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INFLUENCING CONSUMER ENGAGEMENT IN ENVIRONMENTALLY RESPONSIBLE BEHAVIOR

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ABSTRACT

The objective of green marketing campaigns is to influence consumer behavior by communicating the benefits of engaging in environmentally responsible behavior (ERB), such as recycling, conserving energy, purchasing locally or regionally grown/raised food, etc. Marketers use a variety of communication channels to diffuse these influential messages to their target segments. These messages convey a range of individual and socially collective benefits of ERB. They commonly stress its behavioral advantages in one of two contexts: ecological or economical. Yet, an insufficient amount of research exists towards understanding if one (or either) context is more influential in increasing the likelihood of consumers' willingness to engage in this increasingly essential social behavior. The findings of this study suggest that although communications rooted in a context presenting the economic upside of environmentally responsible behavior have a greater influence on consumers' likelihood to recycle, environmentally themed messages were seen as being more honest.

JEL: M3

KEYWORDS: Green Marketing, Consumer Behavior, ERB, Advertising, Public Policy

INTRODUCTION

Green marketing is a concept that has become an intersection for traditional advertising, social media, cause-related marketing, and public policy concerns. The idea of expanding and applying basic marketing principles and approaches to non-commercial organizations, as well as marketing to individuals who follow a more natural or organically oriented lifestyle, has existed for almost half a century (Kinnear, Taylor, and Ahmed, 1974). However, the popularity among academic researchers and marketing practitioners of this once borderline disciplinary niche is increasing at a very rapid pace these days. This is partly attributable to increased media coverage of the warnings issued by the scientific community regarding the Earth's climate and environment (Hanas, 2007, Rosenthal and Revkin 2007, Trenberth 2011). United Nations' Intergovernmental Panel on Climate Change Chair R. K. Pachauri recently declared that although there were many solutions to limiting climate change, all that was needed is the will to change (IPCC, 2014). The common theme of these reports and studies is that if human activities are not drastically altered immediately, there is a great likelihood of life on Earth, including human life, becoming extinct during the 21st century (Stern 2006, Swim, Clayton, and Howard, 2011, Hajat, Vardoulakis, Heaviside, and Eggen, 2014).

Studies have shown that increases in media coverage of events precede increases in the importance the public attaches to them (Sharp, 1992, Smith, 1987). Not surprisingly, calls for such imperative action regarding the environment have received widespread media exposure in hopes that the public will appreciate the consequential severity of not changing their environmental behaviors. The majority of the attempts to increase media coverage via public service announcements, electronic (including online and

mobile) and print advertisements, and other similar approaches have tended to stress either the economical or the ecological benefits of engaging in ERB. However, an uncertain financial future may have consumers less concerned with the green of their environment and more with the green (or lack thereof) in their pockets. To help offset this argument, many pro-ERB communications suggest the immediate realization of financial savings for consumers. A magazine ad, for example, may point out how the purchase of a single reusable water bottle and filter (as opposed to repeatedly buying bottled water) is not only greener ecologically, but is economically sounder as the financial costs involved in reusable bottles are only a fraction of the money consumers spend on bottled water every year (Clapp, 2012).

If consumer behaviors are to be successfully altered in this area, those advocating ERB would more effectively be able to serve their cause if they focused on the more constructive of these two different streams of thought. It is with this thought in mind that the purpose of this study is to determine whether consumers perceive an ecologically or an economically themed communication to be more constructive in either persuading non-ERB consumers to re-evaluate their activities and in re-enforcing existing ERB consumers to continue theirs. This current study contributes to the field of Marketing, specifically Green Marketing, by addressing the impact of the motivational framing of internal and external facilitators on the willingness of consumers to engage in environmentally responsible behavior.nAn examination of the relevant academic research on the areas applicable to this study will be provided next, followed by an overview of the methodology used to collect the data. After this, the authors will present their summarization and interpretation of the results achieved through statistical data analysis. Lastly, concluding comments will discuss the implication of these results and possible directions for further research on this topic.

LITERATURE REVIEW

A tremendous amount of work exists on environmentally responsible behavior regarding organizational and corporate actions. Much is focused on consumer impact and inference of organizational environmentally ethical behavior (Vitell, 2015). However, too few articles directly address consumers' personal performance of ERB. Stone, Barnes, and Montgomery (1995) define environmental responsibility as, "a state in which a person expresses an intention to take action directed toward remediation of environmental problems, acting not as an individual concerned with his/her own economic interests, but through a citizen consumer concept of societal-environmental well-being." This study helps to fill the void of research on direct consumer personal ERB and what drives it. The majority of ER studies have been concerned with the determinants of consumer ERB (Schwartz, 1977, Balderjahn, 1988, Diamantopoulos, Schlegelmilch, Sinkovics, and Bohlen 2003). Several studies conducted outside of North America focused on identifying and modeling the determinants of environmentally conscious behavior (Abdul-Muhmin 2007, Collins, Steg, and Koning, 2007). Marketing's role in repositioning environmentally responsible behavior as being the norm, instead of the exception, was the subject of Rettie, Burchell, and Barnham's (2014) research.

Minton and Rose's (1997) study on the effects of consumers' environmental concerns on the likelihood of environmentally friendly behavior found the primary driver of such behavior to be the personal norm of the individual, while the individual's attitude drove their intent. Schwartz and Miller (1991) reported that according to the 1990 Roper Organization's Green Gauge Study, the three most environmentally active groups were those: 1) higher in income and education; 2) female; and 3) had white-collar (either executive or professional) employment. Diamantopoulos, et al (2003) further showed that females are more likely to undertake recycling activities more often and display greener shopping habits than their male counterparts and that older people are more likely to perform higher levels of recycling activities. At the same time, the findings of do Paço, A. M. F., and Reis (2012) indicate that gender made no difference regarding skepticism of environmentally themed advertising. Similarly, Neuman (1986) claimed that spousal influences do not shape an individual's environmental concern.

Abdul-Muhmin's (2007) study, which serves as the primary conceptual inspiration for the present study, utilizes not the concept of behavioral intentions, but rather behavioral willingness; i.e., not whether individuals intend to perform the desired behavior, but whether they would be willing to perform environmentally responsible behaviors, such as recycling. This research indicated that psychological consequences serve as a key determinant of willingness. Hence, consumers' willingness to engage in recycling may simply be a matter of their understanding the consequences of doing such. Research conducted by Gifford and Comeau (2011) found that the use of motivational framing rather than sacrificial framing increased climate-related engagement and activation of community members to help mitigate climate change. Hornik and Cherian (1995) found that consumer understanding and commitment to recycle (internal facilitators), as well as monetary rewards and social influence (external facilitators), were the two best predictors of consumer recycling behavior.

Perceived honesty is a determinant of the extent that consumers scrutinize messages, according to Priester and Petty (1995). They found that consumers with a high need for cognition (NFC) were not impacted by the source of the message, while those with a low NFC did not scrutinize those messages they assumed were honest. Much of the existing research on the role honesty plays in green marketing is, not surprisingly, limited to a product context, (Newell, Goldsmith, and Banzhaf, 1998, Nyilasy, Gangadharbatla, and Paladino, 2014, Xie, 2014). However, a recent study by do Paço and Reis (2012) found that the greater the level of environmental concern a consumer had, the greater their level of skepticism toward green claims on packages or featured in ads. Tucker, Rifon, Lee, and Freece (2012) claimed that consumers with an existing positive attitude towards environmental protection were more likely to be receptive to ecologically themed ad claims. These studies, as do the majority of green marketing and consumer behavior research, focus on product claims of environmental responsibility (i.e., eco-friendly products) that target consumers, not on the environmental responsibilities of the consumers themselves as influenced by their attitude toward environmentally or economically themed messages, which is the focus of the present study.

Recycling was chosen as the desired environmentally responsible behavior given its role as the primary weapon in the battle against the many detrimental environmental issues facing society (Wan, Shen, and Yu 2014). It was also selected due to the lack of existing research on the various marketing strategies that have been initiated to increase its practice. McCarty and Shrum (1994) found that attitudes towards its perceived inconvenience negatively influenced the likelihood of recycling behavior. Ramayah and Rahbar (2013) claimed recycling behavior is significantly influenced by resistance to change. Domina and Koch (1999) reported, almost two decades ago, that increasing awareness of, and sensitivity to, environmental issues has triggered a dramatic escalation in consumer recycling of product waste. Simmons and Widmar's (1990, p. 13) highly cited prophetic article stated in its abstract (emphasis added): …recyclers were more likely to hold to a conservation ethic or to feel a sense of responsible action. However, such positive attitudes might not lead to corresponding behavior if individuals professed *a lack of knowledge about recycling*…Thus, public education programs should provide a mix of motivations for recycling, as well as methods for overcoming informational and attitudinal barriers."

DATA AND METHODOLOGY

The focal construct of this study is consumer willingness to engage in environmentally responsible (consumer) behavior ($WILL_{ERCB}$). It will be operationalized through the practice of recycling. The study's measurements focuses on the strength of the relationship between consumers' attitude towards a print ad depicting either the economical or environmental benefits of this practice and their willingness to engage in various forms of recycling, including recycling itself, their willingness to encourage others to recycle, and their willingness to purchase either recycled or recyclable products. This study proposes that a consumer's economical ($MESS_{ECON}$) attitude (i.e., saving money) is a stronger motivator to engage in recycling than is their environmental ($MESS_{ENV}$) attitude (i.e., saving nature). Further, it suggests that

how honest they perceive the actual message being delivered to be has a positive effect on the desired behavior. One constructs is used to corroborate the importance ($RECY_{IMPO}$) people place on recycling have a positive influence on the willingness to recycle. This leads to the following four hypotheses:

H_1 There will be a positive relationship between ERB messages (MESS) and consumer willingness to engage in environmentally responsible behavior ($WILL_{ERCB}$).

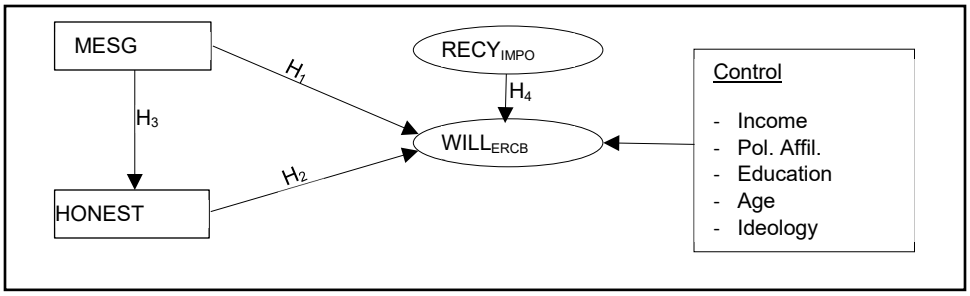
H_2 There will be a positive relationship between Perceived Honesty (HONEST) and consumer willingness to engage in environmentally responsible behavior (WILLERCB).

H_3 The relationship between ERB messages (MESS) and Perceived Honesty (HONEST) will be significantly stronger for those with an economically themed message.

H_4There will be a positive relationship between consumers perceived importance of recycling ($RECY_{IMPO}$) and their willingness to engage in environmentally responsible behavior ($WILL_{ERCB}$).

There are two latent variables used in the present research, the willingness to engage in environmentally responsible (consumer) behavior ($WILL_{ERCB}$) and the importance of recycling\ ($RECY_{IMPO}$). These two variables are measured through different indicators that capture perceived values. The variables, Honesty (HONEST) and Message (MESG) are measured using single indicators. The variable Message (MESG) is a dummy variable with two distinct values: (1) for the economic message and a (2) for the environmental message. Besides the variables mentioned above, five control variables are included into the research model: Income, Political Affiliation, Education, Age, and Ideology. A conceptual model is shown below:

Figure 1: Conceptual Model



A basic survey was compiled and distributed in person to residents of two cities in south Texas. One-hundred and seven (107) surveys were distributed, of which eighty-nine (89) were determined viable after the data was coded, entered, screened, and cleaned. This resulted in a response rate of eighty-three percent (83%). Economically themed messages were provided, at random to 46 of the respondents (52%), while the remaining 43 volunteer respondents (48%) received the ecologically themed version.

Participants were informed that their participation was voluntary, that they would not be compensated in any manner for their involvement, and that their responses were completely confidential and would only be used for the purpose of this study. Study participants were randomly provided with one of two versions of a survey. One version contains a mock print ad showing the economic benefits of recycling, including its impact on the economy (i.e., jobs, revenue, and payroll created). The other version extolls the environmental benefits of recycling (i.e., number of trees saved, amount of savable water, and energy savings). Demographic information regarding age, marital status, household ownership, type of home, the presence of others in the household (roommate, spouse, children and/or grandchildren), education, income levels, as well as psychographic information (political party affiliation and ideology) was collected from all participants. Additionally, the consumer-respondents' attitudes towards the environmentally responsible behavior of recycling were measured using items adopted from Bohlen, Schlegelmilch, and Diamantolpoulos' (1993) and Stone, Barnes, and Montgomery's (1995) well-

respected and established environmental attitude scales. General demographic characteristics of the respondents are provided in Table 1 below.

Table 1: Respondent Demographic Attributes

Respondent Attribute	Attribute Categories	Percentage of Respondents
Age	Under 40 years old	58 (66%)
	Over 40 years old	31 (34%)
Education	Never attended college	10 (11%)
	Attended college	75 (85%)
	College degree	40 (45%)
	Graduate degree	04 (05%)
Children	No children	58 (66%)
	Have children	31 (34%)
	Have grandchildren	14 (16%)
Marital Status	Single	56 (63%)
	Married	25 (28%)
	Divorced	07 (08%)
	Did not provide response	01 (01%)
Income	Less than $25,000	25 (28%)
	Between $25-75,000	31 (35%)
	More than $75,000	28 (31%)
	Did not provide response	05 (06%)

This table shows basic demographic characteristics (age, level of education, if they have children their marital status and current income level) of those who participated in the survey that was conducted for this research study. It indicates that the majority of the survey respondents are under age 40, college educated, childless, single, and make less than $75,000 annually.

After completing these first two sections, respondents were randomly shown either an economically or an environmentally themed print advertisement to view. After a few minutes of studying the ad and its message, respondents voluntarily completed a 7-point Likert-scale questionnaires designed to measure (a) their attitude towards the advertisement's message and (b) the extent of their willingness to engage in recycling, encourage others to recycle, buy products made from recycled materials, and buy products that were recyclable. Copies of the advertisements are provided in the Appendix. The data was analyzed using WarpPLS 4.0 (Kock, 2011) software that analyzes data using variant-based structural equation modeling. This multivariate analysis is extremely useful as a predictive model in highly complex scenarios (Anderson and Gerbing, 1988, Hsu, Chen, and Hseih, 2006). Partial Least Squares (PLS) is a variant-based structural equation modeling technique in which the overall model consists of an inner and an outer model. The inner model is represented by the relationships between latent variables while the outer model consists of the relationships between the indicators and their respective latent variables.

PLS does not provide a single or global goodness-of-fit criterion. Rather, an index of criteria to assess partial model structures is used to evaluate the overall model (Chin, 1998). A systematic application of these criteria is a two-step process that encompasses the assessment of both (inner and outer) models. The first step includes the evaluation of the outer model including the reliability and validity of reflective constructs. The second step focuses on the assessment of the inner model. It includes the variance explanation of endogenous constructs, effect sizes, and predictive relevance of the model.

RESULTS

For the first step and evaluation of the outer model a test for validity and reliability was conducted through the implementation of factor analysis, coefficients of reliability, Cronbach's alpha coefficients (Hair, Anderson, and Tatham, 1987), and average variance extracted (AVE) for each latent variable (Fornell and Larcker, 1981). The results of the validity and reliability tests for the reflective measurement model used for the perceptual control variables are presented in Table 1.

Convergent Validity explains how well the indicators associate to each latent variable, in other words, if the questions asked in the survey were understood by respondents in the same way intended by the designers (Kock, 2011). Convergent validity was measured using indicators loadings. Hair et al. (1987) allows that a model can have acceptable convergent validity when the *P* values associated with the loadings are lower than 0.05 and that the individual loadings are greater than or equal to 0.5. Table 2 shows that all the *P* values are significant at the 0.01 level and that all the loadings are greater than 0.5. Reliability explains how well the measurement instrument was designed and how well questions measure what it was intended to measure by the designers. In this study, reliability was measured by both composite reliability and Cronbach's Alpha coefficients; both coefficients should be equal to or exceed 0.7 for the instrument to be deemed valid (Fornell and Larcker, 1981; Nunnally and Bernstein, 1994). The values achieved by the questions used in this research exceeded the minimum required levels. They are provided in Table 2 below.

Table 2: Reliability Results

	Component		**Cronbach's Alpha**
	$RECY_{IMPO}$	$WILL_{ERCB}$	
RIMPO1	**0.865*****	-0.273	**0.852**
RIMPO2	**0.745*****	-0.227	
RIMPO3	**0.867*****	0.143	
RIMPO4	**0.843*****	0.104	
RIMPO5	**0.641*****	0.302	
WILL1	-0.273	**0.884*****	**0.947**
WILL2	-0.227	**0.919*****	
WILL3	0.143	**0.957*****	
WILL4	0.104	**0.954*****	

This table shows Convergent Validity and Reliability of the PLS Outer model. As can be observed all the individual indicator loadings for the latent variables $RECY_{IMPO}$ and $WILL_{ERCB}$ are greater than 0.5 and significant at the 0.01 level. Also, Cronbach's Alphas for both latent variables are greater than the threshold of 0.7

Discriminant Validity confirms that questions that measure a specific Latent Variable in the measurement instrument are not confused with questions measuring a distinct Latent Variable in that same instrument. A combination of the Average Variance Extracted (AVE) and Latent Variable correlations measure discriminant validity; for each latent variable, the squared root of the AVE should be higher than any correlation involving that latent variable (Fornell and Larcker, 1981). The values achieved in this study regarding discriminant validity also exceeded minimum requirements. They are provided in Table 3 below.

Table 3: Average Variance Extracted (AVE), Square Root of AVE, and Correlation Results

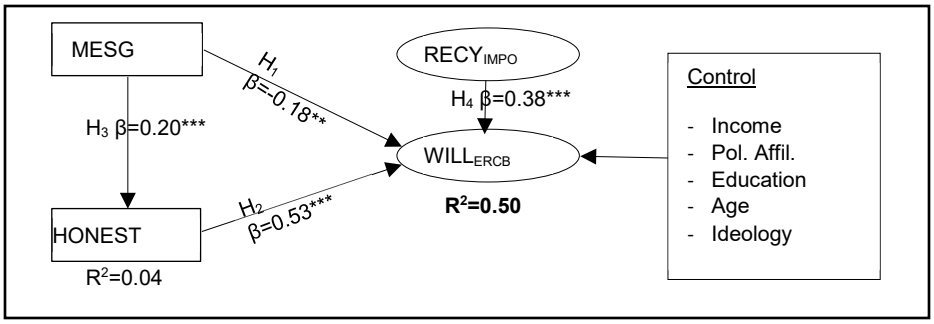
	CR	**AVE**	**$WILL_{ERCB}$**	**$RECY_{IMPO}$**
$WILL_{ERCB}$	0.962	0.863	**0.929**	
$RECY_{IMPO}$	0.896	0.635	0.538	**0.797**

CR – Composite Reliability; **AVE** – Average Variance Extracted. *Diagonal elements are the square root of AVE; Off diagonal elements are the correlation between the constructs. This table shows Reliability and Discriminant Validity of the Outer PLS Model. A combination of the Average Variance Extracted (AVE) and Latent Variable correlations measure discriminant validity; for each latent variable, the squared root of the AVE should be higher than any correlation involving that latent variable*

The second step and evaluation of the inner model include the analysis of the partial correlations betas (β) and R squares (R^2) or explained variance. Figure 2 illustrates the structural model with the results of the PLS analysis. In the model Betas (β) followed by three asterisks are significant at $P < 0.01$ in a one-tailed T-test; Betas (β) followed by two asterisk are significant at $P < 0.05$ in a one-tailed T-test; Betas (β)

followed by NS are non-significant. The $P < 0.05$ level can be seen as the upper threshold of acceptability (Rosenthal & Rosnow, 1991). The *P* values in the model were calculated using a re-sampling method called bootstrapping and 100 samples were set in WarpPLS for re-sampling (Kock, 2011).

Figure 2: Hypothetical Model with Results



As shown in Figure 2, Hypothesis 1 was supported with a beta of -0.18 at the .05 significance level, meaning that the economic message was significantly stronger than the environmental one. Hypothesis 2 was also supported by the statistical analysis with a beta of 0.53 at the .01 significance level, implicating that the more honest the message is perceived to be, the higher the willingness of the user to get involved in recycling. Hypothesis 3, even though it was significant with a beta of 0.20 at the .01 level of significance, the sign of the relationship was opposite of the expected not supporting it. Finally, Hypothesis 4 was supported with a beta of 0.38 at a .01 significance level, implying that people that think recycling is important the higher their willingness to get involved in recycling.

This study takes into consideration many control variables that are tested as part of the model that was presented in figure 1. The control variables are measured by adding them to the main PLS Model pointing to the dependent variable $WILL_{ERCB}$. The control variables are Income, political affiliation, education level, age, and ideology. None of the control variables had a significant effect at the $P < 0.05$ level on the main dependent variable $WILL_{ERCB}$. The first hypothesis, H_1, stated that the relationship between MESS and $WILL_{ERCB}$ would be significantly stronger for the financial message than for the environmental message. Consistent with Hornik and Cherian's (1995) findings the statistical analysis shows support for H_1. Hypothesis 2 expected to find a positive relationship between Perceived Honesty and consumer willingness to engage in environmentally responsible behavior (recycling).

Data analysis supports H_2. The third hypothesis, H_3, that the relationship between the advertisement's message and its perceived honesty would be stronger when the context of the message was economical, was not supported by the statistical analysis of the data. This finding extends the consumer skepticism regarding environmental claims on product packaging (do Paço and Reis, 2012), it also contradicts Tucker, Rifon, Lee, and Freece's (2012), research that reported consumers with an existing positive attitude towards environmental protection were more likely to be receptive to ecologically themed ad claims. The upside here is the potential for future research that this dichotomy provides. The fourth hypothesis predicted that a positive relationship exists between consumer perception of the importance of environmentally responsible behavior (recycling) and their willingness to engage in such. As expected, H_4 was also supported by the statistical analysis, confirming that people who believe environmentally responsible behaviors, such as recycling, to be important are more willing to recycle and encourage others to do the same. The support of H_4 furthers Abdul-Muhmin's (2007) research on what motivates consumers to engage in personally engaging in such behavior. It also extends the research conducted almost twenty years ago by Minton and Rose (1997) on influencers of consumer attitude towards ERB.

CONCLUDING COMMENTS

The research presented begins to fill a gap in the existing literature regarding environmental marketing. Although this area has been in existence for several decades, only in these first decades of the twenty-first century is its importance beginning to be appreciated by academics and practitioners. A number of

variables are involved in driving consumer decision-making during ordinary times. However, given the potential results of the current global environmental situation, the impacts and consequences of which have not been experienced, there exists a plethora of potential future research that can and should be undertaken at once to determine behavioral drivers of consumer behavior regarding environmentally responsible behavior.

APPENDIX

Appendix A: Survey

Section I. General Demographic Information.

Section II. Views on Recycling. A seven-point Likert scale with the following endpoints.

To me, recycling is . . .
14. Bad / Good
15. Foolish / Wise
16. Not worthwhile / Worthwhile
17. Pointless / Necessary
18. Expensive / Valuable
19. Difficult / Easy
20. Inconsequential / Crucial

Section III. Importance of Recycling: A seven-point Likert scale using Strongly Agree/Disagree as endpoints.

21. Recycling is important to me.
22. Recycling can make a difference.
23. When I do not recycle, I feel guilty.
24. I encourage others to recycle.
25. I check product containers to see if they are recyclable before buying.
26. I participate in curbside recycling.

Section IV. Message opinion survey. A seven-point Likert scale with the following endpoints.

27. *Ineffective / Effective*
28. *Uninformative / Informative*
29. *Not Persuasive / Persuasive*
30. *Unfair / Fair*
31. *Dishonest / Honest*
32. *Not Influential / Influential*

Section V. Message influence likelihood to recycle. A seven-point Likert scale using Strongly Agree/Disagree as endpoints.

33. It makes me more willing to recycle.
34. It makes me more willing to encourage others to recycle.
35. It makes me more willing to buy products made from recycled materials.
36. It makes me more willing to buy products that are recyclable.

Appendix B: Environmentally Themed Print Ad

DID YOU KNOW. . .?
Every ton of recycled paper saves 17 trees and 7,000 gallons of water.
Every ton of recycled newsprint or mixed paper saves 12 trees.
Every ton of recycled office paper is the equivalent of 24 trees.

Recycling aluminum requires 95% less energy than making it from raw materials.
Making recycled newspaper requires 40% less energy,
Making recycled plastics requires 70%, less energy;
Making recycled glass requires 40% less energy.

A national recycling rate of 30% would reduce greenhouse gas
emissions by the same amount caused by 25 million cars on the road.

A pound of recovered aluminum saves the energy resources required to generate about 7.5 kilowatt-hours of electricity; enough to meet the needs of Pittsburgh for six years.

RECYCLING
MAKES YOUR WORLD GREEN.

Appendix C: Economically Themed Print Ad

DID YOU KNOW. . .?
The US Recycling Economic Information Study reported that the recycle and reuse industry employs 1.1 million people, has an annual payroll of $37 billion,
and generated $236 billion in sales.

In 2010, the United States sold recycled materials valued at over $30 billion
to over 154 countries.

Americans throw away enough aluminum cans each month to completely rebuild
the entire U.S. commercial airline fleet.

The U.S. Scrap Recycling Industry, in 2011, employed almost 500,000 people, paid over $26 billion in wages and generated over $90 billion in revenue.

RECYCLING
MAKES YOUR WORLD GREEN.

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