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## Corporate Sustainability Practices in the Plastics Industry

Bonnie Bachman

*Missouri University of Science and Technology, [bachmanb@mst.edu](mailto:bachmanb@mst.edu)*

Shikhar P. Acharya

Margaret Baumann

Shristy Bashyal

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Bonnie J. BACHMAN, Shikhar P. ACHARYA,  
 \*Margaret H. BAUMANN, Shristy BASHYAL  
 Missouri University of Science and Technology, \*G. H. Associates

## Corporate Sustainability Practices in the Plastics Industry

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### Summary

The objective of the survey for the plastics industry was to determine the role of sustainability in the plastics industry. We also wanted to determine the level of understanding of the concept of sustainability and the degree of commitment that this industry had to sustainability. Is it a passing trend or would it have a substantial impact on the industry and company strategy? In addition, the relation between company size as measured by its revenue and sustainability spending in plastics industry was investigated. It is logical and sensible to think that the bigger the company, the more they are likely to spend on sustainability. This study examines the hypothesis and uses statistical analysis to determine if this is actually true, at least in the plastics industry.

### KEY WORDS:

business practices  
 plastics industry  
 sustainability

### KLJUČNE RIJEČI

održivost  
 plastičarska industrija  
 poslovna praksa

### Poslovna praksa održivosti u plastičarskoj industriji

#### Sažetak

Svrha provođenja ankete bila je odrediti ulogu održivosti i utvrditi razinu razumijevanja koncepta održivosti i razinu određenja plastičarske industrije prema održivosti. Je li to prolazni trend ili bitno utječe na plastičarsku industriju u cjelini i strategiju pojedinih kompanija? Osim toga, proučen

je odnos između veličine kompanije mjerene prema prihodima i potrošnji za postizanje održivosti. Bilo je logično i razumno očekivati da što je veća kompanija, to je veća vjerojatnost da će više trošiti na održivost. Ovaj rad proučava tu hipotezu i koristi se statističkom analizom kako bi se odredila njezina istinitost, barem u plastičarskoj industriji.

### Introduction

The first survey was initiated with the membership of the *Society of Plastics Engineers (SPE)* in 2011. The purpose was to determine which strategies were used by the companies to address *sustainability* and to what degree sustainability was part of a company's strategy. The findings from the first survey were reported at *ANTEC 2011* and *2012*.<sup>1,2</sup> The second survey was conducted during the first quarter of 2014 and the results are reported in this paper.

### Methodology

An online survey with twenty-nine (29) questions including demographics of the respondents was created, distributed and analyzed using *Qualtrics*, a web-based surveying software application. The questions for this survey were taken primarily from the *Sustainability Initiative* project which is a joint collaboration of the *MIT Sloan Management Review* and knowledge partner *The Boston Consulting Group*.<sup>3</sup>

Based on the experience from the first survey, similar questions to the 2011 survey were used but, with some additional questions to ascertain a relationship between innovation and sustainability and the value proposition for sustainability. The survey was distributed to the *Society of Plastics Engineers (SPE)* membership via an email blast with a total of 156 responses collected.

### Demographics

The demographics of the participants are depicted in the following figures:

- size of organization (Figure 1);
- role of respondent (Figure 2);
- value proposition and stakeholders breakdown (Figure 3);
- area of responsibility (Table 1);

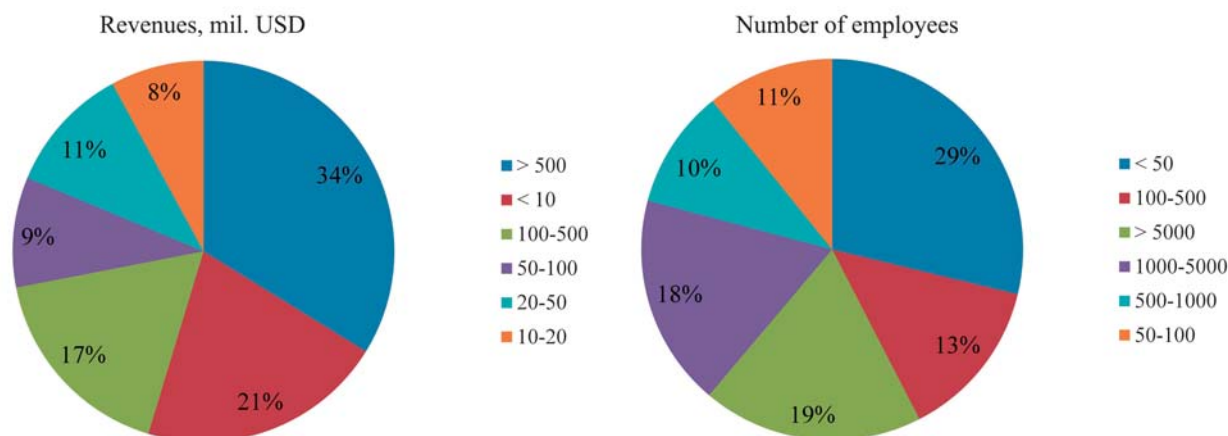


FIGURE 1 – Size of Organization

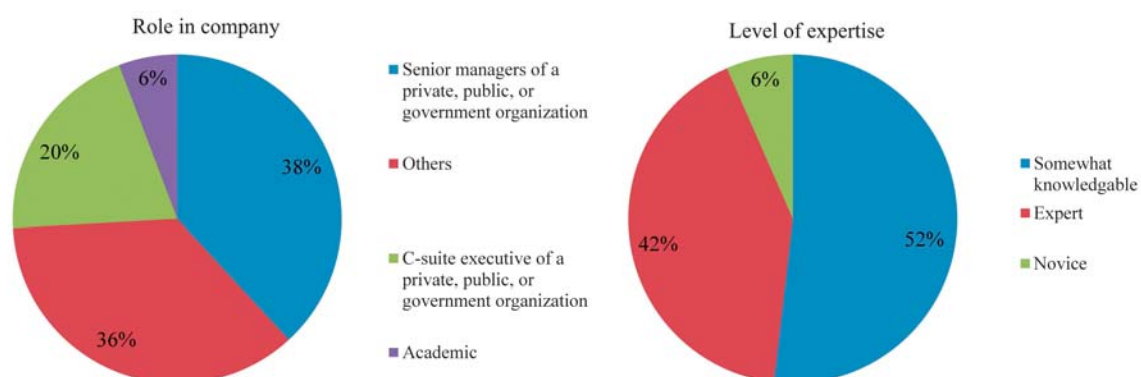


FIGURE 2 – Respondent's Role

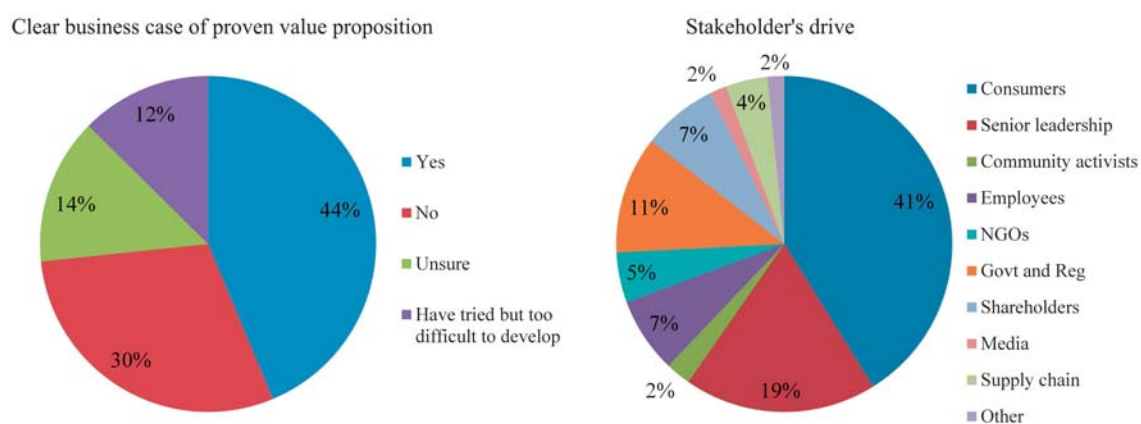


FIGURE 3 – Value proposition and stakeholders breakdown

- industry segment (Table 2);
- market served (Table 3);
- geographic region (Table 4).

TABLE 1 – Area of responsibility

Area	Percent, %	2011, %
Accounting / Finance	0	
Administration	4	
Education / Training	2	
Engineering	29	18
Environmental, health and safety	2	
Human resources	0	
Information technology	0	
Management	23	19
Marketing / Sales	21	14
Production	1	
Research, design and development	51	
Other	8	

TABLE 2 – Industry segment

Industry	Percent, %	2011, %
Academics	2	
Manufacturing - raw materials	47	22
Manufacturing - equipment	11	
Manufacturing - added value	11	18
Manufacturing – processors	31	33
Non profit	0	
OEM- capacity	14	

OEM-subcontract	2	
Public sector / Government	1	
Service provided – consultant	8	
Service provided – fabricator	1	
Service provided – other	3	
Other	3	

TABLE 3 – Market served

Market served	Percent, %	2011, %
Automotive	14	13
Building / Construction	8	9
Consumer products	23	15
Electrical / Electronics	9	
Fiber / Textile	4	
Industrial	21	
Medical / Healthcare	11	15
Packaging	30	8
Other	17	22

TABLE 4 – Geographic region

Market served	Percent, %	2011, %
Asia	2	5
Europe	4	7
ROW	5	6
USA	46	41
There are more regions	42	41

## Results and Findings

One of the most important aspects of the survey is developing a consistent set of definitions regarding sustainability. The results regarding the perceived definition of sustainability were as follows:

- 69% of all individual respondents believed sustainability refers to addressing issues from a long-term perspective;
- 60% indicated that sustainability incorporates climate change, environmental, social, and economic issues;
- 69% of the companies selected meeting the needs of current generation without compromising future generations to meet their needs;
- 54% preferred maintaining the viability of the business.

It is meaningful to understand what individuals and companies consider the most important resources that sustainable practices should address i.e., which resources had the greatest impact on their organization in 2014. The results are listed in order of the number of responses or equal rating (indicated by \*):

- non-renewable resource depletion (e.g., oil);
- government legislation in regards to sustainability\*;
- increasing consumer concern for sustainability issues\*;
- air, water or other environmental pollution;
- food supply or safety issues.

We also wanted to understand where the responsibility for sustainability lies in the organization:

- 7% indicated their organizations did not address sustainability issues;
- 13% were not clear on who has responsibility;
- 38% indicated all employees have a responsibility;
- 17% reported a senior or executive-level individual has full responsibility;
- 20% indicated there is a corporate cross functional group;
- 9% reported that each business unit in their organization has a group or individual.

In relation to current sustainability strategies and emphasis, the results are listed in order of the number of responses:

- developing a clearly articulated definition of sustainability;
- building awareness of sustainability in the organization;
- modelling the business case for sustainability in the long range  $\geq 4$  years);
- including sustainability in scenario or strategic analysis;
- developing a business case for sustainability in the shorter term (1-3 years);
- integrating sustainability strategy across organization;
- conducting a thorough assessment of the drivers of sustainability.

Additionally, we wanted to understand the external challenges that represent the most significant roadblock.

Listed below are the top three selected:

- insufficient customer demand or need;
- absence of clear industry standards;
- insufficient economic incentives.

Conversely, the question of internal challenges that represent the most significant roadblock to addressing sustainability within the organization provided the following responses:

- not persuaded of business case or value proposition;
- do not know the most effective ways to take action;
- initiative stalled by recessionary conditions;
- inability to assess tradeoffs between short term and long term;
- not enough resources to address these issues;
- outdated thinking and perspectives on sustainability issues;
- too many competing priorities/do not know what to do first.

Another survey item dealt with the greatest benefits to the organization when there is a focus on sustainability:

- competitive advantage;
- product, market or service innovation;
- improved company brand image or brand equity;
- business model or process innovation;
- new sources of revenue or cash flow;
- sustainability contributes to employee satisfaction, morale, and retention.

The question, ‘where are improved communications needed regarding sustainability programs’, provided the following results (percent of total responses) include:

- 33% - consumers;
- 15% - employees;
- 13% - government and regulators.

We asked what key challenges firms faced in communication with stakeholders respondents faced. The top three selections were:

- unclear role of sustainability as part of strategy - 15%;
- cannot sufficiently communicate financial value - 31%;
- do not know how to tailor messages to different stakeholder groups - 11%.

A third area of communication asked how organizations engaged suppliers. The most numerous selections follow:

- encourages suppliers with some degree of success - 32%;
- do not engage suppliers at all - 22%;
- limited engagement - organization lacks capability - 18%.

Respondents listed the following as the most important capabilities an organization needs to address sustainability (3 most prevalent responses):

- innovation in product, service or market;
- vision and leadership commitment to sustainability;
- innovation in business model or process.

One of the items needed to fairly evaluate sustainability initiatives are tools. Respondents viewed the following as important:

- financial tools to evaluate sustainability investments;
- sustainability scorecard with clear, measureable metrics;
- Six Sigma and *Lean* manufacturing concepts.

Another item covered in this paper pertains to what specific actions the respondent’s company was taking to address sustainability? The top six responses follow:

- improving efficiency by reducing waste;
- improving efficiency in energy consumption;
- reducing or eliminating toxicity;
- highlighting sustainability in company or product branding;
- improving efficiency in packaging;
- highlighting or promoting sustainability in supplier and customer relationships.

## Relationship between the Size of a Company and its Sustainability Spending

Numerous studies have included information as to what companies are spending on sustainable activities but there has not been any research relating to how the spendings are affected by the demographics of the company. This section focuses on whether or not the size of the company has an impact on sustainability spending.

The following statistical analysis (results of Chi-square test for independence), two survey questions came to the forefront from the field of twenty-nine items. The size of the company is classified into six types based on the revenue in millions of dollars: >500, 100-500, 50-100, 20-50, 10-20, and <10. Sustainability spending of a company is based on the response to the survey question *Has your organization developed a product or process that has specifically been designed to improve your organization’s sustainability profile*. If the answer to the question is yes,

it is assumed that the company has committed financial resources on sustainability spending; otherwise, it is assumed that the company does not allocate any financial resource on sustainability spending.

Similarly, the response to the survey question *Has your organization developed a clear business case or proven value proposition for addressing sustainability?* is taken as a commitment for potential sustainability spending. If the answer to the question is *yes*, it is assumed that the company is most likely to spend on sustainability products in the future; else it is assumed that the company is not inclined to sustainability spending in the near future.

Cross-tabulation is performed between the responses of these two variables with the size of the company. The cross tabulation table of the size of the company with sustainability spending is shown in Table 5 and the cross tabulation table of the size of the company with potential sustainability spending is shown in Table 6.

TABLE 5 – Contingency table of size of the company and sustainability spending

	>500	100-500	50-100	20-50	10-20	<10	Total
Yes	28	8	7	3	6	11	63
No	21	16	7	12	6	18	80
Total	49	24	14	15	12	29	143

TABLE 6 – Contingency table of size of the company and the potential sustainability spending

	>500	100-500	50-100	20-50	10-20	<10	Total
Yes	23	16	6	3	5	10	63
No	9	7	5	8	5	13	47
Total	32	23	11	11	10	23	110

Chi-square test at a significance level of 0.05 is performed to test the following hypothesis:

Case I:

*Null Hypothesis:* Sustainability spending is independent of the size of the company

*Alternate Hypothesis:* Sustainability spending is dependent on the size of the company

Case II:

*Null Hypothesis:* Potential sustainability spending is independent of the size of the company

*Alternate Hypothesis:* Potential sustainability spending is dependent on the size of the company

In case I, the Chi-square test returned the p value of 0.114. Since the p value of 0.114 is greater than the significance level 0.05, we do not have enough evidence to reject the null hypothesis. Hence, we conclude that there is no relationship between the size of the company and its sustainability spending.

In case II, the p value of the Chi-square test is 0.067. Since this p value is also greater than the significance level of 0.05, we do not reject the null hypothesis and conclude that there is no relationship between the size of the company and its potential sustainability spending.

## Conclusions

Sustainability is continuing to grow in importance within companies in the plastics industry driven by customers and stakeholders. It is becoming the core part of corporate strategy with consumer product companies and their suppliers taking the lead.

Customer demand for sustainable products and services is growing, but not at a substantial monetary premium. Responsibility for sustainable initiatives varies from company to company. In 2014, more companies have a person or team responsible either corporate-wide or by business unit compared to the 2011 survey.

Although companies are rapidly and actively including sustainability into their businesses and the plastics industry is no exception, the study shows that how much the companies spend on sustainability is not dependent on size of the company.

Based on the study, we conclude that there is no relationship between the size of the company and the sustainability spending. Even more, the size of the company doesn't even determine the potential sustainability spending. A small company may allocate a lot of financial resources for sustainability and a large company may not have any sustainability spending at all.

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## CONTACT

Bonnie J. Bachman, PhD  
Missouri University of Science & Technology  
Department Economics  
G9 Harris Hall, 500 W 13<sup>th</sup> Street  
Rolla, MO 65409, USA  
E-mail: bachmanb@mst.edu