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Textile Recycling Attitudes And Behaviors Among College Students

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TEXTILE RECYCLING ATTITUDES AND BEHAVIORS AMONG COLLEGE STUDENTS

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Textile Recycling Attitudes and Behaviors Among College Students

BY

Elizabeth Eileen Walter

THESIS

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Abstract

The purpose of this research was to examine the recycling attitudes and behaviors among Eastern Illinois University undergraduate students in the Lumpkin College of Business and Applied Sciences, and to determine if students are willing to include textiles in their recycling behavior. The potential benefits of this research include an increase in environmental awareness among students and a decrease in the amount of textiles sent to the landfill.

A survey was distributed to seventeen Family and Consumer Sciences, Business, and Technology classes. Surveys were also distributed at a meeting for non-traditional students. A total of 194 surveys were returned to the researcher. Data was analyzed using SPSS statistical software.

Five research questions regarding student's recycling habits were addressed in this study. From the survey, related statements were combined to form variables corresponding to each of the research questions. The following tests were used to analyze the data: MANOVA, t-tests, and descriptive statistics.

Results indicate that students are willing to include textiles in their recycling behavior. Females are more likely than males to dispose of textiles in ways that are environmentally friendly. There are no significant differences in the recycling behaviors of older (non-traditional) students and younger (traditional) students. Significant differences were found in the recycling attitudes and behaviors among Family and Consumer Sciences, Business, Technology and other majors.

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Chapter 1

Introduction

There is much emphasis on the clothing distribution channel from manufacturer to consumer. Of equal or greater importance, however, are the clothing disposal patterns of consumers once garments or household textiles are no longer needed or wanted. "Like the traditional fiber to apparel to consumer consumption chain, textile and apparel waste has its own lifecycle" (Domina & Koch, 1997, p. 98).

The Council for Textile Recycling (2007) defines post-consumer textile product waste (PCTPW) as any type of garment or household article, made of some manufactured textile that the owner no longer needs and decides to discard. Clothing and household items made from textiles include clothing, sheets, blankets, towels, curtains, and drapes. The Environmental Protection Agency (2007) reports that an estimated 10.6 million tons of textile waste was generated in 2003. According to Domina and Koch (2002), approximately 4.5% of the municipal solid waste (MSW) stream is composed of post-consumer textile product waste.

Need for the Study

Little research exists regarding textile recycling. Even fewer research studies have addressed recycling attitudes and behaviors among college students. Some students may come from a home environment where recycling is a part of daily life. However, these students must make a conscientious decision to continue that behavior when at college and away from home. The college years are also an excellent time to increase environmental awareness and educate those students who are unfamiliar with recycling practices and to promote this behavior. Environmental awareness and recycling behaviors

learned in college as a young adult may lead to a lifelong habit of recycling. "As a younger population segment, students are more likely to be fashion opinion leaders and thus are a good vehicle for disseminating textile recycling information to other consumer groups, such as parents and peers" (Koch & Domina, 1997, p. 14).

Vining and Ebreo (1990), Oskamp, Harrington, Edwards, Sherwood, Okuda, and Swanson (1991), and Shim (1995) found that younger adults are more environmentally aware, but older adults are more likely to participate in recycling programs. Berger (1997) found that those with limited space in which to store recyclables are less likely to recycle. College students living in residence halls or small apartments usually have less space. Yet Berger also found that individuals who are better educated are more likely to recycle. Domina and Koch (2002) found that individuals are more likely to recycle newspapers, glass, plastic, and aluminum because these items are the most widely accepted in recycling programs, and that access and convenience are critical to the success of a recycling program. Most college campus recycling programs accept these items and it is relatively easy for students to take part in these programs. However, Shim speculates that the ease with which these items can be recycled on campus leads students to "…develop a habit of recycling without much sensitivity toward environmentalism" (p. 46). More hopefully, a 1997 study by Koch and Domina found that college students are concerned for the environment and they do choose environmentally-friendly disposal methods of textiles.

College students are a unique group of consumers. These individuals typically make their own decisions about clothing choices. Therefore, they must also make their own disposal decisions regarding these items, possibly for the first time in their lives.

How does this relate to the way college students view recycling and post-consumer textile waste? Educating students as to various recycling options and the inclusion of textiles in campus recycling programs could potentially reduce the amount of post-consumer textile waste being sent to landfills.

Purpose of the Study

The purpose of this study was to examine the recycling attitudes and behaviors among Eastern Illinois University undergraduate students in the Lumpkin College of Business and Applied Sciences (LCBAS). The School of Family and Consumer Sciences, the School of Business, and the School of Technology are included in the LCBAS. The programs and student base found within the LCBAS are diverse in nature, and are therefore intended to represent the EIU student population. From this information, it can be determined if students are aware of the recycling options available to them in the Charleston area and if students are willing to include textiles in their recycling behavior. If needed, the campus can then work to educate students as to the recycling options that exist in the community and to promote those options. Campus officials may also want to evaluate the merits of establishing a campus curbside recycling program that includes textiles.

Benefits

Potential benefits of this study include an increase in awareness of recycling options available in the Charleston area among students, and a decrease in the amount of textiles sent to the landfill at crucial times during the academic year. For example, it is known that there is an increase in items thrown away at the end of the spring semester when students typically move out of their college residences.

Also, the potential benefits of this study extend to members of the Charleston community, as well. A renewed interest in recycling, and perhaps expanding the current community recycling program to include textiles are examples of possibilities. The Charleston community stands to benefit from a reduction in the amount of waste being sent to the landfill.

Assumptions/Limitations

The researcher expects that participants will honestly report their recycling behaviors, attitudes, and knowledge when completing the survey instrument. It is acknowledged that participants may not answer accurately, choosing the socially acceptable answer because they feel that is what the researcher would like.

Limitations of the study include utilizing a convenience sample of undergraduate students from the Lumpkin College of Business and Applied Sciences at Eastern Illinois University. It is assumed that the participant sample is representative of LCBAS students, as well as the student population at this university.

Definitions

For purposes of clarification, the following definitions of terms were used in this study:

1. Post-consumer Textile Product Waste (PCTPW). Post-consumer textile product waste consists of any type of garments or household articles, made of some manufactured textile that the owner no longer needs and decides to discard (Council for Textile Recycling, 2007).
2. Textile. A general term used to refer to fibers, yarns, or fabrics or anything made from fibers, yarns, or fabrics (Kadolph, 2007).

3. Textile Recycling. The reprocessing of textile waste into original fiber components to be made into new textile products (Daneshvary, Daneshvary, & Schwer, 1998).
4. Lateral-cycling. A method of clothing disposal in which the item does not enter the waste stream; may include selling at a consignment or resale shop or garage sale, giving the item to another, or donating the item (Shim, 1995).
5. Curbside Collection. Presorted recyclable materials are left by consumers in front of their property to be collected by a recycling vehicle.
6. Drop-off Facility. A collection point for recyclable materials.
7. Perceived Consumer Effectiveness (PCE). The extent to which the consumer believes that the efforts of an individual acting alone can make a difference (Ellen, Wiener, & Cobb-Walgren, 1991).
8. Non-traditional Student. Individuals who are older than the typical (usually age 17-23) undergraduate college student.
9. Traditional Student. Undergraduate college students age 17-23.

Research Questions

Five research questions will be addressed in this study. These questions include:

1. Are students aware of the textile recycling options available to them in the Charleston area?
2. Are students willing to include textiles in their recycling behavior?
3. Are female students more likely than male students to choose environmentally responsible disposal methods of textiles?

4. Are older (non-traditional) students more likely than younger (traditional) students to participate in recycling programs?
5. Is there a significant difference in the recycling attitudes and behaviors among LCBAS Family and Consumer Sciences, Business, and Technology students?

Summary

College students are a unique group of consumers. It is important to understand how this population views recycling and their perceived environmental impact. It is also important to educate students about environmentally responsible disposal methods of textiles and the recycling options available to them in the Charleston area. Student participation in environmentally responsible disposal methods of textiles and the inclusion of textiles in campus recycling programs could potentially reduce the amount of post-consumer textile product waste sent to landfills.

Chapter 2

Review of Literature

The literature review is composed of several sections regarding recycling behaviors of clothing and other textile products. These sections include (a) consumption of clothing and textile products and disposal options; (b) clothing exports to Third World countries; (c) textile recycling; (d) recycling demographics; and (e) environmental attitudes of consumers.

Consumption & Disposal Options

Winakor (1969) defined clothing consumption as encompassing the whole process of acquiring, storing, using, maintaining, and discarding clothing. The clothing consumption process model developed by Winakor involves acquisition, inventory (including use, care, and storage), and discard; clothing is added to inventory by acquisition and removed from inventory by discard.

Clothing is unique when it comes to the disposal patterns of consumers. "Clothing is neither durable- in a sense that houses are durable- nor non-durable as it is consumed once and for all as is food" (Shim, 1995, p. 39). Rarely is clothing kept and used for long periods of time, as are items such as household appliances. Clothing is disposed of for several reasons. Clothing may be disposed of when it is worn out or beyond the consumer's repair. In addition, fashion plays a large role in the disposal of clothing. Clothing in relatively good condition may be disposed of simply because the item is no longer in style or because the consumer is bored with the item. Shim also reports that like-new clothing may be disposed of if the consumer can no longer wear the item due to physical changes such as weight gain or loss. In a 1997 study, Koch and Domina found

that fit was the most common reason for clothing disposal among college students. For many individuals, body measurement changes occur during the college years.

Consumers have several options when it comes to clothing disposal. The item may be thrown away, ultimately ending up in a landfill. A second option includes giving the used clothing away to someone else or selling the used clothing at a garage sale, thrift or consignment shop. "Another increasing trend in handling old clothes, partially owing to an environmental concern, is selling them at the second-hand store, a method called 'lateral cycling'"(Shim, 1995, p. 39). The problem remains, however, that sometimes second-hand and consignment shop experience overload, and refuse to take additional items until existing stock is sold. Often, these stores may only take seasonal items to help alleviate the problem of overload. A third option includes donating used clothing and textiles to Goodwill or other similar charitable organizations or recycling the unwanted items. According to the Council for Textile Recycling (2007) almost half (48 percent) of the post-consumer textile waste that is recovered by charities is recycled as secondhand clothing, which is typically sold to Third World nations.

Through the efforts of charitable organizations and textile recycling, used clothing is either exported to Third World countries or purchased by the textile reclamation industry. The clothing may then be processed into items such as wiping cloths, paper, and filling for furniture, or broken down into fibers which are then used to create new textile products. "Post-consumer textile product waste (PCTPW) is in demand by textile recycling industries and Third World countries" (Daneshvary, Daneshvary, & Schwer, 1998, p. 145).

Clothing Exports to the Third World

"While second-hand clothing is increasingly in vogue for fashion and social reasons in the western world, it also meets basic apparel demands in developing countries. A majority of second-hand clothing is exported to Third World countries, where it is the primary affordable option for people who earn as little as $200 per year" (Mhango & Niehm, 2005, p. 345). Demand for used clothing in Third World countries continues to grow, where second-hand clothing accounts for approximately one-third of all garments purchased (Haggblade, 1990).

The international clothing trade is sourced largely by various charitable organizations. "Charitable organizations are the largest single source of the garments that fuel the international trade in second-hand clothing, through sales of a large proportion-between 40 and 75 percent…of their clothing donations" (Hansen, 2004, p. 3). Clothing gathered by these organizations is purchased in bulk quantities by textile recyclers and graders to be sorted.

Items that are worn or damaged are processed into fibers and rags for industrial use. Clothing from certain historical time periods is sold to buyers seeking items for the increasingly popular vintage market. The rest of the clothing is sorted by garment type, fabric, and quality and compressed into standard 50-kg bales to be shipped overseas. According to Haggblade (1990, p. 511), "…sorting allows exporters to target countries and seasons, thereby increasing both the value of their exports and also their ability to coordinate demand and supply patterns".

Bales containing the poorest-quality clothing are shipped to Africa; mid-quality clothing bales are shipped to Latin America, and top-quality clothing bales are sent to

Japan. "The United States is the world's largest exporter in terms of both volume and value, followed in 2001 by Germany, the United Kingdom, Belgium-Luxembourg and the Netherlands" (Hansen, 2004, p. 3). African countries receive nearly 30% of exports, making it the largest destination of second-hand clothing in the world, followed closely by Asia at 25%. The top net importers of used clothing include Sub-Saharan Africa, Asia, North Africa and the Middle East, and Europe (Haggblade, 1990).

A 2005 study by Mhango and Niehm found that the distribution channel, or supply chain, for second-hand clothing is inversely related to that country's economic development; less developed countries have longer channels than countries with high economic development. In Rwanda, importers sell bales of clothing to wholesalers, who then sell the bales to distributors. The distributors open the bales and sell the contents to retailers in outdoor public markets. In the last stage of the channel, retailers sell their items to consumers (Haggblade, 1990).

In spite of being quite lucrative, there is some controversy surrounding the second-hand clothing trade. In many African countries, second-hand clothing imports are either forbidden altogether or limited in volume and must be used for purposes other than resale. Regardless of restrictions, illegal imports are often smuggled across borders.

Some governments have banned second-hand clothing imports because of issues involving hygiene and public health. For example, the import of used underwear was banned in Tanzania for fear of skin problems and transmission of disease to the consumer, even though there is no medical evidence to support this (Hansen, 2004).

Perhaps the biggest issue is the fear that second-hand clothing imports will have a negative impact on domestic textile and garment industries. However, Hansen (2004)

found that local textile industries and second-hand clothing imports can co-exist because they do not target the same consumer. In African countries that have a textile industry, clothing produced by local manufacturers is often exported to the United States under the duty/quota free provisions of the African Growth and Opportunity Act (AGOA), and to other developed countries.

Studies by Haggblade (1990), Hansen (2004), and Mhango and Niehm (2005) all indicate that for countries that allow imports of second-hand clothing, there are positive effects, as well. For example, the second-hand clothing trade in Rwanda created employment opportunities in handling, cleaning, repairing, and restyling. Overall, national income increased and tariffs and market fees created government revenue. The trade also provides the opportunity for low-income consumers to purchase better-quality clothing (Haggblade, 1990). The second-hand clothing trade has given women, in particular, new opportunities to develop small business enterprises, enabling them to support their households. "Controlling an important part of the dress market, women traders in second-hand clothing offer customers an attractive alternative to new factory-produced garments" (Hansen, 2004, p. 6).

Textile Recycling

A 1997 study by Domina and Koch provides a brief history of the recycling movement. Environmental awareness and recycling was a product of the counter culture of the 1960s. Recycling programs were established in a few communities and college campuses. In spite of increased environmental awareness during the 1970s and 1980s, recycling was still not a priority because disposal in landfills remained inexpensive and

convenient. The late 1980s saw a renewal in environmental awareness as landfill disposal costs increased at the same time availability of landfill sites decreased.

When the Environmental Protection Agency (EPA) recommended a 25% reduction in solid waste, all states passed legislation requiring a reduction in the amount of solid waste thrown into landfills by municipalities. Many municipal recycling programs have been able to effectively educate the public as to the importance of recycling paper, plastic, aluminum, and glass. However, post-consumer textile product waste has been largely ignored by community curbside and drop-off programs (Domina and Koch, 2002). "Currently, textile-recycling programs are not as abundant as those for paper, glass, metal, or plastic. Only about 25% of textiles are currently recycled through efforts other than curbside recycling, leaving ample room for expansion of textile-recycling programs" (Daneshvary, Daneshvary, & Schwer, 1998, p. 145).

Textile recycling programs would decrease the amount of post-consumer textile product waste found in landfills and also provide a steady source of textiles for the textile recycling industry and for Third World countries. Many textile recycling companies are experiencing a shortage, due in part to the increased demand of used clothing by Third World countries and competition among recycling plants (Daneshvary, Daneshvary, & Schwer, 1998). "Textiles and apparel is a largely untapped consumer commodity with strong reuse and recycling potential" (Domina & Koch, 2002, p. 217).

Many textile products are mostly or entirely recyclable if they are kept clean and free from moisture. Fleece, flannel, corduroy, cotton, nylon, denim, wool, and linen are examples of textiles that can be recycled. Some textiles are made into wiping and polishing cloths. Cotton is made into rags or used as a component for high-quality paper.

Knitted or woven woolens are reduced to a fibrous state for applications such as car insulation or seat stuffing. Insulation, upholstery, and building materials are made from fibers of reprocessed fabric (U.S. Environmental Protection Agency, 2007).

Textile recycling is a huge industry. According to the U.S. Environmental Protection Agency (2007), in the U.S. alone there are more than 500 textile recycling companies. "As a whole, the industry employs approximately 10,000 semi-skilled workers at the primary processing level and creates an additional 7,000 jobs at the final processing stage" (U.S. Environmental Protection Agency, 2007, p. 2).

The Dumont Export Corporation, located in Philadelphia and established over sixty years ago, is one of the oldest and largest textile recycling companies. "The company has 100 employees and processes nearly 150 tons of textiles per week in its 150,000 square foot Philadelphia plant. The textiles are sorted and baled into 400 different categories. Approximately 60 percent of the textiles are sold for use as wiping cloths and the remaining 40 percent are baled and exported overseas to West and East Africa, central Europe and South America" (Farrell, 1997, p. 69). At least 175 tons per week are needed to keep the plant in business. Approximately 96 percent of everything delivered to the plant is recycled and approximately 8,000 tons of textiles per year are processed and sold (Riggle, 1992).

The Dumont Corporation purchases nearly sixty percent of its used textiles from charitable organizations such as Goodwill and the Salvation Army. Also, in 1989, Dumont Corporation began cooperating with various municipalities to establish curbside and drop-off programs in order to boost the company's supply of used textiles (Farrell, 1997). The company works closely with the community in the implementing and running

of a textile recycling program. Clothing, drapes, curtains, belts, towels, sheets, shoes, and handbags are all acceptable items. The textile recycling programs have been successful in the communities in which they have been implemented.

Interest in textile recycling has started to increase, even among large corporations in the textile industry. "For textiles, it is estimated that between 1.5 and 1.9 billion pounds of new fiber and fabric wastes are generated annually by fiber producers, textile mills, and fabric manufacturers" (Domina & Koch, 1997, p. 97). Media attention has prompted the textile industry to dispose of textile waste in environmentally-friendly ways; as a result, 75% of post-producer textile waste is recycled instead of being landfilled (Domina & Koch, 1997).

One example of environmentally proactive behavior within the textile industry involves the Lands' End catalog clothing company. After Lands' End implemented a recycling program, it became obvious that textiles composed most of the remaining waste being sent to the landfill. The textile waste was generated from scraps from the hemming and cutting processes, or from scraps embroidered with logos that did not pass inspection or were returned. Lands' End has since found alternative ways to dispose of textile waste, including selling and donating scraps to charitable organizations (Newenhouse, 2000).

Recycling Demographics

"To realize the potential benefits of recycling, officials must successfully contend with several challenges. Chief among these is how to maximize and sustain citizen participation in recycling" (Folz, 1991, p. 222). There are several factors that contribute to the success of a community recycling program. Success is measured by the level of citizen participation and the amount of waste diverted from landfills.

Mandatory programs will have higher rates of participation than voluntary programs. However, Folz (1991) found that cities that impose sanctions (in mandatory programs) and verbal reminders (in voluntary programs) were more likely to have higher rates of citizen participation. Even voluntary programs can be quite successful when combined with other implementation strategies such as public education programs, curb-side pick-up, and providing free bins in which to sort and store recyclables.

Other factors that are positively related to the success of a recycling program include citizen involvement during the planning stages, setting specific goals (the amount of waste to be diverted from the landfill), assistance from non-profit or volunteer organizations with recycling experience, including more types of materials for recycling, and hiring a private contractor to collect recyclables (Folz, 1991).

There are several factors that determine the willingness of individuals to participate in a municipal recycling program, and to include textiles in their recycling behaviors. Some of these factors include access to recycling facilities, the inclusion of textiles in recycling programs, knowledge, incentives, and a variety of demographic variables such as age, income, education, homeowner, ethnicity, and gender.

Perhaps the biggest factor includes convenience and access to recycling facilities. Participation in recycling programs is directly linked to accessibility. Lansana (1992) found that most households preferred curbside pick-up over drop-off sites as points of collection for recyclables. Lansana also suggests providing households with special containers in which to store the recyclable materials until curbside pick-up.

Berger (1997) examined the relationship between access to recycling facilities and socioeconomic factors. It was determined that curbside recycling programs were more

likely to be offered to better educated, higher income householders living in single-family dwellings as compared to lower income, less-educated apartment dwellers. Berger stated "…There is no space to store the separated materials, and most apartments are not included in curbside programs; …if we observe these individuals recycling less, should we conclude that they are less environmentally aware or active?" (p. 517). To be successful, recycling programs must be indiscriminately accessible to everyone.

Domina and Koch (2002) found that individuals are more likely to recycle newspapers, glass, plastics, and aluminum because these items are accepted in most curbside recycling programs and at drop-off facilities. Individuals are less likely to recycle items that are not accepted, such as textiles. However, individuals who recycle are willing to include more items, such as textiles, if their local recycling programs would accept such items. Pro-environmental behaviors are likely to lead to other environmentally-friendly behaviors. Individuals who recycle at home are also more likely to recycle at their place of work (Daneshvary, Daneshvary, & Schwer, 1998).

Studies by Vining and Ebreo (1990); Oskamp, Harrington, Edwards, Sherwood, Okudo, and Swanson (1991); Lansana (1992); Daneshvary, Daneshvary, and Schwer (1998); and Domina and Koch (2002) indicate that knowledge influences recycling behavior. Recyclers are more knowledgeable than non-recyclers about conservation, recycling programs available in their area, items to be recycled, and recycling procedures. While recyclers report receiving most of their information from print media, other methods of communication such as radio and television, could be used to target non-recyclers (Lansana, 1992).

Vining and Ebreo (1990) found that both recyclers and non-recyclers report concern for the environment; however, there is incongruence between attitudes and actual recycling behavior. Both Vining and Ebreo and Oskamp, et al. (1991) examined social influences and incentives as motivations for recycling.

According to Vining and Ebreo (1990), social influences were not reported as important factors by recyclers or non-recyclers. This was attributed to the fact that recycling took place at sites away from the immediate neighborhood. In the case of curbside recycling, Oskamp, et al. (1991) found that the social influence of friends and neighbors who recycle served as a motivator.

Non-recyclers were found to be more concerned with monetary incentives to recycle. The problem remains that once the incentive is removed, the behavior stops (Vining & Ebreo, 1990; Oskamp, et al., 1991). According to Vining and Ebreo, "…as long as protecting the environment is viewed as a luxury and not a necessity, actions that benefit the environment will be taken only by those who have strong environmental values." (p. 69). Results of Lansana's 1992 study indicate that recyclers prefer mandatory or government regulated recycling programs as opposed to voluntary programs.

Studies by Vining and Ebreo (1990), Oskamp, et al. (1991), and Shim (1995) found that younger adults are more environmentally aware, but older adults are more likely to participate in recycling programs. "In addition, Whites, homeowners, and married individuals are more likely to recycle solid waste that non-Whites, renters, and non-married individuals, respectively" (Daneshvary, Daneshvary, & Schwer, 1998, p. 153). Vining and Ebreo (1990) suggest that individuals in a higher socioeconomic strata are more likely practice conservation behaviors, including recycling. These individuals

tend to have better access to recycling information and they may have more materials to recycle, making the endeavor worth the effort.

Gender is also a factor in determining recycling behavior. Studies by Shim (1995) and Koch and Domina (1997) indicate that women are more environmentally aware and are more likely than men to choose environmentally responsible disposal methods. Daneshvary, Daneshvary, and Schwer (1998) found that women are more likely than men to recycle items such as glass, plastic, and newspapers. Women are also less likely than men to throw away unwanted clothing. It can also be assumed that women would be more likely than men to handle the disposal of unwanted clothing, simply because women have long been the caretakers of clothing for the family (Shim, 1995; Koch & Domina, 1997).

Environmental Attitudes

Demographic characteristics alone are not effective predictors of recycling behavior. "Despite curbside collection programs, in which more that 15 million households participate, 73% of all solid waste is diverted to landfills" (Koch & Domina, 1999, p. 3). Therefore, there is an increased need to understand the environmental attitudes and motivations of consumers in order to educate consumers and to promote textile recycling. "Current recycling behaviors reflect an individual's environmental awareness, concerns, values, beliefs, and attitudes. Environmental concerns are connected and influences by personal value systems" (Daneshvary, Daneshvary, & Schwer, 1998, p. 148). In order to change behavior, it becomes necessary to change attitudes.

Bagozzi and Dabholkar (1994) examined the goals, or intrinsic motives, relevant to consumers as related to recycling. Fifteen key goals were identified that influenced

consumer recycling decisions. These goals included to reduce waste, reuse materials, save the environment, save the planet, avoid filling up landfills, reduce the cost of living, build self-esteem, save resources, conserve energy, help the community, reduce pollution, enhance aesthetic experience, "it's the right thing to do", save/earn money, reduce messy trash, help the economy, provide for future generations, promote health/avoid sickness, and sustain life.

A 1999 study by Ebreo, Hershey, and Vining links attitudes, motives, and recycling behavior with environmental consumerism. Environmental concern, or attitudes toward the preservation of the environment, have been positively associated with conservation behaviors- recycling or purchasing items that have been made from recycled material or that can be recycled. Conservation behaviors may be facilitated by satisfaction received from participating in an activity (intrinsic rewards) and for selfish reasons of self-preservation for those who see environmental problems as a threat to personal health and well-being.

Ellen, Wiener, and Cobb-Walgren (1991) found that environmentally conscious behaviors are motivated by the perceived effectiveness of those behaviors. This perceived consumer effectiveness is defined as the degree to which an individual believes that that his or her efforts can make a difference in the solution to a problem. It then becomes important in the marketing of recycling programs to provide positive feedback to illustrate that changes can be made from the consumption and disposal practices of one individual acting alone.

Both Shim (1995) and Koch and Domina (1997) examined environmental attitudes and textile recycling behaviors among college students. College students are a unique group of consumers.

Shim (1995) points out that "…a recycling system for aluminum, glass, and paper is widely available on many university campuses…, thus enabling students to develop a habit of recycling without much sensitivity toward environmentalism" (p. 46). This differs from clothing disposal in that textile recycling, which is not readily available on most campuses, involves conscious decision-making and action on the part of the consumer. Attitude predicts environmentally-responsible disposal behavior.

Koch and Domina's 1997 study examined environmental attitudes and fashion leadership among college students as factors that influence textile recycling. Koch and Domina proposed that "The fashion opinion leader is a consumer who has greater than average interest in fashion and influences others to purchase new fashion items. Such an interest in fashion may extend to textile recycling and to the potential for this group to influence textile recycling in other social groups" (p. 4).

While this was not the case, it was found that environmental attitude did have an impact on the decision to dispose of textiles in an environmentally-friendly manner. Participants were identified as being either eco-active (actively engaged in recycling behaviors and who view their contribution as important), eco-thinkers (persons worried about the environment, yet who recycle less frequently), or eco-passive (persons who see their environmental contribution as too small to make a difference) (Koch and Domina, 1997). A strong correlation was found between disposal of textiles in an environmentally-friendly manner and being eco-active.

Summary

Used clothing and textiles are an abundant commodity. The establishment and inclusion of clothing and textiles in curbside and drop-off recycling programs would supply a demand of the textile recycling industry and Third World countries. Textile recycling programs would also benefit the environment by reducing the amount of solid waste sent to landfills. It is important to understand the factors that contribute to environmentally-friendly behaviors in order to educate consumers and promote the inclusion of textiles in current recycling programs.

Chapter 3

Methodology

Research Design

A quantitative descriptive research design was used to examine the recycling attitudes and behaviors of Eastern Illinois University undergraduate students from the Lumpkin College of Business and Applied Sciences (LCBAS) and to determine awareness of recycling options in regard to used clothing and textiles, also known as post-consumer textile product waste (PCTPW).

Research Questions

Five research questions were addressed in this study. These questions include:

1. Are students aware of the textile recycling options available to them in the Charleston area?
2. Are students willing to include textiles in their recycling behavior?
3. Are female students more likely than male students to choose environmentally responsible disposal methods of textiles?
4. Are older (non-traditional) students more likely than younger (traditional) students to participate in recycling programs?
5. Is there a significant difference in the recycling attitudes and behaviors among LCBAS Family and Consumer Sciences, Business, and Technology students?

Population/Sample

Participants in this study consisted of Eastern Illinois University LCBAS undergraduate students. Surveys were distributed to a convenience sample of Family and Consumer Sciences, Business, and Technology students. There are approximately 2,400

undergraduate students in the Lumpkin College of Business and Applied Sciences at Eastern Illinois University. Therefore, according to Krejcie and Morgan (1970) a sample size of 331 was needed to represent a population of 2,400.

Instrumentation

The survey instrument used in this study was developed by the researcher. The instrument includes twenty-two Likert-type statements, with 5 representing 'strongly agree' and 1 representing 'strongly disagree'. Several of these statements were adapted from two previous recycling studies by Shim (1995) and Koch and Domina (1997). Demographic questions include age, gender, year in school, major, and GPA. An open-ended question was also included to determine what would further encourage students to participate in a textile recycling program. The survey is included in Appendix A.

Related questions were combined to form a variable. The first section was used to determine the environmental concern, recycling attitudes, and perceived consumer effectiveness of students. The second section determined current recycling behavior; the third section determined recycling knowledge; and the last section specifically related to the disposal of textiles.

Ensuring Reliability and Validity

Steps were taken to determine reliability and validity of the survey instrument. Four Eastern Illinois University professors were asked to evaluate the survey for face validity. The survey was also pilot tested during the fall 2006 semester for a research project in an FCS 5900 Research Methods class. Revisions were made to the survey after it was evaluated and pilot tested. Reliability coefficients will be calculated for the variable scores.

Procedures

Family and Consumer Sciences, Business, and Technology instructors were contacted for permission to survey students during the fall 2007 semester at the instructor's convenience. Approximately ten classes were selected to participate in the survey. Students were given a brief explanation as to the purpose of the research and a copy of the survey and informed consent form (see Appendix B). Students were then asked to complete the survey at their convenience and return it to the researcher during the next class period or in a sealed envelope via campus mail. Documentation of the Institutional Review Board approval for this study is included in Appendix C.

Data Analysis

The collected data was analyzed using SPSS (Statistical Package for the Social Sciences) statistical software. The following tests were used to analyze the data for each of the five research questions:

Question 1: To analyze if students are aware of the recycling options available to them in the Charleston area, descriptive statistics provided means and standard deviation. Data gathered from section 3 of the survey instrument will correspond to Research Question 1 (See Appendix A).

Question 2: To analyze students' willingness to include textiles in their recycling behavior, descriptive statistics provided means and standard deviation. Data gathered from section 4 of the survey instrument will correspond to Research Question 2 (See Appendix A).

Question 3: To analyze if female students are more likely than male students to choose environmentally responsible disposal methods of textiles, a t-test was used. Data

gathered from section 4 of the survey instrument will correspond to Research Question 3 (See Appendix A).

Question 4: To analyze if older (non-traditional) students are more likely than younger (traditional) students to participate in recycling programs, a t-test was used. Data gathered from section 2 of the survey instrument will correspond to Research Question 4 (See Appendix A).

Question 5: To compare differences in the recycling attitudes and behaviors among LCBAS Family and Consumer Sciences, Business, and Technology students, a MANOVA was used. Data gathered from all four sections of the survey will correspond to Research Question 5 (See Appendix A).

Summary

This chapter included the research design, research questions, and hypotheses. The population sample, survey instrument, and the data collection methods were described. The research results will be presented in Chapter 4.

Chapter 4

Results

The purpose of this study was to examine the recycling attitudes and behaviors among Eastern Illinois University undergraduate students in the Lumpkin College of Business and Applied Sciences (LCBAS), and to determine the awareness of recycling options regarding textiles. Five research questions were addressed in this study:

1. Are students aware of the textile recycling options available to them in the Charleston area?
2. Are students willing to include textiles in their recycling behavior?
3. Are female students more likely than male students to choose environmentally responsible disposal methods of textiles?
4. Are older (non-traditional) students more likely than younger (traditional) students to participate in recycling programs?
5. Is there a significant difference in the recycling attitudes and behaviors among LCBAS Family and Consumer Sciences, Business, and Technology students?

Population/Sample

A total of 194 surveys were returned to the researcher via campus mail. Data is included from all surveys, although some were returned incomplete. Demographics of the population sample can be found in Table 1. Participants ranged in age from 18 to 54, with an average age of 22. Of the participants, 73 (37.6%) were male and 115 (59.3%) were female. The participants included 3 freshmen; 23 sophomores; 60 juniors; and 104 seniors. Participants were classified by major. Of the participants, 77 (39.7%) were classified as Family and Consumer Sciences; 60 (30.9%) were classified as Business; 24

(12.4%) were classified as Technology; 31 (16%) were classified as 'Other'. All surveys were included in the analysis, regardless of major, due to a large number of responses indicating a major other than Family and Consumer Sciences, Business, or Technology. The average GPA of participants was 3.17.

Table 1

Characteristics of Sample

		N	*%*
Gender			
	Male	73	37.6
	Female	115	59.3
	Not Reported	6	3.1
Year			
	Freshman	3	1.5
	Sophomore	23	11.9
	Junior	60	30.9
	Senior	104	53.6
	Not Reported	4	2.1
Major			
	FCS	77	39.7
	Business	60	30.9
	Technology	24	12.4
	Other	31	16.0
	Not Reported	2	1.0
		M	*SD*
Age		22.38	5.04
GPA		3.17	0.43

Data Collection

A survey was used to collect data. The survey contained demographic information including age, gender, year in school, major, and GPA. The survey included twenty-two

Likert-type statements, with 5 representing 'strongly agree' and 1 representing 'strongly disagree'. Related statements were reverse-scored if needed and then combined to form a variable. The first section included statements regarding environmental concern, recycling attitudes, and perceived consumer effectiveness of students. The second section included statements about current recycling behavior. The third section included statements about recycling knowledge, and the fourth section included statements related to the disposal of textiles. The mean scores and standard deviations for all questions can be found in Table 2.

Table 2

Mean Scores and Standard Deviations for Survey Questions

	M	*SD*
…concerned about the environment	4.13	0.61
…everyone should do their part to preserve the environment	4.23	0.59
…not enough emphasis is placed on environmental issues	3.66	0.94
… my recycling efforts will probably have an impact	3.36	0.91
…recycle when on campus	3.87	1.08
…recycle when at home/when at my parent's house	3.65	1.33
…recycle glass regularly	2.67	1.23
…recycle paper/newspaper regularly	3.22	1.26
…recycle aluminum regularly	3.45	1.27
…recycle plastic regularly	3.36	1.30
…used clothing and textiles can be recycled	2.99	1.30
…throwing away contributes to the landfill problem	3.10	1.20
…the recycling center does not accept textiles	2.06	1.00
…used clothing and textiles may be donated to Goodwill	4.46	0.73
…Goodwill has a regularly scheduled pick-up	2.40	1.23
…do not throw old clothing away	4.02	1.09
…sell my used clothing	2.83	1.31
…give my used clothing to others	4.01	0.88
…use my used clothing as rags	3.26	1.14
…donate my used clothing to charity	3.90	1.04
…recycle clothing if the center accepted textiles	3.52	1.04
…recycle if there was a place on campus to drop off	3.76	1.01

Data gathered from section 3 of the survey corresponds to the first research question. Data gathered from section 4 of the survey corresponds to the second and third research questions. Data gathered from section 2 of the survey corresponds to the fourth research question. Data gathered from all four sections of the survey correspond to the fifth research question. Overall scores for each section were calculated by averaging the questions in that section. Mean scores and reliability for the created variables can be found in Table 3.

Table 3

Mean Scores and Reliability for Created Variables

	M	*SD*	*Alpha*
Section 1: Environmental Concern	3.85	0.35	0.62
Section 2: Recycling Behavior	3.37	0.91	0.82
Section 3: Recycling Knowledge	3.00	0.63	0.46
Section 4: Disposal of Textiles	3.62	0.58	0.59

After obtaining permission from instructors, the researcher distributed surveys and consent forms to seventeen Family and Consumer Sciences, Business, and Technology classes. More classes were surveyed than originally planned due to anticipated lower participation rates. The researcher also distributed surveys at a meeting for non-traditional students.

Results

The third section of the survey, regarding recycling knowledge, was used to answer the first research question- are students aware of the recycling options available to them in the Charleston area? The mean scores and standard deviations from the questions are shown in Table 4. In this section, the highest mean ($M = 4.46$, $SD = .73$) was from the statement about awareness that used clothing and textiles may be donated to Goodwill.

The lowest mean (M = 2.06, SD = 1.00) was from the statement about awareness that the Charleston recycling center does not currently accept textiles. The overall score for this section (M = 3.00, SD = .63) indicated that it was not clear if students were aware of the recycling options available to them in the Charleston area.

Table 4

Recycling Knowledge

I am aware that…	*M*	*SD*
…used clothing and textiles can be recycled	2.99	1.30
…throwing away contributes to the landfill problem	3.10	1.20
…the recycling center does not accept textiles	2.06	1.00
…used clothing and textiles may be donated to Goodwill	4.46	0.73
…Goodwill has a regularly scheduled pick-up	2.40	1.23

The fourth section of the survey, regarding disposal of textiles, was used to answer the second research question- are students willing to include textiles in their recycling behavior? The mean scores and standard deviations from the questions are shown in Table 5. In this section, the highest mean (M = 4.02, SD = 1.09) was from the statement about throwing used clothing away. This statement was reverse-scored for data analysis. The lowest mean (M = 2.83, SD = 1.31) was from the statement about selling used clothing at a consignment shop or garage sale. The overall score for this section (M = 3.62, SD = .58) indicated that students were willing to include textiles in their recycling behavior.

The fourth section of the survey addressed the third research question- are female students more likely than male students to choose environmentally responsible disposal methods of textiles? The results can be found in Table 6. Female students had a higher mean (M = 3.76, SD = .50) than male students (M = 3.37, SD = .62). Using a t-test,

significant differences, $t(181)=2.46$, $p = .00$, were found. This indicated that females were more likely than males to dispose of textiles in ways that are environmentally friendly.

Table 5

Disposal of Textiles

I usually…	*M*	*SD*
…do not throw old clothing away	4.02	1.09
…sell my used clothing	2.83	1.31
…give my used clothing to others	4.01	0.88
…use my used clothing as rags	3.26	1.14
…donate my used clothing to charity	3.90	1.04
I would…		
…recycle clothing if the center accepted textiles	3.52	1.04
…recycle if there was a place on campus to drop off	3.76	1.01

The second section of the survey, regarding recycling behavior, addressed the fourth research question- are older (non-traditional) students more likely than younger (traditional) students to participate in recycling programs? The results can be found in Table 6. Traditional students had a slightly higher mean ($M = 3.39$, $SD = .90$) than non-traditional students ($M = 3.30$, $SD = .97$). A t-test indicated that there were no significant differences, $t(188)=1.10$, $p = .662$, in the recycling behaviors of older (non-traditional) and younger (traditional) students.

All four sections of the survey were used to address the fifth research question- is there a significant difference in the recycling attitudes and behaviors among Family and Consumer Sciences, Business, Technology and Other majors? A MANOVA indicated significant differences, $F(12, 522)=2.08$, $p = .02$. Duncan's Multiple Range Test indicated differences in sections three and four of the survey.

Table 6

Disposal and Gender; Recycling Behavior and Age

		M	*SD*
Gender			
	Male	3.37	0.62
	Female	3.76	0.50
Age			
	Traditional	3.39	0.90
	Non-traditional	3.30	0.97

In section three, mean scores indicated Family and Consumer Sciences students were more knowledgeable about recycling options than Technology students. In section four, mean scores indicated that Family and Consumer Sciences and Technology students were more likely to dispose of textiles in ways that are environmentally-friendly than Business students or other majors. These results can be found in Table 7.

Table 7

Recycling Knowledge and Textile Disposal among Majors

	Knowledge	Disposal of Textiles
FCS	3.14^{a}	3.79^{a}
Other	3.03^{ab}	3.57^{ab}
Business	2.91^{ab}	3.42^{b}
Technology	2.75^{b}	3.71^{a}

** Numbers with different subscripts in the same column are significantly different at $p<.05$.*

Summary

In this chapter, a summary of the data collection method and a description of the population sample were given. The survey instrument was further explained and the results of the data analysis were presented.

Chapter 5

Conclusions and Recommendations

The focus of previous recycling research has been on willingness to recycle, participation in recycling programs, convenience and access to recycling facilities, knowledge of recycling practices, and a variety of demographic and socioeconomic variables. Very few studies have addressed the recycling attitudes and behaviors of college students. The survey used in this study contained questions relating to environmental concern, recycling attitudes and perceived consumer effectiveness, current recycling behavior, recycling knowledge, and textile disposal.

Overall, results based on questions one and two from the survey indicated that students feel concern for the environment and that everyone should do their part to preserve it. Results based on questions five and six also indicated that students are likely to recycle when on campus or at their parent's house. This could be due to the fact that the means to recycle certain items is readily available on campus. Also, a pattern of recycling behavior may already exist at the parent's home, making it easy for the student to participate in recycling activities with little forethought and conscientious effort. Recycling textiles, which are not widely accepted in most recycling programs, requires conscious decision-making and action on the part of the consumer.

The results of this study indicated that students do not dispose of used clothing by throwing those items away. Instead, students use methods of lateral-cycling, such as selling used clothing at a consignment shop or garage sale or giving the unwanted items away to others. Students also indicated a willingness to recycle unwanted clothing if the

Charleston recycling drop-off center accepted textiles or if there was a place on campus to drop them off.

Conclusions

The results of this research indicated that it is unclear if students are aware of the recycling options available to them in the Charleston area. Students agreed that that they were aware that used clothing and textiles may be donated to Goodwill, but they were unaware that Goodwill has a regularly scheduled pick-up at the Charleston Wal-Mart. Students were also unaware that the recycling drop-off center in Charleston currently does not accept textiles. It was also unclear if students were aware that used clothing and textiles can be recycled and that throwing these items away significantly contributes to the landfill problem. Results also indicated that students are willing to include textiles in their recycling behavior.

It was determined that female students were more likely than male students to choose environmentally responsible disposal methods of textiles. This is consistent with previous research as documented in the literature review. However, there are no significant differences in the recycling behaviors of older (non-traditional) and younger (traditional) students, which is not consistent with previous research. This may be because as college students, the non-traditional participants in this study may have been younger than what had been described as older in previous studies.

Family and Consumer Sciences students were more knowledgeable about recycling than Technology students. Both Family and Consumer Sciences and Technology students were more likely to dispose of textiles in environmentally friendly ways than Business students or other majors. It is interesting that Technology students

were less knowledgeable about recycling, yet were likely use environmentally responsible disposal methods of textiles. Family and Consumer Sciences students are more knowledgeable about recycling and are also more likely to use environmentally responsible disposal methods of textiles. This could be attributed to the consumer affairs content taught in Family and Consumer Sciences classes.

Recommendations

The results of this study can be used as a starting point to educate students about recycling options in the Charleston area and to promote recycling behaviors. Information about the local recycling drop-off center and the local Goodwill pick-up can be disseminated to incoming students at orientation and at the end of the spring semester when students are moving out of their college residences and there is an increase in items thrown away. Other methods such as public forums or textile recycling drives could be used to educate and promote recycling behaviors to the Charleston community, who would benefit from a reduction in the waste sent to the landfill.

Even though the local recycling drop-off center does not currently accept textiles, interest from students and the community might prompt the facility to expand their program to include textiles. Likewise, the campus recycling program could also be expanded to include textiles.

Limitations

A target number of 331 surveys were needed to be a representative sample of the population. A total of 194 surveys were returned to the researcher in this study, therefore, the sample size was not large enough to be representative of the undergraduate student population in the Lumpkin College of Business and Applied Sciences. A convenience

sample consisting only of undergraduate students in LCBAS classes were included in this research, so the results may not be generalizable. As with most survey and self-reported data, participants may not have completed the survey accurately, choosing instead the socially acceptable response.

Further Research

Other students at other universities across the United States may be included in future research, resulting in a larger, diverse, and more generalizable sample.

Future research could focus on reasons for clothing and textile disposal and frequency of disposal among college students. Motivations to recycle, such as monetary incentives, could also be included in future research. The differences between the recycling attitudes and behaviors of students who came from a home environment that participated in recycling and those who did not could also be addressed.

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Appendix A

Survey

Recycling Survey

Instructions: The purpose of this survey is to determine the recycling attitudes and behaviors of Eastern Illinois University students. Please respond according to the directions for each section. If you have already completed a survey, you do not need to complete another one. **Please be sure to fill out the bottom portion of the informed consent form and return with the completed survey in the provided envelope, which may be dropped in any campus mail box.**

Age:_____ **Gender (circle one):** Male Female

Year in School (circle one): Freshman Sophomore Junior Senior

Major:_____ **GPA:**_____

Please read each statement carefully and respond by circling the number on the scale at right that best reports the degree to which you agree or disagree with each statement. Please note that 1 represents 'strongly disagree' and 5 represents 'strongly agree'.

	Circle your answers…				
	Strongly Disagree	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
Section 1					
1. I am concerned about the environment.	1	2	3	4	5
2. Everyone should do their part to preserve the environment.	1	2	3	4	5
3. Too much emphasis is placed on environmental issues.	1	2	3	4	5
4. My recycling efforts will probably have very little impact on the environment.	1	2	3	4	5
Section 2					
5. I recycle when on campus because prominently displayed disposal containers are provided.	1	2	3	4	5
6. I recycle when at home/ when at my parent's house.	1	2	3	4	5
7. I recycle glass regularly.	1	2	3	4	5
8. I recycle paper/newspaper regularly.	1	2	3	4	5
9. I recycle aluminum regularly.	1	2	3	4	5
10. I recycle plastic regularly.	1	2	3	4	5
Section 3					
11. I am not aware that used clothing and textiles can be recycled.	1	2	3	4	5

12. I am aware that throwing away used clothing and textiles significantly contributes to the landfill problem.	1	2	3	4	5
13. I am aware that the recycling drop-off center in Charleston currently does not accept textiles.	1	2	3	4	5
14. I am aware that used clothing and textiles may be donated to Goodwill.	1	2	3	4	5
15. I am aware that Goodwill has a regularly scheduled pick-up at the Charleston Wal-Mart.	1	2	3	4	5
Section 4					
16. I usually throw old clothing away.	1	2	3	4	5
17. I usually sell my used clothing at a consignment shop or garage sale.	1	2	3	4	5
18. I usually give my used clothing to others.	1	2	3	4	5
19. I use my used clothing as rags or for other purposes to get the most out of them.	1	2	3	4	5
20. I usually donate my used clothing to charity.	1	2	3	4	5
21. I would recycle unwanted clothing if the recycling drop-off center in Charleston accepted textiles.	1	2	3	4	5
22. I would recycle unwanted clothing and textiles if there was a place on campus to drop them off.	1	2	3	4	5

What else would encourage you to participate in a textile recycling program? (Please provide your answer along with any additional comments in the space below.)

Appendix B

Consent Letter

CONSENT TO PARTICIPATE IN RESEARCH

You are invited to participate in a research study entitled *Textile Recycling Attitudes and Behaviors among College Students.* Your cooperation in filling out the enclosed questionnaire and returning it to the researcher or via campus mail is greatly appreciated. The purpose of this research is to determine the attitudes and behaviors of Eastern Illinois University undergraduate students regarding the inclusion of textiles in recycling programs. Potential benefits include an increase in awareness of recycling options available in the Charleston area among students, and a decrease in the amount of textiles sent to the landfill.

Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate. You may stop taking the survey at any time. There are no risks involved with taking this survey. The survey takes approximately 5-10 minutes to complete.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. No identifying information is included on the survey; the survey will remain anonymous.

If you have any questions or concerns about this research, please contact Elizabeth Walter at eewalter@eiu.edu or at (217) 565-0252, or Dr. Richard Wilkinson at rfwilkinson@eiu.edu or (217) 581-6046.

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board, Eastern Illinois University, 600 Lincoln Ave. Charleston, IL 61920
Telephone: (217) 581-8576, E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

Please fill out and return this portion with your completed survey in the provided envelope.
I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time.

_____
Printed Name of Participant

_____ _____
Signature of Participant Date

I, the undersigned, have defined and fully explained the investigation to the above subject.

_____ _____
Signature of Investigator Date

Appendix C

IRB Approval

November 6, 2007

Elizabeth Walter

Family & Consumer Sciences

Thank you for submitting the research protocol titled, "Textile Recycling Attitudes and Behaviors Among College Students" for review by the Eastern Illinois University Institutional Review Board (IRB). The IRB has reviewed this research protocol and effective 11/6/2007, has certified this protocol as Exempt from Further Review. The protocol has been given the IRB number 07-114.

The classification of this protocol as Exempt from Further Review is valid only for the research activities, timeline, and subjects described in the above named protocol. IRB policy requires that any proposed changes to this protocol must be reported to, and approved by, the IRB before being implemented. You are also required to inform the IRB immediately of any problems encountered that could adversely affect the health or welfare of the subjects in this study. Please contact me, or the Compliance Coordinator at 581-8576, in the event of an emergency. All correspondence should be sent to:

Institutional Review Board

c/o Office of Research and Sponsored Programs

Telephone: 217-581-8576

Fax: 217-581-7181

Email: eiuirb@www.eiu.edu

Thank you for your cooperation, and the best of success with your research.

John Best, Chairperson

Institutional Review Board

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