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Sustainability Vision and Practice: The Apparent Gap Between Corporate Leaders' Pronouncements and the Perceptions of Polish and U.S. MBA Students from Three Universities.

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SUSTAINABILITY VISION AND PRACTICE

THE APPARENT GAP BETWEEN CORPORATE
LEADERS' PRONOUNCEMENTS AND THE
PERCEPTIONS OF POLISH AND U.S. MBA
STUDENTS FROM THREE UNIVERSITIES

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Abstract. This study focuses on the CEO-asserted critical need for sustainability in corporate strategy and MBA student perceptions of the extent to which their respective programs prepare them to handle sustainability challenges successfully. Students in one Polish and two U.S. mid-tier MBA programs were surveyed regarding their perceptions of four issues: 1) the link between sustainability practices and corporate performance; 2) the barriers to embedding sustainability practices in their current job; 3) the effects of being a sustainability advocate on their careers; and 4) the efficacy of their MBA programs in fostering leadership perspectives and skills related to sustainability. While students generally agreed on the positive link between sustainability practices and performance, they differed on the other

issues. The study discusses the implications of these findings for faculty members who want to close the gap between what CEOs say they need from graduates related to sustainability vis-à-vis the ability of current MBA programs to fulfill that need.

Keywords: sustainability practices; sustainability advocacy; leadership; cross-cultural management education

INTRODUCTION

The attitudes of CEOs toward sustainability assert that it is increasingly becoming a driver of corporate strategy. They have stated 1) that sustainability will transform their businesses within the next five years (Hayward et al., 2013); 2) that implementing sustainability strategies is increasingly becoming a competitive imperative (Kiron, Kruschwitz, Haanaes, & Velken, 2012) and is often one of the top three issues on their strategic agenda (Bonini & Bové, 2014); 3) that their firms' corporate business models are already including sustainability to capture strategic market opportunities (Kiron, Kruschwitz, Reeves, & Goh, 2013); and 4) that embedding sustainability in a corporation's core businesses will generate revenue growth through new opportunities (Hayward et al., 2013).

Nevertheless, these same CEOs indicated that their firms are currently trapped by "pilot paralysis," the inability to take small-scale, successful projects and expand them for greater impact.

CEOs believe action will be required not only in reshaping a new architecture for corporate sustainability, but also in linking sustainability tangibly and quantifiably to value creation, moving at scale and speed beyond pilot projects of incremental improvement toward transformational change. (Hayward et al., 2013: 19)

Lee and Brackley (2017) also add that short-term competitive market dynamics pose major challenges to sustainability practices. Thus, if such "transformational change" (Hayward et al., 2013: 19) is to be achieved, all organizational leaders must be able to translate their CEO's broad vision for sustainability into doable practice (Klettner, Clarke, & Boersma, 2014). Yet Lacy et al. (2010) found that "nearly a quarter (24 per cent) of all the CEOs selected 'lack of skills/knowledge of middle-senior management' as one of the top three barriers preventing them from effectively

implementing sustainability” (p. 352). Indeed, the literature on hiring managerial talent who possess the requisite technical knowledge of sustainability and the leadership skills needed to effect large scale organizational change supports these findings (Epstein & Buhovac, 2014; Goleman, 2010; Huber & Hirsch, 2017). Klingenberg and Kochanowski (2015) thereby concluded that “few organizations will find themselves in the luxurious position [of having] the right mix of people with the right mix of capabilities when starting sustainability initiatives” (p. 990).

Our research was stimulated by this juxtaposition between the need for skilled leadership teams that can implement sustainable business models versus current difficulties CEOs have in finding them. The historical view of management education as the formal agent for developing managerial talent (Khurana, 2007) led to our research question: How well is management education preparing future leaders to understand, advocate for, and implement sustainability so that transformational change can occur? Even though a growing body of literature identifies sustainability as an increasingly important management education topic (Collins & Kearins, 2010; Figueiró & Raufflet, 2015; Sharma & Hart, 2014; Weybrecht, 2013, 2016), few existing studies concurrently evaluate MBA students’ perceptions on 1) the links between sustainability practice and corporate performance; 2) the barriers to embedding sustainability in their current job; 3) the effects of being a sustainability advocate on their career; and 4) how well their MBA programs foster leadership perspectives and skills related to sustainability. Given that sustainability is a global challenge, our study measured and assessed all four of these dimensions in a cross-cultural context by analyzing the MBA programs of one Polish and two U.S. universities.

We chose Poland for two reasons: 1) because of Poland’s formal commitment to sustainable development, which has been codified in Article 5 of the Polish Constitution since April 1997 (Scrobota, 2014), and 2) because of the country’s significant growth post-transition. Poland is the leading economy in Central and Eastern Europe (Piatkowski, 2013) and one of the most robust economies in all of Western Europe (Bogdan, Boniecki, Labaye, Marciniak, & Nowacki, 2015). We therefore wanted to investigate whether MBA education for sustainability in Poland (Kronenberg & Bergier, 2010, 2012; Scrobota, 2014) was keeping pace with the country’s dynamic growth.

Our study begins with literature reviews on sustainability as a contested concept, the leadership-sustainability-strategy relationship, and on the challenge of integrating sustainability into management education. We then describe the study’s research methodology and findings. These in turn lead to a discussion of the gaps between

management curricula and the successful development of managerial talent which for CEOs is critical for embedding sustainability throughout their organizations. We conclude with a discussion of the study's limitations and provide suggestions for future research.

SUSTAINABILITY: A CONTESTED CONCEPT

Gallie (1956) describes four characteristics that define “essentially contested concepts”: a contested concept refers to 1) a valued achievement that 2) is internally complex, 3) has its meaning revised as circumstances change, and 4) has its origins in an exemplar whose authority is recognized. Moreover, individuals using a contested concept acknowledge the concept's contested character.

In light of this definition, the complexities involved in understanding sustainability are well-established (Filho, 2000). Lankoski (2016), for example, notes that “there has been a protracted debate on the general definition of sustainability” (p. 849). Johnston et al. (2007) have found over three-hundred definitions of sustainability, while Quental, Lourenço, and Da Silva (2011), Little (2014), and Owens and Legere (2015) have all noted that the term “sustainability” has become more ambiguous over time, as contested concepts often do. As Carew and Mitchell (2008) note: “The existence of different conceptions of sustainability is not surprising because the concept is comparatively young, complex and abstract and ... it rests on both factual and ethical components” (p. 106). The matter is complicated further when Bell and Morse (2008) observe that the “very holistic and anthropocentric essence of sustainability continues to elude attempts at objective analysis and assessment” (p. xvii).

As for a contested concept having its origin in an exemplar whose authority is acknowledged, the Brundtland Commission's statement that sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: 16) is often identified as the exemplar for sustainability. The power of the Brundtland Commission's definition of sustainable development is *prima facie*: it is easy to understand and it resonates with individuals on an intuitive level. It also implies that sustainable development is multi-generational and involves issues of intergenerational justice, and that humans are in a dependent relationship with their environment (Holden, Linnerud, & Banister, 2014; Laasch & Conaway, 2015).

The Brundtland Commission's definition of sustainable development, however, is also contested (Hopwood, Mellor, & O'Brien, 2005; Jacobs, 1999; Pearce & Atkinson, 1998; Redclift, 2005). First and foremost, it is difficult to operationalize (Barkemeyer, Holt, Preuss, & Tsang, 2014; Little, 2014) due to the ambiguity inherent in the concept of "needs." If the goal of sustainable development is to allow future generations to meet their own needs, then it is necessary to predict with accuracy what those needs will be while also determining when they will become salient. But chaos theory (Levy, 1994) and complexity science (Stacey, 1995) suggest that accurate forecasts of any long-term future are challenging—and often faulty. Furthermore, Hopwood, Mellor, & O'Brien (2005) note that the Brundtland Commission's definition of sustainable development is intentionally ambiguous, which helps explain its contested character as historically situated (Mebratu, 1998).

Despite the lack of definitional consensus, however, the business community sought to embrace sustainable development through the concept of corporate sustainability (Antolín-López, Delgado-Ceballos, & Montiel, 2016). For example, in an attempt to bring the Brundtland Commission's concept of sustainable development more firmly into the business domain, Elkington (1997) stated that sustainable development for businesses involves developing and then assessing organizational performance against economic, social, and environmental measures, e.g., the triple bottom line. As Collins and Kearins (2010) note, the triple bottom line is "a simple heuristic that both managers and business students can use as a prompt to remember the interrelated social, environmental, and economic dimensions fundamental to sustainability" (p. 500). Bansal (2005) in turn attempts to make such a framework more precise by outlining three elements of corporate sustainability—"Environmental integrity through corporate environmental management; social equity through corporate social responsibility; economic prosperity through value creation" (p. 199–200)—while Porter and Kramer's (2011) concept of shared value captures the complementary benefits that accrue to organizations, the environment, and society when triple bottom line thinking is a driver of core business strategy (Savitz & Weber, 2006; Sridhar, 2012). Landrum (2017) has noted, though, that the proliferation of terms related to corporate sustainability (e.g., corporate social responsibility, corporate citizenship, corporate social performance, environmental management, and corporate sustainability and responsibility) merely adds confusion to this scholarly debate.

The relationship between corporate sustainability and corporate social responsibility is similarly contested (Moon, 2007). Both concepts deal with the relationship of business to society and have since come together as discussions in stakeholder relationships (Donaldson

& Preston, 1995) and corporate citizenship (Matten & Crane, 2005) advanced. Bansal and Song (2017) have thus attempted to untangle what they believe to be an unfortunate convergence which they refer to as responsibility and sustainability: “Business managers and researchers alike now use the words *responsibility* and *sustainability* interchangeably, inconsistently, and ambiguously” (p. 106, italics in original). Such convergence in usage has not only increased confusion in the field but also stunted its growth, leading Bansal and Song (2017) to argue for the continued differentiation of the terms.

Given such complexity inherent in defining the concepts of sustainability, sustainable development, and corporate sustainability, scholars are now opting out of definitional debates (Holden et al., 2014; Müller & Pfleger, 2014). They increasingly review the literature germane to their research and simply state which term(s) they will use (Landrum, 2017). As such, we follow Bansal and Song (2017) by using the term “sustainability” throughout this article.

THE LEADERSHIP-SUSTAINABILITY-STRATEGY RELATIONSHIP

A variety of studies suggest that sustainability has become an increasingly important topic for corporate leaders (Berns et al., 2009; Bonini, 2012; Bonini & Görner, 2011; Kiron, Kruschwitz, Haanaes, Reeves, Fuisz-Kehrbach, & Kell, 2015; Lacy, Cooper, Hayward, & Neuberger, 2010; Lubin & Esty, 2010). CEOs report that sustainability is now “on their corporate radar,” and they believe finding sustainable solutions to current and future business challenges has the potential to transform their industries (Hayward et al., 2013). Moreover, a growing body of research links sustainability to improved financial performance (Cooper & Schlegelmilch, 1993; Kaspereit & Lopatta, 2016; Lo & Sheu, 2007; Lourenço, Branco, Curto, & Eugénio, 2012): a Deutsche Bank meta-analysis of 56 academic studies found that companies with high ratings on economic, social, and governance (ESG) factors had a lower cost of debt and equity. Such firms also outperformed the market in both the medium (three to five years) and long (five to ten years) term (DB Climate Change Advisors, 2012).

CEOs, however, also acknowledge frustration with embedding sustainability throughout their organizations, and often struggle when it comes to sustainability initiatives (Lee & Brackley, 2017). “That’s not because they don’t see sustainability as a strategic issue. Rather, it’s because they think they’re facing an unprecedented journey for which

there is no road map” (Lubin & Esty, 2010: 2). As such, the Balanced Score Card (Figge, Hahn, Schaltegger, & Wagner, 2002), Total Quality Management techniques (Curry & Kadasah, 2002; Zairi, 2002), the development of corporate sustainability performance measurement systems (Searcy, 2012), and the Global Reporting Initiative (Bonini & Bové, 2014) are all attempts to develop management tools that can quantify corporate performance *via-à-vis* sustainability efforts.

Müller and Pflieger (2014) have proposed the Sustainability Maturity Cube to help CEOs map and manage their organizations’ progress along three intersecting dimensions of corporate sustainability: 1) corporate activities, 2) the dimensions of sustainability those corporate activities address, and 3) the progress of institutionalization of those sustainability actions within the organization. Such a framework aids CEOs in structuring their actions for a “transformation towards sustainability” within their corporations (Müller & Pflieger, 2014: 316).

Beyond determining accurate sustainability measurement tools, CEOs must also embed sustainable development into their companies’ core business strategies (Engert & Baumgartner, 2016; Engert, Rauter, & Baumgartner, 2016; Stead & Stead, 2013). In this regard, Hahn et al. (2015) and Metcalf and Benn (2013) provide insights into why CEOs find the development of corporate sustainability strategies difficult. For Metcalf and Benn (2013), corporate sustainability is a complex problem, and as such is solved through complex cognitive processes which in turn are further challenged by the open systems that characterize most organizations. Open systems tend to act with the environment in “dynamic nonlinear” ways (Metcalf & Benn, 2013: 375), and so organizational leadership for sustainable development requires someone who

can read and predict through complexity, can think through complex problems, engage groups in dynamic adaptive organisational change and can manage emotion appropriately. In essence, leaders and leadership is a key interpreter of how the complexity of the wider complex adaptive systems environment of the organisation “links” internally to the organisation, and this link is a powerful mediator for successful implementation of sustainability, or may even be an expression of it. (Metcalf & Benn, 2013: 381)

Despite the various sustainable development challenges companies face, such as a lack of clear and consistent definitions, difficulties in measuring social impact, scaling sustainable development projects from pilot to core strategy, and hiring the right CEO with a comprehensive sustainability mindset, among others, CEOs are “virtually united in the

view that sustainability ... is and will be a major force to be reckoned with—and one that will have a determining impact on the way their businesses think, act, manage and compete” (Berns et al., 2009: 3).

MANAGEMENT EDUCATION AND SUSTAINABILITY

The well-established mission of business schools and programs is to develop human capital for effectively managing organizations (Grey, 2002; Khurana, 2007; Muff, Dyllick, Drewell, North, Shrivastava, & Haertle, 2013). As such, just as sustainability has crept into corporate operations and strategy, so too has it become increasingly important in management education (Wankel & Stoner, 2009; Weybrecht, 2016), although it still faces challenges (Figueiró & Raufflet, 2015). First, complete incorporation of sustainability across the entire business curriculum is limited, although a growing number of case studies describe MBA program redesign with sustainability at its core (Bamburg & Rowledge, 2009; Barber, Wilson, Venkatachalam, Cleaves, & Garnham, 2014; Hesselbarth & Schaltegger, 2014; Moran, Higgins, & Rosen, 2009; Stubbs & Lockhart, 2009). Second, much of the published management literature is descriptive, with articles focused on integrating sustainability concepts at the course level (Collins & Kearins, 2010; Landrum & Ohsowski, 2017). Examples of redesigns that incorporate sustainable development issues have clustered around marketing (Bridges & Wilhelm, 2008; Borin & Metcalf, 2010; DeLong & McDermott, 2013; Perera & Hewege, 2016; Pentina & Guilloux, 2010; Rountree & Koernig, 2015; von der Heidt, 2014), accounting (Coulson & Thomson, 2006; Fleischman & Schuele, 2006; Gray, 2013; Kelly & Alam, 2009; Ng, Leung, & Lo, 2017; Saravanamuthu, 2015), finance (Werner & Stoner, 2015, 2017), and entrepreneurship (Schlee, Curren, & Harich, 2008) courses. In contrast, Cavico et al. (2015) describe a multi-disciplinary approach that integrates ethics, law, social responsibility, and sustainability in a mandatory leadership and gateway experience for all incoming MBA students at one U.S. university. To date, few textbooks have been published that integrate sustainability ideas into general management, organizational behavior, or leadership courses (Figueiró & Raufflet, 2015). A recent review of eleven sustainability management textbooks captures the current state of the field in its title: “Sustainability Management Textbooks: Potentially Necessary, but Probably not Sufficient” (Starik, Kanashiro, & Collins, 2017).

Third, models for charting the progress of sustainability integration into business courses and curricula are emerging (Rusinko 2010a, 2010b)

in line with the descriptive nature of the literature. Pedagogical articles that speak to student engagement with sustainability issues cover as well the common theme of incorporating more active, applied, problem-based, and service-oriented learning into courses to bridge the theory-application gap (Baden & Parkes, 2013; Benn & Dunphy, 2008; Erskine & Johnson, 2012; MacVaugh & Norton, 2012).

Fourth, organizational challenges to embedding sustainability in business schools also involve well-known organizational change issues, such as the need for institutional resource allocation, resistance of individual faculty members to change, availability of support for ongoing faculty development to enable course and curriculum redesign, incomplete involvement of stakeholders in decision-making, and resistance to breaking down disciplinary silos (Figueiró & Raufflet, 2015). The latter point is especially challenging since sustainability is a fundamentally transdisciplinary concept (Mauser et al., 2013; Steiner & Posch, 2006; Tress, Tress, & Fry, 2004).

Finally, one of the most notable discontinuities in the management education literature to date is the lack of an epistemologically explicit educational framework within which to situate curricular and co-curricular sustainability efforts (Raufflet, 2013). As Arbaugh (2010, 2013) demonstrated in his evaluation of online and face-to-face learning, business disciplines differ in fundamental assumptions about how disciplinary knowledge is created. These differences in turn have implicit assumptions about pedagogy (Biglan, 1973). Therefore, without explicit statements of epistemological differences between disciplines, interdisciplinary work becomes more difficult because differences between what constitutes knowledge and the reliability of that knowledge are never overtly addressed. As a result, the evaluation of which pedagogies yield the most effective learning for students vis-à-vis sustainability also becomes ungrounded (Hofer & Pintrich, 1997; Meyer & Land, 2005). Thus, while agreement exists that business curricula need to change, the lack of explicit statements on “how this change could and should be undertaken, from the perspectives of both course design and an explicit educational paradigm” (Figueiró & Raufflet, 2015: 30) impedes systemic integration of sustainability in business programs.

RESEARCH METHODOLOGY

Questionnaire Design. We began our questionnaire design process with a review of the published literature on 1) the attitudes of managers

toward sustainability and corporate strategy and 2) student perceptions of the extent to which sustainability issues and topics were included in MBA programs. This review informed the questions asked in our survey's two major sections: Section One on sustainability in relation to corporate performance and Section Two on sustainability issues in the respondent's current MBA program.

Section One used items from Dale, Mayer, & Fox's (2010) research exploring business student attitudes toward environmental management. For some of these questions, we replaced the more restrictive concept of "environmental management" with the broader concept of "sustainability" in our question stems; all other questions were used verbatim from the original published source. Next came questions drawn from Lacy et al.'s (2010) study of CEO attitudes toward sustainability. This question sequence explored the relationship between sustainability and corporate strategy at the respondent's current place of employment. The latter were also asked to evaluate the significance of thirteen barriers that might impede the implementation of a company-wide approach to sustainability. It is here that we differentiated between sustainability and corporate social responsibility (Bansal & Song, 2017) by having separate questions on whether "differing definitions of corporate social responsibility" and "differing definitions of sustainability" were barriers to sustainability integration.

Section Two of the survey began with questions related to sustainability and the curriculum in the respondent's MBA program. It first assessed students' perceived opportunities to study sustainability within current courses; for this purpose, we selected items from the Aspen Institute's (2008) survey of MBA student attitudes toward business and society. A second group of questions then focused on curriculum design and asked students to evaluate how well their MBA program was preparing them to think strategically about sustainability (Net Impact & The Aspen Institute Center for Business Education, 2009). A third set of questions explored the extent to which specific pedagogies and curriculum features, such as sustainability-focused case studies and cross-disciplinary team projects, were used to understand sustainability issues (Net Impact & The Aspen Institute Center for Business Education, 2009). Selected examples of the questions used from each source can be found in Appendix A.

We also developed a question to gauge students' perceived ability to become a "sustainability advocate." Respondents were asked to identify the strength of their agreement/disagreement with each stem in the following statement: "As a strong advocate for sustainability, I will: have

problems at my current place of work; be limiting my career opportunities in the next 3–5 years; and be part of my industry’s leadership.”

The questionnaire concluded with demographic queries related to gender, age, years of work experience, and extent of MBA course work completed. None of the scales used in this research were copyrighted. The Institutional Review Board at one of the U.S. universities approved the final questionnaire and study design.

Respondents. Study participants were recruited from one university in eastern Poland and two universities in the United States. Non-elite, mid-tier comprehensive universities were chosen in both countries because, in the words of Fornaciari and Arbaugh (2017), the “vast majority of us do not work at elite institutions, even those residing in the, by definition, limited and prestigious universe of Association to Advance Collegiate Schools of Business International (AACSB)-accredited schools” (p. 7). By extension, the study of sustainability in non-elite, mid-tier universities also provides insights into how far along the diffusion of sustainability concepts (Lozano, 2010; Lozano, Lukman, Lozano, Huisingh, & Lambrechts, 2013) and teaching practices is in the numerical majority of MBA programs worldwide.

One of the U.S. universities is located on the east coast while the other is situated in the Midwest. The east coast university is a public institution with a total enrollment of 22,000 students, has a business school, and offers undergraduate and graduate level courses. The Midwest university is a private university, offers undergraduate, graduate, and doctoral programs, has a business school, and has a total enrollment of 3,800 students. The Midwest university also has an accelerated MBA program which can be completed within a year and exempts qualified undergraduates from all foundation courses. Both U.S. universities hold AACSB International accreditation.

The Polish university, located in east Poland, has approximately 24,000 students and delivers over 60 programs at the undergraduate, graduate, post-graduate, and doctoral levels, with the MBA housed within its Economics Department. Business classes at the Polish university are taught in English as well as Polish. The Polish business program is not AACSB International-accredited.

Students were invited to participate in the survey by their course professors who assured them that the survey was completely anonymous, that individual responses were impossible to track, and that nonparticipation would have no impact on any individual’s final grade. The survey was posted online using SurveyMonkey.com and was

available for ten days. A general reminder was given either orally or sent by email to all students to encourage survey participation. This was a simple statement saying that the online survey would be closing soon and that those interested should complete their survey by a given date.

RESULTS

One hundred and eleven MBA students completed the survey: fifty-nine from Polish university A and fifty-two from U.S. universities B and C combined. Females made up 79% of the Poland-based respondents and 67% of the U.S.-based respondents. The students from Polish university A were also much younger—between 21 and 29 years old—than their counterparts from both U.S. universities B and C, who included individuals in their 30s, 40s, and 50s.

Students from Polish university A had less work experience (with an average of 2.6 years) than their counterparts from U.S. universities B and C (who averaged 8.1 years). As a result, Polish university A students averaged one year of work with their current employer while U.S. university B and C students averaged 3.7 years with theirs. Finally, 63% of the students from Polish university A said that they were “almost done” with their MBA while only 19% of the students from U.S. universities B and C said the same, with almost 50% of the U.S. students stating that they were “just starting” their degree. Such data may reflect differences in full-time and part-time enrollment between the U.S. and Polish programs, as well as the accelerated nature of the Midwest university which allows students to take advanced disciplinary course work early in their studies.

To confirm the reliability of the scales used, a Cronbach’s Alpha was computed for each group of questions. All resulting Cronbach Alphas were above 0.70, the generally accepted cut-off point for scale reliability (Nunnally, 1978), thereby confirming the reliability of all scales used. The value for each group is as follows: for the

- five items drawn from Dale, Mayer, & Fox (2010), .716;
- thirteen items on organizational barriers to sustainability (Lacy et al., 2010), .933;
- eight items on sustainability in the workplace, also drawn from Lacy et al. (2010), .946;

- thirteen items on MBA program characteristics (The Aspen Institute Business and Society Program, 2008), .878;
- six items from Net Impact & The Aspen Institute Center for Business Education (2009) measuring program preparedness for sustainability, .870; and
- seven items that measured program opportunities to study sustainability issues (Net Impact & The Aspen Institute Center for Business Education, 2009), .918.

Independent t-tests were conducted for all questions. As such, we found that MBA students across all three universities held similar views on the relationships between sustainability and corporate strategy. For example, no statistically significant differences between the groups were found when they were asked whether companies “that engage actively in sustainability management gain a long term competitive edge over rivals” ($M_p = 3.89$, $M_{us} = 3.98$) and whether companies “that engage actively in sustainability management have a distinctive position in their industry that cannot be easily replaced by major competitors” ($M_p = 3.46$, $M_{us} = 3.79$). However, when asked whether companies that engaged in sustainability management would 1) “have better profitability compared to rivals” ($M_p = 3.44$, $M_{us} = 3.89$) and 2) “have growth that exceeds that of major competitors” ($M_p = 3.38$, $M_{us} = 3.70$), the two groups differed at $p < .05$. As to whether sustainability is embedded in operational decision-making at the respondent’s current place of employment, no statistically significant differences existed between the two groups—MBA students across all three universities held consistently similar perceptions that it was “sometimes true” that sustainability was included in strategy and operations decisions ($M_p = 3.33$, $M_{us} = 3.44$), global supply chain operations and practices ($M_p = 3.15$, $M_{us} = 3.53$), employee performance evaluations ($M_p = 3.11$, $M_{us} = 3.21$), and employee training ($M_p = 3.07$, $M_{us} = 3.34$).

A one-way analysis of variance (ANOVA) was conducted to test whether progress in one’s MBA program and length of time at one’s current place of employment—partitioned into three categories: just beginning (less than a year), established (one to five years), and long term (more than five years)—made a difference in the student’s perception of either the role of sustainability on firm performance or the embeddedness of sustainability thinking in the student’s current place of employment. No statistically significant differences were found.

Table 1 presents the mean scores (rank ordered) for the respondents’ evaluation of perceived barriers to embedding sustainability at their

current place of employment. All thirteen items were perceived as being moderate to significant barriers, and when all of them were mean-centered, seven in particular—1) lack of financial resources, 2) lack of support from the board of directors, 3) ineffective communications, 4) lack of perceived benefits for integrating sustainability into company decision-making, 5) lack of skills/knowledge of middle-senior management, 6) employee resistance, and 7) lack of recognition from the financial markets of the firm’s efforts to embed sustainability into decision-making—were above the mean center (grand mean = 3.43) and were perceived to be the strongest barriers to embedding sustainability in the respondent’s job. Independent t-tests were also conducted on the sample, with no significant differences found between the two student groups.

	N	Mean	Std. Deviation
Lack of financial resources†	96	3.71	1.297
Lack of support from the board of directors	91	3.63	1.244
Ineffective communications	97	3.63	1.310
Lack of perceived benefits	93	3.58	1.245
Lack of skills/knowledge of middle-senior management	93	3.54	1.194
Employee resistance	91	3.53	1.158
Lack of recognition from the financial markets	85	3.46	1.041
Difficulty in engaging with external/stakeholder groups	86	3.40	1.077
Differing definitions of sustainability	93	3.35	1.139
Failure to recognize a link to value drivers	85	3.34	1.119
Competing strategic priorities	89	3.19	1.147
Complexity of implementing strategy across functions	86	3.17	1.098
Differing definitions of corporate social responsibility	89	3.08	1.254
† Scale: 1 = not a barrier at all, 5 = a very significant barrier			

Table 1: Perceived Barriers to Embedding Sustainability at Respondent’s Place of Employment

Thus, for Section One of the survey, MBA students across the three universities were fundamentally similar in their attitudes regarding sustainability and its relation to corporate performance. In the survey’s second section, however, the perceptions of the two groups differed markedly in the evaluation of their respective MBA programs vis-à-vis sustainability. As Table 2 indicates, MBA students from Polish university A, as compared to their counterparts from U.S. universities B and C, perceived that they had fewer opportunities to make sustainability-

related decisions in their courses, that faculty came across as being less interested in discussing sustainability issues in organizations, that fewer applications of a multi-stakeholder approach to decision-making were being made in courses, and that there was more reluctance to raise questions about sustainability in the classroom.

		N	Mean	Std. Deviation
I have many opportunities to practice responsible decision-making related to sustainability issues/problems as part of my graduate management education.†	USA	48	3.63*	.890
	Poland	53	2.77	1.086
I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations.	USA	51	4.04*	.720
	Poland	55	3.00	.861
I am free to raise issues related to the sustainability responsibilities of companies and organizations in class.	USA	52	4.10*	.721
	Poland	50	3.26	.828
When issues related to the sustainability responsibilities of companies are discussed in class, they are almost always raised by students.	USA	49	3.10	.872
	Poland	52	2.77	.962
All faculty in my program are interested in discussing the sustainability impacts of business decision-making.	USA	44	3.77*	.803
	Poland	50	3.04	1.087
My program uses a multi-stakeholder approach to analyzing the impacts of business decisions.	USA	42	4.02*	.749
	Poland	46	2.83	1.039
* $p < 0.05$.				
† Scale: 1 = strongly disagree, 5 = strongly agree				

Table 2: MBA Student Perceptions of Opportunities to Learn about Sustainability in Their MBA Program

Respondents also differed significantly in their evaluation of how well their respective MBA program developed specific intellectual and behavioral competencies related to sustainability. With regard to all dimensions explored—systems thinking, effectively communicating technical ideas, having a stakeholder perspective, relating sustainability to the core business, understanding regulations, working for the common good, and cross-disciplinary problem-solving, students from U.S. universities B and C consistently said that their MBA was doing a better job in helping them develop these skills compared to what students from Polish university A claim (see Table 3).

		N	Mean	Std. Deviation
Communicate [all] the technical aspects of sustainability to a variety of audiences†	USA	48	3.02***	1.062
	Poland	51	2.25	.891
Relate sustainability elements to a company's core business	USA	51	3.27***	.961
	Poland	56	2.45	.851
Understand the effects of global and national regulatory frameworks on a business	USA	49	3.33**	1.068
	Poland	53	2.68	.915
Communicate sustainability imperatives to external and internal stakeholders	USA	49	3.14***	1.061
	Poland	51	2.39	.940
See the "big picture" and have a "holistic view of the world"	USA	50	3.36***	1.102
	Poland	50	2.52	.953
Integrate societal needs into business decisions	USA	51	3.59*	1.023
	Poland	53	3.04	.960
Use problem-solving approaches from outside business, such as the principles of design, to develop business strategies	USA	50	3.46***	1.054
	Poland	54	2.63	1.069
* p < 0.05; ** p < 0.01; *** p < 0.001.				
† Scale: 1 = not well at all, 5 = excellently				

Table 3: MBA Student Perceptions of How Well Their MBA Program is Developing Competencies Related to Sustainability

Statistically significant differences also existed between students at Polish university A and those at U.S. universities B and C in their perceptions of how often various pedagogies commonly used in MBA programs furthered their understanding of sustainability. Students from Polish university A consistently said that they had fewer courses, case studies, and practicum opportunities concerning sustainability as well as fewer lectures from sustainability professionals, applied projects that required them to "solve" a sustainability issue at their place of employment, and opportunities to hear science, design, and engineering professionals speak on sustainability topics than did their peers from U.S. universities B and C (see Table 4).

Lastly, we turn to the issue of becoming a sustainability advocate (see Table 5). Advocacy is generally thought of as giving verbal support for a cause or position; McConnell (2004) notes that it "is about moving from 'what is' to 'what should be' and that it is accomplished by, among other things, drawing attention to underlying or 'submerged' issues,

influencing public attitudes, and changing policies and practices” (p. 26). Sustainability advocates for McConnell, therefore, are change agents within a company because they want to move a unit, department, strategic business unit (SBU), or an entire firm from “what is” vis-à-vis sustainability to “what should be.” A sustainability advocate can also act as the firm’s conscience, reminding others of the importance of considering the sustainability implications of decision-making. In this light, MBA students from Polish university A and those from both U.S. universities B and C differed on the impact that becoming a sustainability advocate would have on their careers. MBA students from both U.S. universities B and C reported that being a sustainability advocate would not create undue problems at work and would, in fact, provide career and leadership opportunities. In contrast, more MBA students from Polish university A than from U.S. universities B and C thought that they would have problems at work and fewer career opportunities if they became a strong sustainability advocate. Table 5 thus raises some important issues related to leadership, strategic management, management education, and sustainability which we will discuss in the next section.

		N	Mean	Std. Deviation
Analyze case studies with sustainability and value creation as their main focus†	USA	53	3.51**	.993
	Poland	57	2.68	.948
Take a course whose main focus is sustainability	USA	53	3.26**	1.112
	Poland	57	2.68	.909
Listen to business professionals speak about sustainability topics	USA	53	3.09**	1.079
	Poland	56	2.57	1.110
Listen to science, design, and engineering professionals speak about sustainability topics	USA	53	2.92*	.978
	Poland	57	2.23	1.018
Have practicum / applied learning experiences related to sustainability issues	USA	53	3.11**	.993
	Poland	57	2.18	1.151
Collaborate with science, design, and engineering students on sustainability projects	USA	53	2.68*	1.105
	Poland	57	2.14	1.141
Take a course that requires a sustainability project for the place where you currently work in	USA	53	2.75*	1.072
	Poland	57	2.23	1.069
* p < 0.05; ** p < 0.01. † Scale: 1 = no opportunity to study, 5 = extensive opportunity to study				

Table 4: MBA Student Perceptions of the Degree to which Various Pedagogies Used in Their MBA Program Furthers Their Understanding of Sustainability

		N	Mean	Std. Deviation
Have problems at my current place of work†	USA	44	2.34*	1.055
	Poland	44	2.80	.954
Limit my career opportunities in the next 3–5 years	USA	45	2.24***	.981
	Poland	48	3.17	.859
Be part of my industry's leadership	USA	46	3.87**	.833
	Poland	50	3.30	.839
* p < 0.05; ** p < 0.01; *** p < 0.001. † Scale: 1 = strongly disagree, 5 = strongly agree				

Table 5: MBA Student Perceptions of the Effect of Being a Sustainability Advocate on One's Career

DISCUSSION

Our data suggest the need to close three gaps so MBA programs can develop the talent CEOs say they need for embedding sustainability into their firms' core strategies (Lacy et al., 2010; Hayward et al., 2013). These three perceived gaps are: between students wanting more in-depth study of sustainability versus the dearth of opportunities currently provided in their programs (Gap 1); between students wanting engaged faculty members who are fully committed to teaching sustainability topics versus current in-class experiences of faculty perfunctorily presenting sustainability issues (Gap 2); and between students' normative understanding that sustainability improves corporate performance versus their assessment that their MBA programs are not fully developing the sustainability competencies needed to link performance outcomes with sustainability (Gap 3). This last gap also results in the students' perception that they are inadequately prepared to deal with workplace barriers that prevent sustainability from becoming a central, organizational concern.

Gap 1: Current program, course, and pedagogical focus vs. perceived needs. Our findings suggest that MBA students from the three universities studied want more opportunities to learn about sustainability (see Table 2) than what their actual in-class activities or cumulative in-program experiences provide (see Table 4). Data from Table 4 also suggest that MBA students from Polish university A want more active and applied learning opportunities. As for students from U.S. universities B and C, we think that they can benefit from service learning and student partnerships with a broad range of societal stakeholders. In this light, courses and even an entire curriculum that stress experiential learning can provide students with an excellent laboratory for applied

sustainability education (Marques, Trevisan, & Cougo da Cruz, 2016). Student engagement with sustainability issues would then move from learning “for the community” to learning “with the community” (Brundiars, Wiek, & Redman, 2010: 311). Emphasizing action-oriented, applied, and project-based learning opportunities (Baden & Parkes, 2013; Figueiró & Raufflet, 2015; Tilbury, 2011) in all three universities’ programs would therefore communicate to students that their business school is a laboratory where they can gain competence and confidence in developing their sustainability mindset (Rimanoczy, 2014).

It is unfortunate, then, that most MBA programs integrate sustainability into core classes either through an ad hoc approach (perhaps also directly related to Gap 2) or by an incremental, “add on” method (Figueiró & Raufflet, 2015). As noted in Table 3, MBA students from Polish university A identified more opportunities for program improvement than did students from U.S. universities B and C. The former also consistently evaluated their program as doing “somewhat well” in terms of helping them communicate all aspects of sustainability to stakeholders, providing a holistic view of the world, and using problem-solving techniques from outside business. Students from U.S. universities B and C, on the other hand, indicated that their MBA program was doing “very well” on the same items. Our research thus supports Barber et al. (2014) in showing that sustainability is difficult to learn because it is both an inter- and a cross-disciplinary topic:

Sustainability challenges require students to learn sharp critical thinking skills, develop complex systems-based perspective [sic], and engage in difficult but necessary discussions about values. It requires a new way of thinking as commonly accepted paradigms and assumptions must be examined deeply and often changed. (p. 479)

Data from Table 4 further suggest that MBA students from Polish university A, in addition to wanting more active and applied learning opportunities, also seek out more cases on, and more exposure to, expert multidisciplinary perspectives on sustainability. Likewise, the mean scores for MBA students from U.S. universities B and C also point to a need for improved programs. Table 4 data thus confirms previous research (Steinemann, 2003; Rowe, 2007; Sipos, Battisti, & Grimm, 2008) in showing that “education for sustainable development calls for pedagogical innovations that provide interactive, experiential, transformative, and real-world learning” (Brundiars et al., 2010: 309). As such, the gaps between program design, courses, and teaching strategies noted above support Naeem and Neal’s (2012) conclusion that multiple

opportunities for successfully integrating sustainability into courses and curricula currently exist in business programs.

Gap 2: Differences among faculty interests and focus. Extensive research suggests that the professor matters (Bain, 2004). “What teachers think, what teachers believe, and what teachers do at the level of the classroom ultimately shapes the kind of learning that [students] get” (Hargreaves & Fullan, 1992: ix). This sentiment is often reinforced in the sustainability literature (Ceulemans, De Prins, Cappuyns, & De Coninck, 2011; Fisher & McAdams, 2015; Naeem & Neal, 2012). Again, we cite Barber et al. (2014): “Even though many faculty realize the growing significance of sustainability education in business schools, they have not integrated it into their teaching activities because of apathy, lack of appropriate teaching resources or other reasons” (p. 477).

Bridging this divide between finance-oriented “show me the numbers” faculty/managers and those faculty/managers who focus on “enduring” success (Ignatius, 2015; Werner & Stoner, 2015) suggests the need for creativity in business-faculty partnerships. For example, faculty members and managers could create, among others, innovative and interactive co-development approaches such as faculty working in businesses, non-profits, and civil society organizations as well as researching internal and external sustainability issues or CEOs becoming more closely involved in management education (Toffel, 2016). Through extended immersion in each other’s worlds, business and faculty leaders might reconstruct disciplinary knowledge within a sustainability framework while becoming sustainability advocates themselves.

Indeed, the second data item from Table 2, “I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations,” indicates that students from Polish university A perceive their faculty as ambivalent about sustainability issues while students from U.S. universities B and C perceive their faculty as relatively more engaged with the topic. When faculty members are seen as relatively disinterested in sustainability, they are less likely to emphasize it in their teaching. Creativity in faculty member-business partnerships as described above could therefore help ameliorate our sample’s perception of disengaged faculty members.

Gap 3: Difference between understanding sustainability advantages and putting competencies into practice. As noted above, students from Polish university A, U.S. university B, and U.S. university C all agreed that sustainability had positive benefits for firms. Yet they also agreed that their MBA programs were not fully developing their core competencies around sustainability.

Wiek et al. (2011) define a competence as “a functionally linked complex of knowledge, skills, and attitudes that enable successful task performance and problem-solving” (p. 204). Competencies are relevant both in educational program design and in businesses. From an educational/curricular/course perspective, they are linked with learning outcomes (Fink, 2013; Hesselbarth & Schaltegger, 2014). By clearly defining competencies, faculty members and administrators have “the reference scheme for transparently evaluating student learning and teaching effectiveness” (Wiek, Withycombe, & Redman, 2011: 204). In the same vein, competencies within organizations are linked with core operating tasks and are often used to recruit and evaluate managerial talent (Boyatzis, 1982). With its emphasis on human behavior, a specific competency thus translates knowledge into observable action that can be evaluated.

The competencies identified in Table 3 (e.g., communicating effectively with various stakeholders, working with and managing cross-disciplinary teams, including societal needs in decision-making, and developing a holistic/systems/enterprise way of thinking about sustainability) parallel Wiek et al.’s (2015) synthesis of five core sustainability competencies: 1) systems thinking, 2) futures (or anticipatory) thinking, 3) values (or normative) thinking, 4) strategic (or action-oriented) thinking, and 5) collaboration (or interpersonal) competence. These sustainability competencies also seem to be very much like the six competencies defined by Rubin and Dierdorff (2009) as being fundamental to managerial work, that is, managing 1) decision-making processes, 2) human capital, 3) strategy and innovation, 4) the task environment, 5) administration and control, and 6) logistics and technology.

In this light, data from Table 3 indicate that students from universities A, B, and C shared similar doubts about whether their respective programs were fully developing core competencies around sustainability. Indeed, while more students from U.S. universities B and C than from Polish university A reported that their MBA programs provided them with opportunities to develop some sustainability-related competencies, neither group asserted that their program helped them develop mastery.

Two specific items in Table 3 also stood out for us. The first concerns our question, “How well is your graduate program preparing you to relate sustainability issues to a company’s core business” (usually understood in terms of a value chain)? Porter and Kramer (2011) suggest that the traditional value chain creates too narrow a focus on short term actions. As an alternative, they advance the notion of shared value, which involves “creating economic value in a way that also creates value for society by addressing its needs and challenges” (Porter & Kramer, 2011: 64). Drayton

and Budinich (2010) also propose an expanded value chain that includes collaboration among companies, social entrepreneurs, NGOs, and others to create economic, social, and ecological value (Figueiró, Bittencourt, & Schutel, 2016). They call it a “sea-change in the way society’s problems are solved” (Drayton & Budinich, 2010: 58).

In addition to this, Laszlo and Zhexembayeva (2011) provide a roadmap of the shift required in corporate strategic perspectives to create sustainable businesses. In their text, Stead and Stead (2014) detail how to weave sustainability into each and every strategic management concept and process. In this light, we note that the majority of student responses from Polish university A suggest that current programs are unlikely to provide a strong foundation for future leaders that are needed in a dynamic market such as Poland.

The second item from Table 3 that stood out for us relates to the ability to use “a multi-stakeholder approach to analyzing the impacts of business decisions.” Students from Polish university A did not think that their graduate business program was sufficiently developing this competency in them, while students from both U.S. universities B and C felt that they were learning to use stakeholder analysis. This finding aligns with research on Polish management education which shows that Polish business schools have had difficulty adopting contemporary management techniques after 1989 (Kowalski, 2008; Skuza, Scullion, & McDonnell, 2013). Thus, while approaches to business school subjects among Polish faculty and students tended to be traditional, U.S. students and faculty appear to be transitioning to a more inclusive stakeholder mindset. Indeed, this advance toward stakeholder inclusion is what underpins the acceptance of sustainability.

On a final note, Table 1 indicates that students from all three universities found meaningful barriers to sustainability integration at their jobs. Lacking the confidence that they have the competencies required to deal with these many workplace barriers means, therefore, that sustainability strategies will be less than fully integrated into their companies. This implication leads us to wonder in turn about the effectiveness of management education in developing managerial talent that has the skills, abilities, and knowledge to address these barriers. Our research findings indicate that while students perceived significant differences within their respective programs, the programs themselves had low mean scores relative to barriers. As such, an overlapping responsibility for developing and implementing sustainability competencies exists between corporate and faculty leaders. In the end, the net result of these three gaps is that neither MBA students from Polish

university A nor from U.S. universities B and C envision themselves as strong sustainability advocates.

Being a sustainability advocate. We posit that becoming a sustainability advocate should be a primary outcome of management education focused on sustainability. Yet, as our data suggest, three gaps work collectively to thwart that development. The lack of opportunities to practice and gain experience with sustainability issues (Gap 1) was influenced by faculty members' course design decisions that dealt superficially with such concerns or omitted them altogether (Gap 2). Such uneven coverage leads students to conclude that their sustainability competencies are insufficient. The link is clear, however, between having the competencies needed for a job or task and the self-efficacy required to complete it successfully: competencies are a requisite condition for accomplishments, and both student groups said that they were inadequately prepared to deal with the multiple barriers that prevent sustainability from becoming a central workplace concern (Gap 3).

On a more positive note, our data also suggest that students from Polish university A and U.S. universities B and C appreciate the connection between good sustainability practices and corporate performance, which in turn mirrors the ESG-ranking (Ignatius, 2015). Students intellectually perceive these benefits: respondent agreement with statements such as "Companies that engage actively in sustainability management have better profitability compared to rivals" (M = 3.65), "Companies that engage actively in sustainability management have growth that exceeds that of major competitors" (M = 3.60), and "Companies that engage actively in sustainability management gain a long term competitive edge over rivals" (M 3.94) was strong. Unfortunately, however, agreement with these normative statements about the impact of sustainability on organizational performance did not uniformly translate into student commitments to become sustainability advocates (see Table 5). Students from U.S. universities B and C saw more career opportunities—or perhaps fewer career barriers—to become a sustainability advocate than did students from Polish university A.

Landrum's (2017) recent work on understanding sustainability models vis-à-vis the sustainability spectrum (very weak, weak, strong, and very strong sustainability) also sheds some light on this gap. She discovered that most of the 22-stage development models for sustainability reported in the academic literature emphasize weak sustainability. Landrum and Ohowski (2017) further solidify this point: their review of reading lists for 81 introductory sustainability business courses from 51 U.S. universities and colleges revealed that the ponderance of the course material emphasized weak or very weak sustainability, with few readings

emphasizing a strong or very strong approach. Teaching students weak sustainability, however, will never develop the type of leaders that can bring organizations to a sustainable future, leaders which, in our view, are strong sustainability advocates. As Landrum (2017) has said, referring especially to professors in their roles as teachers and researchers, “This is our own fault” (p. 19).

RESEARCH LIMITATIONS AND FUTURE STUDY

As suggested above, our research is subject to a number of limitations. Our sample size, for one, is relatively small. A larger sample might reveal additional or different “gaps” which might further influence the redesign of management curricula that explores sustainability topics in depth. Nonetheless, despite our small n , we believe our study raises important questions about the efficacy of management education curricula in developing the managerial talent that CEOs say they need (i.e., graduates who can deal competently with sustainability issues).

With regard to demographics, our focus on mid-tier, non-elite institutions may reveal student perceptions that differ from those found at lower or higher tier business schools. Our respondents also included a preponderance of women; how, then, do gender differences affect results, if at all? Also, there could be a benefit to focusing on graduates who had completed or are about to complete their programs.

Much more attention could also be paid to cross-cultural aspects. To what extent, for example, are seeming differences in responses explainable by cultural diversity? National and organizational culture may be hidden variables that affect student perceptions (Huang & Wang, 2013; Lee & Herold, 2016). Studies that specifically measure the residual effects of country or organizational culture on sustainability efforts would thus advance our understanding of the moderating and/or mediating effects of culture on sustainability practices and mindsets (Rimanoczy, 2014; Schein, 2015).

Finally, there was no “not important” option in our questionnaire itself, which could suggest why some respondents inferred some bias in our queries.

Such limitations suggest a possible future research agenda. Larger samples, more countries, different program levels, explicit attention to culture, and replication could all improve the reliability of results.

CONCLUSION

We chose a case study approach in an attempt to shed some modest empirical light on whether management education in one Polish and two U.S. MBA programs was developing in students the capabilities to become sustainability advocates. We also decided to study non-elite universities in both countries because the large majority of MBA programs offered globally are from this institutional type, and ours is among them.

As noted in our introduction, CEOs claim to envision a future where sustainability will fundamentally transform their industries (Hayward et al., 2013; Kiron et al., 2013; Lacy et al., 2010). They are thus looking for managerial talent that can not only help lead large scale organizational change but also embed sustainability thinking and analysis into core business strategy (Lubin & Esty, 2010; Metcalf & Benn, 2013). As such, we wanted to know whether students were being adequately educated to manage the sustainability challenges that CEOs say they foresee as central to the long-term success of their firms. Specifically, we developed a questionnaire to delve into the following four issues:

1. the link between sustainability and corporate performance;
2. barriers to embedding sustainability practices in the MBA student's current job;
3. effects of becoming a sustainability advocate on one's career; and
4. the efficacy of the three MBA programs studied in fostering leadership perspectives and skills related to sustainability.

When we explored the link between sustainability and corporate performance, our findings suggested that MBA students at the three universities we studied, even allowing for demographic differences, held similar views related to sustainability and long term competitive advantage, and on whether sustainability confers a competitive advantage to any firm. That said, all the mean scores were "mid-range" or neither especially good nor especially bad.

Our study also investigated the barriers to embedding sustainability practices in the MBA student's current job. Thirteen items drawn from previously published research (Lacy et al., 2010) were tested as potential obstacles to sustainability, including lack of financial resources, lack of support from the Board, lack of perceived benefits, and differing definitions of sustainability. Once again, mean scores hovered in the

mid-range, suggesting that sustainability needs to be less at the “pilot stage” and more integrated into the strategy process.

Unique to this research were questions designed to understand the effects of becoming a sustainability advocate on MBA students’ careers. The students from U.S. universities B and C reported that being a sustainability advocate would not create undue problems at work and would, in fact, provide career and leadership opportunities. We also found that more MBA students from Polish university A than from U.S. universities B and C perceived both more problems at work and limited career opportunities as consequences of becoming sustainability advocates.

In this light, the issue of advocacy is closely linked with the issue of leadership—sustainability leadership is needed if organizations are to embed sustainability into corporate strategy (Ferdig, 2007; Gerard, McMillan, & D’Annunzio-Green, 2017). We therefore studied the efficacy of the three MBA programs in fostering leadership perspectives and skills related to sustainability. Some differences between MBA students from Polish university A and those from U.S. universities B and C appeared, with U.S. students consistently saying that their program better prepared them with respect to, for example, having a stakeholder perspective and relating sustainability to the core business. Mean scores for students from all three universities were once again in the mid-range.

We also identified three major gaps or disconnects between stated goals and perceived needs. For Gap 1 (current program focus vis-à-vis students’ perceived needs), our findings suggest that neither in-class activities nor cumulative in-program experiences currently satisfy students’ desire for more opportunities to study sustainability (Cullen, 2017).

For Gap 2 (current faculty focus vis-à-vis company needs), our research supports David, David, and David’s (2011) conclusion that “an ongoing gap [is occurring] between what is being taught in business schools compared to what is actually needed by companies” (p. 59). For one, our observations of faculty attitudes uphold Lee and Brackley’s (2017) conference summation that short-term financial considerations tend to outweigh all others.

For Gap 3 (current understanding of sustainability advantages vis-à-vis implementing sustainability practices), all the students agreed that sustainability practices could provide positive benefits for firms. They also agreed, however, that their MBA programs were not fully developing their competencies around sustainability (Figueiró & Raufflet, 2015; Hesselbarth & Schaltegger, 2014; Wiek et al., 2011).

To summarize, we have identified issues and gaps faced by corporate leaders and MBA faculty. Major challenges thus remain—we concur with Cullen (2017) when he said, in his recent bibliometric review of research about educating management students for sustainability, that

most of the research appears to attempt to address management education *providers* rather than students (recipients). Sustainability and management education research needs to enhance our understanding of how students engage with sustainability-oriented management education programmes.... (p. 438, italics in original)

With its focus on MBA student experiences in Polish university A and U.S. universities B and C, our study thereby represents both a modest step toward understanding sustainability from the student perspective and an early effort to progress further in creating an educational foundation for sustainable practices.

Authors’ note: The three MBA/graduate business programs still existed at the time of data collection for this study. Over the past year, however, the MBA program at university B was forced to close.

APPENDIX A: SELECTED EXAMPLES OF QUESTIONS DERIVED FROM PREVIOUS RESEARCH AND USED IN OUR RESEARCH QUESTIONNAIRE

<p>Dale, Mayer, & Fox (2010)</p>	<p>Companies that engage actively in sustainability management have better profitability compared to rivals.</p> <p>Companies that engage actively in sustainability management gain a long term competitive edge over rivals.</p> <p>Companies that engage actively in sustainability management have a distinctive position in their industry that cannot be easily replaced by major competitors.</p>
<p>The Aspen Institute Business and Society Program (2008)</p>	<p>I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations.</p> <p>All faculty in my program are interested in discussing the sustainability impacts of business decision-making.</p> <p>My program uses a multi-stakeholder approach to analyzing the impacts of business decisions.</p>

APPENDIX A: SELECTED EXAMPLES OF QUESTIONS DERIVED FROM PREVIOUS RESEARCH AND USED IN OUR RESEARCH QUESTIONNAIRE

<p>Net Impact & The Aspen Institute Center for Business Education (2009)</p>	<p>My MBA program is preparing me to be able to</p> <ul style="list-style-type: none"> • relate sustainability elements to a company’s core business; • communicate sustainability imperatives to external and internal stakeholders; and • see the “big picture” and have a “holistic view of the world.”
<p>Net Impact & The Aspen Institute Center for Business Education (2009)</p>	<p>My MBA program provides opportunities to</p> <ul style="list-style-type: none"> • analyze case studies with sustainability and value creation as their main focus; • take a course whose main focus is sustainability; and • listen to business professionals speak about sustainability topics.
<p>Lacy et al. (2010)</p>	<p>To what degree is the following a barrier to implementing a companywide approach to sustainability at work?</p> <ul style="list-style-type: none"> • Complexity of implementing strategy across functions • Competing strategic priorities • Differing definitions of sustainability • Lack of support from the board of directors • Lack of perceived benefits

REFERENCES

- Antolín-López, R., Delgado-Ceballos, J., & Montiel, I. 2016. Deconstructing corporate sustainability: A comparison of different stakeholder metrics. *Journal of Cleaner Production*, 136: 5–17.
- Arbaugh, J. B. 2010. *Online and blended business education for the 21st century*. Oxford: Chandos Publishing.
- Arbaugh, J. B. 2013. Does academic discipline moderate CoI-course outcomes relationships in online MBA courses? *The Internet and Higher Education*, 17: 16–28.
- Baden, D., & Parkes, C. 2013. Experiential learning: Inspiring the business leaders of tomorrow. *Journal of Management Development*, 32(3): 295–308.
- Bain, K. 2004. *What the best college teachers do*. Cambridge, MA: Harvard University Press.
- Bamburg, J., & Rowledge, L. 2009. Building the Bainbridge Graduate Institute (BGI): Pioneering management education for global sustainability. In C. Wankel & J. Stoner (Eds.), *Management education for global sustainability*: 207–226. Charlotte, NC: Information Age Publishing.

- Bansal, P. 2005. Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3): 197–218.
- Bansal, P., & Song, H.-C. 2017. Similar but not the same: Differentiating corporate sustainability from corporate responsibility. *Academy of Management Annals*, 11(1): 105–149.
- Barber, N. A., Wilson, F., Venkatachalam, V., Cleaves, S. M., & Garnham, J. 2014. Integrating sustainability into business curricula: University of New Hampshire case study. *International Journal of Sustainability in Higher Education*, 15(4): 473–493.
- Barkemeyer, R., Holt, D., Preuss, L., & Tsang, S. 2014. What happened to the “development” in sustainable development? *Sustainable Development*, 22(1): 15–32.
- Bell, S., & Morse, S. 2008. *Sustainability indicators: Measuring the immeasurable?* (2nd ed.). London: Earthscan.
- Benn, S., & Dunphy, D. 2008. Action research as an approach to integrating sustainability into MBA programs: An exploratory study. *Journal of Management Education*, 33(3): 276–295.
- Berns, M., Townend, A., Khayat, Z., Balagopal, B., Reeves, M., Hopkins, M. S., & Kruschwitz, N. 2009. Sustainability and competitive advantage. *MIT Sloan Management Review*, 51(1): 19–26.
- Biglan, A. 1973. The characteristics of subject matter in different academic areas. *Journal of Applied Psychology*, 57(3): 195–203.
- Bogdan, W., Boniecki, D., Labaye, E., Marciniak, T., & Nowacki, M. 2015. *Poland 2025: Europe's new growth engine*. Boston, MA: McKinsey & Company. Available at http://www.mckinsey.com/~media/mckinsey/business%20functions/economic%20studies%20temp/our%20insights/how%20poland%20can%20become%20a%20european%20growth%20engine/poland%202025_full_report.ashx.
- Bonini, S. 2012. The business of sustainability. *McKinsey on Sustainability & Resource Productivity* (Summer): 96–105. Available at https://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Sustainability/PDFs/McK%20on%20SRP/SRP_11_Biz%20sustainability.ashx.
- Bonini, S., & Bové, A.-T. 2014. *Sustainability's strategic worth: McKinsey Global Survey results*. Available at <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/sustainabilitys-strategic-worth-mckinsey-global-survey-results>.
- Bonini, S., & Görner, S. 2011. *The business of sustainability: Putting it into practice*. McKinsey & Company. Available at https://www.mckinsey.com/~media/mckinsey/dotcom/client_service/sustainability/pdfs/putting_it_into_practice.ashx.
- Borin, N., & Metcalf, L. 2010. Integrating sustainability into the marketing curriculum: Learning activities that facilitate sustainable marketing practices. *Journal of Marketing Education*, 32(2): 140–154.
- Boyatzis, R. E. 1982. *The competent manager: A model for effective performance*. New York: John Wiley & Sons.

- Bridges, C. M., & Wilhelm, W. B. 2008. Going beyond green: The “why and how” of integrating sustainability into the marketing curriculum. *Journal of Marketing Education*, 30(1): 33–46.
- Brundiers, K., Wiek, A., & Redman, C. L. 2010. Real-world learning opportunities in sustainability: From classroom into the real world. *International Journal of Sustainability in Higher Education*, 11(4): 308–324.
- Carew, A. L., & Mitchell, C. A. 2008. Teaching sustainability as a contested concept: Capitalizing on variation in engineering educators’ conceptions of environmental, social and economic sustainability. *Journal of Cleaner Production*, 16(1): 105–115.
- Cavico, F., Mujtaba, B., Nonet, G., Rimanoczy, I., & Samuel, M. 2015. Developing a legal, ethical, and socially responsible mindset for business leadership. *Advances in Social Sciences Research Journal*, 2(6): 9–26.
- Ceulemans, K., De Prins, M., Cappuyens, V., & De Coninck, W. 2011. Integration of sustainable development in higher education’s curricula of applied economics: Large-scale assessments, integration strategies and barriers. *Journal of Management & Organization*, 17(5): 621–640.
- Collins, E. M., & Kearins, K. 2010. Delivering on sustainability’s global and local orientation. *Academy of Management Learning & Education*, 9(3): 499–506.
- Cooper, M., & Schlegelmilch, B. B. 1993. FOCUS: Key issues in ethical investment. *Business Ethics: A European Review*, 2(4): 213–227.
- Coulson, A. B., & Thomson, I. 2006. Accounting and sustainability, encouraging a dialogical approach; integrating learning activities, delivery mechanisms and assessment strategies. *Accounting Education: An International Journal*, 15(3): 261–273.
- Cullen, J. G. 2017. Educating business students about sustainability: A bibliometric review of current trends and research needs. *Journal of Business Ethics*, 145(2): 429–439.
- Curry, A., & Kadasah, N. 2002. Focusing on key elements of TQM-evaluation for sustainability. *The TQM Magazine*, 14(4): 207–216.
- Dale, K., Mayer, B., & Fox, M. 2010. Business students’ perceptions towards environmental sustainability: Is it a legitimate business issue? *Business Education Innovation Journal*, 2(1): 76–85.
- David, F. R., David, M. E., & David, F. R. 2011. What are business schools doing for business today? *Business Horizons*, 54(1): 51–62.
- DB Climate Change Advisors. 2012. *Sustainable investing: Establishing long-term value and performance*. Frankfurt, Germany: Deutsche Bank AG. Available at https://www.db.com/cr/en/docs/Sustainable_Investing_2012.pdf.
- Delong, D., & McDermott, M. 2013. Current perceptions, prominence and prevalence of sustainability in the marketing curriculum. *Marketing Management Journal*, 23(2): 101–116.
- Donaldson, T., & Preston, L. E. 1995. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1): 65–91.

- Drayton, B., & Budinich, V. 2010. A new alliance for global change. *Harvard Business Review*, 88(9): 56–64.
- Elkington, J. 1997. *Cannibals with forks: The triple bottom line of 21st century business*. Oxford: Capstone.
- Engert, S., & Baumgartner, R. J. 2016. Corporate sustainability strategy: Bridging the gap between formulation and implementation. *Journal of Cleaner Production*, 113: 822–834.
- Engert, S., Rauter, R., & Baumgartner, R. J. 2016. Exploring the integration of corporate sustainability into strategic management: A literature review. *Journal of Cleaner Production*, 112: 2833–2850.
- Epstein, M. J., & Buhovac, A. R. 2014. *Making sustainability work: Best practices in managing and measuring corporate social, environmental, and economic impacts*. Oakland, CA: Berrett-Koehler Publishers.
- Erskine, L., & Johnson, S. D. 2012. Effective learning approaches for sustainability: A student perspective. *Journal of Education for Business*, 87(4): 198–205.
- Ferdig, M. 2007. Sustainability leadership: Co-creating a sustainable future. *Journal of Change Management*, 7(1): 25–35.
- Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. 2002. The sustainability balanced scorecard: Linking sustainability management to business strategy. *Business Strategy and the Environment*, 11(5): 269–284.
- Figureiró, P. S., Bittencourt, B. A., & Schutel, S. 2016. Education for sustainability in business schools by practicing social learning. *Brazilian Journal of Science and Technology*, 3(1): 11.
- Figureiró, P. S., & Raufflet, E. 2015. Sustainability in higher education: A systematic review with focus on management education. *Journal of Cleaner Production*, 106: 22–33.
- Filho, W. L. 2000. Dealing with misconceptions on the concept of sustainability. *International Journal of Sustainability in Higher Education*, 1(1): 9–19.
- Fink, L. D. 2013. *Creating significant learning experiences: An integrated approach to designing college courses*. New York: John Wiley & Sons.
- Fisher, P. B., & McAdams, E. 2015. Gaps in sustainability education: The impact of higher education coursework on perceptions of sustainability. *International Journal of Sustainability in Higher Education*, 16(4): 407–423.
- Fleischman, R. K., & Schuele, K. 2006. Green accounting: A primer. *Journal of Accounting Education*, 24(1): 35–66.
- Fornaciari, C. J., & Arbaugh, J. B. 2017. Defining and achieving student success at non-elite schools. *Organization Management Journal*, 14(1): 7–21.
- Gallie, W. B. 1956. Essentially contested concepts. *Proceedings of the Aristotelian Society*, 56: 167–198.
- Gerard, L., McMillan, J., & D'Annunzio-Green, N. 2017. Conceptualising sustainable leadership. *Industrial and Commercial Training*, 49(3): 116–126.
- Goleman, D. 2010. Why leading sustainability matters more than ever. *People & Strategy*, 33(1): 7–9.
- Gray, R. 2013. Sustainability + accounting education: The elephant in the classroom. *Accounting Education*, 22(4): 308–332.

- Grey, C. 2002. What are business schools for? On silence and voice in management education. *Journal of Management Education*, 26(5): 496–511.
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. 2015. Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 127(2): 297–316.
- Hargreaves, A., & Fullan, M. 1992. *Understanding teacher development*. New York: Teachers College Press.
- Hayward, R., Lee, J., Keeble, J., McNamara, R., Hall, C., Cruse, S., Gupta, P., & Robinson, E. 2013. The UN Global Compact-Accenture CEO study on sustainability 2013. *UN Global Compact Reports*, 5(3): 1–60.
- Hesselbarth, C., & Schaltegger, S. 2014. Educating change agents for sustainability: Learnings from the first sustainability management master of business administration. *Journal of Cleaner Production*, 62: 24–36.
- Hofer, B. K., & Pintrich, P. R. 1997. The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research*, 67(1): 88–140.
- Holden, E., Linnerud, K., & Banister, D. 2014. Sustainable development: Our common future revisited. *Global Environmental Change*, 26: 130–139.
- Hopwood, B., Mellor, M., & O'Brien, G. 2005. Sustainable development: Mapping different approaches. *Sustainable Development*, 13: 38–52.
- Huang, S. K., & Wang, Y. L. 2013. A comparative study of sustainability management education in China and the USA. *Environmental Education Research*, 19(1): 64–80.
- Huber, R., & Hirsch, B. 2017. Behavioral effects of sustainability-oriented incentive systems. *Business Strategy and the Environment*, 26(2): 163–181.
- Ignatius, A. 2015. Leadership with a conscience. *Harvard Business Review*, 93(11): 50–59.
- Jacobs, M. 1999. Sustainable development as a contested concept. In A. Dobson (Ed.), *Fairness and futurity: Essays on environmental sustainability and social justice*: 21–45. Oxford, UK: Oxford University Press.
- Johnston, P., Everard, M., Santillo, D., & Robèrt, K. 2007. Reclaiming the definition of sustainability. *Environmental Science and Pollution Research*, 14(1): 60–66.
- Kaspereit, T., & Lopatta, K. 2016. The value relevance of SAM's corporate sustainability ranking and GRI sustainability reporting in the European stock markets. *Business Ethics: A European Review*, 25(1): 1–24.
- Kelly, M., & Alam, M. 2009. Educating accounting students in the age of sustainability. *Australasian Accounting Business & Finance Journal*, 3(4): 30–44.
- Khurana, R. 2007. *From higher aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession*. Princeton, NJ: Princeton University Press.
- Kiron, D., Kruschwitz, N., Haanaes, K., Reeves, M., Fuisz-Kehrbach, S-K., & Kell, G. 2015. Joining forces: Collaboration and leadership for sustainability. *MIT Sloan Management Review Research Report*. Available at https://www.unglobalcompact.org/docs/publications/Joining_Forces_MITSMR_BCG_UNGlobalCompact_Report.pdf.

- Kiron, D., Kruschwitz, N., Haanaes, K., & Velken, I. 2012. Sustainability nears a tipping point. *MIT Sloan Management Review*, 53(2): 69–74.
- Kiron, D., Kruschwitz, N., Reeves, M., & Goh, E. 2013. The benefits of sustainability-driven innovation. *MIT Sloan Management Review*, 54(2): 69–73.
- Klettner, A., Clarke, T., & Boersma, M. 2014. The governance of corporate sustainability: Empirical insights into the development, leadership and implementation of responsible business strategy. *Journal of Business Ethics*, 122(1): 145–165.
- Klingenberg, B., & Kochanowski, S. M. 2015. Hiring for the green economy: Employer perspectives on sustainability in the business curriculum. *Journal of Management Development*, 34(8): 987–1003.
- Kowalski, E. 2008. MBA teaching challenges in a changing political and economic environment: A case study of MBA teachers and students in Poland. *Journal of Teaching in International Business*, 19(3): 274–292.
- Kronenberg, J., & Bergier, T. (Eds.). 2010. *Challenges of sustainable development in Poland*. Fundacja Sendzimira.
- Kronenberg, J., & Bergier, T. 2012. Sustainable development in a transition economy: Business case studies from Poland. *Journal of Cleaner Production*, 26: 18–27.
- Laasch, O., & Conaway, R. 2015. *Principles of responsible management: Glocal sustainability, responsibility, and ethics*. Stamford, CT: Cengage Learning.
- Lacy, P., Cooper, T., Hayward, R., & Neuberger, L. 2010. *A new era of sustainability: CEO reflections on progress to date, challenges ahead and the impact of the journey toward a sustainable economy*. UN Global Compact-Accenture CEO Study 2010. Available at http://goodvision.co.il/images/File/Accenture_UNGC_Study_2010.pdf.
- Landrum, N. 2017. Stages of corporate sustainability: Integrating the strong sustainability worldview. *Organization & Environment*. DOI: 10.1177/1086026617717456.
- Landrum, N., & Ohsowski, B. 2017. Content trends in sustainable business education: An analysis of introductory courses in the USA. *International Journal of Sustainability in Higher Education*, 18(3): 385–414.
- Lankoski, L. 2016. Alternative conceptions of sustainability in a business context. *Journal of Cleaner Production*, 139: 847–857.
- Laszlo, C., & Zhexembayeva, N. 2011. *Embedded sustainability: The next big competitive advantage*. Sheffield, UK: Greenleaf Publishing Ltd.
- Lee, K.-H., & Herold, D. M. 2016. Cultural relevance in corporate sustainability management: A comparison between Korea and Japan. *Asian Journal of Sustainability and Social Responsibility*, 1:1–21. Available at <https://ajssr.springeropen.com/articles/10.1186/s41180-016-0003-2>.
- Lee, M., & Brackley, A. 2017. *Building the good life: Evolving perceptions of corporate sustainability leadership*. Oakland, CA: SustainAbility. Available at <http://sustainability.com/our-work/insights/building-good-life-evolving-perceptions-corporate-sustainability-leadership/>.
- Levy, D. 1994. Chaos theory and strategy: Theory, application, and managerial implications. *Strategic Management Journal*, 15: 167–178.

- Little, D. 2014. Defining sustainability in meaningful ways for educators. *Journal of Sustainability Education*, 7 (December). Available at http://www.jsedimensions.org/wordpress/content/defining-sustainability-in-meaningful-ways-for-educators_2014_12/.
- Lo, S. F., & Sheu, H. J. 2007. Is corporate sustainability a value-increasing strategy for business? *Corporate Governance: An International Review*, 15(2): 345–358.
- Lourenço, I. C., Branco, M. C., Curto, J. D., & Eugénio, T. 2012. How does the market value corporate sustainability performance? *Journal of Business Ethics*, 108(4): 417–428.
- Lozano, R. 2010. Diffusion of sustainable development in universities' curricula: An empirical example from Cardiff University. *Journal of Cleaner Production*, 18(7): 637–644.
- Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., & Lambrechts, W. 2013. Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. *Journal of Cleaner Production*, 48: 10–19.
- Lubin, D. A., & Esty, D. C. 2010. The sustainability imperative. *Harvard Business Review*, 88(5): 42–50.
- MacVaugh, J., & Norton, M. 2012. Introducing sustainability into business education contexts using active learning. *International Journal of Sustainability in Higher Education*, 13(1): 72–87.
- Marques, C. S., Trevisan, M., & Cougo da Cruz, A. 2016. Treading paths to sustainability: An analysis of the postgraduate curriculum in business administration. *Brazilian Journal of Science and Technology*, 3: 5.
- Matten, D., & Crane, A. 2005. Corporate citizenship: Toward an extended theoretical conceptualization. *Academy of Management Review*, 30(1): 166–179.
- Mauser, W., Klepper, G., Rice, M., Schmalzbauer, B. S., Hackmann, H., Leemans, R., & Moore, H. 2013. Transdisciplinary global change research: The co-creation of knowledge for sustainability. *Current Opinion in Environmental Sustainability*, 5(3): 420–431.
- McConnell, S. 2004. Advocacy in organizations: The elements of success. *Generations*, 28(1): 25–30.
- Mebratu, D. 1998. Sustainability and sustainable development: Historical and conceptual review. *Environmental Impact Assessment Review*, 18(6): 493–520.
- Metcalfe, L., & Benn, S. 2013. Leadership for sustainability: An evolution of leadership ability. *Journal of Business Ethics*, 112(3): 369–384.
- Meyer, J. H., & Land, R. 2005. Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning. *Higher Education*, 49(3): 373–388.
- Moon, J. 2007. The contribution of corporate social responsibility to sustainable development. *Sustainable Development*, 15(5): 296–306.
- Moran, S. B., Higgins, M. M., & Rosen, D. E. 2009. Educating future business leaders in the strategic management of global change opportunities. In C. Wankel & J. Stoner (Eds.), *Management education for global sustainability: 227–241*. Charlotte, NC: Information Age Publishing.

- Muff, K., Dyllick, T., Drewell, M., North, J., Shrivastava, P., & Haertle, J. 2013. *Management education for the world: A vision for business schools serving people and the planet*. Cheltenham, UK: Edward Elgar Publishing.
- Müller, A. L., & Pflieger, R. 2014. Business transformation towards sustainability. *Business Research*, 7(2): 313–350.
- Naeem, M., & Neal, M. 2012. Sustainability in business education in the Asia Pacific region: A snapshot of the situation. *International Journal of Sustainability in Higher Education*, 13(1): 60–71.
- Net Impact & The Aspen Institute Center for Business Education. 2009. *New leaders, new perspectives: A survey of MBA student opinions on the relationship between business and social/environmental issues*. Net Impact & The Aspen Institute Center for Business Education. Available at http://netimpact.org/docs/publications-docs/NetImpact_MBAPerspectives_2009.pdf.
- Ng, A. W., Leung, T. C., & Lo, J. M. 2017. Developing sustainability competence for future professional accountants: The integrative role of an undergraduate program. In W. L. Filho, L. Brandli, P. Castro, & J. Newman (Eds.), *Handbook of theory and practice of sustainable development in higher education*: 119–136. Hamburg, Germany: Springer International Publishing.
- Nunnally, J. C. 1978. *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Owens, K. A., & Legere, S. 2015. What do we say when we talk about sustainability? Analyzing faculty, staff and student definitions of sustainability at one American university. *International Journal of Sustainability in Higher Education*, 16(3): 367–384.
- Pearce, D. W., & Atkinson, G. 1998. The concept of sustainable development: An evaluation of its usefulness ten years after Brundtland. *Swiss Journal of Economics and Statistics*, 134(3): 251–269.
- Pentina, I., & Guilloux, V. 2010. Incorporating sustainability into a cross-cultural French-American marketing communications project. *Marketing Education Review*, 20(1): 21–28.
- Perera, C. R., & Hewege, C. R. 2016. Integrating sustainability education into international marketing curricula. *International Journal of Sustainability in Higher Education*, 17(1): 123–148.
- Piatkowski, M. 2013. *Poland's new golden age: Shifting from Europe's periphery to its center*. Washington, DC: World Bank. Available at <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6639>.
- Porter, M., & Kramer, M. 2011. Creating shared value: Redefining capitalism and the role of the corporation in society. *Harvard Business Review*, 89(1/2): 62–77.
- Quental, N., Lourenço, J. M., & Da Silva, F. N. 2011. Sustainability: Characteristics and scientific roots. *Environment, Development and Sustainability*, 13(2): 257–276.
- Raufflet, E. 2013. Integrating sustainability in management education. *Humanities*, 2(4): 439–448.
- Redclift, M. 2005. Sustainable development (1987–2005): An oxymoron comes of age. *Sustainable Development*, 13(4): 212–227.

- Rimanoczy, I. 2014. A matter of being: Developing sustainability-minded leaders. *Journal of Management for Global Sustainability*, 2(1): 95–122.
- Rountree, M. M., & Koernig, S. K. 2015. Values-based education for sustainability marketers: Two approaches for enhancing student social consciousness. *Journal of Marketing Education*, 37(1): 5–24.
- Rowe, D. 2007. Education for a sustainable future. *Science*, 317(5836): 323–324.
- Rubin, R. S., & Dierdorff, E. C. 2009. How relevant is the MBA? Assessing the alignment of required curricula and required managerial competencies. *Academy of Management Learning & Education*, 8(2): 208–224.
- Rusinko, C. A. 2010a. Integrating sustainability in higher education: A generic matrix. *International Journal of Sustainability in Higher Education*, 11(3): 250–259.
- Rusinko, C. A. 2010b. Integrating sustainability in management and business education: A matrix approach. *Academy of Management Learning & Education*, 9(3): 507–519.
- Saravanamuthu, K. 2015. Instilling a sustainability ethos in accounting education through the transformative learning pedagogy: A case-study. *Critical Perspectives on Accounting*, 32: 1–36.
- Savitz, A., & Weber, K. 2006. *The triple bottom line: How today's best-run companies are achieving economic, social and environmental success—And how you can too*. San Francisco, CA: John Wiley & Sons.
- Schein, S. 2015. Ecological worldviews: A missing perspective to advance global sustainability leadership. *Journal of Management for Global Sustainability*, 3(1): 1–24.
- Schlee, R. P., Curren, M. T., & Harich, K. R. 2008. Building a marketing curriculum to support courses in social entrepreneurship and social venture competitions. *Journal of Marketing Education*, 31(1): 5–15.
- Scrobota, M. 2014. Education for sustainability in Poland: A narrative literature review. *Journal of Education Culture and Society*, 2: 223–236.
- Searcy, C. 2012. Corporate sustainability performance measurement systems: A review and research agenda. *Journal of Business Ethics*, 107(3): 239–253.
- Sharma, S., & Hart, S. L. 2014. Beyond “saddle bag” sustainability for business education. *Organization & Environment*, 27(1): 10–15.
- Sipos, Y., Battisti, B., & Grimm, K. 2008. Achieving transformative sustainability learning: Engaging head, hands and heart. *International Journal of Sustainability in Higher Education*, 9(1): 68–86.
- Skuza, A., Scullion, H., & McDonnell, A. 2013. An analysis of the talent management challenges in a post-communist country: The case of Poland. *The International Journal of Human Resource Management*, 24(3): 453–470.
- Sridhar, K. 2012. The relationship between the adoption of triple bottom line and enhanced corporate reputation and legitimacy. *Corporate Reputation Review*, 15(2): 69–87.
- Stacey, R. D. 1995. The science of complexity: An alternative perspective for strategic change processes. *Strategic Management Journal*, 16(6): 477–495.

- Starik, M., Kanashiro, P., & Collins, E. 2017. Sustainability management textbooks: Potentially necessary, but probably not sufficient. *Academy of Management Learning & Education*, 16(3): 500–503.
- Stead, J., & Stead, W. 2013. The coevolution of sustainable strategic management in the global marketplace. *Organization & Environment*, 26(2): 162–183.
- Stead, J., & Stead, W. 2014. *Sustainable strategic management* (2nd ed.). Armonk, NY: M. E. Sharpe.
- Steinemann, A. 2003. Implementing sustainable development through problem-based learning: Pedagogy and practice. *Journal of Professional Issues in Engineering Education and Practice*, 129(4): 216–224.
- Steiner, G., & Posch, A. 2006. Higher education for sustainability by means of transdisciplinary case studies: An innovative approach for solving complex, real-world problems. *Journal of Cleaner Production*, 14(9): 877–890.
- Stubbs, W., & Lockhart, E. 2009. The sustainability business case: Educating MBAs in sustainability. In C. Wankel & J. Stoner (Eds.), *Management education for global sustainability*: 305–325. Charlotte, NC: Information Age Publishing.
- The Aspen Institute Business and Society Program. 2008. *Where will they lead? MBA student attitudes about business & society*. Available at https://assets.aspeninstitute.org/content/uploads/files/content/docs/bsp/SAS_PRINT_FINAL.PDF.
- Tilbury, D. 2011. Higher education for sustainability: A global overview of commitment and progress. In M. Barceló, Y. Cruz, C. Escrigas, D. Ferrer, J. Granados, F. López-Segrera, & J. Sivoli (Eds.), *Higher education in the world 4: Higher education's commitment to sustainability: From understanding to action*, vol. 4: 18–28. Palgrave Macmillan.
- Toffel, M. W. 2016. Enhancing the practical relevance of research. *Production and Operations Management*, 25(9): 1493–1505.
- Tress, G., Tress, B., & Fry, G. 2004. Clarifying integrative research concepts in landscape ecology. *Landscape Ecology*, 20(4): 479–493.
- von der Heidt, T. 2014. A study of inquiry-based learning in action: An example from a first-year marketing principles course. In P. Blessinger & J. M. Carfora (Eds.), *Innovations in higher education teaching and learning: Inquiry-based learning for the arts, humanities, and social sciences: A conceptual and practical resource for educators*, vol. 2: 243–276. Bingley, UK: Emerald Group Publishing Limited.
- Wankel, C., & Stoner, J. (Eds.). 2009. *Management education for global sustainability*. Charlotte, NC: Information Age Publishing.
- WCED [World Commission on Environment and Development]. 1987. *Our common future*. Oxford: Oxford University Press.
- Werner, F. M., & Stoner, J. A. 2015. Transforming finance and business education: Part of the problem. *Journal of Management for Global Sustainability*, 3(1): 25–52.
- Werner, F. M., & Stoner, J. A. 2017. Transforming finance and business education: Finance's unique opportunities. *Journal of Management for Global Sustainability*, 5(2): 15–52.

- Weybrecht, G. 2013. *The sustainable MBA: A business guide to sustainability*. New York: John Wiley & Sons.
- Weybrecht, G. 2016. *The future MBA: 100 ideas for making sustainability the business of business education*. Sheffield, UK: Greenleaf Publishing Ltd.
- Wiek, A., Bernstein, M., Foley, R. W., Cohen, M., Forrest, N., Kuzdas, C., Kay, B., & Keeler, L. W. 2015. Operationalising competencies in higher education for sustainable development. In M. Barth, G. Michelsen, M. Rieckmann, & I. Thomas (Eds.), *Routledge handbook of higher education for sustainable development*: 241–260. New York: Routledge.
- Wiek, A., Withycombe, L., & Redman, C. L. 2011. Key competencies in sustainability: A reference framework for academic program development. *Sustainability Science*, 6(2): 203–218.
- Zairi, M. 2002. Beyond TQM implementation: The new paradigm of TQM sustainability. *Total Quality Management*, 13(8): 1161–1172.