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ORIGINAL RESEARCH

Leadership strategies for embedding sustainability and resilience in organizations with an emphasis on sustainable energy

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Abstract Efficient strategies to embedding sustainability in an organization are frequently linked to effective leadership. By design, changes in direction within an organization may lead to alterations in commitment or perceived significance of sustainability in organizations. While some organizational leaders are interested in embedding sustainability within a structure, other leaders believe in leaving the legacy behind and permanently influencing sustainability efforts. To confirm or dispel the underscored notion of the importance of leadership in embedding sustainability in organizations, a qualitative methodology approach to interviews, document analyses, and literature review is utilized. The research inquiry includes in-person interviews with top city staff and elected officials in a large Midwestern city and a review of the internal documents and reports. The end goal of the research is an examination of the role both elected and appointed officials have in embedding sustainability within cities, and whether a change in leadership may have an impact on continuity of sustainability implementation and long-term viability of such policies. The paper focuses on the application of sustainable energy policies within a local government organizational structure as a mean of constructing a better understanding of leadership on sustainability implementation and embedment. While the further inquiry is needed, the research points out that an active partnership between city managers, administrators, and elected officials must be in place to support integrating sustainability from within and that sustainability thrives where exhaustive leadership support such initiatives and efforts.

Keywords: *leadership, sustainability, local governments, sustainable energy, resilience*

Introduction

For sustainability-related initiatives to thrive and succeed within an organization, leadership support is critical. The following research provides practical insights on the benefits of embedding sustainability with a specific focus on implementing the sustainable energy program within organizations. While the study focuses on a local government with the city/council with a weak mayor type of local government, and a history of implementing sustainable energy projects, the implications of the study can be substantial to both the public and the private sector organizations. Organizations engaging in sustainable energy strategies adopt innovations and efficaciously incorporate them into organizational routines and culture. In this research, an attempt is made to demonstrate the significance of a synergetic leadership and community support to sustainable energy strategies. Sustainable energy management, a subset of sustainability serves as an impetus for progress towards more effective leadership, organizational efficiencies, and more resilient communities. Sustainable energy management is defined as a set of practical measures undertaken by an organization to address the increased energy cost and may include energy efficiency initiatives, strategic energy management, and investments in renewables.

The central question for the research is: What is a relationship between the effect of deployment of sustainable energy by the local government and its organizational efficiency and effectiveness, fiscal resilience, and the overall sustainability? An in-depth, rich, thick

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descriptions concerning the opportunities and a potentially positive impact on local governments and communities were identified. One of the critical topics explored was the effectiveness of leadership in developing, delivering and sustaining the sustainable energy strategies. Furthermore, a key to successful sustainable energy implementation is measuring, tracking, and reporting of results is analyzed. The implications for transformative changes include informing the local government public administrators of the benefits of institutionalizing sustainable energy management and the effects on productive leadership, efficient organizations, and resilient communities. As the increased cost of energy, lack of coherent climate change policies and financial conditions intensify pressures on local governments, sustainable energy management provides an opportunity to reduce adverse effects of such inherent concerns.

The ultimate goal of this study is to identify the critical mechanisms leading to effective sustainable energy strategies at a local government level. The role of local governments is to deliver efficient and effective services and to ensure the safety of the public to support the critical results related to the quality of life in their communities. However, cities' leaders are primarily concerned with the economic well-being of the organization. Moreover, a new fiscal distress dynamic dictates new approaches, and sustainable energy management offers novel venues to address the issues related to the economic, social, environmental, and governance elements of sustainability aligned with a pragmatic, practical worldview. Researchers in previous studies surmised the importance of sustainable energy, and sustainable energy models for cities (Houck & Rickerson, 2009; Hughes, 2009; Keirstead et al., 2012; Kim et al., 2006; Born et al., 2001).

The literature review reveals an abundance of books, and peer-review journal articles using varying lenses focusing on sustainability (Akinsete and Nelson, 2017; Alibašić, 2017a & 2018b; Collin and Collin, 2010; Cohen, 2011; Coyle, 2011; Doppelt, 2010; Girardet, 2006; Portney and Berry, 2010; Portney, 2013; Slavin, 2011; Tumlin, 2012). Moreover, number of research, writings, and studies provide a review of varying aspects of energy efficiency and renewable energy efforts, including programs and policies (Alibašić, 2017b; Anderson, Kanaroglou, and Miller, 1996; Bossink, 2017; Born et al. 2001; Brownsword et al., 2004; Burch, 2010; Cheung et al., 2016; Cumo et al., 2012; Droege, 2006; Friedman & Cooke, 2011; Kim, Han, and Na, 2006; Lin & Huang, 2009; Madlener & Sunak, 2011; Mathiesen, Lund, and Karlsson, 2010; Vanderburg, 2006). However, a lack of specific research on the role of leadership in sustainable energy programs, plans, projects and policies, and in embedding sustainable energy to increase organizational efficiency is evident.

The positive impact of sustainable energy initiatives is presented using a case study of the City of Grand Rapids, MI. The City meritoriously deploys sustainability in the strategies and programs, brings about better insight into the potential implications of sustainable energy and sustainability programs and the role of leadership in implementing and embedding sustainability. One goal of this research was to analyze the influence of sustainable energy on the organization and in the community and showing the leadership at the local government level. Fitzgerald's (2010) viewed cities as leaders in inspiring national policies and energy sector growth and innovation. Local governments lead the worldwide efforts in deploying sustainable energy initiatives to increase climate resilience (Alibašić, 2018a & 2018c).

To adequately position the qualitative research design in evaluating the sustainable energy management and leadership, grounded theory formed the framework of this study. The grounded theory approach offers a prospect for new theories to emerge in the social science field rooted in objectivist and more recently constructivist concepts with a focus on generating theory, induction, and deduction. Grounded theory design contributes to the new views and theoretical understanding of sustainable energy management and the future of the sustainability framework. Studying sustainable energy in local government presented an opportunity for a potential theory to emerge as a more advanced field of study.

Leadership and sustainability in local governments

Today's leaders must operate within the constraint of surroundings, and limitations and benefits of a partnership with other similar organizations. Osborn, Hunt, and Jauch (2002) observed how organizations embedded the formal and contextual approach to leadership internally (p. 798). In cities, the performance measurements are incorporated into specific leadership actions, whether they include a reduction in energy consumption, renewable energy or specific reporting mechanism. Successful and sustainable organizations utilize "the set of shared values, beliefs, and norms" to enhance its work and efficiency (Yukl, George, Jones, 2009, p.502). In such environmental and structural authentication, leadership is essential for favorable evaluation, development, and implementation of sustainable energy management.

Sustainable energy management in Grand Rapids, MI

The City of Grand Rapids employs approximately 1,500 employees and is the second largest municipality in Michigan (City of Grand Rapids, 2016). Since 2004, the City has successfully implemented innovative sustainability strategies and incorporated them effectively into City's operations and culture (Alibašić, 2014 & 2015; City of Grand Rapids, 2015; City of Grand Rapids, 2016). The city employed sustainability at all levels to critically evaluate and appraise existing services and to improve operations, cut waste, and reduce costs for the organization. In addition to successfully transforming operations, a certain level of empowerment of employees occurs in the workplace manifested through sustainability. As employees design their work processes, they are more effective in creating the desired outcomes with the explicit association to the budget.

Sustainable energy efforts in the City of Grand Rapids date back to 1987 with the first energy audits evolving overtime to nascent energy efficiency strategies. Energy conservation efforts have remained a centerpiece of the overall sustainability efforts of the city. Besides, the city has been consistently analyzing cost-effective opportunities for on-site energy generation, including the use of wind turbines, solar panels, and geothermal production techniques. Initial successes in these areas have led city leaders to commit to the target of obtaining 100% renewable energy by 2025 (Steiner, 2017; City of Grand Rapids, 2016). The city is regularly listed on the U.S. Environmental Protection Agency Green Power Partnership list, a program that features the organizational procurement of green power by offering expert advice, technical support, tools and resources (EPA, 2018).

Methodology

The methodology utilized in this research is in alignment with the grounded theory from a constructivist perspective as outlined by Charmaz (2014). Moreover, Birks and Milles (2015) described the growing popularity of a grounded theory approach in qualitative data research for generating emergent theories from data. According to Charmaz (2014), the goal of "grounded theory strategies is to focus data collection" on constructing theories (p. 87). Moreover, Charmaz and Belgrave (2012) added researchers routinely use interviewing for data collection where grounded theory is being utilized for qualitative studies. Grounded theory is employed to assist with explaining the interconnection of sustainable energy management, organizational leadership in local governments. Accompanying grounded theory design added a dimension to the research findings.

A qualitative, purposeful sample study of the city's sustainable energy efforts was conducted to confirm or dispute the connection between leadership and sustainable energy. An evolving dynamic between the concepts of sustainability and leadership was examined, focusing on sustainable energy initiatives. In line with Patton's (2002) recommendation for critical case sampling with the most impact, a purposeful sample of twenty (20) top-management level employees, elected and appointed officials, and community leaders from

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the city was selected and then interviewed using the specific questions. Of those 20 identified interviewees, each had an active, leadership role in sustainable energy, whether in a management position or as a direct stakeholder related to sustainable energy.

Table 1. Demographic data of participants

	Community organizations representatives	City representatives	Total
Elected officials		2	2
Management/director	4	9	13
Mid management	1	4	5
Total	5	15	20

Table 1 describes demographic data of participants and professional positions of the interviewees.

Patton's (2002) and Creswell's (2007) approaches to a conceptual framework for using the purposeful sampling strategy and strategies in dealing with case studies were utilized in this research. Yin's (2008) recommended the use of a case study for examining social issues. Huberman and Miles (2000) provided an additional structure on for data collection methodologies in case studies, including interviews. An in-depth analysis of the sustainable energy management by the City of Grand Rapids provided an opportunity to examine the economic, environmental, and societal impact of such efforts internally and externally. The method of analysis was in line as suggested by (Stake, 1995; Wolcott, 1994; as cited in Creswell, 2009) for the case study. Multiple points of data collection allowed for participants' perception to be included in the research outcome. Furthermore, the qualitative data was collected and then analyzed for themes, in line with Creswell's (2009) recommendation for primary qualitative research (p. 184).

In identifying purposefully selected site and individuals for collecting the qualitative data Creswell (2009) suggested face to face interviews with city representatives and review and analysis of the qualitative publicly available documents such as reports related to sustainability. In using grounded theory approach, Charmaz (2014) emphasized the theoretical applicability of interviews rather than the full accuracy. The City's internal documents added a further dimension to the qualitative portion of the research, shedding light on operations and strategies related to sustainability. However, the internal documents did not offer an in-depth overview of data needed for this study in as much as interviews did with rich and thorough responses. The interviews were conducted on-site in the City of Grand Rapids. The more extended period for a qualitative study at the city ensured the reliability of data and integrity of research.

Walden University's Institutional Review Board (IRB) approval number for the study is 05-09-13-0186190. To add rigor to the study, after setting up the boundaries of the research, the strict data collection procedure to ensure the integrity of data was incorporated. After recording them, the interviews were transcribed and coded, as recommended by Stake (1995) using NVivo software for categorical aggregation denoting significance in the inquiry. Categorical aggregation was utilized to support looking for categories and themes. The study included analysis of the data with themes and utilization of NVivo software and its Node methodology, producing the coding density and strength in a meaningful order. By coding a specific part of the data and placing them into nodes, using the NVivo enabled a more cohesive organization of themes rigorously. Further analysis by looking at a hierarchical relationship was prepared by using the Framework Matrix in NVivo. By observing broader categories of data, various patterns and meanings were recognized from collected data and concepts behind each interview and to see the hierarchal interactions between the results.

Results

Based on the overall themes collected from transcribed interviews, questions about the impact of sustainable energy on the overall sustainability of the organizations generated a generous amount of constructive and indispensable responses. The effect of sustainable energy, defined as energy efficiency, renewable energy, and energy management is summarized through the lens of the resilience of the organization and the community, good governance, transformation and awareness, cost reduction, savings, cost avoidance, and efficient delivery of services. While there are varying themes that have occurred under different questions, a consensus of themes from research results was identified:

- Answerability and Good Governance.
- Triple Bottom Line Benefits.
- Embracing New Technologies and Systems.
- Building Resiliency through Transformation and Awareness.

In particular, an impressive portfolio of responses was collected through the theme of Building Resiliency through Transformation and Awareness. A summary of those responses emerged under the subset of themes focusing on Awareness and Improved Culture and Leadership, and Sustainable Organizations. According to responders, an intricate and irreplaceable connection between the organizational resilience, sustainability, transformation, and culture and leadership exist within an organization. The theme relies on a subset of themes focusing on Awareness and Improved Culture and Leadership, and Sustainable Organizations. The theme links to all the research questions, but most precisely answers the research question about a relationship between the impact of sustainable energy management on organizational efficiency and effectiveness, fiscal, and overall sustainability.

When compared to overall patterns from each interview, sustainable energy is viewed as an opportunity. In the words of interviewees, sustainable energy has a potential transformational and cultural impact in the community and organization. This view of transformation is the common theme among all but one interviewee, and the common thread and pattern transpired from interviews. As one of the community members interviewed for research noted: "Efforts for the sustainable energy management have been transformational." Interviewee 11 also added that as changes were made, and everyone responded to "the accepted norms to be more efficient" but those changes "would not have been made without a concerted effort and without changing the expectations and the norms." Likewise, Interviewee 17 responded that relationship between sustainable energy management and overall sustainability is unlimited "from an energy concept and a cultural people concept" further explaining that both have a positive effect on each other. Furthermore, Interviewee 17 added:

> "Getting a buy-in and understanding how to be more energy efficient from a process standpoint, and coupled with renewable energy at the same time, not only is it driving cultural transformation, with how to do things from a business practices, but that also turns into conservation, which inherently turns into energy savings in some form."

As noted by Interviewee 18, in addition to the cost that city pays, "there is an impact on the awareness that energy use has on the environment and overall cost that we pay" as a result of keeping track of costs for the past 10-11 years showing that costs kept rising. Interviewee 18 further noted, "As people became aware of these costs and started making changes, now these costs are going down, down, down every year," concluding the city is "heading in the right direction." Interview 13, directly involved in sustainable energy project management, noted that major shifts are occurring "even within the last ten years, of people being aware of not only having energy, looking at energy, and saving energy here and there, but we are evolving into the big picture mindset." The Interviewee 13 continued saying the process of

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change starts with “simple things like being conscious of where we are now, where we were five years ago, what improvements have we made, and what improvements we can make.” Furthermore, Interviewee 13 noted the impact of energy use has beyond the organization “now we are also looking at where the energy is coming from, is this the best source of our energy, and now realizing that energy creation does have an impact on regional environments, and the area in general.”

Interviewee 12 explained how the City's transformation plan is linked to the Sustainability Plan and is "integrated into it, but it is working on the operational side to transform our operations, and to provide a sustainable operational platform, which is essentially a lower cost platform than the trajectory we have been on." When describing sustainable energy in the city's operations, Interviewee 3 pointed out many benefits of the sustainable infrastructure and the ability to evaluate such relationship between sustainable energy management and efficiency in the organization, stating: "It has a considerable impact, catalyzing the various departments within the City to work within their organization to see what they could do for more sustainable practice." In response to the question on how sustainable energy management impacts the city's triple bottom line, social, economic, environmental decisions, Interviewee 20 believed that "there is a culture that develops, culture of energy efficiency, culture that can be bred out of being conservative, and being good stewards of the resources." According to respondents, sustainable energy provides multiple opportunities to benefit the organization. The willingness of the organizational leadership to embrace those opportunities can have significant positive impact on social, governance, economic and environmental aspects of the community. In building resilient communities, organizations providing essential public services use sustainable energy as an opportunity to tackle short and long-term costs. Additionally, leaders use it as an opportunity to serve the public from reinvestments and savings achieved in applying sustainable energy.

The interviewees provided an abundance of in-depth descriptions responses, indicating the evidence of the impact of sustainable energy management on the organization. The research results reveal the relevant conclusions about successful organizations and communities engaged in sustainable energy management.

Discussion

The role of government is often characterized by its ability to provide services to its constituents. In recent years, the concept of sustainable energy management as a system of good governance and cost containment became more prevalent. Traditionally, researchers have focused on large-scale benefits from either renewable energy, or energy efficient, but not in the overall context impact on the transformation of the local governments. Researchers (Keirstead, Jennings, & Sivakumar, 2012; Lin and Huang; 2009; MacKay, 2009; Houck and Rickerson, 2009) noted the direct impact of the application of sustainable energy management in local governments. Scholars in this field have documented the purpose and benefits of sustainable energy in local governments' operations and communities, focusing on specific delivery of sustainable energy using case studies. By linking applied sustainable strategies to local governments and testing for a positive impact from such actions in communities, the applicable grounded theory method was utilized within the context of sustainability and the positive social changes that occur as a result.

This qualitative research study demonstrated the effectiveness of the city’s sustainable energy efforts and practical strategies that could enable other communities to learn from these particular policies and programs. In general, interviewees believed that successful energy management, including energy consumption reduction, and managing the issue or rising cost would unavoidably lead to improved management and maintenance of infrastructure, systems, equipment, and assets. Furthermore, the city employs its sustainable energy management as an attempt to further operational efficiency, and to address economic, environmental,

governance, and social aspects of activities in delivering services, described as the Quadruple Bottom Line (Alibašić, 2017). The findings directly related to the research questions on the impact of sustainable energy management and subsequent measurement and reports.

The data indicated that city staff made a conscientious effort in delivering sustainable energy programs and that robust correlating support from the community and political leaders is needed and available. The city has been engaged in saving energy, reducing energy consumption, changing energy outlook, reviewing outside energy providers, and looking at cost function from a sustainability perspective. The city has evaluated functional infrastructure and systems, engineered new solutions to decrease pollution, reduce cost, and provide better outcomes for taxpayers. Moreover, the financial results are further evidence of the impact of the practical application of sustainable energy policies. As noted in a recent statement by the Deputy City Manager, Eric DeLong, using energy efficiency projects alone, the city was able to save over $25 million (Steiner, 2017). Additionally, future cost avoidance is expected from investment in renewable energy projects (Steiner, 2017). A principal focus on frugality and fiscal responsibility are evident throughout the city organization.

Building resiliency through transformation and awareness

Interviewees offered compelling responses related to sustainable energy outcomes, changes in organizational culture, and a general theme of transformation and leadership. In describing sustainability as an opportunity Laszlo and Zhexembayeva (2011) suggested the sustainability be viewed as an added benefit. There is overall confidence that sustainable energy management has a positive impact on operations and meets community expectations for transformation. As pointed out by Fiksel (2003) organizations are better off embracing and dealing with uncertainty to adapt to changes, rather than avoiding it (p. 5338). Transformative measures were undertaken by the city's leadership to build a stronger and more resilient organization ready to respond to changing demands and surrounding economic and environmental threats and uncertainty. The transformation towards sustainability is viewed as an opportunity for building more resilient organizations and communities.

Conclusion, policy implications, and recommendations

The research explored the impact of sustainable energy management in local government, its applicability and practicality. It built on previous literature, studies, and findings, and addressed the considerable gaps that still exist in the under-researched field of study. In exploring sustainable energy management within local governments in the context of sustainability, the research advances specific impacts from sustainable energy and its connection to organizational leadership. As today's organizations deal with an increased level of complexity and existential threat, their leadership is continuously challenged to adapt to changes, to evolve and transform to create and maintain sustainable organizations (Ireland & Hill, 2005; Metcalf & Benn, 2017; Uhl-Bien, Marion & McKelvey, 2007).

As explained by Bringer, Johnston, and Brackenridge (2006) grounded theory is used to create a reality-based theory (p. 251). These reliable, reality-based outcomes of the research are evidenced throughout the study. However, while this inquiry generated a potential positive alignment between sustainability and leadership, further research is required for an onset of the new theory. The findings from the interviews and the follow up analysis revealed that there was a positive impact on organizations and communities attributable to sustainable energy management. The implications of the results of this study in institutionalizing sustainable energy management include transformative changes for public administrators in the local governments, benefits of a more productive leadership, and more resilient communities.

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The findings of this research are consistent with previous inquiries of cities and the impact of renewable energy, energy management, and energy efficiency (Alibašić, 2015 & 2017b; Bossink, 2017; Hughes, 2009, Houck & Rickerson 2009; Lin & Huang, 2009). Furthermore, findings document a correlation between the successful implementation of sustainable energy management and leadership. The interviewees shared a sense of pride and ownership as being part of the sustainable energy management, and relevant policies and programs. It became evident during the interviews that staff directly and indirectly involved in sustainable energy projects spoke with a sense of pride and ownership. The research demonstrates how employees control builds capacity for accountability and good governance, leading to universal leadership for those involved in sustainable energy efforts within organizations, and focusing on final deliverables for the entire organization. There is a sense of synergetic direction that starts from the top and spreads across the organization and is supported by the community.

Additional research is needed to compare sustainable energy efforts across a spectrum of cities and programs, and to prove the concept of answerability and good governance, as well as the concept of resilience through transformation and awareness. Finally, several respondents were concerned about future of sustainable energy efforts with an impending change in leadership. Future studies focusing on the transitional aspect of leadership in the context of culture change and transformation towards sustainability would be advantageous to organizations. The organization benefited from having a structured leadership engagement in planning and implementation of strategies related to the sustainable energy management. Moreover, future investigations should include the views of city staff not engaged in sustainable energy.

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