasing creativity and innovation, and utilizing heterogeneous problem-solving teams.

There is no consensus on why there is a need for diversity in health care organizations, but some suggestions include corporate social responsibility, effect on consumer satisfaction (Ivancevich, 2007), advancing cultural competency, increasing access to high-quality health care services, strengthening the medical research agenda, and ensuring equitable management of the health care systems (Weech-Maldonado, Dreachslin, Danky, Souza, and Gatto, 2002). Having a talent pool of different backgrounds would bring greater leadership talent to focus on more diverse business solutions (Cohen, Gabriel, and Terrell, 2002). Both not-for-profit and for-profit organizations require an organization to be financially stable to continue operations. Therefore, the role of diversity in the workforce requires understanding of the potential financial consequences on the organization.

Oftentimes, top executives in health care and other types of organizations desire information on how diversity relates to the efficiency, stability, and long-term viability of their organizations. Literature shows that organizational effects of diversity on these and other measures is often overlooked, sometimes for apparent convenience, and other times because of difficulty in coming to consensus on methods of analyses and lack of agreement on relevance of such analyses (Weech-Maldonado et al., 2002). In this paper, we offer an analytical method that would show the effects of diversified healthcare executive suites.

DIVERSITY IN HEALTH CARE EXECUTIVE SUITES

Previous research and meetings have focused on diversity in the health care organization. At the National Association of Health Services Executives (NAHSE) CEO/Senior Executives Conference in 1999, a variety of issues facing health care executives were addressed including: (1) the challenge of delivering health care to a disenfranchised population; (2) the lack of minorities in the executive suites; and (3) racial biased treatment options (Ruthledge and Wesley, 2001). In 1992 a study conducted by American College of Health care Executives (ACHE) and the National Association of Health Services Executives (NAHSE) (whose members are predominately African-American) found that while African-Americans and Caucasian-Americans had similar educational backgrounds and years of experience, African-Americans were underrepresented in top management positions, employed less often in hospitals, earned a salary thirteen percent less, and had lower job satisfaction than their white co-workers. Another study conducted in 1997 by the ACHE, the Association of Hispanic Health care Executives (AHHE), and NAHSE in collaboration with the Institute of Diversity in Health Management (IFD), expanded the 1992 survey to include executives of all racial backgrounds. The major findings of the survey highlighted the profile of executives in health care organizations and found that there continues to be statistically significant differences in the number of Caucasian women versus minority women holding executive positions, but no significant differences in males between race groups (American College of Health care Executives, 2002). These studies highlight that although some organizations are committed to improving diversity, inadequate representation of minorities in executive positions persists and the executive suite will be forefront in positive changes.

Health care executives are responsible for the overall operations of a variety of health care organizations including hospitals, long-term care facilities, health insurance agencies, and consulting firms. In each organization there are different levels of executives that perform various functions. They are responsible for understanding the macro- and micro-environment when making strategic management changes. Middle and first-line managers have more direct contact with non-administration employees and should be utilized to understand how changes in the organization affect the employees (Shi and Singh, 2004). Senior executives have to evaluate available resources to determine what might affect their organization's long-term stability. Health care executives are influential in shaping the future of the organization. As the demographics of the United States and the overall workforce change, so must the organization's missions, visions, and long-term goals (Weil, 2003). It is imperative that all members of the health care executive team recognize these changes and determine what actions will position their organizations to be ready for these changes.

The future of the health care organization is largely determined by the health care managers. Weil (2003; p. 22-27) described existing disparities related to health care management in the U.S. as follows:

(1) Whites continue to be more highly compensated than minorities, (2) When adjusted for education and experience, income disparities among men virtually disappear, but persist among women, (3) Minorities have made mixed progress in closing the income gap since 1997, (4) With the exception of Asian women, minorities have made little headway in holding senior-level management positions since 1997, (5) Minorities are less satisfied than Whites with pay, level of respect, and on-the-job treatment, but express equal satisfaction with autonomy and job security, (6) Minorities express lower levels of attachment to their jobs than do Whites, (7) more White men aspire to become CEOs than respondents in other groups, (8) A significantly higher number of minorities than Whites believe there are racial/ethnic inequities in health care management, (9) more Whites than minorities feel that race relations in their organizations are good, (10) Minorities believe they must be more qualified than others to get ahead in their organization; Whites disagree, (11) Minorities report a reduction in discrimination since 1997, particularly regarding hiring, and (12) More minorities than Whites favor efforts to increase the percentage of minorities in health care management.

Continuing to hire non-minority individuals who mirror their image and ideas may be comfortable and convenient for managers (Dolan, 2003), health care organizations that survive will be led not by managers who feel the need to make their employees feel comfortable with the status quo, but by leaders who distinguish themselves as innovative thinkers with a compelling desire to increase the success of the organization. Successful leaders are those who understand that for the survival of their organization, they must step outside their comfort zone and decide what is best for the population they serve. Leaders in health care organizations need to recognize that supporting diversity goes beyond supporting community programs, but also to search for ways to implement changes within their organizations that best reflects the image the organization wishes to project (Warden, 1999). The notion equally applies to health care organizations in developing countries.

In the previous sections, we discussed the present state and future needs for diversity in not only health care organizations, but all business sectors. What lacks in the literature is the understanding how difficult it is for administrators and researchers to determine how to adequately measure the effects of diversity in the organization. In this paper we provide some suggestions to measure the effects of diversity in the organization by use of strategic human information systems and data envelopment analysis (DEA) to illuminate how diversity in the executive suites of health care organizations might impact measures such as efficiency, stability, long-term viability, etc. Doing such would provide value and fill a void in current literature.

STRATEGIC INFORMATION SYSTEMS

A definition of information is a "technology resources used for business information management" such as software, hardware, and network capabilities (Olugbode, Richards, and Biss, 2007). Turban, McClean, and Wetherbe (1996) states that "information systems (IS) are a collection of components that collects, processes, stores, analyzes, and disseminates information for a specific purpose." Thus, information systems utilize technology to help the organization with its daily processes. Many organizations spend a considerable amount of money either

developing, acquiring, or outsourcing information system to perform various tasks. Unfortunately, most information systems are inadequately used. Many organizations use these technological resources as databases, and fail to utilize them to look at financial performance or other areas for analysis (Dos Santos, 2003).

Strategic information system (SIS) is more pin-point than just information systems or information technology. The ability for an organization to not only utilize information system but to understand how information technology affects the viability of the organization is necessary (Olugbode, Richards, and Biss, 2007). Strategic information systems are technological resources utilized to increase the competitive advantage and long-term strategic goals of the organization. There are a variety of technological resources in information systems and strategic information systems utilized by organizations in general.

Before an organization can fully utilize SIS it must understand what its goals are and how the technology will be used to enable the organization to increase its competitive advantage. Individuals involved with buying and incorporating SIS need to be actively involved, and have a deep understanding of the pathway the organization is setting for itself. Strategic information systems could be used in conjunction with an application called data envelopment analysis to evaluate the relative efficiencies of organizations or units thereof. The proposal here is to apply these tools or resources in the evaluation of efficiency, stability, and long-term viability of health care firms that have implemented diversity in their executive suites and compare the results with firms that have not implemented such. The results could shed some light on the contributions of diversity and other factors, as well as point to improvement measures. Used as a decision making aid in conjunction with strategic information systems, data envelopment analysis is introduced in the next section.

DATA ENVELOPMENT ANALYSIS

Although strategic human information system would enable organizations to examine how diverse an organization is and how it could be aligned with the organization's strategic goals, it still may not facilitate the ability to determine how the organization's current diversity affects its financial bottom-line. Although there are a variety of mechanisms for determining financial success in a department, the challenge is to determine how a SIS can be used to determine how to use diversity to enhance efficiency, long-term sustainability, and competitive advantage.

Although there may be different mechanisms for determining success of an organization, financial performance is most often determined using financial ratios (Sherman and Gold, 1985). Use of ratios does have positive and negative implications. One of the positive implications is that ratios are universally used, and with little education or training, any individual involved in the organization could understand how the organization is fairing financially. With the development of benchmarks, it is even easier to evaluate the financial performance of an organization in comparison to other organizations in the same sector. One of the biggest obstacles of using financial analysis is that it fails to capture the non-financial aspects of the organization that often set it apart from other organizations. While these aspects may not be quantifiable in ratios, they are often what make the organization sustain competitive advantage. For example, Disney World/Land is called the 'Happiest Place on Earth'. It is not easy to quantify the friendliness of the staff, the goals set by Walt Disney, etc. What sets Disney apart is immeasurable.

One alternative to financial analysis that may be used to determine efficiency or performance of the organization is data envelopment analysis. Data envelopment analysis (DEA) is a nonparametric analysis that allows an organization to determine efficiency compared to other organizations in the same sector (Herrero and Salmeron, 2005). Efficiency is the ability of the organization to use its resources at the least amount of cost. Therefore, in this instance, diversity can be used as an input variable to determine how the make-up of the executive suite affects efficiency of the organization. This paper proposes to understand how the application of DEA can be used to evaluate the effects of an organization's diversity population and how it affects the organization's efficiency. It could also be used to look at the differences in how department administrators manage their units and also how to evaluate how non-administrative personnel work together. For example, organizations could use DEA to evaluate

how different surgical wards provide efficient patient care depending on the composition of the nursing, administrative, physician, clerical, and environmental sciences who are assigned to that floor.

We also propose a similar analysis across organizations to evaluate the relative efficiencies of individual health care organizations. As mentioned earlier, diversity of executive suites would be an input variable in the DEA model formulation. In this scenario, “executive suite” refers to individuals who are employed in higher levels of administrative positions, vice-presidents to the corporate governance. Sherman and Gold (1985) explain that “DEA evaluates the relative efficiency of a set of organizations in their use of multiple inputs to produce multiple outputs where the efficient production function is not known or easily specified.”

A major advantage in the application of DEA is that it works well in environments where “government bodies operate in markets, which are distorted by regulated prices, subsidies, and a lack of contestability” (Abbott and Doucouliagos, 2003). In most countries, the government plays an enormous role in health care. The ability of an organization to continue to provide high quality care under strict government guidelines require high amounts of efficiency, which DEA adequately measures.

Another beauty of DEA is that, as in financial ratios, with proper education interested parties can understand the outputs of DEA. While the details of DEA is not the focus of this paper, we should mention that DEA analysis calls for the creation of a “composite organization or unit” out of those being compared. The resulting efficiency ratios and other statistics on the various output measures are then interpreted. Organizations or units with efficiency ratios closer to 1.00 would be considered more efficient relative to those with ratios significantly lower than 1.00 (considered less efficient). Organizations or units with efficiency ratios of 1.00 are considered the most efficient in the group. This would allow managers and executives to understand the weaknesses within their organization with regards to diversity and other factors, and can suggest areas that should be evaluated for future changes and improvements (Sherman and Gold, 1985).

Inputs And Outputs Measures In DEA

The use of DEA requires the identification of appropriate inputs and outputs for health care units or organizations that are being compared. The inputs and outputs should be easily attained and have similar operationalization across the units or organizations. The input variables do not need to equal the number of output variables. Examples of inputs could be: number of minorities in executive positions, total expenditures, number of nurse staff, and number of beds to name a few. Examples of output variables could include: average daily census, patient satisfaction, number of nurse assistants trained per year, and total revenue. Fortunately the inputs and outputs are not concrete and can be changed appropriately for each section. Location and ownership may be variables that could also be considered in the analysis. A development of appropriate hypothesis is the initial step to understand how one organization, for this paper Hospital A, wishes to determine the efficiency of its organizations related to other organizations within the area: Hospital B, Hospital C, and Hospital D. These other organizations would be considered the organization’s competition in the environment.

Fortunately, many input and output data can be obtained through public information resources such as the American Hospital Association or annual reports presented to the community or investors. The information pertaining to the number of minorities in executive positions could easily be obtained through these sources. The definition of minorities should be clearly defined prior to obtaining information for minorities, especially in executive position and reflect a large avenue of constituents based on age, gender, race, etc.

Total revenue is an output that shows the total amount of revenue obtained through operations. The advantage of using this type of data is that revenue is universally determined regardless of ownership status or any other differences between organizations, especially those of for-profit and not-for-profit status. Also, if an organization is comparing total revenue with an organization within its macro-environment, then reimbursement rates should be comparables across the organizations. A problem that could arise with using total revenue is the unfortunate misrepresentation and number manipulation done by some unethical accounting practices. Therefore, it

would be best to compare organizations that are in similar geographic areas with similar patient mix, which may help to control for this.

Two non-financial output variables include average daily census and patient satisfaction. It is important when looking at health care organizations to evaluate both non-financial and financial analysis which can provide a better-rounded example of how organizations are performing. Average daily census provides a snapshot of how the hospital is using the available beds. This information needs to be weighted according to the number of beds in the organization. Patient satisfaction is becoming more widely studied by organizations as a way to gain market share in a tightly competitive market. There are a variety of organizations that are using patient satisfaction data that could be obtained for the organization. The reason for utilizing patient satisfaction is the possibility that higher number of minorities employed at the organization equals more patient satisfaction as it reflects changes in the population.

Using DEA is of course not an end-all solution for organizations to determine how diversity affects the efficiency of their organizations. Developing countries could also benefit from the application of DEA and the strategic use of information systems to enhance their health care development efforts. In the next section, we present some implications for developing countries.

IMPLICATIONS FOR DEVELOPING COUNTRIES

As developing countries seek to improve its own health care systems, it is important to understand how the composition of the organization will affect the efficiency and the overall sustainability of the organization. This composition can include different individuals of race, gender, age, ethnicity, religious, etc. Because developing countries have limited resources it is imperative that their organizations be as efficient as possible. Most developing countries, especially those in sub-Saharan African include individuals from diverse ethnic and religious backgrounds. These countries stand to benefit from our proposal if they implement strategic decisions for filling executive and other sub-level position with people of diverse backgrounds, and apply DEA to evaluate the effects of diversity and other interventions of organization survival. As conjectured for developed countries, this would help improve the efficiency and long-term viability of health care organizations in developing countries as they suffer disproportionate incidences of serious health care diseases such as AIDS, malaria, typhoid, and suffer higher rates of infant mortality.

CONCLUSION AND FUTURE STUDIES

We recognize that the ideal situation of a diverse organization will not occur overnight. The acceptance of diversity requires an organization to make a commitment, to try multiple efforts, to continue reinforcement of its strategies toward diversity, empowerment of minority groups, and openness of the employees (Gilbert and Ivancevich, 2000). With continued research and support from decision-makers, a diverse workforce is foreseeable in the future which reflects aspects of positive attributes such as understanding of different cultures, better quality of care, increase satisfaction among employees, and stronger business alliances. Strategic human resource information system and data envelopment analysis can be used to determine how diversity affects the organization and is a viable method which can be used to increase the number of minorities in executive position in developed and developing countries alike.

Future studies involving conducting analysis in health care organizations to understand the effects diversity has on efficiency and other health care outputs at both the organizational and departmental levels. Another study will focus on comparing the effects of diversity in health care organizations in the United States and in some developing countries, especially those in sub-Saharan Africa.

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