Sustainable Packaging Design Visually Explained Guidebook Prototype

Sara Almudhaf

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Sustainable Packaging Design Visually Explained

Guidebook Prototype

A Thesis submitted in partial fulfillment of the requirements for the degree of

Master of Fine Arts
in Visual Communication Design

School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology
Rochester, NY

Sara Almudhaf
Thesis Candidate

Approval Date
12/19/2014
# Approval of Thesis

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<thead>
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<th>Name</th>
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<td>Associate Advisor</td>
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<td>Professor, Visual Communication Design</td>
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<td>Peter Byrne</td>
<td>School of Design Administrative Chair</td>
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Date

Sara Almudhaf

Sustainable Packaging Design Visually Explained: Guidebook Prototype

iii
Abstract

Synopsis

As the fields of graphic and packaging design continue to evolve, it is important to keep their applications sustainable and green. Unaware graphic and packaging designers need to have an easy-to-comprehend source of information about sustainability. Developing an educational information graphics guidebook prototype has potential to serve as a unique tool for understanding the need for sustainable packaging design. The purpose of it is to eases the understanding of a complex system and enables users to discover relationships and connections among design, economy, environment, and society.

This prototype project involved designing a comprehensive sustainability symbol set where no satisfactory symbol set existed. The symbol set is intended to simplify the basics of sustainable packaging design for international audiences through educational information graphics content. A survey was conducted to gather over 600 symbols from royalty free sources. After the collection was refined and evaluated, during the design process, sketches for the symbol set were created using feedback from advisors, consultants, professionals, and students. Using biomimicry, the “golden ratio” was adapted as a grid system for unity, solidity, and effective use of space and ink.

The second part of this project outlines a model for the guidebook’s content. The first section was developed as a theoretical base to see the relationships, interaction, and connections between packaging design, related systems, networks, and the people involved. Section 2 of the table of contents provides a road map for the reader. In particular serves as a practical guide for the specific culture of Kuwait, as a case study. This section provided the big picture for the context of Kuwait, recommended sustainable strategies for consumer acceptance and adaptability based on four survey results. This research intends to benefit graphic design educators, researchers, professionals, and students.

Keywords

# Table of Contents

Approval of Thesis .................................................. i  
Copyright and Permission ......................................... ii  
Abstract ................................................................... iii  

Section 1  Introduction  
1.1 Thesis Statement ................................................ 1  
1.2 Target Audience ................................................ 4  

Section 2  Review of Literature  
2.1 Information Design Resources ............................. 5  
2.2 Sustainability Resources ...................................... 10  
2.3 Packaging Design Resources ............................... 15  
2.4 Kuwait Culture Resources .................................... 16  

Section 3  Process  
3.1 Thesis Parameters ................................................ 18  
3.2 Design Considerations ......................................... 22  

Section 4  Final Design Application ............................. 28  

Section 5  Conclusion  
5.1 Challenges and Technical Issues ........................... 29  
5.2 Final Reflection .................................................. 30  

Section 6  Appendix  
6.1 Survey 1: Kuwait Detergent Market ...................... 32  
6.2 Survey 2: Existing Symbols ................................... 43  
6.3 Survey 3: Environmental Awareness .................... 225  
6.4 Survey 4: Health Awareness ............................... 253  
6.5 Survey 5: Existing Labels in Kuwait ..................... 327  
6.6 Survey 6: Screen Sizes and Ratios ....................... 330  
6.7 Guidebook Table of Contents .............................. 334  
6.8 Thesis Proposal .................................................. 351  

Acknowledgment ....................................................... 374  
Bibliography ............................................................ 375
In today’s growing issues of industrial pollutions, solid waste, climate change, depletion of resources, energy consumption, and social distress, made the practice of sustainable and green design a necessity and responsibility towards the planet.\(^1\) Society’s daily consumption generates a great amount of solid waste that often ends up in landfills or as litter causing negative environmental impact;\(^2\) especially when waste management infrastructure in some countries has not maintained speed and efficiency with the rapid increase in consumption.

Countries with landfill infrastructures, such as Kuwait, suffer most from solid waste and household waste problems. Recent studies showed that the volume of consumption of household waste in Kuwait makes up more than 4000 tons per day.\(^3\) Moreover, the U.S. EPA reported in 1998 that packaging generated more than one-third of the U.S. municipal solid waste stream and a recent report in 2013 indicated that only 34.7% of solid waste is being recycled.\(^4\),\(^5\) This is because of the fact that packaging is a byproduct with a short lifespan and is being mass produced. Furthermore, most designers did not consider sustainable solutions nor encouraged consumers to reuse, refill, or recycle. Perullo claims that packaging design has been known for focusing more on marketing and sales rather than sustainability.\(^6\) Fortunately, consumer packaging nowadays is getting much attention regarding the resources used for production and their contribution to waste.

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The equation of contributing to waste systems can be redirected towards closed-loop cycles that would contribute positively to other systems and eliminate waste, not just reduce it. The call for a sustainable future requires breaking out of the old mindsets and have a wider perspective and understanding of the bigger picture.

Sustainability is a design plan that is in harmony and well habituated with the environment where economy and society’s present needs are met without compromising the ability to satisfy future needs. The practice of sustainability in design will help eliminate waste, nourish nature, use local and renewable resources, and blend in harmony with the culture. Designers should design packaging with reuse and longevity in mind. It should also be created for cyclically not linearly. It should be cost-effective, made of local and renewable resources, safe and nontoxic, aim at zero waste, and encourage social change.

Biomimicry is a new science that combines the disciplines of biology and design together. It studies nature’s time-tested models and uses these designs and processes to solve human problems. Through biomimicry, designers explore ways to create resource-efficient design solutions by imitating forms, systems, and elements found in nature that are well-adapted to life on earth. For example, the radiant colors found in a butterfly wing is created by structural colors rather than pigments. Another example is hollow hexagon structures found in beehives are known to be structurally very strong forms that uses maximum amount of space with minimal amount of material and energy as Charles Darwin described it “economizing labor and wax.”

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10. Ibid.  
11. Ibid.  
<table>
<thead>
<tr>
<th><strong>Need</strong></th>
<th>As the fields of graphic and packaging design continue to evolve, it is important to keep their applications sustainable and green. Unaware graphic and packaging designers need to have an accessible, easy to comprehend source of information about the subject of sustainability.</th>
</tr>
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<tr>
<td><strong>Research Question</strong></td>
<td>The concern raises the question about the best method and application to explain and deliver the subject of sustainable packaging design for designers with little or no understanding of sustainability. In addition to the type of information the reference should include to satisfy and meet the needs of the intended audience (Section 1.2 – Target Audience).</td>
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| **Scope** | Sustainable and green graphic and packaging design references are currently present in forms including written text, videos, and imagery (Section 2 – Review of Literature). Nevertheless, developing an educational information graphics guidebook prototype that eases the understanding of a complex system and enables users to discover relationships and connections among design, economy, environment, and society has potential to serve as a unique tool for understanding and applying the principles of sustainable packaging design.  

This prototype project involved designing in a sustainable manner a new and comprehensive sustainability symbol set where no satisfactory and complete symbol set existed. The symbol set is intended to simplify the basics of sustainable packaging design for international audiences through educational information graphics contents. It is also intended for use throughout the guidebook content as bookmarks to identify sections.  

The second part of this project outlines a model for the guidebook structure and content. The scope of the guidebook content covers packaging for detergents and cleaning products as daily household consumables. The content of this research excluded all packaging categories that fall under food, drugs, or cosmetics because they require complex understanding of chemistry since they get in direct contact with the human body.  

The scope of this thesis project prototype is further discussed in (Section 3.1 – Thesis Parameters). |
Section 1.2 Introduction

**Target Audience**

The final guidebook will benefit the personas listed below. Each group of audience presents different limitations, needs, education and experience levels. However, they all share the need to gain the basic knowledge about biomimicry and sustainability as they have little or no understanding of biomimicry and sustainability in graphic and packaging design. Another common characteristic is they all have the ability to read English and symbols as a universal visual language.

<table>
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<th>Persona #1</th>
<th>Graphic Design Educator or Researcher</th>
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<tr>
<td>Age Range</td>
<td>20s–And Above</td>
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<tr>
<td>Experience</td>
<td>Extremely knowledgeable and experienced in the field of visual communication design. Specialty: information graphics, system design, layout and grid structure, typography, or packaging design.</td>
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<tr>
<td>Needs</td>
<td>Introduce biomimicry and sustainability in teaching</td>
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<tr>
<td>Technical Skills</td>
<td>Uses a computer / laptop / tablet to read books and documents</td>
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<th>Graphic Design Professional</th>
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<td>Age Range</td>
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<tr>
<td>Experience</td>
<td>College degree or self-taught with a career relating to graphic or packaging design.</td>
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<tr>
<td>Involvement</td>
<td>Mass production of projects in print and packaging design</td>
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<tr>
<td>Needs</td>
<td>Reduce cost, cut down waste, practice responsibly, nourish nature, create awareness, and meet cultural needs.</td>
</tr>
<tr>
<td>Limitations</td>
<td>Does not have time to read long and complex textbooks</td>
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<tr>
<td>Technical Skills</td>
<td>Uses a computer / laptop / tablet to find online resources and inspiration</td>
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<td>Age Range</td>
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<tr>
<td>Experience</td>
<td>General knowledge in the field of visual communication design. Little or no professional experience.</td>
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<td>Needs</td>
<td>Learn responsible practices in graphic and packaging design</td>
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<tr>
<td>Limitations</td>
<td>Have short attention span and does not want to read a full textbook</td>
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<tr>
<td>Technical skills</td>
<td>Uses a computer / laptop / tablet to find online resources and inspiration</td>
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Section 2.1 Review of Literature

Information Design Resources

Introduction

The following are excellent resources for building knowledge about biomimicry, sustainability, packaging, and information design. In addition to resources about the consumer culture in Kuwait, as a case study, will provide a social context for applying this understanding. Those valuable resources draw attention to theoretical approaches including environmental impacts of print and packaging design, ethical practices in design, principles of green and sustainable design, and the ecology of print design. In addition, technical design features including biomimicry in design, material choices, ink usage or type techniques that use no ink, as well as ink-saving typography design.


This book provides information that focuses on behavior change and creating environmental awareness. It shows a new visual language represented for sustainability. It explains that sustainable practices are not an option but a necessity. As such, designers and business owners are increasingly pressing this topic. A wide range of target audiences have to be persuaded of the importance of a conscious lifestyle. The authors believe that a new visual language must be found for this topic because the traditional understanding of environmentalism is no longer effective. This book is a collection of work from around the world that displays reliable and understandable contemporary visual language for communicating sustainability. The examples presented in this book get the message across by utilizing graphic design, information graphics, illustrations, and photography. The examples in the book inspire graphic designers and challenge consumers. They describe relationships and complex technical processes serve as a unique presentation of the most significant, intelligent, and entertaining communication standards and proposed solutions for sustainability today.
Symbols are the origin of non-verbal and multicultural communication. This book defines pictograms, explains the appropriate use of them and their advantages. The authors also show the technicalities for building them along with pictogram design rules and principles. In addition to the traps that symbol and pictogram designers must bypass. This book displays examples from around the world outlines the history of pictograms and shows their uses in commercial and creative fields over the past century. It also offers invaluable hints and advice to designers. The book features tips from successful pictogram designers, with real-life examples to instruct and inspire. It discusses icons in detail in the chapter about the quest to create a visual language that crosses all grammatical, semantic, and semiotic boundaries in order to build a language of non-verbal communication methods.


This book offers a wide range of international selection and successful contemporary design examples in transportation systems, maps, databases, three-dimensional renderings, and electronics manuals with informed commentary. It focuses on the importance of structure, organization, and presentation of information whether faced with masses of material or sophisticated sign systems. It explains the process of arriving at useful and aesthetic solutions which make complex information appear simple, accessible, and available to particular audiences. The authors offer detailed analysis on each design solution, how it responded to the client’s needs, and why it succeeds. Including every chapter are case studies that explore each project in depth, from the client’s request to the completed product.

This resource recognizes the significance of symbols in delivering faster and more efficient message. The author and his team gathered and classified visual symbols from all areas of people’s daily lives throughout the world. The book is very functional and easy-to-use. The author arranged the symbols within sections that are easy to grasp. The basic symbols section outlines standard symbols such as on-off and up-down. The disciplines section, for example, displays symbols used in business, travel, safety, traffic controls, agriculture, communications, engineering, photography, sports, and architecture. In color, the psychological meanings behind using colors in applications worldwide and in particular cultures. Whereas, in the graphic form section, symbols across disciplines are grouped based on their forms, for instance, squares, circles, arrows, and human figures. This book serves as a set of criteria and a frame of reference for designing new symbols.


This book explains in great detail the process of developing the familiar American Institute of Graphic Arts (AIGA) signs system for the U.S. Department of Transportation. It also provides complete guidelines for designing new symbols. This book uncovers five-year effort of the design team led by Massimo Vignelli to design a system of passenger/pedestrian-oriented symbols for the U.S. Department of Transportation. These symbols are still in use at airports, train stations, parks and as part of wayfinding systems all over the world. The design method has confirmed to be very successful for accomplishing a 45 symbol system project.
Organizing information, especially complex information, is not a simple task. This book showcases successful design solutions in varied applications such as maps, sketches, diagrams, and graphs. Even though the designers who are displayed in the book are international, they express universal messages and themes through information design. Their work illustrates how a single idea can be executed in numerous, various, and unique ways, while sustaining the design’s main purpose to organize and communicate complex information in an easily obtainable and engaging way.


Wherever complex information is present, the need for information visualization becomes apparent; symbols, diagrams, pie-charts, histograms, and maps make information faster and easier to digest whether it is a book, magazine, business report or exhibition. The Data Flow book shows varied possibilities in visualizing data and information. The examples shown are not limited to classical representations of information, but there are numerous types of diagrams designed for different cases and categories. These range from chart-like diagrams, graph-based diagrams, and molecular diagrams to complex three-dimensional diagrams. Some examples include complex data thus making the final solutions appear as abstract art forms while others contain simple data, therefore, adding more functionality and readability to the outcome. The book also outlines and explains various methodologies for solving problems concerning complexity, simplification, and readability.

The author applied the understanding of information design throughout the content of this book. The book itself is inspirational in terms of the organization of complex visual and verbal information. It outlines methods for designing complex data while still maintaining meaning, relevance, and clarity. In addition, illustrations include real-life examples and problems as well as provide a historical dimension to demonstrate concepts, hypothesis, and human-factors driven information design. Both successful and failed design case studies are introduced to help readers understand the design principles under discussion. This resource is very clear, organized, easy to follow, and understand for designers in all fields.


Information design has evolved into a hot topic nowadays creating the new terminology "Infographic" as a buzzword. In this pictorial conversation, Joel Katz explained his viewpoints and revealed the principles for successful and functional information design solutions. Katz put forth design examples of his work in addition to examples from his book and design course at University of The Arts in Philadelphia. He discussed several issues of information design such as critically analyzing the failure of pyramids, anatomy versus function, metaphor, geography versus experience, and organizational simplicity.
Section 2.2  Review of Literature

Sustainability Resources


This book describes how to take the lead with sustainable packaging design solutions. Producing sustainable packaging is an essential part of today’s global dynamic market. This reference is a comprehensive, single source of actionable information, written by experts from a wide variety of fields. This book will enable designers to make smart decisions and create new possibilities for truly innovative solutions. It describes environmental impacts for designers to consider in their early design process. It is not solely about materials; it incorporates all aspects of packaging: functionality, aesthetic quality, and life-cycle. This book looks at packaging from every aspect. It presents the inter-connectivity of packaging, methods, and human influences. This resource is essential for understanding sustainable packaging design, its techniques, and processes.


This book concentrates on the ultimate goal before working on the first step in the design process. Design that start with such focus are sensitive to living systems and can potentially fulfill their mission without negative environmental, social, and economical impacts. Such profound designs fit the fundamental principles of recyclability, renewability, and non-toxicity. Usually based on natural systems, they are straightforward and provide more refined approaches to getting the services and functions needed. This book offers information from innovative designers in a wide variety of fields. It outlines numerous case studies that demonstrate the theory and practice of deep design.

This book breaks down the concept of green design in simple steps. It reframes the way designers think about the work they produce while remaining focused on cost restraints and corporate identity. The author demonstrates simple eco-innovative developments in the design process stages. This resource involves selecting projects, strategizing with clients, and choosing materials for manufacture and shipping. In addition, understanding users, printing choices of ink and paper, binding, packing, building strong brands, and working with clients to promote transparency and social change. The author filled this book with illustrations and case studies of green design implementation. This reference guide provides a comprehensive glossary of fundamental terminologies and resources to assure that any designer can perform practical green solutions. This book is a vital resource for graphic designers willing to view to the future of business and the environment.


This book explores practical packaging design models that follow sustainable and ecological principles. It invites the next generation of graphic designers to re-think packaging design from an environmental perspective. It encourages them to explore a collection of techniques and methodologies for producing innovative and sustainable packaging designs. The author organized the book into two distinct sections embracing the theory first by introducing many case studies, and then the applications of sustainable packaging design. The first part of the book, after the introduction background of packaging design and its purpose, the author concentrates on issues of sustainability. He introduces leading companies in sustainable packaging through a range of case studies and interviews. The other section of the book presents practical information on designing eco-friendly packaging and follows several projects through, step by step.
Sustainable design is gaining prominence as a crucial issue for the future of current design practices at design schools and professional design conferences. Graphic designers and clients are frequently demanding sustainable solutions. Designers want to approach these needs when presenting their work for consideration. As companies continue to accommodate to and provide environmental solutions with their goods, they require it from their creative partners. For that reason, designers need to be well informed and on the forefront of these initiatives. This book will provide designers with information to be leading on sustainability issues and inform them on sustainable applications such as paper, printing, formats, materials, inks, and executions.


This book contributes critical research about the book-publishing industry and examines approaches to achieve sustainable practices. Through comprehensive research and experience in the professional field, the authors practiced the concept of sustainability throughout the design production of the book, reviewing the environmental impacts of editing, printing, marketing, distribution, and both print and digital sales. This book includes a detailed record of the choices to produce a book. It also features business profiles that highlight individuals and businesses representing sustainable standards.

This book paints an entirely unique philosophy and practice of production and environmentalism. The authors argue in their idealistic book that the “reduce, reuse, and recycle” approach preserves a linear direction, “cradle to grave” production model. This design-minded model begins with the industrial revolution and accounts for 90 percent of the material used as waste. The authors examine the assumption that human industry must surely damage the natural world. They then use nature as a model for sustainable design. For example, a tree produces thousands of blossoms in order to create another tree; its excess is not considered wasteful but safe, beautiful, and highly effective. From this example, the book introduces “waste equals food” as the first sustainable principle. They argue that products should be designed to enrich and benefit something new after their first life is over, either as biological nutrients that go back to nature or as technical nutrients that go into an industrial closed-loop cycle for reproduction. Of course, this industrial cycle would not down-cycle or reduce the materials quality like the recyclables of today. Elaborating their principles from experience, the authors address an inspiring and viable case for change.


This book examines techniques and methods to aid graphic designers to create environmentally friendly design decisions. This book features the best of these earth-friendly designs. It showcases the design work of ad agencies and in-house designers that are innovative and creative. Mainly focuses on printed materials but also showcases samples of environmental graphic design, repurposed designs, and the new anti-packaging trend. The book illustrates examples of marketing materials designed using environmentally friendly means. By the collection of this book, the authors intend to inspiring freelance designers, printers, and other creative professionals in the field to take a similar direction.

This series encounters significant ethical and professional regarding designers and their clients. This brochure presents graphic designers with an introduction to design and print production practices that express challenges of critical issues of today: the balance between economic profit and environmental degradation. For design to be responsive to a client’s requirements, it should be responsible and suitable. This issue includes best-practices tips and resources that will improve the ability to design and print responsibly. Social responsibility has economic and environmental dimensions. Sustainable design has become a term-of-art for developing economic activity without harming the future’s potential. Exhibiting respect for these consequences is no longer a fringe matter. Designers should perform reliable communication methods to serve customers efficiently.


For people planning to adopt an eco-friendly lifestyle without losing quality, this book is the ultimate one-stop materials resource. This edition of this comprehensive sourcebook includes listings for various consumer products that have a minimal impact on the nature while remaining beneficial and attractive. This book has an extensive index reference section presenting detailed and illustrated entries of eco materials, and another part provides information on manufacturers, design studios, and green organizations.
Section 2.3  Review of Literature

Packaging Design Resources


This book concentrates on creating, improving, and executing package designs from a marketing perspective. The design bar is always high for those confident to engage in the industry. Today’s designers must educate themselves on all the actions needed to create designs that standout in an increasingly competitive market. This book takes an in-depth strategy, enabling designers to discover how to create work that is aesthetically appealing, strategy-driven, and intelligent.


This book is a reference that provides a visual inspiration for the creation of attractive packaging designs. The various types of carton templates demonstrate the diversity of packaging possibilities. This book covers product appropriateness and distinguishing features for each design, and a system of symbols provides ease of access to information to all design aspects, from their ecological connections through to their material suitability. Authoritative essays feature the principles of packaging, along with the concerns and challenges encountered by contemporary packaging designers. A beneficial guide includes all the main kinds of closure and quick reference list abstracts traditional packaging materials and their typical uses.
Section 2.4  Review of Literature

Kuwait Culture Resources


This resource provides statistical facts about different domains in Kuwait. The Annual Statistical Abstract includes statistical data that cover many economic and social activities in Kuwait. This report is one of the most-important official references of statistical data in the country. This report includes the most-relevant up-to date data published by the Central Statistical Bureau, in addition, to other data provided by ministries and governmental organizations in Kuwait. It examines quantities and qualities of residential, commercial, agricultural, and construction wastes. The General Census of Population is another important source for population data. It provides detailed data on population size and demographic, economic, and social characteristics. This dataset will be very useful for the creation of economic and social development plans. Another essential report is the Household Income and Expenditure Survey. It identifies the products and services consumed by different levels of society. It also classifies consumer spending in several goods and services categories.


This website database is an excellent resource for journals, maps, articles, reports, and photo albums related to Kuwait’s environments. The Waste Management section of the website provides 159 journal issues and 72 articles about waste in general. Number of articles discuss sustainability actions, household waste, and disposal infrastructure. This resource provides factual and statistical information describing the past, current, and future situations and plans of Kuwait’s environment.

Kuwait Municipality’s official website presents resources that would help complete the picture of Kuwait legal boundaries for environmental actions and waste behaviors. Although the website is poorly designed and disorganized, it holds very useful resources for this research area. It outlines the responsibilities of the administration of environmental affairs in Kuwait such as municipal solid waste treatment and utilization projects, studies of municipal landfill waste, banning non-biodegradable plastic bags and regulations for hygiene and waste transportation.


This resource covers established laws, policies, and standards in Kuwait regarding the environment. It has information about Kuwait’s local environment condition, provides a comprehensive database that includes digital maps. Additionally, an environmental Atlas is available for the six governorates in the State which provides data related to water, soil, and air. Furthermore, there are digital satellite maps for all regions in Kuwait.

Conclusion

Understanding all aspects involved in sustainable design helps build an easy-to-follow guidebook to educate, inform, and promote ethical design practices for graphic design students to adopt in their design processes. This research intends to further design academia by helping students understand sustainable packaging principles and applications. It will also motivate and help them find new ways to embrace the “cradle to cradle” and “zero waste” philosophies in their design process and become more aware of creating sustainable design solutions.
Packaging of Detergent and Cleaning Products

While researching the subject of sustainable packing, it became apparent how complex and scientific the subject is. Narrowing the subject to the basic level of packaging became necessary to meet the needs of the intended target audience (Section 1.2 – Target Audience). The subject was narrowed down to non-food, non-drug, and non-cosmetic daily household consumables. Products under those categories are intended to get in direct contact with the human body, which the U.S. Food and Drug Administration further described in the following quotation:

The Federal Food, Drug, and Cosmetic Act (FD&C Act) defines cosmetics by their intended use, as "articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body . . . for cleansing, beautifying, promoting attractiveness, or altering the appearance." The FD&C Act defines drugs, in part, by their intended use, as "articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or any function of the body of man or other animals." \(^{15}\)

When chemicals get in contact with the human body, the responsibility requires advance level of understanding in chemistry to assure health and safety of consumers. For example, it is important to understand the connection between shelf-life and the migration of packaging chemicals into the packaged product when designing packaging for food, drugs, or cosmetics.

This finding brought the scope down to detergent and cleaning products related to windows, counter tops, dishes, floors, and laundry. Detergent and cleaning products do not require deep understanding of chemical compounds because they are not intended for use on the human body. Thus, the subject is simple and easy to comprehend for designers with no background in chemistry.

\(^{15}\) U.S. Food and Drug Administration. "Is It a Cosmetic, a Drug, or Both? (Or Is It Soap?)" in FDA.gov, last modified April 30, 2012, http://goo.gl/LkSmXl.
Guidebook Table of Contents

Prior to the investigation of sustainable and green design for this thesis project, I considered myself as one of the research's audience (Section 1.2 – Target Audience) since I had very little understanding about the subject. My need to understand the basics of sustainable packaging design helped me put together section 1 of the table of contents (Appendix 6.7 – Guidebook Table of Contents). Throughout the process of acquiring knowledge about sustainable packaging and print design, I came across resources that were easy to comprehend and others that were complex. Complex resources required prerequisite knowledge to be able to grasp the content whereas simple resources reflected basic information and were rich with verbal and visual examples. Section 2, was developed by conducting four culture specific surveys on Kuwait as a case study.

Table of Contents

Section 1: Theory
Part 1: Ecology System (The Bigger Picture)
Part 2: Unintended Consequences & Consumer Behavior
Part 3: Sustainable Strategies Around The World
Part 4: Methods of Evaluation & Assessment
Part 5: Materials and Production
Part 6: Case Studies

Section 2: Road Map (Practice)
Part 1: Kuwait’s Infrastructure
Part 2: Kuwait Consumer Culture & Behavior
Part 3: Packaging Strategies for Kuwait
Part 4: Case Studies

Section 1

The first section of the guidebook was developed to provide a theoretical base to enable the reader to see the relationships, interaction, and connections in the bigger picture of packaging design related systems, network, and the people involved. This guidebook does not intend to provide a one-size-fits-all model; however, it demonstrates how sustainability is tied closely to its context and surrounding. This section means to identify the different sustainable strategies adopted in different parts of the world and explain clearly the fact that a strategy that is sustainable in one country may not be sustainable in another. In support of this notion, this section will showcase existing sustainable approaches for packaging design, describing the logic behind their design decisions from cultural, economic, and ecological perspectives.
In addition, the guidebook aims to point out downsides of unsuccessful methods that were performed in the past by corporations alongside consumer behavior change. Furthermore, this section intends to focus on creative labeling as means for consumers to engage in the pursuit of good. Labeling that educates, informs, raises awareness, and helps consumers participate in making responsible decisions. Moreover, it is planed to have a part dedicated to list responsible, safe, non-toxic, renewable resources, and production techniques including but not limited to ink-efficient production, ink-less typography and graphics such as laser, die-cut, and embossing, and biodegradable and recyclable materials. Data was collected for the previously stated chapters but was not included in the appendix because it was not germane to the purpose of this prototype.

**Section 2**

**Case Study: Kuwait**

Section 2 was developed to provide a road map for the reader and a practical real-life application for a particular culture. For this project, Kuwait was chosen as a case study for two main reasons. First, the lack of awareness and practice of sustainability in the country as a whole. Also, the high need of raising the awareness in the Arab region at large. Second, my existing knowledge and experience of the Kuwaiti culture and context as a Kuwaiti citizen. Part of this section intends to explore the context of Kuwait such as existing laws, policies, consumer culture, adaptability, or resistance to change, resources, energy, waste infrastructure, technology, ecology system, the people involved in packaging, etc. The previous listed data was collected for the purpose of developing the guidebook’s table of contents, however, it was not covered in the appendix since it was not pertinent to the scope of this prototype. This part aims to provide the big picture or the context of Kuwait and recommend effective sustainable strategies based on consumer acceptance and adaptability from survey results (Appendix 6.3 – Survey 3: Environmental Awareness). In addition, this section means to display current packaging types (Appendix 6.1 – Survey 1: Kuwait Detergent Market), labeling (Appendix 6.5 – Survey 5: Existing Labels in Kuwait), and their limitations in order to suggest solutions that would align with consumer needs and expectations (Appendix 6.4 – Survey 4: Health Awareness). Moreover, it intends to use consumer values and habits to the advantage of achieving desired behavior outcomes towards acceptability and positive change. For example, explore reasons for consumer decision to reuse certain packaging rather than others.
Sustainable Packaging Symbol Set
The major part of this thesis project covers a universal design for a 45 symbol set for packaging sustainability. The data collection and evaluation process was inspired by the American Institute of Graphic Arts (AIGA) Symbol Signs book designed for the U.S. Department of Transportation. A comprehensive survey was conducted to gather existing symbols (Appendix 6.2 – Survey 2: Existing Symbols). Soon after the collection was refined and evaluated, a symbol system was developed using biomimicry or design inspired by nature. The golden ratio was adopted as a grid system for unity and solidity, in addition, to its effective use of space and ink. During the design process, sketches and ideation were generated, feedback from advisors, consultants, professionals, and students were taken into account to enhanced the development of the comprehensive sustainable packaging symbol set. The symbol set is intended for use in information graphics to help explain the subject of sustainable packaging visually throughout the guidebook.

The development of this project is further described and illustrated in the following section (Section 3.2 – Process).
Section 3.2 Process

Design Considerations

Introduction
Building a thesis about biomimicry and sustainability in visual communication design, specifically packaging design, was a rewarding opportunity. It is vital for today’s expanding consumer market, industrial pollutions, and climate change to gain the necessary knowledge and rightful practices. Resources pursued in Rochester Institute of Technology (RIT) were invaluable. Knowledge-building resources were not limited to books, journals, and dissertations in the subject of sustainability at the RIT Library, as mentors from RIT in the fields of sustainable packaging science and industrial design enriched and enhanced my whole experience. The information graphics guidebook intends to exhibit a contemporary visual language for sustainability, a unique learning tool that simplifies complex data for designers who are new to the subject and want to practice in a responsible manner.

Inspiration
My previous experience in building the MEDesign: Human Health book at RIT provided excellent foundation and inspiration for this thesis project.16 This book serves to educate the layperson about health issues and complex systems in the human body. The primary method used to ease the understanding was through information design pieces that communicated the main idea as well as small and easy-to-digest portions of text to support the visuals. This book will greatly influence the direction of the guidebook.

Another inspiration was the Cause And Effect book.17 This book showcased outstanding worldwide examples of contemporary information visualization approaches. Some of those applications were campaigns, posters, brochures, and digital media. Projects mainly focused on raising awareness and education, which encouraged moving towards the information graphics guidebook project.

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17. For more information, please read Section 2.1 Literature Review, 5.
Moreover, a conference titled *Biomimicry in Architectural Design*, held at The Royal Danish Academy of Fine Arts in Copenhagen, emphasized the importance of learning to do things the way nature does. Nature, as Pawlyn described it, is a sourcebook of successful solutions that have been researched and developed through millions of years.\(^\text{18}\) He showed and explained that hollow structures in biology are stronger and more efficient in saving on resources. Another example was the *Caviar Project*; it illustrates a simple ecological system that aims at producing zero waste achieved by collaboration.\(^\text{19}\) This finding added a dimension of biology to the thesis that inspired exploring successful solutions in nature for design applications.

Furthermore, Ecofont, an ink-saving typeface, mimicked nature and applied the hollow structure concept to prove the effectiveness of a design inspired by nature.\(^\text{20}\) In addition, the University of Wisconsin saved 30% on ink and toner when switching from Arial to Century Gothic because it uses thinner print lines.\(^\text{21}\)

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19. Ibid.
20. For more information on Ecofont, please visit www.ecofont.com.
Biomimicry was adopted for this project as an approach for innovation through copying nature’s time-tested models and designs in order to achieve sustainable solutions to human challenges.\(^\text{22}\) Therefore, the golden ratio was adopted from nature and applied to build the structure of the symbol set in order to design unified, balanced, ink-efficient, aesthetic, visible, and readable symbols.

The golden ratio is a precise mathematical proportion measurement operating as a universal law in nature.\(^\text{23}\) It operates as the true ideal measures in the areas of both nature and art.\(^\text{24}\) The golden ratio holds the ground principle of all structures, forms, and proportions whether organic or inorganic that strive for beauty and perfection.\(^\text{25}\)

Researcher Zeising claimed to have found the golden ratio in its fullest realization in the human form as well as plants.\(^\text{26}\) He extended his investigation to the proportions of animals, chemical compounds, in addition to leading man-made artworks and architectural forms.\(^\text{27}\) The golden ratio is found in the skeleton of the human body. The Apple logo, as an example, is designed and constructed using the golden ratio.

\(^\text{24}\) Ibid.
\(^\text{26}\) Ibid.
\(^\text{27}\) Ibid.
**Symbol Evaluation Basis**

**Existing Sustainability Symbol Set Development Process and Evaluation Basis**

This study offers a visual recommendation of 45 symbols that help explain the subject of sustainable packaging design and simplify basic messages to graphic and packaging designers who are unfamiliar with sustainability concepts and practices. This study introduces a new and comprehensive symbol set where no satisfactory ideas exists. This symbol set took three stages to be developed.

1. First stage in this project was to collect existing and commonly used symbols with qualities of immediacy and recognition to many people.

2. The second stage used the semiotic evaluation method to analyze the three primary dimensions of a visual design:

   a. **Semantic—Meaning**
      The relationship of the visual design to meaning conveyed.

   b. **Syntactic—Form**
      The interrelationship among parts of the visual design such as size, shape, weight, contour, figure/ground, massing, tone, texture, position, orientation, and color.

   c. **Pragmatic—Technical**
      The relationship of the visual design to the user in terms of visibility, readability, legibility, lighting conditions, viewing distances, and the practical aspects of fabrication, manufacturing and production processes.

      This evaluation was performed through discussions with thesis advisors and consultants, and graduate-level graphic design students.

3. Finally, setting up a grid system and design principles to redesign the complete and unified sustainable packaging design symbol set.
Data Collection

Survey of Existing Symbols

From readings and advisors feedback, a keyword list was created to identify the major symbols needed to explain the big picture of sustainable packaging design. Data were color coded and visualized to easily categorize major and minor symbols (Appendix 6.7 – Guidebook Table of Contents).

Data Evaluation

Three revisions were generated for the existing symbols to find the best representational group of symbols for the keyword. Around 700 symbols were gathered from royalty free websites and symbols in the public domain. Then, existing symbols were evaluated and reviewed by advisors, consultants, and design students to opt out unsuccessful symbols and combine effective ideas in a new symbol design.
**Design Ideation**

**Designing a New Comprehensive Symbol Set**

Below are sample sketches were created based on features and qualities identified and discussed during the evaluation process for the keyword *Industry*. Further sketches and design process can be found in (Appendix 6.2 – Survey 2: Existing Symbols).

![Sample Sketches](image)

Using the golden ratio as base and structure, a simplified form was designed to represent the visual vocabulary for *Industry*.

![Golden Ratio and Biomimicry Diagram](image)
This section features the final design of the 45 packaging sustainability symbols. For additional design process images, please view Appendix (Section 6.2 – Survey 2: Existing Symbols).

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Energy</th>
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<th>Tidal Energy</th>
<th>Wind Energy</th>
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<td>Forest</td>
<td>Renewable Resources</td>
<td>Disposal</td>
<td>Recycle</td>
</tr>
<tr>
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<td>Health</td>
<td>Coal</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Time</td>
<td>Designer</td>
<td>Media</td>
<td>Online Shopping</td>
<td>Shopping</td>
</tr>
<tr>
<td>Government</td>
<td>Retail</td>
<td>Institution</td>
<td>Profit</td>
<td>Cost</td>
</tr>
<tr>
<td>Factory</td>
<td>Process</td>
<td>Warehouse</td>
<td>2nd Packaging</td>
<td>1st Packaging</td>
</tr>
<tr>
<td>Extraction</td>
<td>Cargo Truck</td>
<td>Cargo Train</td>
<td>Cargo Ship</td>
<td>Cargo Plane</td>
</tr>
<tr>
<td>Walking</td>
<td>Bicycle</td>
<td>Motorbike</td>
<td>Car</td>
<td>Bus</td>
</tr>
<tr>
<td>Sun</td>
<td>Global Warming</td>
<td>Deer</td>
<td>Fish</td>
<td>Bird</td>
</tr>
</tbody>
</table>
Section 5.1 Conclusion

Challenges and Technical Issues

During the proposal, little research was conducted on existing symbol sets for packaging and sustainability. It was anticipated for the guidebook to use existing symbols to create the visual explanation designs. However, after researching in this area, it was found that no satisfactory comprehensive symbol set existed. The focus of the thesis shifted to designing a complete packaging and sustainability symbol set consisting of 45 symbols to be used throughout the guidebook.

The process of designing the symbol set was partly inspired by the AIGA "Symbol Signs" book designed for the U.S. Department of Transportation. This book reveals five-year effort of a design team to accomplish a universal 45 symbol system project wayfinding systems for airports and train stations. Whereas, the sustainability symbol set of this thesis project was designed in a 5 month time frame. The research and design process of the symbol set took much time from designing the guidebook content. However, a good sense of direction was established through conducting surveys and analyzing the results.

Throughout this project, a few technical issues were encountered by survey participants, which prevented 75 surveys from being completed. The survey was distributed through cell phone text messaging service and social media. Most technical issues were encountered with the use of cell phone internet browsers and loss of internet connection. Because the survey is programmed to accept one participant per IP Address, participants who closed the browser and reopened it or lost connection were taken to the last page of the survey automatically after the page was refreshed.

Another technical issue was faced in the process of this research documentation. As more pages were added to the document the slower the computer processes and the more crashes occurred to the Adobe InDesign software.
### Section 5.2 Conclusion

#### Final Reflection

**Learnings**
The development of the guidebook prototype was a great learning experience. It has potential to continue on after thesis with possibility for publication and short video development.

Extensive research, content collection, and organization took place in gathering information to direct the guidebook’s table of contents as well as develop the symbol set system. The knowledge and experience acquired from conducting surveys was invaluable. Accuracy of information illuminates a true path of possibilities and eliminates uncertainty. The collection process allowed for deep exploration and new level of appreciation for sustainable packaging design, biomimicry, and information graphics.

A practical understanding for the golden ratio and system design was acquired during the development of the sustainability symbol set. A great level of skill in technical illustration and precision in measurements was learned in order to create a highly balanced and systematic set. A highly valued, critical step in the process was the interaction, discussion, and critique during the development of the set.

The final guidebook has potential to serve as a comprehensive hands-on guidebook providing all the research, processes, and findings through the documentation of this thesis and beyond this time frame. This prototype project will continue to progress so that it could reach and fulfill its vision.

**New Questions**
Based on consumer comments and requests regarding package labeling, new questions have emerged such as (1) how can package labeling become more visible, readable, and engaging? (2) can package labeling change its application from print to digital? (3) will information graphics encourage consumers to read labels? (4) can label design educate and inspire behavior change?

**Future Consideration**
According to feedback from advisors, possibilities for future application other than the printed and digital guidebook have surfaced such as educational short infographics videos and board games whether digital or physical.
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Survey 1: Kuwait Detergent Market</td>
<td>32</td>
</tr>
<tr>
<td>6.2</td>
<td>Survey 2: Existing Symbols</td>
<td>43</td>
</tr>
<tr>
<td>6.3</td>
<td>Survey 3: Environmental Awareness</td>
<td>225</td>
</tr>
<tr>
<td>6.4</td>
<td>Survey 4: Health Awareness</td>
<td>253</td>
</tr>
<tr>
<td>6.5</td>
<td>Survey 5: Existing Labels in Kuwait</td>
<td>327</td>
</tr>
<tr>
<td>6.6</td>
<td>Survey 6: Screen Sizes and Ratios</td>
<td>330</td>
</tr>
<tr>
<td>6.7</td>
<td>Guidebook Table of Contents</td>
<td>334</td>
</tr>
<tr>
<td>6.8</td>
<td>Thesis Proposal</td>
<td>351</td>
</tr>
</tbody>
</table>
Survey 1

Kuwait Detergent Market

The sample of this survey is focused on detergent products sold in Alsurra Co-operative Society in Kuwait. Products sold in this or any Co-operative Society in Kuwait are approved and imported by The Union of Consumer Co-operative. In other words, the sample products that are found in Alsurra Co-op are also found in all Co-ops in all areas in the country. This survey aims to identify the existing types of packaging used and sold in Kuwait consumer market. A total of 77 snapshots of all types of detergents were taken from the shelves in Alsurra Co-op.

Snapshots Detergent Products Packaging in Alsurra Co-operative

![Image of detergent products]

![Image of detergent products]
Snapshots
Snapshots
Snapshots
Snapshots
Snapshots
Snapshots
### Survey 1 Results

<table>
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<th>Results</th>
<th>Types of Detergent Packaging in Alsurra Co-op in Kuwait</th>
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<tr>
<td></td>
<td>• Full-color cardboard box for powder detergent.</td>
</tr>
<tr>
<td></td>
<td>• Full-color laminated paper wrap for detergent bar.</td>
</tr>
<tr>
<td></td>
<td>• Transparent hard plastic for liquid detergent lightened with water.</td>
</tr>
<tr>
<td></td>
<td>• Opaque hard plastic for liquid detergent lightened with water.</td>
</tr>
<tr>
<td></td>
<td>• Opaque hard plastic for concentrated liquid detergent.</td>
</tr>
<tr>
<td></td>
<td>• Opaque full-color soft plastic for powder detergent.</td>
</tr>
<tr>
<td></td>
<td>• Mixed plastic and metal spray head for liquid detergent lightened with water.</td>
</tr>
<tr>
<td></td>
<td>• Full-color aluminum spray can for compressed detergent.</td>
</tr>
<tr>
<td></td>
<td>• Full-color laminated label double-sided print.</td>
</tr>
<tr>
<td></td>
<td>• Full-color laminated label single-sided print.</td>
</tr>
</tbody>
</table>
Preface  Existing Sustainability Symbol Set Development Process
Around 700 symbols were gathered from royalty free websites and symbols in the public domain. Existing symbols were evaluated and reviewed by advisors, consultants, and design students to opt out unsuccessful symbols and combine effective ideas in a new symbol design. Sketches were created based on features and qualities identified and discussed during the evaluation process for each keyword. Using the golden ratio, symbols were designed with a simplified form to represent visual vocabulary for all keywords.
### Time Period

<p>| | | | | |</p>
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Section 6.2  Symbol Redesign

Time Period

Process
Section 6.2  Symbol Redesign

Time Period

Process
Section 6.2 Symbol Redesign

Shopping
Section 6.2  Symbol Redesign

Time Period

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
### Section 6.2 
Data Collection of Existing Symbols

#### Shopping

<table>
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<th></th>
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</table>
Section 6.2  Symbol Redesign

Shopping

Process

\[ \text{Diagram of shopping carts} \]
Prefinal

Shopping
Section 6.2 Symbol Redesign

Shopping

Final

Golden ratio  Biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf  52
### Section 6.2 Data Collection of Existing Symbols

#### Home

<table>
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<th></th>
<th><img src="image1.png" alt="Image 1" /></th>
<th><img src="image2.png" alt="Image 2" /></th>
<th><img src="image3.png" alt="Image 3" /></th>
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Section 6.2 Symbol Redesign

Home

Process

45°
Section 6.2  Symbol Redesign

Home

Prefinal
Section 6.2 Symbol Redesign

Home

Final

goldenratio  biomimicry

goldenratio  biomimicry
Section 6.2 Data Collection of Existing Symbols

Retail

1

![Retail Icon 1](image1)

2

![Retail Icon 2](image2)
Section 6.2  Symbol Redesign

Retail

Prefinal
Section 6.2  Symbol Redesign

Retail

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

**Light**

1

2

3

4
Section 6.2  Symbol Redesign

Light

Process
Section 6.2  Symbol Redesign

Light

Prefinal
Section 6.2    Symbol Redesign

Light

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

Energy

1

2

3

4
Section 6.2  Symbol Redesign

Energy

Process
Section 6.2  Symbol Redesign

Energy

Prefinal

[Diagram of symbol redesign for energy]
Section 6.2  Symbol Redesign

Energy

Final

goldenratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

67
Section 6.2  Data Collection of Existing Symbols

**Water**

1. 
   - ![Symbol 1]
   - ![Symbol 2]
   - ![Symbol 3]
   - ![Symbol 4]
   - ![Symbol 5]

2. 
   - ![Symbol 6]
   - ![Symbol 7]

3. 
   - ![Symbol 8]
   - ![Symbol 9]
   - ![Symbol 10]
   - ![Symbol 11]
Section 6.2  Symbol Redesign

**Water**

**Process**

![Image of water symbol redesign process](image-url)
Section 6.2  Symbol Redesign

Water

Prefinal
Section 6.2  Symbol Redesign

Water

Final

golden ratio  biomimicry

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Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

**Toxins / Pollution**

1

2

3
Section 6.2 Symbol Redesign

Toxins / Pollution

Process
Section 6.2  Symbol Redesign

Toxins / Pollution

**Process**

[Images of skull drawings in different stages of redesign, showing process from original sketch to final design.]
Section 6.2  Symbol Redesign

Toxins / Pollution

<table>
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### Section 6.2 Symbol Redesign

#### Toxins / Pollution

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<tbody>
<tr>
<td>![Image of skull symbol]</td>
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Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2   Symbol Redesign

Toxins / Pollution

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

Forest

1

2

3
Section 6.2  Symbol Redesign

**Forest**

<table>
<thead>
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<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Process Image]</td>
<td>![Final Image]</td>
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</table>

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Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Symbol Redesign

Forest
Section 6.2  Symbol Redesign

Forest

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype  Sara Almudhaf
Section 6.2 Data Collection of Existing Symbols

**Renewable**

1. 

2. 

3. 

4. 

...
Section 6.2  Symbol Redesign

Renewable

Process
Section 6.2 Symbol Redesign

**Renewable**

**Process**

[Image of renewable symbol redesign process]
Section 6.2  Symbol Redesign

Renewable
Section 6.2  
Symbol Redesign

Renewable

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

Fuel

1

2

3

4

5
Section 6.2  Symbol Redesign

Fuel

Process
Section 6.2  Symbol Redesign

Fuel
Section 6.2 Symbol Redesign

Fuel

Final

golden ratio

bio mimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

**Bicycle**

1

2

3

4

5
Section 6.2  Symbol Redesign

Bicycle

Process
Section 6.2 Symbol Redesign

Bicycle

Prefinal
Section 6.2  Symbol Redesign

**Bicycle**

Final

---

*golden ratio*  bio*mimicry*

---

Sara Almudhaf  Sustainable Packaging Design Visually Explained: Guidebook Prototype  95
Section 6.2  
Data Collection of Existing Symbols

**Motorbike**

1. ![Motorbike 1](image1)
2. ![Motorbike 2](image2)
3. ![Motorbike 3](image3)
4. ![Motorbike 4](image4)
Section 6.2  Symbol Redesign

Motorbike
Section 6.2 Symbol Redesign

Motorbike

Process
Section 6.2  Symbol Redesign

Motorbike

Prefinal
Section 6.2  Symbol Redesign

Motorbike

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

Walk

1


2


3


Section 6.2  Symbol Redesign

Walk

Process
Section 6.2  Symbol Redesign

**Walk**

*Prefinal*
Section 6.2  Symbol Redesign

Walk

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

**Car**

1

![Car Symbol 1](image1)

2

![Car Symbol 2](image2)

3

![Car Symbol 3](image3)

4

![Car Symbol 4](image4)
Section 6.2  Symbol Redesign

Car

Process
Section 6.2  Symbol Redesign

Car

Process
Section 6.2  Symbol Redesign

**Car**

Prefinal
Section 6.2  
Symbol Redesign

Car

![Golden Ratio and Biomimicry Diagrams](image.png)

Final
Section 6.2  Data Collection of Existing Symbols

Truck

1

2

3

4

5
Section 6.2  Symbol Redesign

**Truck**

**Process**

![Diagram of Truck Process](image_url)
Section 6.2  Symbol Redesign

Truck

Prefinal
Section 6.2  Symbol Redesign

Truck

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype  Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

Bus

1

2

3
Section 6.2 Symbol Redesign

Bus

Process
Section 6.2  Symbol Redesign

Bus

Prefinal
Section 6.2  Symbol Redesign

Bus

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype  Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

Train

1

2

3

4

5
Section 6.2  Symbol Redesign

Train

Process
Section 6.2 Symbol Redesign

Train

Process
Section 6.2  Symbol Redesign

Train

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

Ship

1

2

3

4

5

6
Section 6.2  Symbol Redesign

Ship

Process
Section 6.2 Symbol Redesign

Ship

Prefinal
Section 6.2  Symbol Redesign

Ship

Final

golden ratio  biomimicry

golden ratio  biomimicry
Section 6.2  Data Collection of Existing Symbols

Extraction

1

2

3

4
Section 6.2  
Symbol Redesign

Extraction

Process
Section 6.2  Symbol Redesign

Extraction

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Data Collection of Existing Symbols

**Plane**

1. 

2. 

3. 

4. 

5.
Section 6.2  Symbol Redesign

**Plane**

**Process**

[Image of a hand-drawn plane with the word "cargo plain"]
Section 6.2  Symbol Redesign

Plane

Prefinal
Section 6.2  Symbol Redesign

**Plane**

**Final**

---

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
### Section 6.2 Data Collection of Existing Symbols

#### Production / Process / Manufacturing

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Section 6.2  Symbol Redesign

Production / Process / Manufacturinge

Process

135

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Sara Almudhaf
Section 6.2  Symbol Redesign

Production / Process / Manufacturing

Prefinal
Section 6.2  Symbol Redesign

Production / Process / Manufacturing

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf
### Section 6.2

**Data Collection of Existing Symbols**

#### Secondary Packaging

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...
Section 6.2  Symbol Redesign

Secondary Packaging

Process
Section 6.2 Symbol Redesign

Secondary Packaging

Final

golden ratio bio mimicry

13 8 5 3 2 1

golden ratio bio mimicry

13 8 5 3 2 1

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Section 6.2  Data Collection of Existing Symbols

Primary Packaging

1. Bottles
2. Jugs and Bottles
3. Cans and Jars
4. Cartons and Pouches
5. Jars and Jars
6. Bags and Recycling Symbols
# Secondary Packaging

## Section 6.2 Symbol Redesign

### Process

<p>| | |</p>
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Section 6.2  Symbol Redesign

Primary Packaging

Final

Golden Ratio  Biomimicry

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Section 6.2  Data Collection of Existing Symbols

Warehouse

1

2

3

4

5

6
Section 6.2  Symbol Redesign

Warehouse

Process
Section 6.2  Symbol Redesign

Warehouse

Prefinal
Section 6.2  Symbol Redesign

Warehouse

Final

golden ratio  biomimicry

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Section 6.2  Data Collection of Existing Symbols

**Corporation**

1. 
   - ![Diagram 1]
   - ![Diagram 2]
   - ![Diagram 3]

2. 
   - ![Diagram 4]
   - ![Diagram 5]
   - ![Diagram 6]

3. 
   - ![Diagram 7]
   - ![Diagram 8]
   - ![Diagram 9]
   - ![Diagram 10]
   - ![Diagram 11]
Section 6.2 Symbol Redesign

Corporation

Process
Section 6.2
Symbol Redesign

Corporation

Prefinal
Section 6.2  Symbol Redesign

Corporation
Section 6.2  
Data Collection of Existing Symbols

**Profit**

1. 
   ![Graph with bars]
   ![Column chart]
   ![Stacked bar chart]
   ![Presentation slide]

2. 
   ![Line chart 1]
   ![Line chart 2]
   ![Line chart 3]

3. 
   ![Percentage symbol]
   ![Percentage symbol]
   ![Percentage symbol]

4. 
   ![Pie chart 1]
   ![Pie chart 2]
Section 6.2  
Symbol Redesign

Profit

Process
Section 6.2  Symbol Redesign

Profit
Section 6.2  Symbol Redesign

Profit

Final

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Sara Almudhaf
## Section 6.2 Data Collection of Existing Symbols

### Cost

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</table>

Sara Almudhaf
Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Symbol Redesign

Cost

Prefinal
Section 6.2  Symbol Redesign

Cost

Final

golden ratio  biomimicry

---

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Section 6.2 Data Collection of Existing Symbols

**Designer**

1. Pen, pencil, marker, crayon, eraser

2. Ruler, measuring stick, protractor, divider

3. Paintbrush, marker, pen, pencil

4. Paint, ink, marker, pen, pencil

5. Vector, illustrator, computer, design tool
Section 6.2 Symbol Redesign

Designer

Process
Section 6.2  Symbol Redesign

Designer

Prefinal
Section 6.2  Symbol Redesign

Designer

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

Disposal / Recycle

1

2

3

4
Section 6.2  Symbol Redesign

**Disposal / Recycle**

<table>
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<td>![Recycling Symbol]</td>
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Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
Section 6.2  Symbol Redesign

Disposal / Recycle

Prefinal
Section 6.2  Symbol Redesign

Disposal / Recycle

Final

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Section 6.2  Symbol Redesign

Disposal / Recycle

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

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Section 6.2  Data Collection of Existing Symbols

Global Warming

1

2

3

4
Section 6.2  Symbol Redesign  

Global Warming

Process
Section 6.2  Symbol Redesign

Global Warming

Prefinal
Section 6.2  Symbol Redesign

Global Warming

Final
Section 6.2  
Data Collection of Existing Symbols

**Solar Energy**

1.

2.

3.

4.

5.
Section 6.2  
Symbol Redesign

**Solar Energy**

**Process**

Images of the process of symbol redesign for solar energy.
Section 6.2  Symbol Redesign

Solar Energy
Section 6.2  Symbol Redesign

Solar Energy

Prefinal
Section 6.2  Symbol Redesign

Solar Energy

Final

golden ratio  biomimicry

Golden ratio

Biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

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Section 6.2
Symbol Redesign
Solar Energy

Final

golden ratio | biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  
Data Collection of Existing Symbols

**Wind Energy**

<p>| | | | | |</p>
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Section 6.2  Symbol Redesign

Wind Energy

Process
Section 6.2  Symbol Redesign

Wind Energy

Prefinal
Section 6.2  Symbol Redesign  

Wind Energy

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype  

Sara Almudhaf  
181
Section 6.2  Data Collection of Existing Symbols

Water Energy

1. [Diagram of water wheel]
   [Diagram of water flowing]
   [Diagram of sun and wave]
   [Diagram of wave]

2. [Diagram of gear]
   [Diagram of gear]

3. [Diagram of water fall]
   [Diagram of dam]
   [Diagram of water fall]
   [Diagram of water fall]

4. [Diagram of wave]
   [Diagram of wave]
   [Diagram of wave]
   [Diagram of wave]
Section 6.2  Symbol Redesign

Water Energy

Process
Section 6.2 Symbol Redesign

Water Energy

Prefinal
Section 6.2  Symbol Redesign

Water Energy

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  
Data Collection of Existing Symbols

Oil

1

2

3

4

5
Section 6.2  Symbol Redesign

Oil

Process
Section 6.2  Symbol Redesign

Oil

Prefinal
Section 6.2  Symbol Redesign

Oil
Section 6.2  Data Collection of Existing Symbols

Coal

1

2
Section 6.2  
Symbol Redesign

Coal

Process
Section 6.2  Symbol Redesign

Coal

Process
Section 6.2  Symbol Redesign

Coal

Prefinal
Section 6.2  Symbol Redesign

Coal

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype  194
Section 6.2  Data Collection of Existing Symbols

**Industry**

1. 
2. 
3. 
4.
Section 6.2  Symbol Redesign

Industry

Process
Section 6.2   Symbol Redesign

Industry

Prefinal
Section 6.2  Symbol Redesign

Industry
Section 6.2  Data Collection of Existing Symbols

Media / Advertising

1

2

3

4
Section 6.2 | Symbol Redesign

Media / Advertising

Process
Section 6.2  Symbol Redesign

Media / Advertising

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

Online Shopping

1

2

3

4

5
Section 6.2  Symbol Redesign

Online Shopping

Process
Section 6.2  Symbol Redesign

Online Shopping

Process
Section 6.2  Symbol Redesign

Online Shopping
Section 6.2  Symbol Redesign

Online Shopping

Final

golden\textit{ratio}  \hspace{1cm}  \textit{biomimicry}

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Section 6.2  Data Collection of Existing Symbols

Health

1

2

3

4

5
Section 6.2  Symbol Redesign

Health

Process
Section 6.2  Symbol Redesign

Health

Prefinal
Section 6.2  Symbol Redesign

Health

Final

golden ratio  biomimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype

211
Section 6.2 Data Collection of Existing Symbols

**Government Laws**

1. 
   ![Buildings]

2. 
   ![Buildings]

3. 
   ![Buildings]

4. 
   ![Buildings]

5. 
   ![Flags]
Section 6.2  
Symbol Redesign  

Government Laws  

Process
Section 6.2  Symbol Redesign

Government Laws

Prefinal
Section 6.2 Symbol Redesign

Government Laws

Final

golden ratio bio mimicry

Sustainable Packaging Design Visually Explained: Guidebook Prototype
Section 6.2  Data Collection of Existing Symbols

Fish

1

2

3

4
Section 6.2  Symbol Redesign

Fish

Process
Section 6.2  Symbol Redesign

Fish
## Section 6.2  Data Collection of Existing Symbols

### Deer

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Section 6.2  Symbol Redesign

**Deer**

**Process**

![Deer drawing process images]
Section 6.2  Symbol Redesign

**Deer**

---

**Final**

```
golden ratio  biomimicry
```

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```
golden ratio  biomimicry
```

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Section 6.2  Data Collection of Existing Symbols

Bird

1

2

3

4

5
Section 6.2 Symbol Redesign

Bird

Process
Section 6.2  Symbol Redesign

**Bird**

![Final Diagram](image-url)

- Golden Ratio
- Biomimicry

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Study of Consumer Environmental Awareness in Kuwait

This digital survey was created and hosted by www.surveymonkey.com. It was distributed through mobile devices and social media to Arabic speaking consumers living in Kuwait. The survey was conducted primarily to detect the level of environmental awareness in order to determine the level of complexity or simplicity, which will allow me to adjust the guidebook content accordingly. In addition, find out if any consumers are in the habit of reusing and refilling packaging products and/or their willingness to change their behavior to reusing and refilling.
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<th><strong>نعم</strong></th>
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<tbody>
<tr>
<td><strong>ال مصدر:</strong> موقع &quot;بيتا&quot; الدوّارة الرسمية للدولة الكويت، الهيئة العامة للبيئة</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **هل تعلم أن استراتيجية دولة الكويت الحالية للتخلص من النفايات هي الردم (إلقان النفايات)؟** | **نعم** | **لا** |

<p>| <strong>هل تعلم أن استراتيجية ردم النفايات تعد من أسوأ استراتيجيات التخلص من النفايات في العصر الحالي؟</strong> | <strong>نعم</strong> | <strong>لا</strong> |</p>
<table>
<thead>
<tr>
<th>4.</th>
<th>من أفضل الاستراتيجيات المتبعة في الدول المتقدمة للتخلص من النفايات ما يلي، عدد ما تعرف منه.</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>Recycle</td>
</tr>
<tr>
<td>□</td>
<td>Refill and Reuse</td>
</tr>
<tr>
<td>□</td>
<td>Biodegradable Material</td>
</tr>
<tr>
<td>□</td>
<td>Reduce Material</td>
</tr>
<tr>
<td>□</td>
<td>لا</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.</th>
<th>بالنسبة لمواد التقطيع المنزلية مثل مواد تنظيف الأرضيات والأسطح والشيابيك والملابس، ما هي علاقتك بالمنتج؟ (يمكن تحديد أكثر من إجابة)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>أنا صاحب قرار الشراء</td>
</tr>
<tr>
<td>□</td>
<td>أنا مستخدم المنتج شخصياً</td>
</tr>
<tr>
<td>□</td>
<td>أنا المستفيد من جودة المنتج</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.</th>
<th>لو طرحت فكرة هذا المنتج في السوق الكويتي الاستهلاكية، هل ستبيع المنتج؟</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>نعم</td>
</tr>
<tr>
<td>□</td>
<td>لا</td>
</tr>
</tbody>
</table>
مواصفات المنتج

عبوة بالاستيكية صغيرة وخفيفة
تحتوي على كميات محددة لكل استخدام
مغلفة بمادة ذات التحلل الحيوي
مسوحوق مركز صغير وخفيف
يقلل كمية النفايات بنسبة تفوق 80 بالمئة مقارنة بالعبوات السائدة
 أقل تكلفة للشحن والنقل
 أقل تكلفة للمستهلك

لو طرحت فكرة هذا المنتج في السوق الكويتية الاستهلاكية، هل ستشجع المنتج؟
  نعم
  لا

آراء معرفة السبب 7

Sustainable Packaging Design Visually Explained: Guidebook Prototype

Sara Almudhaf
مواصفات المنتج

الرشاش قابل لإعادة الاستخدام والتعفية
عبوة المسحوق الصغيرة وخفيفة
كمية المسحوق محددة لكل استخدام
يضف الماء في المنزل

يقل كمية النفايات بنسبة تفوق 80 بالمئة مقارنة بشراء عبوة الرشاش مرة أخرى
اقل كلفة للشحن والنقل
اقل كلفة للمستهلك

نواد معرفة السبب. 9

تعليقات نهائية 10
(اختياري)
1 Did you know that Kuwait has been suffering from household waste disposal for decades?
○ Yes
○ No
Source: “Beatona.net” The Official Environmental Portal of the State of Kuwait, Kuwait Environment Public Authority (EPA)

2 Did you know that landfill is the current waste disposal strategy of Kuwait?
○ Yes
○ No

3 Did you know that landfill is considered the worst waste disposal strategy nowadays?
○ Yes
○ No

4 The best waste disposal strategies followed by developed countries are as follows. Select the answer(s) that you are familiar with.
□ Recycle
□ Refill and Reuse
□ Biodegradable Material
□ Reduce Material
□ None

5 Regarding household cleaning products such as floors, countertops, windows, and laundry detergents, what is your relationship to the product? (Can select multiple options)
□ I make the buying decision
□ I personally use the product
□ I am the beneficiary of the product quality
6 If this product idea was introduced in the Kuwaiti consumer market, will you encourage it?

○ Yes
○ No

Product Description
Small and light plastic bag container
Contains per-determined amounts for each use
Amounts are packaged in dissoluble skin
Concentrated detergent for smaller and lighter container
Reduces waste by 80% or more compared to the liquid detergent
Reduces shipping and transportation cost
Reduces product cost

7 If no, please share your reason.

(If yes, question is skipped automatically.)
8 If this product idea was introduced in the Kuwaiti consumer market, will you encourage it?

☐ Yes
☐ No

Product Description
Spray bottle is refillable and reusable
Concentrated detergent packet is small and light
Detergent amount is per-determined for the spray bottle
Concentrated detergent is mixed with water at home
Reduces waste by 80% or more compared to buying the spray again
Reduces shipping and transportation cost
Reduces product cost

9 If no, please share your reason.

(If yes, question is skipped automatically.)

10 Final comments. (Optional)
**Survey 3 Results**

**Q1:** هل تعلم أن دولة الكويت تعاني من مشكلة التخلص من النفايات المنزلية منذ عشرينات السنين؟

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>70.4%</td>
</tr>
<tr>
<td>لم</td>
<td>29.6%</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
</tr>
</tbody>
</table>

**Q2:** هل تعلم أن استراتيجية دولة الكويت الخالية للتخلص من النفايات هي الرسم (دفن النفايات)؟

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>73.2%</td>
</tr>
<tr>
<td>لم</td>
<td>26.8%</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
</tr>
</tbody>
</table>
استبيان لدراسة النوعي البيئي الاستهلاكي في الكويت

Q3 هل تعلم أن استراتيجية ردم النفايات تعد من أساليب استراتيجيات التخلص من النفايات في العمران؟
Answered: 351 Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>67.2%</td>
</tr>
<tr>
<td>لا</td>
<td>32.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>351</td>
</tr>
</tbody>
</table>

Q4 من أفضل الاستراتيجيات المتاحة في الدول المتقدمة للتخلص من النفايات ما يلي، حدد ما تعرفه منهم
Answered: 351 Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycle إعادة التدوير</td>
<td>87.2%</td>
</tr>
<tr>
<td>Refill and Reuse إعادة التدوير واستخدام</td>
<td>37.6%</td>
</tr>
<tr>
<td>Biodegradable Material استخدام المواد ذات الحبوب الجيدة</td>
<td>39.3%</td>
</tr>
<tr>
<td>Reduce Material استخدام المواد ذات صفرة وورشة خاصة للاستهلاك</td>
<td>16.0%</td>
</tr>
<tr>
<td>لا علم</td>
<td>6.8%</td>
</tr>
<tr>
<td><strong>Total Respondents:</strong> 351</td>
<td></td>
</tr>
</tbody>
</table>
استبيان لدراسة الوعي البيئي الاستهلاكي في الكويت

Q5

بالنسبة لمواد التنظيف المنزلية مثل مواد تنظيف الأراضي والسطح والشاميك والملاس، ما هي علاقتك بالنسبة؟ (يمكن اعطاء أكثر من اختيار)

Answered: 351  Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>أنا صاحب قرار الشراء</td>
<td>54.1%</td>
</tr>
<tr>
<td>أنا مستخدم منتج فخذي</td>
<td>40.5%</td>
</tr>
<tr>
<td>أنا المستفيد من مادة المنتج</td>
<td>56.4%</td>
</tr>
</tbody>
</table>

Total Respondents: 351
**استبيان لدراسة النوعي البيئي الاستهلاكي في الكويت**

**Q6** لو تطري فكره هذا المنتج في السوق الكويتية الاستهلاكية، هل ستبيع المنتج؟

**Answered:** 351  **Skipped:** 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>93.4%</td>
</tr>
<tr>
<td>لا</td>
<td>6.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>351</td>
</tr>
</tbody>
</table>

**استبيان لدراسة النوعي البيئي الاستهلاكي في الكويت**

**Q7** نود معرفة السبب

**Answered:** 14  **Skipped:** 337

<table>
<thead>
<tr>
<th>#</th>
<th>Responses</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>.....</td>
<td>4/17/2014 6:27 PM</td>
</tr>
<tr>
<td>2</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/17/2014 8:47 AM</td>
</tr>
<tr>
<td>3</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 7:48 PM</td>
</tr>
<tr>
<td>4</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 3:25 PM</td>
</tr>
<tr>
<td>5</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 3:07 PM</td>
</tr>
<tr>
<td>6</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 2:11 PM</td>
</tr>
<tr>
<td>7</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 1:16 PM</td>
</tr>
<tr>
<td>8</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/16/2014 12:48 PM</td>
</tr>
<tr>
<td>9</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/14/2014 9:33 PM</td>
</tr>
<tr>
<td>10</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/14/2014 9:18 PM</td>
</tr>
<tr>
<td>11</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/14/2014 8:26 PM</td>
</tr>
<tr>
<td>12</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/14/2014 7:26 PM</td>
</tr>
<tr>
<td>13</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/13/2014 1:28 AM</td>
</tr>
<tr>
<td>14</td>
<td>لا نعلم بعضاً غيرها من الأشكال الأخرى التي يمكن استخدامها في الاعتبار</td>
<td>4/12/2014 11:42 PM</td>
</tr>
</tbody>
</table>
أسئلة لدراسة الوظوي البيئي الاستهلاكي في الكويت

Q8: لو طرحت فكرة هذا المنتج في السوق الكويتي الاستهلاكية، هل ستبيع المنتج؟

Answered: 351 Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم 93.7%</td>
<td>329</td>
</tr>
<tr>
<td>لا 6.3%</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
</tr>
</tbody>
</table>

Q9: نود معرفة السبب

Answered: 7 Skipped: 344

<table>
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<th>#</th>
<th>Responses</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>لا، لأن تكرار استخدام المنتجات وكيف يتم التخلص من دوامها</td>
<td>4/18/2014 3:34 PM</td>
</tr>
<tr>
<td>2</td>
<td>...</td>
<td>4/17/2014 6:27 PM</td>
</tr>
<tr>
<td>3</td>
<td>لا، لأن المنتجات اغتلت</td>
<td>4/16/2014 7:49 PM</td>
</tr>
<tr>
<td>4</td>
<td>غير معقول</td>
<td>4/16/2014 2:13 PM</td>
</tr>
<tr>
<td>5</td>
<td>لا، لأن المنتجات اغتلت</td>
<td>4/13/2014 12:13 AM</td>
</tr>
<tr>
<td>6</td>
<td>لأن المنتجات تؤثر على الأعمال والbettدارية، ولا يوجد به فوائد من ذلك</td>
<td>4/12/2014 6:35 PM</td>
</tr>
<tr>
<td>7</td>
<td>لا، لأنها لا تقدم أي فوائد</td>
<td>4/12/2014 4:00 PM</td>
</tr>
<tr>
<td>#</td>
<td>Responses</td>
<td>Date</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>1</td>
<td>توزيع مساعدات م一体化 بشكل متساوٍ كما هو الحال في مبادرات تطبيق النشاطات في الوضعية الراهنة</td>
<td>4/18/2014 3:36 PM</td>
</tr>
<tr>
<td>2</td>
<td>زيادة بيئة للتنافس على سياسة طريققة عقلية ومعاهيد وربى بزيادة بعددكم البعض ومن النحو تطوير النشاطات والاقتصاد</td>
<td>4/18/2014 1:12 PM</td>
</tr>
<tr>
<td>3</td>
<td>استетесь في مبادرة قضية التخطيط الخاطئ أو إدارته معتوجه محارم</td>
<td>4/17/2014 7:03 PM</td>
</tr>
<tr>
<td>4</td>
<td>تدريبات تدريبية مكونات طريقة فيهم عن اعمال الخاطئ والاقتصاد والمالية الراهن من بيتضيق خلال معالجة وصوصاً أخرى م칠ت من المستقبل</td>
<td>4/12/2014 6:04 PM</td>
</tr>
<tr>
<td>5</td>
<td>البحث والتصنيع في الأمر</td>
<td>4/17/2014 2:41 PM</td>
</tr>
<tr>
<td>6</td>
<td>توزيع الكتل الفعال</td>
<td>4/17/2014 1:31 PM</td>
</tr>
<tr>
<td>7</td>
<td>في البعثة المستقلة متكاملة من اعمال ولا تزال هناك الزيادة في الوضعية الراهنة اقتصادياً</td>
<td>4/17/2014 8:50 AM</td>
</tr>
<tr>
<td>8</td>
<td>شكر</td>
<td>4/16/2014 11:13 PM</td>
</tr>
<tr>
<td>9</td>
<td>شكر ما على مبادرة إضافية وربى وإصلاح مبادرة تطبيق محدود على بيضاء من طريق وسيايا أو إضافات أو إضافات أو إضافات</td>
<td>4/16/2014 10:51 PM</td>
</tr>
<tr>
<td>10</td>
<td>أرض أن يكون تشييد شريك لإعادة التطور والضغطات بشكل محدد</td>
<td>4/16/2014 6:52 PM</td>
</tr>
<tr>
<td>11</td>
<td>شكرتي قبل وقت ودمة ودانية أو في صعوبات موقع قيادة التطورات (أبلغ المقابل) ويجب لكل في ذاتها</td>
<td>4/16/2014 6:41 PM</td>
</tr>
<tr>
<td>12</td>
<td>شكر</td>
<td>4/16/2014 3:07 PM</td>
</tr>
<tr>
<td>13</td>
<td>الشكل أو مستقبل بحث يغطي جميع جرعات الوضعية الجيدة في إطار الابحاث ونظام</td>
<td>4/16/2014 3:07 PM</td>
</tr>
<tr>
<td>14</td>
<td>بعض الأهداف والتحديات في بعض الوقت تأثير النظقات والخدمات التي تم تقديمها من المتكشفة في السوق</td>
<td>4/16/2014 2:02 PM</td>
</tr>
<tr>
<td>15</td>
<td>شكر</td>
<td>4/16/2014 1:38 PM</td>
</tr>
<tr>
<td>16</td>
<td>منتخبات منبولت في مزرعة أفتاح</td>
<td>4/16/2014 1:17 PM</td>
</tr>
<tr>
<td>17</td>
<td>متحركات حزب مايكرو</td>
<td>4/16/2014 1:17 PM</td>
</tr>
<tr>
<td>18</td>
<td>ببكر مدعياً واثب على مكمل الإنتاج بالآلات والحوار</td>
<td>4/16/2014 1:04 PM</td>
</tr>
<tr>
<td>19</td>
<td>النموذج أو فتات جمع اهادات خلايا مما بإحالة إضافة مفتوحة</td>
<td>4/16/2014 12:57 PM</td>
</tr>
<tr>
<td>20</td>
<td>أن يكون لدينا مفهوم تنفيذ انتقادات وتعدداً لها</td>
<td>4/16/2014 12:51 PM</td>
</tr>
<tr>
<td>21</td>
<td>رغم بعض الذوق أو رسوم</td>
<td>4/16/2014 12:49 PM</td>
</tr>
<tr>
<td>22</td>
<td>مراكز أو تيودر ملء إضافياً أو معلومات أو معلومات</td>
<td>4/16/2014 12:35 PM</td>
</tr>
<tr>
<td>23</td>
<td>شكركم ما للتم طبقة</td>
<td>4/16/2014 12:28 PM</td>
</tr>
<tr>
<td>24</td>
<td>أشنن ما عل بذيه</td>
<td>4/16/2014 12:06 PM</td>
</tr>
<tr>
<td>25</td>
<td>يلهمك على هذا الاستخر</td>
<td>4/16/2014 11:58 AM</td>
</tr>
<tr>
<td>26</td>
<td>لا يمكن أن تلقى شكل إذا الجزاء مشاركين في ضمان أن تكون لنا متضمناً غير مبين</td>
<td>4/16/2014 11:54 AM</td>
</tr>
<tr>
<td>27</td>
<td>أبى أن يصفى عن الناس للطريقة هذه اللواء على الامة والنسيف</td>
<td>4/16/2014 11:54 AM</td>
</tr>
<tr>
<td>28</td>
<td>محترم وذوهم مساحات إضافية من جهات ما للاستقرار والتنمية وسائدة المستوصف على أينما وسائدة مع أن ترى يكمل النمط والقطاع تجهز مساحة في وقت أتمد وينتقل وينتقل</td>
<td>4/6/2014 11:51 AM</td>
</tr>
<tr>
<td>29</td>
<td>للظروف الفارقة دفع اقتصاد وإعادة الاستخدام وثنائي التحليل أو في النظام أو النظام مسار السافر</td>
<td>4/8/2014 11:33 AM</td>
</tr>
</tbody>
</table>
استبيان لدراسة النوع البيئي الاستهلاكي في الكويت

32
33
34
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42
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سارة المذحف

Sustainable Packaging Design Visually Explained: Guidebook Prototype
239
1 Did you know that Kuwait has been suffering from household waste disposal for decades?

- Yes: 70.4% (247)
- No: 29.6% (104)

2 Did you know that landfill is the current waste disposal strategy of Kuwait?

- Yes: 73.2% (257)
- No: 26.8% (94)
3 Did you know that landfill is considered the worst waste disposal strategy nowadays?

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>67.2%</td>
</tr>
<tr>
<td>No</td>
<td>32.8%</td>
</tr>
</tbody>
</table>

Total: 351

4 The best waste disposal strategies followed by developed countries are as follows. Select the answer(s) that are familiar to you.

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycle</td>
<td>87.2%</td>
</tr>
<tr>
<td>Refill and Reuse</td>
<td>37.6%</td>
</tr>
<tr>
<td>Biodegradable Material</td>
<td>39.3%</td>
</tr>
<tr>
<td>Reduce Material</td>
<td>16.0%</td>
</tr>
<tr>
<td>None</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

Total Respondents: 351
5 Regarding household cleaning products such as floors, countertops, windows, and laundry detergents, what is your relationship to the product? (Can select multiple options)

![Bar chart showing relationship to product]

Answer Choices | Responses |
--- | --- |
I make the buying decision | 54.1% | 190 |
I personally use the product | 40.5% | 142 |
I am the beneficiary of the product quality | 56.4% | 198 |
Total Respondents: 351

6 If this product idea was introduced in the Kuwaiti consumer market, will you encourage it?

![Pie chart showing encouragement]

Answer Choices | Responses |
--- | --- |
Yes | 93.4% | 328 |
No | 6.6% | 23 |
Total | | 351 |
7 If no, please share your reason.
(If yes, question is skipped automatically.)

14 Responses

4/12/2014 10:42 PM
I do not know how much will be enough. I might make more trips to the
grocery store. The housemaids will not know how to use them and will
waste a lot.

4/13/2014 12:28 AM
Kuwaities are dumb and selfish.

4/14/2014 6:26 PM
It does not clean very well.

4/14/2014 7:26 PM
It will be expensive.

4/14/2014 8:18 PM
I do not know.

4/14/2014 8:33 PM
Because the existing cardboard box packaging is considered green and
gives the user the more freedom to choose the detergent amounts for
each wash.

4/16/2014 11:48 AM
It is not important to me.

4/16/2014 12:16 PM
Because it might be more expensive than the existing big
detergent containers.

4/16/2014 1:11 PM
I do not know.

4/16/2014 2:07 PM
Because all the above product description is for the consumer’s benefit
in terms of health and cost wise.
I am not used to it.

I do not trust local products because they have flaws.

The quality of the product specially that it is owned by a global brand. Their main objective is profit and sustainability is their new marketing strategy.

If this product idea was introduced in the Kuwaiti consumer market, will you encourage it?

**Answer Choices**

<table>
<thead>
<tr>
<th>Response</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>93.7%</td>
</tr>
<tr>
<td>No</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

Total 351
9 If no, please share your reason.
(If yes, question is skipped automatically.)

7 Responses

4/12/2014 3:00 PM
I do not know this product.

4/12/2014 5:35 PM
Because the liquid detergent is ready and easy to use. Plus, there is no danger in mixing the detergent or else.

4/12/2014 11:13 PM
Next question.

4/16/2014 1:13 PM
Not practical.

4/16/2014 6:49 PM
I do not trust local products.

4/17/2014 5:27 PM
...

4/18/2014 2:34 PM
There is no need for using many detergents. I can clean without them.
10 Final comments. *(Optional)*

60 Responses

4/12/2014 3:03 PM
Thanks to those who worked on the survey towards a better environment.

4/12/2014 3:34 PM
No comment because there is no study nor hard work.
I am a Kuwaiti and I know Kuwaities. They are talkers and thieves.

4/12/2014 3:44 PM
I do not expect any changes in the future.

4/12/2014 3:52 PM
Thanks for your concerns and God bless your efforts.

4/12/2014 4:16 PM
The roles of the Public Authority for Industry, the Environment Public Authority, the Ministry of Education in supporting the environment through the academic curriculum, the telecommunications companies in promoting environmental awareness, and the family in teaching their children how to preserve the environment.

4/12/2014 4:21 PM
We hope for our country to advance.

4/12/2014 8:24 PM
I hope for you to reach solutions and positive ideas to help preserve the environment. I am here to support you. Thank you for your efforts and creating awareness. Awareness should be raised through all medias.

4/12/2014 10:45 PM
Thank you so much. I hope for you to continue to raise the environmental awareness among people because it is completely non-existent. I also hope for you to raise the awareness of reusing the grocery plastic bags more than once. It is a purposeful way to bring the same plastic bags back to the grocery store to carry groceries again instead of discarding, wasting, and polluting the environment.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/12/2014 11:03 PM</td>
</tr>
<tr>
<td>Government corruption is the main reason for poor environmental awareness.</td>
</tr>
</tbody>
</table>

| 4/12/2014 11:13 PM                   |
| No                                   |

| 4/13/2014 12:55 AM                   |
| Nothing                              |

| 4/13/2014 1:39 AM                    |
| This is a very important subject because is directly linked to the public's general health. |

| 4/13/2014 12:33 PM                   |
| The amount of waste cannot be reduced but I hope for you to raise the awareness of disposing garbage in the proper place. I like the idea for having separate containers for metals, glass, plastic, paper, etc. |

| 4/13/2014 1:34 PM                    |
| I hope for the new product ideas to be of high quality and effectiveness. May God help you. |

| 4/13/2014 1:53 PM                    |
| As consumers, we know of the danger and damage landfills causes but we cannot change the situation. The country is responsible for making those decisions. |

| 4/13/2014 1:55 PM                    |
| I hope for the solution to benefit the general public and not the dealer or seller. Also, I hope for you to raise the consumer awareness about the environment. |

| 4/13/2014 2:31 PM                    |
| No life to whom you are calling. There is no use. |
The environment situation in Kuwait is a disaster. If nothing changed now, the next generations will live in pollution and disease. Girls of the environment department, put more efforts and you can do this! Put an end to this farce and plan for a healthier environment. All the success to you girls.

The most important thing for those products is not to be expensive as I am expecting them to be.

Nothing

The survey is fabulous especially because this is an environmental problem that has many consequences many of us do not realize its importance. Thank you for your efforts.

May God grants you wellbeing. Our society needs more awareness because many of us tolerate the environmental issues. The thing that disturbs me most is the drivers who throw their trash from the car’s window. It indicates carelessness and recklessness.

We have to care about the recycling and reusing our waste whether its the government of private business. The amount of waste is worth billions and the amount of waste we have is tremendous. We should benefit from out waste because it is a strong source of income for the country. Be safe.

Most of the eco-friendly products are more expensive than other products which creates a small chance for consumers to actually select them.

At the end, prices will compete. The lowest price of the same quantity surely will sell more.
Thanks for the survey

All the success

I realized it is not only on the ground. Kuwait’s land and sea is full of garbage and the main reason is "if there is no penalty people will misbehave."

We need informative programs, publications, lectures, and conferences to raise the environmental awareness level.

I ask God to grant you all the success. I ask of the researcher to present the results and provide copies of this study for all the relevant companies, supermarkets, Ministry of Health, Environment Public Authority, Municipality, and the Governing Council. (I hope that God will benefit others through it.)

The survey questions appear to be directed towards creating awareness more than it is to collect information. Thanks. –M. Bushra

Work to instill a culture of recycling, reusing, and rebuilding in children and youth through the educational curriculum for an advanced and environmentally aware society to preserve the environment and the planet.

We are in great danger. I saw the advanced countries approach to waste, and I urge our country to follow their path; otherwise we are in destruction. What prevents us from regulating and profiting from our waste as developed countries do? Why don’t we care about our people and country?
I hope that this survey will raise the awareness of the danger of chemicals to our health and environment.

I cannot educate the society if the ministry and municipality’s cars need to be changed because they appear uncivilized.

I thank you for this survey.

This survey is of interest to everyone. I wish you all the best and success.

I hope to see those products in the market.

May God reward you with goodness for making this survey. I was exposed to important information.

It depends on the product advertisements.

I hope we have a recycling industry.

The environment requires the support and efforts of all the competent authorities in addition to the publics awareness.

Thank you for the idea of caring for the environment.

I hope for those things to happen.

The prices will go down in this case.
I hope for the authorities to make a decision and take an action as soon as possible for recycling waste and disposing in healthy and practical manners.

I encourage Kuwaiti products that prioritize human health over profit.

We always look for the best.

Unfortunately, there are villas, gardens, and private homes near landfill sites such as Qurain city. This is risking the population’s health.

I hope for us to have an industry for recycling waste systematically.

Thanks for creating an environmental awareness. I hope for more environmental awareness programs to help preserve the environment through WhatsApp mobile application and YouTube.

Thanks.

Protecting the environment is everyone's responsibility and we still need to raise the environmental awareness of all Kuwaiti individuals in the society.

We want the best for Kuwait.

May God grant you success for Kuwait to become beautiful.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4/17/2014 5:04 PM</strong></td>
</tr>
<tr>
<td>TV episodes promoting environmental awareness taking into account well-chosen scenes, actors, and sophisticated script and making it convincing for the viewer specially teenagers—the generation of the future.</td>
</tr>
</tbody>
</table>

| **4/17/2014 6:03 PM** |
| We need intensive public service announcements and seminars in schools to promote recycling projects. |

| **4/18/2014 12:12 PM** |
| I hope for all of us to work hand by hand to preserve our environment in a scientific and correct way. May God bless your sincere efforts and good deeds. Amen. |

| **4/18/2014 2:36 PM** |
| Distribute blue boxes for every house as it is in Al Sha’ab city. Intensify environmental awareness through media. |
Study of Consumer Awareness of Health Issues in Kuwait

This digital survey was created and hosted by www.surveymonkey.com. It was distributed through mobile devices and social media to Arabic-speaking consumers living in Kuwait. The survey was conducted to discover whether or not consumers read the packaging label for ingredients, disposal, and health warnings. In addition, gather reasons for not reading the product label (e.g., language barrier.) It will help discover the best packaging design that suites the consumer culture and behavior in Kuwait. These packaging design changes might include use of number of languages, amount of information, use of visual language (pictograms) versus text.

Draft Survey
1. مكان السكن في الكويت حسب المحافظة
   - المكاسة
   - الأحساء
   - الفروانية
   - الجهراء
   - حولي
   - مبارك الكبير

2. الجنسية
   - الكويت
   - دولة أخرى [___]

3. هل تعلم أن منتجات التنظيف المنزلية تصنف على فئتين من حيث المكونات: نباتية أو كيميائية?
   - نعم [___]
   - لا [___]
هل تعلم أن معظم المنتجات الكيميائية تحتوي على مواد مسببة للأمراض مع الاستخدام على المدى البعيد؟

1. نعم
2. لا

على سبيل المثال: اختفاء معظم منتجات الصور الكيميائية على سطح الأرجل ووصفات نسب التلقي والرضا وآلام العظام وغيرها على المدى البعيد.

 المصدر: وكالة حماية البيئة في كاليفورنيا - الولايات المتحدة، مكتب فحص الخطر الصحية البيئية

هل تعلم أنه من الخطر جداً خلط المنتجات الكيميائية أو جمعها في حاوية في أن واحد للتخلص منها؟

1. نعم
2. لا

على سبيل المثال: منتجات البياض والألومنيا تتفاعلان بشكل غير قابل.

 المصدر: إدارة نيويورك للحفاظ على البيئة - الولايات المتحدة، مكتب الحماية والتدوير

هل تعلم أن الملصق الخلفي لكل منتج كيميائي يحتوي على معلومات دقيقة بطريقة الاستخدام السليمة وطرق الوقاية من الأضرار والlàعقات اللازمة في حالة الخطر؟

1. نعم
2. لا
هل اشترتي أو استخدمت شخصيا منتج لتنظيف الأراضي أو الأسطح أو الشامبو أو الملابس؟ 7

نعم ☐ 
لا ☐

8. عند شراءك للمنتج لأول مرة، هل تهتم بقراءة الملصق الخلفي للعبوة؟

نعم ☐ 
لا ☐

9. نود معرفة السبب:

لا يوجد ملصق خلفي للعبوة.

10. المنتج الذي تكرر شرائه، هل تهتم بقراءة الملصق الخلفي للعبوة؟

نعم ☐ 
لا ☐
|問い合わせの理由 | 11.
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ノード</td>
</tr>
</tbody>
</table>

ノード | 原因

12. ヨット | 再生 | デザイン | 回かい | 令 | 書類 | 平 | 不 | 貴 | 令 | 書類 | 平 | 不 | 貴 |

13. 側面 | 再生 | デザイン | 回かい | 令 | 書類 | 平 | 不 | 貴 | 令 | 書類 | 平 | 不 | 貴 |
Study of Consumer Awareness of Health Issues in Kuwait

1 City of residency in Kuwait.
- Al Asimah
- Al Ahmadi
- Al Farwaniyah
- Al Jahrah
- Hawalli
- Mubarak Al Kabeer

2 Nationality
- Kuwait
- Other ________________

3 Did you know that cleaning product fall into two categories in terms of ingredients: plant-based and chemical-based?
- Yes
- No
Did you know that most chemical-based detergents contain ingredients that cause diseases after long-term exposure?

O Yes
O No

For example, some dish washing liquid detergents contain dyes that can be contaminated with heavy metals such as arsenic and lead. Arsenic can increase the risk of cancer, heart disease, skin allergies, and other diseases after long-term exposure.28 29

Source: “OEHHA.ca.gov” Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (Cal/EPA).

Did you know that it is dangerous to mix or dispose of hazardous chemical detergents in one container at the same time?31

O Yes
O No

For example, bleach and ammonia react to form a deadly gas.32


---

32. DEC.ny.gov, “Managing and Disposing Household Hazardous Waste.”
6 Did you know that the back label of every chemical-based detergent displays safe usage, ingredients, prevention and first aid in case of danger?
- Yes
- No

7 Have you ever purchased or used a cleaning product such as floors, counter tops, windows, and laundry detergents?
- Yes
- No

(If no, question is skipped automatically to Q13.)
8 When you purchase a product for the first time, do you read its back label?
   ○ Yes
   ○ No

9 If no, please share your reason.

(If yes, question is skipped automatically.)

10 When you purchase a product repeatedly, do you read its back label?
   ○ Yes
   ○ No

11 If no, please share your reason.

(If yes, question is skipped automatically.)

12 If the back label was redesigned to be read clearer, easier, and faster containing pictograms and signs, will this increase your interest to read it?
   ○ Yes
   ○ No

13 Final comments. (Optional)

________________________________________
### Q1: مكان السكن في الكويت حسب الافشحة

Answered: 340  Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>العامة</td>
<td>144</td>
</tr>
<tr>
<td>الإمارات</td>
<td>24</td>
</tr>
<tr>
<td>الفروانية</td>
<td>28</td>
</tr>
<tr>
<td>الهمراء</td>
<td>2</td>
</tr>
<tr>
<td>مبارك الكبير</td>
<td>102</td>
</tr>
<tr>
<td>موارد الكبير</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>340</td>
</tr>
</tbody>
</table>

144%: العلاقة العامة
7.1%: الإمارات
8.2%: الفروانية
0.6%: الهمراء
30.0%: مبارك الكبير
11.8%: موارد الكبير
استبيان لدراسة الوعي الصحي الإستهلاكي في الكويت

Q2
الجنسية

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>الكويت</td>
<td>93.8%</td>
</tr>
<tr>
<td>دول أخرى</td>
<td>6.2%</td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
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</tbody>
</table>

### Table of Responses

<table>
<thead>
<tr>
<th>#</th>
<th>دولة أخرى</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>بريطانيا</td>
<td>4/17/2014 6:07 PM</td>
</tr>
<tr>
<td>2</td>
<td>سوريا</td>
<td>4/16/2014 11:14 PM</td>
</tr>
<tr>
<td>3</td>
<td>السعودية</td>
<td>4/16/2014 10:53 PM</td>
</tr>
<tr>
<td>4</td>
<td>الكويت</td>
<td>4/16/2014 10:26 PM</td>
</tr>
<tr>
<td>5</td>
<td>قطر</td>
<td>4/16/2014 2:44 PM</td>
</tr>
<tr>
<td>6</td>
<td>مصر</td>
<td>4/16/2014 2:22 PM</td>
</tr>
<tr>
<td>7</td>
<td>مصر</td>
<td>4/16/2014 2:16 PM</td>
</tr>
<tr>
<td>8</td>
<td>مصر</td>
<td>4/16/2014 1:06 PM</td>
</tr>
<tr>
<td>9</td>
<td>عمان</td>
<td>4/16/2014 1:00 PM</td>
</tr>
<tr>
<td>10</td>
<td>الأردن</td>
<td>4/14/2014 7:28 PM</td>
</tr>
<tr>
<td>11</td>
<td>الكويت</td>
<td>4/14/2014 4:23 PM</td>
</tr>
<tr>
<td>12</td>
<td>مصر</td>
<td>4/14/2014 1:22 AM</td>
</tr>
<tr>
<td>13</td>
<td>موريتانيا</td>
<td>4/14/2014 1:18 AM</td>
</tr>
<tr>
<td>14</td>
<td>مصر</td>
<td>4/14/2014 1:30 AM</td>
</tr>
<tr>
<td>15</td>
<td>لبنان</td>
<td>4/14/2014 12:21 AM</td>
</tr>
<tr>
<td>16</td>
<td>سوريا</td>
<td>4/13/2014 11:44 PM</td>
</tr>
<tr>
<td>17</td>
<td>مصر</td>
<td>4/13/2014 11:43 PM</td>
</tr>
<tr>
<td>18</td>
<td>موريتانيا</td>
<td>4/13/2014 11:11 PM</td>
</tr>
<tr>
<td>19</td>
<td>مصر</td>
<td>4/13/2014 10:10 PM</td>
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<tr>
<td>20</td>
<td>السعودية</td>
<td>4/13/2014 9:40 PM</td>
</tr>
<tr>
<td>21</td>
<td>إيران</td>
<td>4/13/2014 9:45 PM</td>
</tr>
</tbody>
</table>
### Question 3

**Q3** هل تعلم أن منتجات التنظيف المنزلية تصنف على فئتين من حيث المكونات: نباتية أو كيميائية؟

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>34.7% (118)</td>
</tr>
<tr>
<td>لا</td>
<td>65.3% (222)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>340</td>
</tr>
</tbody>
</table>

### Question 4

**Q4** هل تعلم أن معظم المنتجات الكيميائية تحتوي على مواد مسببة للأمراض مع الاستخدام على المدى البعيد؟

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>62.9% (214)</td>
</tr>
<tr>
<td>لا</td>
<td>37.1% (126)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>340</td>
</tr>
</tbody>
</table>
استبيان لدراسة الوعي الصحي الاستهلاكي في الكويت

Q5 هل تعلم أن الملفق الخلفي لكل منتج كيميائي يحتوي على معلومات تفيد بطريقة الاستخدام السليمة وطرق الوقاية من الأضرار والإعفاءات اللازمة في حالة الخطر؟
Answered: 340 Skipped: 0

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>نعم</td>
<td>35.0% (119)</td>
</tr>
<tr>
<td>لا</td>
<td>65.0% (221)</td>
</tr>
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Q6 هل تعلم أن الملفق الخلفي لكل منتج كيميائي يحتوي على معلومات تفيد بطريقة الاستخدام السليمة وطرق الوقاية من الأضرار والإعفاءات اللازمة في حالة الخطر؟
Answered: 340 Skipped: 0

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استبيان لدراسة الوعي الصحي الاستهلاكي في الكويت

Q7: هل اشتريت أو استخدمت شخصيا منتج لتنظيف الأرضيات أو الأسطح أو الشباك أو الملابس؟
Answered: 340 Skipped: 0

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Q8: عند شرائك للمنتج لأول مرة، هل تجده بقراءة الملصق الخلفي للعبوة؟
Answered: 320 Skipped: 20

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**استبيان لدراسة الوعي الصحي الاستهلاكي في الكويت**

**Q10**

**المنتج الذي تكرر شراؤه، هل تتم بقراءة الملصق اخلي للعبوة؟**

*Answered: 320  Skipped: 20*

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<td>What is your opinion of sustainable packaging?</td>
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<td>Have you ever tried a plant-based meat substitute?</td>
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<td>How often do you recycle plastic bottles?</td>
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<td>Do you prefer products in environmentally friendly packaging?</td>
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<td>Have you ever participated in a recycling program?</td>
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<td>How much do you usually spend on sustainable products?</td>
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<td>Would you be willing to pay more for sustainable products?</td>
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<tr>
<td>Do you think sustainable products are better for the environment?</td>
<td>Yes</td>
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**Survey Results**

**Survey Date:** 4/15/2015

**Survey Results by Sara Almudaf**

*Sustainable Packaging Design Visually Explained: Guidebook Prototype*
## نتائج الاستبان

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<td>وجود نمط التحكم</td>
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<td>فقد افترض أننا سعيدونا دائما إذا كان لدينا فرد راقب لل✨</td>
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<td>لا يمكنني شراء ذلك لكن فراغبنا نحن مرة أخرى لأنر مثل هذه البرامج إذا كان هناك أكثر من استخدامات العلامات أي استخدامات العلامات الادوات ذات قيمة عند ما تكون ملاحظات الأشياء لضمان أن تكون مهمة</td>
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<td>عدم الاستماع بسرعة لنص طريقته</td>
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<td>أعرفه لغز من قبل</td>
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<td>Because i always buy it</td>
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أ Undertake a study of the consumer awareness of sustainable packaging in Kuwait

Q12: Would you recommend that packaging back labels be made more legible and readable to improve readability and understanding of labels?

Answered: 320  Skipped: 20

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من الضروري أن تثبت الأعراض انتبهتمي الشعبية  
ارجع لتكبير هذه السؤال المحدد على مستوى السعد وقل النظر عنه، إن لم تكن المعولية  
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| 2  |  
استمتع طفلك بملونه  
من الضروري أن تثبت الأعراض انتبهتمي الشعبية  
arjkualxbljja  
لا يوجد | 4/19/2014 11:09 PM |
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أحكم لكمي ملول  
من الضروري أن تثبت الأعراض انتبهتمي الشعبية  
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| 7  |  
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| 8  |  
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| 15 |  
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| 22 |  
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| 31 |  
لا يوجد | 4/16/2014 1:08 PM |
| 32 |  
لا يوجد | 4/16/2014 12:58 PM |
| 33 |  
لا يوجد | 4/16/2014 12:15 PM |
استبيان لدراسة الوعي الصحي الاستهلاكي في الكويت

34 4/16/2014 12:12 PM
35 ووجبة اتناولها على وجبة الغداء
36 4/16/2014 11:54 AM
38 Good luck
37 4/16/2014 1:02 PM
39 ماذا سيتغذى
40 4/15/2014 12:03 AM
41 4/15/2014 12:48 PM
42 اوضح كيف تتناول الوجبات
43 4/15/2014 12:29 PM
44 4/15/2014 10:05 PM
46 ارى أن يكون افكار واجه الانتهاء
45 4/15/2014 9:06 PM
47 4/14/2014 8:02 PM
48 تذكر اشتمالك بالبيئة والنوع الصحي بنوع التنظيمات من اكل أو المواد الجمهورية
49 4/14/2014 7:40 PM
50 4/14/2014 7:31 PM
51 4/13/2014 10:00 AM
52 4/14/2014 6:35 PM
53 4/13/2014 9:30 AM
54 4/14/2014 4:06 PM
55 4/14/2014 3:19 PM
56 4/12/2014 2:56 PM
57 4/13/2014 3:28 PM
58 4/14/2014 2:22 PM
59 4/13/2014 9:29 PM
60 4/13/2014 2:09 PM
61 4/12/2014 1:47 PM
62 4/14/2014 1:44 PM
63 4/13/2014 1:36 PM
64 4/11/2014 5:10 PM
65 4/12/2014 12:57 PM
66 4/12/2014 12:51 PM
67 4/12/2014 12:42 PM
68 4/14/2014 12:40 PM

يتم اختيار بعض مصادر الوعي الصحي من تطبيق المنهج المائي

Sara Almudaf | Sustainable Packaging Design Visually Explained: Guidebook Prototype
<table>
<thead>
<tr>
<th>الاستبيان لدراسة الوعي الصحي الاستهلاكي في الكويت</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>69</td>
<td>4/14/2014 12:22 PM</td>
</tr>
<tr>
<td>70</td>
<td>4/14/2014 11:35 AM</td>
</tr>
<tr>
<td>71</td>
<td>4/14/2014 9:46 AM</td>
</tr>
<tr>
<td>72</td>
<td>4/14/2014 9:31 AM</td>
</tr>
<tr>
<td>73</td>
<td>4/14/2014 1:30 AM</td>
</tr>
<tr>
<td>74</td>
<td>4/14/2014 12:56 AM</td>
</tr>
<tr>
<td>75</td>
<td>4/14/2014 12:37 AM</td>
</tr>
<tr>
<td>76</td>
<td>4/14/2014 12:34 AM</td>
</tr>
<tr>
<td>77</td>
<td>4/14/2014 12:34 AM</td>
</tr>
<tr>
<td>78</td>
<td>4/14/2014 12:13 AM</td>
</tr>
<tr>
<td>79</td>
<td>4/14/2014 12:09 AM</td>
</tr>
<tr>
<td>80</td>
<td>4/14/2014 12:07 AM</td>
</tr>
<tr>
<td>81</td>
<td>4/14/2014 11:21 PM</td>
</tr>
<tr>
<td>82</td>
<td>4/14/2014 11:20 PM</td>
</tr>
<tr>
<td>83</td>
<td>4/14/2014 11:19 PM</td>
</tr>
<tr>
<td>84</td>
<td>4/14/2014 11:08 PM</td>
</tr>
<tr>
<td>85</td>
<td>4/14/2014 10:55 PM</td>
</tr>
<tr>
<td>86</td>
<td>4/14/2014 10:31 PM</td>
</tr>
<tr>
<td>87</td>
<td>4/14/2014 10:17 PM</td>
</tr>
<tr>
<td>88</td>
<td>4/14/2014 10:07 PM</td>
</tr>
<tr>
<td>89</td>
<td>4/14/2014 10:06 PM</td>
</tr>
<tr>
<td>90</td>
<td>4/14/2014 9:49 PM</td>
</tr>
<tr>
<td>91</td>
<td>4/14/2014 8:31 PM</td>
</tr>
<tr>
<td>92</td>
<td>4/14/2014 8:01 PM</td>
</tr>
<tr>
<td>93</td>
<td>4/14/2014 7:49 PM</td>
</tr>
<tr>
<td>94</td>
<td>4/14/2014 6:55 PM</td>
</tr>
<tr>
<td>95</td>
<td>4/14/2014 6:39 PM</td>
</tr>
<tr>
<td>96</td>
<td>4/14/2014 6:47 PM</td>
</tr>
<tr>
<td>97</td>
<td>4/14/2014 5:31 PM</td>
</tr>
<tr>
<td>98</td>
<td>4/14/2014 4:07 PM</td>
</tr>
<tr>
<td>99</td>
<td>4/14/2014 3:55 PM</td>
</tr>
<tr>
<td>100</td>
<td>4/14/2014 3:46 PM</td>
</tr>
<tr>
<td>101</td>
<td>4/14/2014 3:44 PM</td>
</tr>
<tr>
<td>102</td>
<td>4/14/2014 3:39 PM</td>
</tr>
</tbody>
</table>

Sara Almudhaf  
Sustainable Packaging Design Visually Explained: Guidebook Prototype  
280
استبيان لدراسة الوعي الصحي الاستهلاكي في الكويت

104 شكرا

105 نشكركم على المشاركة المنسقة

106-formed schedule with the Kuwaiti Health Office

107 زاد الوعي الصحي بصورة كبيرة من خلال تطبيق الاستمارة

108 ما ساعدك ستعمل على نظافة ونظامية

109 Thanks alot

110 Thanks

111 شكرا على النموذج

112 شكرًا على زيادة الوعي

113 اقترب من نموذج باكتر من نقطة سلبي، بإلتزام

114 glluck

115 نجحون الأولين علم بأن هناك أخطاء في نموذج المنتج

116 نجحون من النماذج المتاحة للجميع، كلما شملت أصفاح استمارة ومستوى منجز الكويت

117 Santopin - يمكن استخدام نقل الأدوات

118 نижابة المعرفة في احتجاج ونمو في الشركات والخلاصة، وزارة الطيران، وزارة الصحة، والشفاء بالضغط على النقاط

119 التسجيولا والمحترفية من النماذج المتاحة، أقسم النظر في النموذج، بالإصلاح والإصلاح والإصلاح والإصلاح الإسلامية

ossilces تركز على الإصلاح والتحسين، دون الإصلاح، في التشكيل، والتحسن،

1/4/13/2014 3:32 PM

1/13/2014 3:13 PM

1/13/2014 3:20 PM

1/13/2014 2:59 PM

1/13/2014 2:58 PM

1/13/2014 2:44 PM

1/13/2014 2:36 PM

1/13/2014 2:36 PM

1/13/2014 2:51 PM

1/13/2014 2:39 PM

1/13/2014 2:39 PM

1/13/2014 2:17 PM

1/13/2014 1:39 PM

1/13/2014 1:10 PM

1/13/2014 11:22 AM

1/13/2014 11:05 AM
1 City of residency in Kuwait.

![Bar chart showing city distributions]

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Asimah</td>
<td>42.4%</td>
</tr>
<tr>
<td>Al Ahmadi</td>
<td>7.1%</td>
</tr>
<tr>
<td>Al Farwaniyah</td>
<td>8.2%</td>
</tr>
<tr>
<td>Al Jahrah</td>
<td>0.6%</td>
</tr>
<tr>
<td>Hawalli</td>
<td>30.0%</td>
</tr>
<tr>
<td>Mubarak Al Kabeer</td>
<td>11.8%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Nationality

**Answer Choices** | **Responses**
---|---
Kuwait | 93.8% (319)
Other Country | 6.2% (21)
Total | 340

### Other Country Responses

- United Kingdom: 1
- Syrian Arab Republic: 3
- Federal Republic of Somalia: 2
- Qatar: 1
- Arab Republic of Egypt: 7
- Hashemite Kingdom of Jordan: 1
- Kuwait: 1
- Republic of Iraq: 1
- Lebanese Republic: 1
- Kingdom of Saudi Arabia: 1
- Islamic Republic of Iran: 1

*The situation is in decline.*

### Note

One respondent answered "Other Country" and typed "Kuwait" eventhough Kuwait was provided as an answer choice. Another respondent answered "Other Country" and typed "The situation is in decline." To be more accurate the final result is:

<table>
<thead>
<tr>
<th>Country</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
<td>320</td>
</tr>
<tr>
<td>Other Country</td>
<td>19</td>
</tr>
<tr>
<td>Not Specified</td>
<td>1</td>
</tr>
</tbody>
</table>
3 Did you know that cleaning products fall into two categories in terms of ingredients: plant-based and chemical-based?

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>34.7%</td>
</tr>
<tr>
<td>No</td>
<td>65.3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

4 Did you know that most chemical-based detergents contain ingredients that cause diseases after long-term exposure?

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>62.9%</td>
</tr>
<tr>
<td>No</td>
<td>37.1%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
5 Did you know that it is dangerous to mix or dispose of hazardous chemical detergents in one container at the same time?

Answer Choices | Responses |
---|---|
Yes | 35.0% (119) |
No | 65.0% (221) |
Total | 340 |

6 Did you know that the back label of every chemical-based detergent displays safe usage, ingredients, prevention and first aid in case of danger?

Answer Choices | Responses |
---|---|
Yes | 80.6% (274) |
No | 19.4% (66) |
Total | 340 |
7 Have you ever purchased or used a cleaning product such as floors, counter tops, windows, and laundry detergents?
(If no, question is skipped automatically to Q13.)

Answer Choices | Responses |
--- | --- |
Yes | 94.1% (320) |
No | 5.9% (20) |
Total | 340 |

8 When you purchase a product for the first time, do you read its back label?

Answer Choices | Responses |
--- | --- |
Yes | 65.9% (211) |
No | 34.1% (109) |
Total | 320 |
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
<th>9 If no, please share your reason.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>(If yes, question is skipped automatically.)</em></td>
</tr>
</tbody>
</table>

110 Responses

4/13/2014 1:10 PM
I do not care.

4/13/2014 1:15 PM
We were used to using without reading.

4/13/2014 1:21 PM
I did not care.

4/13/2014 1:27 PM
Because they are written in sizes and colors that are not eye-catching. Plus, the location on the back does not grab my attention.

4/13/2014 1:27 PM
I feel that I know unless it is complicated.

4/13/2014 1:28 PM
Unaware.

4/13/2014 1:29 PM
All information is repetitive plus there is no way to prevent dangers.

4/13/2014 1:29 PM
Information is very similar on most products.

4/13/2014 1:34 PM
I forget to read.

4/13/2014 1:37 PM
No time.

4/13/2014 1:42 PM
Mmm not interested to read.
I do not know why.

Because I care about the product’s brand and quality.

I do not know why.

I’m in a rush.

Negligence.

Just because.

Because someone I know had purchased it before me.

Sure.

Soap and water; why read?

No reason.

Because I do not have time to read.

Yes.

Because it is soap.
No reason.

Lack of interest.

It is recognized for its effectiveness disregard its harm.

Because my trust in a recognized brand name is enough for me.

Because I believe it is not important.

Unknowing.

No reason.

I am lazy.

I trust the product’s brand.

Because I know the product’s uses.

Yes.

I read the back label of personal care products but not detergents.

It is a recognized brand.
<table>
<thead>
<tr>
<th>English</th>
<th>4/13/2014 9:14 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>We just buy.</td>
<td>4/13/2014 9:15 PM</td>
</tr>
<tr>
<td>Negligence.</td>
<td>4/13/2014 9:15 PM</td>
</tr>
<tr>
<td>I trust the product.</td>
<td>4/13/2014 9:38 PM</td>
</tr>
<tr>
<td>I do not know.</td>
<td>4/13/2014 9:44 PM</td>
</tr>
<tr>
<td>Because supposedly the way of usage is known and possibly carelessness too.</td>
<td>4/13/2014 10:02 PM</td>
</tr>
<tr>
<td>No reason.</td>
<td>4/13/2014 10:10 PM</td>
</tr>
<tr>
<td>I am lazy.</td>
<td>4/13/2014 10:12 PM</td>
</tr>
<tr>
<td>I do not read because it is a global, trust-worthy, and famous brand.</td>
<td>4/13/2014 10:12 PM</td>
</tr>
<tr>
<td>It does not interest me.</td>
<td>4/13/2014 10:14 PM</td>
</tr>
<tr>
<td>I buy based on brand recognition.</td>
<td>4/13/2014 10:20 PM</td>
</tr>
<tr>
<td>Na.</td>
<td>4/13/2014 10:56 PM</td>
</tr>
<tr>
<td>I didn’t think its important to read it .. its a general information anyone knows it.</td>
<td>4/13/2014 11:32 PM</td>
</tr>
<tr>
<td>I do not care.</td>
<td></td>
</tr>
</tbody>
</table>
I am only interested in reading the front label to know the quality and effectiveness of the product.

No time.

Because I am used to it, I need it, and I do not have an alternative for cleaning.

Because my family uses the same product in the same way.

Lack of awareness.

I only care about reading food products labels and ways of use.

I do not care about the products’ information other than way of use and distributor’s country.

I only care about ways of cleaning.

I do not read contents.

No particular reason.

Because we do not know the extent of harm that products have. Plus, there is no time to read.

Not knowing how serious the product’s harm is.
I have no time.

Text size is too small on all products whether food or chemicals.

I never knew the danger of those chemicals.

No reason.

I benefit from other people’s experiences only.

Not important.

I do not care.

Maybe negligence.

Rush. No time to read.

No.

Text size is too small.

No reason.

Rush. Advertisements. Used to using it at home for a very long time.
Lack of awareness.

No reason.

I know how to use it.

I was not aware that there were useful information.

Laziness.

No time.

Because I buy cleaning products that I use.

Lack of awareness.

Because text size is too small.

Because it’s the municipality’s and the consumer protection’s job.

It is not my culture.

If its sold in groceries, then it is absolutely permissive.

Because I usually go to buy a product that I have already had before.
4/16/2014 12:09 PM
No time.

4/16/2014 12:20 PM
It is not that important to me.

4/16/2014 12:28 PM
No reason.

4/16/2014 12:35 PM
Trust.

4/16/2014 1:05 PM
Careless.

4/16/2014 1:26 PM
Words are too small which tires the vision, at it does least for me. Also, in my opinion, I think that most well-known products are similar.

4/16/2014 1:47 PM
I depend on the advertisement.

4/16/2014 1:58 PM
I do not care.

4/16/2014 3:33 PM
I do not know.

4/16/2014 5:00 PM
I do not have time to read.

4/16/2014 5:03 PM
None.

4/16/2014 5:45 PM
I do not know.

4/16/2014 5:47 PM
For the trust of the product... unfortunately.
I do not know. Maybe because I am in a rush.

Because I depend on past experience.

Lack of awareness.

Because I trust and depend on government institutions and the supermarkets union. This reduces my keenness to read knowing that they had already done the reading for me.

When I buy a product, I buy it for the same intended usage but I do not read any other details.

Lack of awareness.

Because I buy a product for what it claims to do in efficient cleaning. Sometime, I read the product’s details after purchase.

Limitations.

I like to buy products that have proven their effectiveness in cleaning.
10 When you purchase a product repeatedly, do you read its back label?

235 Responses

4/13/2014 11:18 AM
Because I know the steps.

4/13/2014 12:01 PM
We lack awareness in this area because we trusted the ways of use which we have inherited. Plus, even if I read the back label, I would only care to read the ways of use and manufacturer country.

4/13/2014 12:10 PM
Because I did not forget what was written on the label.

4/13/2014 1:10 PM
I do not care.

4/13/2014 1:16 PM
We are used to using products in the conventional methods without reading any directions.
I did not care.

I already know how to use it unless it is a new product.

It does not cross my mind.

It has been used before.

Because I already know how to use it.

I am compelled to buy the same product.

Because I always buy it.

Because I read it before and I do not need to read it every time I buy it so I won’t waste my time.

I know the product and I have used it before.

Because I already know the information on the label.

I used it before.

Mmmm not so interested.

Careless about reading the product’s details.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
<th>4/13/2014 1:44 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I read it the first time.</td>
<td></td>
</tr>
</tbody>
</table>

| 4/13/2014 1:45 PM                     |                   |
| Because I care about the brand’s quality and the opinion of the expertise. |                   |

| 4/13/2014 1:52 PM                     |                   |
| Because I trust it.                   |                   |

| 4/13/2014 1:55 PM                     |                   |
| I have read it before and made myself familiar with it. |                   |

| 4/13/2014 1:57 PM                     |                   |
| I am lazy.                            |                   |

| 4/13/2014 1:58 PM                     |                   |
| I think it is the same information on the previous package I had. |                   |

| 4/13/2014 1:59 PM                     |                   |
| Already knowing.                      |                   |

| 4/13/2014 2:00 PM                     |                   |
| Because I continuously buy the same product, thus the same label information. |                   |

| 4/13/2014 2:01 PM                     |                   |
| Urgency.                              |                   |

| 4/13/2014 2:08 PM                     |                   |
| I do not read the label when I purchase a product repeatedly because I had read it the first time. Unless the product’s package design changed, I read the information in case they were changed as well. |                   |

| 4/13/2014 2:15 PM                     |                   |
| In my opinion, because it has the use so the information won’t change. |                   |

| 4/13/2014 2:21 PM                     |                   |
| Because I read it when I first time purchased it. |                   |
Because the product is bought repeatedly.

Because buying a product repeatedly will actually save you time in reading contents and steps all over again.

Just because.

Because I am familiar with the product so I do not expect the contents to change.

I already know what is written.

The core.

No reason.

No reason.

I might read from time to time if I had doubt about the directions of use.

Quality

Because it is the same information.

Same product.

Because it is soap.
<table>
<thead>
<tr>
<th>English</th>
<th>4/13/2014 4:01 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translation of Survey Results</td>
<td>Because I read it the first time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 4:27 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is not the first time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 4:30 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I already know about it.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 4:39 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for what?? The question is not clear.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 5:37 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t care about the harm.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 5:52 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because I read it the first time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 6:17 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not know.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 6:49 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because I read it the first time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 6:57 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because I read the details before. Unless the label indicated a new formula, I would be interested to read about the new qualities of the product.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 7:04 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>??</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 7:24 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4/13/2014 7:31 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I see the effectiveness of the product. I trust the product; no reason to read.</td>
</tr>
<tr>
<td>English Translation of Survey Results</td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td>4/13/2014 8:19 PM</td>
</tr>
<tr>
<td>The same.</td>
</tr>
<tr>
<td>4/13/2014 8:42 PM</td>
</tr>
<tr>
<td>I'm lazy.</td>
</tr>
<tr>
<td>4/13/2014 8:46 PM</td>
</tr>
<tr>
<td>I trust the product.</td>
</tr>
<tr>
<td>4/13/2014 8:48 PM</td>
</tr>
<tr>
<td>It is not important to me.</td>
</tr>
<tr>
<td>4/13/2014 8:48 PM</td>
</tr>
<tr>
<td>Yes.</td>
</tr>
<tr>
<td>4/13/2014 8:49 PM</td>
</tr>
<tr>
<td>To know how to use it.</td>
</tr>
<tr>
<td>4/13/2014 8:51 PM</td>
</tr>
<tr>
<td>It is enough for me to read it once.</td>
</tr>
<tr>
<td>4/13/2014 8:53 PM</td>
</tr>
<tr>
<td>Because I have looked at it once before.</td>
</tr>
<tr>
<td>4/13/2014 8:55 PM</td>
</tr>
<tr>
<td>I read it the first time.</td>
</tr>
<tr>
<td>4/13/2014 9:02 PM</td>
</tr>
<tr>
<td>Because I am using the product based on a friend’s or family member’s recommendation, thus there is no reason to read.</td>
</tr>
<tr>
<td>4/13/2014 9:03 PM</td>
</tr>
<tr>
<td>I have read it before plus I do not suspect major changes, if any. My main concerns will be on the ease of use, practicality, and time spent on cleaning.</td>
</tr>
<tr>
<td>4/13/2014 9:04 PM</td>
</tr>
<tr>
<td>Sometimes I am rushed because of a tight schedule.</td>
</tr>
</tbody>
</table>
I buy it repeatedly.

Not important especially after I have tried it and felt comfortable.

Because I read it the first time.

Because the product has high demand.

Same reason *(I do not care.)*

I trust the product.

?*

It is enough for me to read it once.

Already know how to use it.

Because I would have read it the first time.

Because I am used to it and I do not need to read the instructions.

Because I read the information before.

Because I read the label the first time and I do not think it has changed.
4/13/2014 10:03 PM
No reason.

4/13/2014 10:04 PM
Because buying the same product became a habit.

4/13/2014 10:07 PM
I read it once, unless I forgot the instructions or wanted to check a particular info again why would I need to read it again?

4/13/2014 10:11 PM
I am lazy.

4/13/2014 10:12 PM
Trust.

4/13/2014 10:12 PM
It is not important to me.

4/13/2014 10:15 PM
If the product is good, I do not care about what is written on the label.

4/13/2014 10:20 PM
Na.

4/13/2014 10:20 PM
I cannot read English.

4/13/2014 10:20 PM
Because I am familiar with the contents.

4/13/2014 10:34 PM
Because it is the job of the Ministries of Health and Commerce to ban products that are harmful to consumers.

4/13/2014 10:57 PM
Not important if it is a famous product.

4/13/2014 11:05 PM
Because I read the dangers and first aid since I first bought the product.
I only read once at first because I think there will not be anything new to read later.

Because I already know the intended use and instructions.

Because I already read it.

I do not care.

Because I do not think the formula will be changed.

I am lazy.

No particular reason. I just did not care.

Because I memorized the ways of use.

Because I already know the directions.

No time.

Because I think the ways of use are still the same.

Because the information has been passed to me by people so I do not read.

There is no time plus my reading won’t change anything.
<table>
<thead>
<tr>
<th>Time</th>
<th>Translation of Survey Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/14/2014 8:52 AM</td>
<td>Because I am used to it.</td>
</tr>
<tr>
<td>4/14/2014 9:35 AM</td>
<td>Because it is the same.</td>
</tr>
<tr>
<td>4/14/2014 9:36 AM</td>
<td>I read the label the first time I bought the product.</td>
</tr>
<tr>
<td>4/14/2014 9:38 AM</td>
<td>No reason.</td>
</tr>
<tr>
<td>4/14/2014 10:01 AM</td>
<td>Repeated purchase does not require repeated reading.</td>
</tr>
<tr>
<td>4/14/2014 10:33 AM</td>
<td>I do not think there are new information added to the label.</td>
</tr>
<tr>
<td>4/14/2014 10:36 AM</td>
<td>Because I read it before.</td>
</tr>
<tr>
<td>4/14/2014 11:21 AM</td>
<td>Careless.</td>
</tr>
<tr>
<td>4/14/2014 11:22 AM</td>
<td>I am lazy.</td>
</tr>
<tr>
<td>4/14/2014 11:43 AM</td>
<td>I know that it is effective.</td>
</tr>
<tr>
<td>4/14/2014 11:45 AM</td>
<td>Because I made myself aware of the information when I first bought it.</td>
</tr>
<tr>
<td>4/14/2014 11:55 AM</td>
<td>I buy it repeatedly because I got good results.</td>
</tr>
</tbody>
</table>
Because I am used to it.

No reason.

I was unaware of those hazards. Plus, the text is too small and has many foreign terminologies that I do not understand.

Because I already know the product’s contents and ways of use.

Because I already know the package’s contents and its associated hazards.

I did not expect this level of danger.

Because I already know the product.

Because I read the directions the first time so there is not need in reading later on.

Because I buy it so much, I did not think to read.

My skin is very sensitive to some contents.

No reason.

Because I read it the first time.
After being familiar with the product, I sometimes read the ways of use and misuse hazard.

It is repeated.

I know from previous use.

If I like it, I keep buying it.

I already know what it is used for.

Because I read it the first time so there is no need to continuously read it.

Because I trust it.

Not important.

I know how to use it.

The product is manufactured locally. I trust local industries.

Because it is the same product plus I read it before.

Because there are many things that couldn't be cleaned with water only. For this reason, we need detergents to clean them.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
<th>Date/Time</th>
<th>Response Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4/14/2014 6:55 PM</td>
<td>I read the directions before.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 7:02 PM</td>
<td>Because I read it the first time and that is enough.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 7:40 PM</td>
<td>Because I read it the first time I bought it.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 7:55 PM</td>
<td>I am lazy.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 8:05 PM</td>
<td>Because the product did what I wanted to do.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 8:17 PM</td>
<td>No reason. Maybe laziness.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 8:31 PM</td>
<td>Because I am comfortable using it and I saw the results.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 8:38 PM</td>
<td>Because I read it the first time. Plus, it was recommended by someone I know.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 8:41 PM</td>
<td>Because I had read it before. Unless the package changes, I would read the back label to check out new information.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 9:20 PM</td>
<td>I had read it before.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 9:38 PM</td>
<td>I depend on the maid to do that.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 10:10 PM</td>
<td>Yes.</td>
</tr>
<tr>
<td></td>
<td>4/14/2014 10:36 PM</td>
<td>Because I am familiar with how to use it.</td>
</tr>
</tbody>
</table>
Because I read it the first time and I know all the details.

I know the information from the first time I read the label.

Assuming the information will be the same.

I do not think the label has changed unless the label design grabs attention to indicate new information.

Because I am used to buying it.

It was tested.

Because information is usually written in a very small size which make it hard for me to read it.

I trust the brand quality.

Because buying it repeatedly makes me feel that I know its contents.

I had read it before.

I do not pay attention.

I am lazy.

I do not think that it has changed.
I read it before.

Label’s information rarely change.

Because it is well-known.

Laziness, usually in a hurry, and I have used it before.

I am used to it.

Because I buy it repeatedly and reading it once is enough.

Because I trust the product’s brand.

Because I tried it before.

I did not experience any problem with it and I am used to it.

The trust of the product’s brand obviate the need to read its back label.

Because it is very popular and well-known.

Because it is very effective.

Because I already read it the first time I bought it. Sometimes I read the details again.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/16/2014 12:08 PM</td>
</tr>
<tr>
<td>I have read it before.</td>
</tr>
<tr>
<td>4/16/2014 12:12 PM</td>
</tr>
<tr>
<td>Because my parents never read.</td>
</tr>
<tr>
<td>4/16/2014 12:14 PM</td>
</tr>
<tr>
<td>A matter of habit.</td>
</tr>
<tr>
<td>4/16/2014 12:21 PM</td>
</tr>
<tr>
<td>Not important.</td>
</tr>
<tr>
<td>4/16/2014 12:22 PM</td>
</tr>
<tr>
<td>I am familiar with the product.</td>
</tr>
<tr>
<td>4/16/2014 12:30 PM</td>
</tr>
<tr>
<td>It is not important.</td>
</tr>
<tr>
<td>4/16/2014 12:31 PM</td>
</tr>
<tr>
<td>None.</td>
</tr>
<tr>
<td>4/16/2014 12:34 PM</td>
</tr>
<tr>
<td>To raise awareness.</td>
</tr>
<tr>
<td>4/16/2014 12:35 PM</td>
</tr>
<tr>
<td>I trust ministry of health and consumer protection.</td>
</tr>
<tr>
<td>4/16/2014 12:39 PM</td>
</tr>
<tr>
<td>Because I read it the last time I bought it.</td>
</tr>
<tr>
<td>4/16/2014 12:47 PM</td>
</tr>
<tr>
<td>Because I buy the product repeatedly so I already read the label before. Plus, I have tried it and saw the results.</td>
</tr>
<tr>
<td>4/16/2014 1:05 PM</td>
</tr>
<tr>
<td>Careless.</td>
</tr>
<tr>
<td>4/16/2014 1:06 PM</td>
</tr>
<tr>
<td>Because I have tried it before and know how to use it.</td>
</tr>
</tbody>
</table>
I do not know.

4/16/2014 1:20 PM
I read it before.

4/16/2014 1:28 PM
Negligence unfortunately.

4/16/2014 1:48 PM
Because I have benefited from its efficiency and quality.

4/16/2014 1:59 PM
Not important.

4/16/2014 2:01 PM
I am lazy.

4/16/2014 2:43 PM
Because I have read it the first time.

4/16/2014 3:00 PM
Reading it once is enough.

4/16/2014 3:06 PM
Because it is well-known.

4/16/2014 3:20 PM
Because I read it from the beginning.

4/16/2014 3:20 PM
Because I read it before, I know it, and the text is written in a very small size that strains the eyes.

4/16/2014 3:33 PM
I do not know.

4/16/2014 4:40 PM
Because I read it the first time and I do not need to read it every time. This is called obsession.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like its use.</td>
<td>4/16/2014 5:01 PM</td>
</tr>
<tr>
<td>None.</td>
<td>4/16/2014 5:03 PM</td>
</tr>
<tr>
<td>I do not know.</td>
<td>4/16/2014 5:46 PM</td>
</tr>
<tr>
<td>I trust the product.</td>
<td>4/16/2014 5:47 PM</td>
</tr>
<tr>
<td>Because the advertisement showed me its cleaning quality.</td>
<td>4/16/2014 5:57 PM</td>
</tr>
<tr>
<td>Because I read it before.</td>
<td>4/16/2014 6:26 PM</td>
</tr>
<tr>
<td>Because I depended on someone else’s experience.</td>
<td>4/16/2014 6:53 PM</td>
</tr>
<tr>
<td>Unaware and negligent.</td>
<td>4/16/2014 9:29 PM</td>
</tr>
<tr>
<td>Because I have tried it before and I am used to it.</td>
<td>4/16/2014 9:55 PM</td>
</tr>
<tr>
<td>Because I have read it when I first bought it.</td>
<td>4/16/2014 9:57 PM</td>
</tr>
<tr>
<td>I have not noticed any harm done in the past.</td>
<td>4/16/2014 10:01 PM</td>
</tr>
<tr>
<td>Rush.</td>
<td>4/16/2014 10:16 PM</td>
</tr>
<tr>
<td>No reason.</td>
<td>4/16/2014 11:25 PM</td>
</tr>
<tr>
<td>Time</td>
<td>Message</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4/16/2014 11:48 PM</td>
<td>I read all the details and warnings from the first time. Why read again?</td>
</tr>
<tr>
<td></td>
<td>What is the addition?</td>
</tr>
<tr>
<td>4/17/2014 12:28 AM</td>
<td>Because I am used to it.</td>
</tr>
<tr>
<td>4/17/2014 1:03 AM</td>
<td>I do not know.</td>
</tr>
<tr>
<td>4/17/2014 7:30 AM</td>
<td>I looked at it in the first time.</td>
</tr>
<tr>
<td>4/17/2014 7:43 AM</td>
<td>Because I familiarized myself with all the product details.</td>
</tr>
<tr>
<td>4/17/2014 8:09 AM</td>
<td>Because I read it before.</td>
</tr>
<tr>
<td>4/17/2014 8:35 AM</td>
<td>I know the product's details and uses.</td>
</tr>
<tr>
<td>4/17/2014 8:52 AM</td>
<td>Inability.</td>
</tr>
<tr>
<td>4/17/2014 5:09 PM</td>
<td>I depend on my previous read.</td>
</tr>
<tr>
<td>4/17/2014 10:20 PM</td>
<td>I have read it before.</td>
</tr>
<tr>
<td>4/18/2014 12:15 PM</td>
<td>I trust the product.</td>
</tr>
<tr>
<td>5/3/2014 10:07 PM</td>
<td>I read it before.</td>
</tr>
</tbody>
</table>
12 If the back label was redesigned to be read clearer, easier, and faster containing pictograms and signs, will this increase your interest to read it?

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>94.7%</td>
</tr>
<tr>
<td>No</td>
<td>5.3%</td>
</tr>
<tr>
<td>Total</td>
<td>320</td>
</tr>
</tbody>
</table>

13 **Final comments.** *(Optional)*

119 Responses

4/13/2014 10:05 AM
Competition of quantity and cost creates greater attraction to most consumers rather than product details and directions. Plus, marketing messages and advertising focus on cost and quantity rather than environmental features and health benefits.

4/13/2014 10:22 AM
Detergents displayed in supermarkets and grocery stores are under the inspection of ministry of health and ministry of commerce. The citizen depends on those two entities.

4/13/2014 12:03 PM
All the best. Your attention to those things grabbed my interest.

4/13/2014 12:39 PM
What is the benefit of this survey? Kuwait has no detergent industry. All products are imported from other countries.
<table>
<thead>
<tr>
<th>Time</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/13/2014 1:17 PM</td>
<td>This is the first time I know about harms in detergent products.</td>
</tr>
<tr>
<td>4/13/2014 1:27 PM</td>
<td>Good luck.</td>
</tr>
<tr>
<td>4/13/2014 1:29 PM</td>
<td>In brief, I like a product that has multi-uses in the house.</td>
</tr>
<tr>
<td>4/13/2014 1:31 PM</td>
<td>Thanks for your concern to raise awareness.</td>
</tr>
<tr>
<td>4/13/2014 1:36 PM</td>
<td>May God grant you strength.</td>
</tr>
<tr>
<td>4/13/2014 1:36 PM</td>
<td>Thank you.</td>
</tr>
<tr>
<td>4/13/2014 1:44 PM</td>
<td>Thanks a lot.</td>
</tr>
<tr>
<td>4/13/2014 1:59 PM</td>
<td>I am more concerned to know about the harms in each detergent product before use.</td>
</tr>
<tr>
<td>4/13/2014 2:02 PM</td>
<td>Our society needs awareness campaigns. Thank you.</td>
</tr>
<tr>
<td>4/13/2014 2:13 PM</td>
<td>Thank you for raising health awareness.</td>
</tr>
<tr>
<td>4/13/2014 2:32 PM</td>
<td>Thanks.</td>
</tr>
<tr>
<td>Time</td>
<td>Text</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>4/13/2014 2:46 PM</td>
<td>Thanks.</td>
</tr>
<tr>
<td>4/13/2014 2:55 PM</td>
<td>It is important to extensive campaign because many people are not aware.</td>
</tr>
<tr>
<td>4/13/2014 3:07 PM</td>
<td>We need information on many uses.</td>
</tr>
<tr>
<td>4/13/2014 4:31 PM</td>
<td>None.</td>
</tr>
<tr>
<td>4/13/2014 4:47 PM</td>
<td>Thanks.</td>
</tr>
<tr>
<td>4/13/2014 5:39 PM</td>
<td>I believe in making the information clear especially when the human health is concerned.</td>
</tr>
<tr>
<td>4/13/2014 5:55 PM</td>
<td>Detergents are usually used by housemaids. The housewife should educate the housemaid on the uses, especially the iron spray because of its intense vapor.</td>
</tr>
<tr>
<td>4/13/2014 6:49 PM</td>
<td>Thanks.</td>
</tr>
<tr>
<td>4/13/2014 7:01 PM</td>
<td>Thanks for raising health awareness regarding detergents. Many of us do not know the danger of mixing detergents together because they think this will provide a stronger result.</td>
</tr>
<tr>
<td>4/13/2014 7:31 PM</td>
<td>None.</td>
</tr>
</tbody>
</table>
Thanks.

All the best. I suggest writing details in a casual and entertaining language rather than the usual formal and uninteresting way. This will grab the consumers’ attention to read and share with their friends, which will in turn help raise the awareness in general.

Excellent report. It has raised my awareness to some extent.

As long as the detergent cleans well, does not leave a bad odor, cheap, fast and easy to use, it will be one of my favorite detergents. My favorite ones are: the oven cleaner Jif with lemon scent, the laundry detergent Vanish, and the floor detergent Dettol.

I think most people already know the danger of detergents and the harm associated with them. I recommend a raising a higher level of awareness. All the best.

Try to reduce the use of chemical detergents for their danger especially on the respiratory system.

You might consider the fact that some of us are not responsible for households and thus our info can be limited till the day we are more exposed to these things.

It is good to know the harms of chemical detergents on our health.

Na.
Please raise the awareness through all kinds of media available.

Thanks for the beneficial awareness.

If detergents contained carcinogenic substances, what is the alternative?

The label is clear but the consumer has to be educated to look because it will benefit the individual.

I do not care.

May God grant you good health.

Please do not import hazardous detergents from the beginning.

Label text should be in clear text or provide consumers with alternative safe substances for cleaning instead of using hazardous detergents.

Thanks for the outstanding survey. A study we need indeed.

I would recommend to improve the awareness of all Kuwait citizens by radio, television, newspapers, and posters as a lot of people are not aware of the hazards.

I would request to provide healthy and safe alternatives for human use.

The font used in the labels is too small and crowded.
Thanks.

4/14/2014 11:40 AM
I hope the government would give extra attention to improve the environment and health awareness of the community.

4/14/2014 11:42 AM
No.

4/14/2014 11:51 AM
Thank you for your attention to raise our awareness of such important matters.

4/14/2014 11:57 AM
If the risks of usage were mentioned in clear way and bigger font, that will help the people to read it and spread awareness.

4/14/2014 12:10 PM
Hazard cleaning products should be sold by specialized places and not by all the shops. Professional people should explain how to use them to the consumers and offer safer alternatives if possible.

4/14/2014 12:36 PM
Thanks.

4/14/2014 12:44 PM
Thanks for your concern for our health.

4/14/2014 12:47 PM
Valuable questions and it increased my attention to read the labels and not to mix the materials in garbage. All the best.

4/14/2014 1:09 PM
Consumers need for more awareness regarding hazards of cleaning products and the correct usage, specially with the variety of new communication methods such as Twitter, Instagram, etc.
<table>
<thead>
<tr>
<th>English Translation of Survey Results</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving more attention to consumers' feedback rather than the seller and have their voice heard and considered rather than focusing on the investors'.</td>
<td>4/14/2014 1:17 PM</td>
</tr>
<tr>
<td>I would recommend to produce a video that explain the hazards of using cleaning products in order to reach a wide range of consumers.</td>
<td>4/14/2014 1:22 PM</td>
</tr>
<tr>
<td>This survey is more valuable for housewives as they use these products more than men.</td>
<td>4/14/2014 1:36 PM</td>
</tr>
<tr>
<td>Information and instructions must be written clearly on the products packages.</td>
<td>4/14/2014 1:56 PM</td>
</tr>
<tr>
<td>We prefer to use less chemical cleaning products at home. It would be even better if they were natural, non-hazardous, and available at home.</td>
<td>4/14/2014 2:19 PM</td>
</tr>
<tr>
<td>Strict monitor on the package types as most of them have low quality. Also, the display of products on shelves are not safe, as they put all the products together which may leak and pollute the atmosphere.</td>
<td>4/14/2014 3:06 PM</td>
</tr>
<tr>
<td>Labels should be clearer and responsible parties such as the Kuwait Institute for Scientific Research, the Scientific Center, and others should increase the level of awareness in the community.</td>
<td>4/14/2014 3:10 PM</td>
</tr>
<tr>
<td>Government should restrict selling hazardous detergents in local markets which may cause diseases and be more concerned and protective of consumers' health.</td>
<td>4/14/2014 5:35 PM</td>
</tr>
<tr>
<td>I recommend that the Ministry of Health to be responsible for spraying pesticide around citizens' houses, streets, and public areas as it was back in sixties.</td>
<td>4/14/2014 6:22 PM</td>
</tr>
<tr>
<td>Time</td>
<td>Message</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4/14/2014 6:31 PM</td>
<td>There was no question about the expiry date and the importance of following it.</td>
</tr>
<tr>
<td>4/14/2014 6:40 PM</td>
<td>It is important to aware the citizens and residents of hazardous chemical cleaning products in order minimize their use.</td>
</tr>
<tr>
<td>4/14/2014 6:56 PM</td>
<td>Thanks for your concern for the environment and public health. We would like to minimize the usage of chemical cleaning products.</td>
</tr>
<tr>
<td>4/14/2014 7:02 PM</td>
<td>Thanks.</td>
</tr>
<tr>
<td>4/14/2014 8:06 PM</td>
<td>I would like the font to be more clear and the instructions to be brief.</td>
</tr>
<tr>
<td>4/14/2014 9:05 PM</td>
<td>Thanks for your efforts and I hope to increase the number of the posters and publications related to this subject.</td>
</tr>
<tr>
<td>4/14/2014 9:51 PM</td>
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Lots and lots of small and small text.

I did not find any first aid.

I was not aware of cleaning products that were made of natural materials.

I wish for more awareness through surveys such as this one in addition to lectures and short videos so the viewer won’t lose attention.

Thanks.

Thanks.

Thanks.

Because some instructions are difficult.

Write the label instructions in Arabic.

Instructions on the back of the packages should be bigger to allowed poor-sighted people to read it.

Thanks for the survey.

None.

I hope it is a true development and not just a survey.
Mention the actual harmful effects of products in commercials.

I hope to see serious work in regards to recycling and explain the products’ usage clearly.

I think we would need longer time to confirm the relationship between diseases and chemical cleaning detergents.

I learned new information form this survey which I did not know before.

Thanks for the survey. Valuable information.

Thanks.

Propagandas and commercials play a huge role in attracting consumers to buy and try. Consumers buy without reading the instructions on the packages because of their trust in registered brands such as Deitol.

Let us work to save the environment.

Wish you all the success towards the good of Kuwait.

May God grant you success.

I hope for an increase in environmental awareness on a personal level and thanks for your efforts.
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Survey 5

Existing Label Designs in Kuwait Consumer Market

The sample of this survey is focused on detergent labels of products sold in Alsurra Co-opetive Society in Kuwait. Products sold in this Co-opetive Society in Kuwait are also found in all Co-ops in all areas in the country. This survey aims to identify the existing label designs on packaging sold in Kuwait consumer market. A total of 12 snapshots of detergent labels were taken randomly from the shelves in Alsurra Co-op.

Snapshots

Detergent labels used in Alsurra Co-operative
Section 6.5  
Appendix

Survey 5 Results

Snapshots  
Continued

Results  
Characteristics of Existing Label Designs in Alsurra Co-op

- Full-color / One-color
- Laminated sticker paper
- Illustrations
- Universal Symbols
- Full-color Photography
- Full-color print on aluminum can
- English Text / Arabic Text
- Paragraphs
- Bullet-points / Short Text
- Titles
- Small Text / Large Text
- Poor typography and layout solutions
Screen Sizes and Ratios for e-Guidebook Implementation

The data of this study was pulled out from i-Skool.co.uk. Information display all existing screen sizes available in 2014. This survey aims to find the most common screen resolution for the digital implementation of this guidebook. A total of 115 screen types were coded, explored and analyzed including mobiles and tablets.

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http://i-skool.co.uk/mobile-development/web-design-for-mobiles-and-tablets-viewport-sizes/
Common Screen Sizes for Tablets

The screen resolution 768x1024 px was chosen because the ratio, when scaled on other devices, has better screen coverage, in addition, designing the layout for a smaller resolution, will allow text to be visible in both small and larger screens when scaled up. The following tablet screen resolutions were the most common among devices in 2014:

- **800x1280 px (11 Devices)**
- **768x1024 px (8 Devices)**
- **600x1024 px (6 Devices)**

Results for Screen Sizes for Mobiles and Tablets

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**Tablet Screens**

**Mobile Screens**
The guidebook contents evolved as I acquired new knowledge and understanding about the subject. Moreover, discussions with advisors, consultants, and graphic design students along with surveys helped shape the direct flow and steps of necessary information for teaching the subject in simple yet comprehensive way.

Version 1

Guidebook Outline (write one page for each title)

Abstract (100 words)
Introduction
Problem Statement (Addiction to Plastic)
Situation Analysis

1) What sustainability (Definition)
   Ecology
   Environmental / Economic / Social
   Marketing

2) Why sustainability (Importance)
   Damage Analysis: Retailers / Consumers
   Responsibility / Ethics

3) How sustainability (Process)
   Principles / Ethics
   Typography + Bio-Ink + Saves on Printing
   Materials
   Steps

Conclusion: Critical Analysis
Endnotes / Footnotes
Bibliography
Acknowledgment
THEORETICAL
The definition of sustainability
The definition of the ecology of design
The backfire effects and behavioral change
Guidelines and criteria for evaluation and assessment
The various sustainable design strategies and applications

PRACTICAL
A study of Kuwait's infrastructure as context
The best sustainable strategies and applications for Kuwait
1) Title
2) Copyright
3) Contents Page
4) Introduction

5) Section 1: Theoretical (General Knowledge)
   6) Part 1: Sustainability
   7) Part 2: Ecology
   8) Part 3: Evaluation & Assessment
   9) Part 4: Consumer Behavior and Unintended Consequences
  10) Part 5: Various Sustainable Strategies
  11) Part 6: Material and Printing
  12) Part 7: Case Studies

13) Section 2: Practical (Specific to Kuwait)
   14) Part 1: Kuwait’s Infrastructure
   15) Part 2: Packaging Strategies for Kuwait
   16) Part 3: Case Studies

17) Footnotes
18) Bibliography
19) Acknowledgments
20) About the Author
21) Colophon
22) Abstract (back cover)
Version 5
Title Page
Copyright
Contents
Introduction

**Section 1: Theory**
Part 1: Sustainable Packaging Design
Part 2: Ecology System
Part 3: Unintended Consequences & Consumer Behavior
Part 4: Sustainable Strategies Around The World
Part 5: Methods of Evaluation & Assessment
Part 6: Materials and Printing
Part 7: Case Studies

**Section 2: Road Map (Practice)**
Part 1: Kuwait’s Infrastructure
Part 2: Packaging Strategies for Kuwait
Part 3: Case Studies

Footnotes
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Colophon
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**Section 1: Theory**
- Part 1: Ecology System (The Bigger Picture)
- Part 2: Unintended Consequences & Consumer Behavior
- Part 3: Sustainable Strategies Around The World
- Part 4: Methods of Evaluation & Assessment
- Part 5: Materials and Production
- Part 6: Case Studies

**Section 2: Road Map (Practice)**
- Part 1: Kuwait’s Infrastructure
- Part 2: Kuwait Consumer Culture & Behavior
- Part 3: Packaging Strategies for Kuwait
- Part 4: Case Studies

Footnotes
Bibliography
Acknowledgments
About the Author
Colophon
Abstract (back cover)
Section 1
Part 1

Ecology System (The Bigger Picture)

THE LARGE PICTURE
/ COMPLEX SYSTEM

Primary packaging waste
Secondary packaging waste
Delivery system
Long-term toxic material
Recovery system
Industry
New ways of thinking / visionaries
New objectives / priorities / prerequisites
New responsibilities
New outcomes
New methodologies
Cycle
Common sustainable concept: Closed loops
Close loops of material usage
Material extraction
Natural resources / material depletion
Young designers
Expert designers
Corporate profit
Retail / market
Sell
Cheap goods
Strong packaging
Thief-proof packaging
Inefficient energy consumption
Environmental Impacts
Financial incentives
Industry’s triple bottom line: (social, environmental, and economic consideration of operating a business)
Dead-end / one-way / cradle-to-grave → economically inefficient
Second life / multi-way / cradle-to-cradle
Material needs for performance
Lightweight
Compact
Ease of use / functionality
Comfort
Product Protection → environmental burden
Delivery of content
Round-trip / Open-close / pop-up and down
Consumer
Product is the content
Packaging is the environment
Consumer behavior
Excessive wrapping
Wrapping waste

Convenience
Labeling
Branding
Marketing
Educating
End-of-life
Learn from past packaging
Redesign
Mass production → large benefit
Small business production
Recycle
Down-cycle
Up-cycle
Use and Reuse /secondary use
Disposal / never intended to be reused
Landfill
Incineration
Driving trip
Supply chain ...
Waste management / pickup trucks
Government
Municipal
Law / policy / regulations
Human
Animals
Habitat
Air
Land
Water
Pollution
Health
Renewable resources / energy
Biodegradable / not recyclable
Compostable / not recyclable
Equity
Green Chemistry
Zero waste
Closed-loop production
Renewable Energy
Local Living Economics
Section 1  
Ecology System (The Bigger Picture)

THE LARGE PICTURE / COMPLEX SYSTEM

ENVIRONMENT
- Rare Materials
- Renewable resources
- Renewable energy
- Cycle
- Close loops of material usage
- Natural resources / material depletion
- Environmental impacts
- Material needs for performance
- Animals
- Habitat
- Air
- Land
- Water
- Pollution
- Health

INDUSTRY
- Suppliers
- Manufacturers
- Inefficient energy consumption
- Environmental impacts
- Supply Chain
- Retail Distribution
- Customers Delivery system
- Convenience
- Tuck
- Aisle
- Storefront
- Shop
- Retail / market
- Sell
- Mass production / large benefit
- Small business production
- Financial incentives
- Corporate profit

PACKAGING
- Primary packaging
- Secondary packaging
- Long term toxic material
- Container
- Strong packaging
- Comfort
- Ease of use / functionality
- Theft proof packaging
- Lightweight
- Closed-end / one-way / cradle-to-grave
- Second life / multi-use / cradle to cradle
- Round-trip / Opens cover / pop-up and down
- Products in the content
- Packaging in the center
- Outside wrapping
- Wrapping media
- Labeling
- Convenience
- Product Protection

CONTEXT & CULTURE
- Environmental impacts
- Social goods
- Consumer
- Consumer behavior
- Waste management / pickup trucks
- Driving trip
- Transportation
- Government
- Municipal
- Law / policy / regulations
- Humans

INPUTS
- New ways of thinking / visionaries
- New objectives / priorities / prerequisites
- New responsibilities
- New outcomes
- New methodologies
- Young designers
- Expert designers
- Branding
- Marketing
- Educating
- Learn from past packaging
- Redesign

END-OF-LIFE
- Recycle
- Down cycle
- Up cycle
- Use and reuse / secondary use
- Disposal / never intended to be reused
- Landfill
- Incineration
- Recovery system
- Recovery system
- Compostable
- Biodegradable
- Compostable
Section 1
Part 1

Ecology System (The Bigger Picture)
Section 1  
Part 1  

Ecology System (The Bigger Picture)  

HIERARCHY A  
Based on Business Supply Chain with Modification  

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<th>Product Development Marketing &amp; Sales Vision / Objectives Profit</th>
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<td>Forests Animals Habitat Water / Air Land / Mountains</td>
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HIERARCHY B  
Based on Materials Economy by The Story of Stuff  

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Designer Economy Profit  
Packaging / Labelling Toxins / Pollution Energy / Waste x10 Workers / Health  
Expected Cost Advertising / Sales Shopping / Retail Garbage
Section 1
Part 1

Ecology System (The Bigger Picture)
Section 1  Ecology System (The Bigger Picture)

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**Sara Almudhaf**

**Part 1**

**Consumer Buying Decision Priority List:**

- How does the consumer make a buying decision?
- Lives with Ads & Subliminal Nags

**How is the cradle to cradle made?**

- "This is not a tree" → Plastic → Recycled

**THE PEOPLE INVOLVED TO MAKE SUSTAINABLE PACKAGING SUCCESSFUL:*

- Producers/Producers
- Consumers/Consumers
- Decomposers/Decomposers

**Design Theme: benefi 1 people**

- Reuse
- Composting
- Recycling

**THE PEOPLE INVOLVED:**

- Industrial
- Graphic
- Facility
- Consultants
- Engineers
- Government
- Environmental
- Marketers
- Technicians
- Suppliers
- Recyclers
- Policy Makers
- Biologists

- What choice do they have?

- How can we benefit each other?
Ecology System (The Bigger Picture)

Section 1
Part 1

Media focuses on [Retail -> Consumer -> Disposal]

Does not focus on [whole story]

Problems ignored for past 50 years

Graphs for amount of material use:

(Paper/ cars/ electronics)

Industrial chemicals in newborns

Globally, footprint network

Look at solutions = motivation

Green Chemistry

Biomimicry

Zero Waste

(Policy + goal + dedication)

People need to understand the problem

Ecosystem decline

Maybe people don’t care.

Survey 1 Analysis

How design contributes to those changes?

Environmental footprint

Saving (water/ energy/ air)

Ending up in waste stream

Writing the thesis documentation.

Focus on your contribution

Start with idea

End with it

Continuation:ouch for reuse/ reduce/ recycle

Design solutions & applications for waste infrastructure and consumer culture.
Section 1
Part 2

Unintended Consequences & Consumer Behavior

INPUT

Energy
Material
Labor
Capital

UNINTENDED CONSEQUENCES

PROCESS

OUTPUT

Cost Reduction
Product
Packaging
Material Reduction
Waste

"We can make more profit."
"We can produce more."
"Create more waste."
"Shareholders / Consumer behavior change."

DIRECT REBOUND

INDIRECT REBOUND

"Create more demand."

BUY MORE

"We don't live alone!"

BACKFIRE

ECONOMIC REBOUND

ENERGY

PRODUCT

WASTE

Direct

Indirect

Restraint

Punishment

Fines

I am angry and this is a lot!
I will make you proud.!
I love designing everything together."
Section 1  Sustainable Strategies Around The World

Part 3

Questions:
- Who are the people involved in packaging?
- What are the environmental regulations of Switzerland?
- What is the future of the future?
- How can sustainable strategies be implemented?
- What are the criteria for evaluation?
- What is the cutting edge of sustainable packaging?
- Closing loops, reducing waste:
  - What are the different design criteria?
  - Calculating an object area in Illustrator (plug-in) space area / size usage (saving)
  - Life span study of materials out there
  - How can packaging educate and create awareness for the consumer?
- Study population languages, apply packaging in countries for different residents
- How can a sustainable package cost less and still compete in the market?
- Unpacking cycle:
  - Costs:
  - Value:
  - Quality:

Sustainable Type Criteria:
- Uses less ink
- Occupies less area space
- Readable as text type
- Removable as display type
- Can be produced printed in different techniques & technologies

Supply Chain Analysis

Comparison of Disposal Systems

Green Design Award Logo

Sustainable Design Award Logo

Walmart Score Card

Development System and Scoring for Kuwait

USA Sustainable Packaging

Kuwait Sustainable Packaging

VS.

NOTE: Sustainable包装

[Diagram of disposal systems comparison and green design award logos]
Section 1  
Part 3  
Sustainable Strategies Around The World

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LIFE = NATURE
WE LIVE IN A SYSTEM [ECOSYSTEM]

IF ONE THING CHANGED, THE REST WILL

THE WISDOM OF YOUR CELLS

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CONSUMERS → BUY

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I WANT TO HELP
declare a state of
development

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industrialization

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Sara Almudhaf  
Sustainable Packaging Design Visually Explained: Guidebook Prototype  
348
Section 1  
Methods of Evaluation & Assessment

William McInerney
"Design is the first signal of human intention."
- What are the first questions for designers?
- How can we assess local society?
- Create world peace?
- Save the environment? -GUARDIAN
- How can we generate prosperity? -COMMERCE
- How do we save all the children of all species for all time? -DESIGNER
- Technical innovation - materials in closed-cycle
- Sustainable packaging - Screen-printed
- Sustainable, Recyclable, Reusable: (Sustainable)
- Recycling, Repurposing, Redesigned
- How do we save all the children of all species for all time?

Good Design Criteria
- Move the world
- Enables
- Removes
- Other

Finding Food: Scope of Work
- Section of Food
- Can be obtained for least amount of ink
Kuwait Chapter can apply to similar countries and contexts.
THESIS PROPOSAL

Sustainable Packaging Design for Kuwait: An Educational Guidebook

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Tuesday December 17, 2013
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# THESIS PROPOSAL

## Content

1. Thesis Advisors
2. Thesis Consultants
3. Situation Analysis & Problem Statement
4. Review of Literature
5. Design Ideation
6. Methodological Design
7. Implementation Strategies
8. Dissemination
9. Evaluation Plan
10. Pragmatic Considerations
11. Timeline
12. Bibliography
Situation Analysis & Problem Statement

Much of society’s daily consumption generates some forms of waste. Solid waste often ends up in landfills, dumping grounds, or as litter causing negative environmental impact.\(^1\) Packaging generates more than one third of the U.S. municipal solid waste stream.\(^2\) This is mainly because a package is a byproduct with a short lifespan. Perullo argues that packaging design has been known for focusing more on marketing and sales more than efficiency.\(^3\)

The main purpose of packaging is it to protect, inform, and sell. We need new ways of thinking to change the future. Designers should aim at eliminating waste and not just reduce it.\(^4\) I believe in the saying that sustainability is a design that is in harmony and well habituated with the environment, where economy and society’s present needs are met without compromising the ability to satisfy future needs.\(^5\) The practice of sustainability in design will help cut down waste, nourish nature, use local and renewable resources, reduce cost, blend in harmony with culture, and encourage social change. Packaging should be designed with re-use and longevity in mind.\(^6\) It should also be created for cyclically not linearly.\(^7\) It should be cost-effective and made of local and renewable resources.\(^8\) It should also be safe and nontoxic, aim at zero waste, habituate with culture and nature, and encourage social change.\(^9\)

A holistic approach to sustainable packaging means looking at reducing all different types of waste throughout the supply chain.\(^9\) Waste includes packaging that ends up in landfill, product left-over in the packaging at disposal time, and waste from manufacturing processes. In this guidebook, I will introduce the supply chain and manufacturing process but focus more on the primary packaging design.

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7 Ibid.
8 Ibid.
9 See note 1 above.
The introductory chapters of the guidebook intend to enable the reader to see the relationships, interaction, and the bigger picture. This guidebook is not a one-size-fits-all tome. Sustainability ties closely with its context and surrounding. What is sustainable in one country may not be sustainable in another. This guidebook will showcase sustainability approaches and the logic behind their design decisions. Furthermore, it will encourage taking packaging design into an advancing level of communication. It will provide a mechanism for consumers to engage in the pursuit of good by helping them make informed and responsible decision. This guidebook aims to teach graphic designers to think in terms of sustainability by empowering them to be fellow agents for positive change, fueling true innovation.

The study of sustainable packaging for detergents and cleaning products will be a comprehensive single source guidebook cataloging all the research, processes, and findings through the documentation of this thesis, including packaging principles and applications. It will provide information on the definition of sustainability from an environmental, social, and economic perspective, its importance to retailers and consumers, and the technical process considering design and production materials and methods.

This research will expand my knowledge on the subject and enable me to promote the principles of sustainable packaging design. It will also emphasize the importance of sustainability in today’s global competitive market. In addition, it will aid me in understanding the connections between environmental, social, and economical contexts of sustainability, which will provide more effective solutions for sustainable future designs.

Kuwait currently lacks the knowledge and understanding of sustainable package design. This final printed resource guidebook will benefit Kuwaiti undergraduate graphic design students as reference work for their professional preparation and practice. Additionally, this resource is for professional graphic and package designers with little or no understanding of sustainability. This research intends to advance Kuwaiti undergraduate education and academia by helping students understand sustainable food packaging principles and applications.
Review of Literature

The following resources point out important aspects of sustainable packaging design. They draw attention to theoretical approaches including environmental impacts of print and packaging design, ethical practices in design, principles of green and sustainable design, and the ecology of print design. In addition, technical design features include material choices, ink usage or type techniques that use no ink, as well as ink-saving typography design.


This book explains how to take the lead with sustainable packaging design solutions. Delivering sustainable packaging is now an integral part of today’s global competitive market. This is a comprehensive, single source of actionable information, written by experts from a wide variety of fields. This book will enable designers to make smart decisions and create new possibilities for truly innovative solutions.

This book explains environmental impacts for designers to consider in their early design process. It is not only about materials; it is more about design that encompasses all aspects of packaging: functionality, aesthetic quality, and life-cycle. This book looks at packaging from all angles. It shows the inter-connectivity of packaging, processes, and social impacts. This is an essential resource for understanding sustainable packaging design, its methods, and process.

In this book, the author focuses on the ultimate goal before working on the first step in the design process. Designs that start with such focus are sensitive to living systems and can potentially fulfill their mission without negative environmental, social, and economical impacts. Such profound designs fit the fundamental principles of renewability, recyclability, and nontoxicity. Often based on natural systems, they are easy to understand and achieve, and provide more refined approaches to getting the services and functions we need. This book offers information from innovative designers in a wide variety of fields. It outlines numerous case studies that demonstrate the theory and practice of deep design.


This book breaks down the concept of green design in simple steps. It reframes the way designers think about the work they produce while remaining focused on cost restraints and corporate identity. The author demonstrates simple eco-innovative developments in the design process stages. This involves selecting projects, strategizing with clients, and choosing materials for manufacture and shipping. In addition, understanding users, printing choices of ink and paper, binding, packing, building strong brands, and working with clients to promote transparency and social change. The author filled this book with illustrations and case studies of green design implementation. This reference guide provides a comprehensive glossary of fundamental terminologies and resources to assure that anyone in the design field can implement practical green solutions. This book is a vital resource for graphic designers willing to view to the future of business and the environment.
4 Boylston, Scott. *Designing Sustainable Packaging.*

This book explores practical packaging design models that follow sustainable and ecological principles. It invites the next generation of graphic designers to re-think packaging design from an environmental perspective. It encourages them to explore a collection of techniques and methodologies for producing innovative and sustainable packaging designs. The author organized the book into two distinct sections embracing the theory first by introducing many case studies, and then the applications of sustainable packaging design. The first section of the book, after the introduction background of packaging design and its purpose, the author concentrates on issues of sustainability. He introduces leading companies in sustainable packaging through a range of case studies and interviews. The second part of the book provides practical information on designing eco-friendly packaging and follows several projects through, step by step.


Sustainable design is gaining prominence as a crucial issue for the future of current design practices at design schools and professional design conferences. Graphic designers and clients are frequently demanding sustainable solutions. Designers want to approach these needs when presenting their work for consideration. As companies continue to accommodate to and provide environmental solutions with their own goods, they are requiring it from their creative partners. For that reason, designers need to be well informed and on the forefront of these initiatives. This book will provide designers with information to be leading on sustainability issues and inform them on sustainable applications such as paper, printing, formats, materials, inks, and executions.

This book contributes critical research about the book-publishing industry and examines approaches to achieve sustainable practices. Through comprehensive research and experience in the professional field, the authors present concepts on sustainability within the book-making process, reviewing the environmental impacts of editing, printing, marketing, distribution, and both print and digital sales. This book includes a detailed record of the choices to produce a book. It also features business profiles that highlight individuals and businesses representing sustainable standards.


This book paints an entirely unique philosophy and practice of manufacturing and environmentalism. The authors argue in their idealistic book that the “reduce, reuse, and recycle” approach preserves a linear direction, a “cradle to grave” manufacturing model. This design-minded model begins with the industrial revolution and accounts for 90 percent of the material used as waste. The authors examine the assumption that human industry must surely damage the natural world. They then take nature itself as a model for sustainable design. For example, a tree produces thousands of blossoms in order to create another tree; we do not consider its excess wasteful but safe, beautiful, and highly effective. From this example, the book introduces “waste equals food” as the first sustainable principle. They argue that products should be designed so that they provide nourishment for something new after their useful life. This is either as biological nutrients that go back to nature or as technical nutrients that go into an industrial closed-loop cycle for reproduction. Of course, this industrial cycle would not down-cycle or reduce the materials quality like the recyclables of today. Elaborating their principles from experience, the authors address an inspiring and viable case for change.
This book provides information that focuses on behavior change and creating environmental awareness. It shows a new visual language represented for sustainability. It explains that sustainability is not an option but a necessity. As such, designers and business owners are increasingly pressing this topic. A wide range of target audiences have to be persuaded of the importance of a conscious lifestyle. The authors believe that a new visual language must be found for this topic because the traditional understanding of environmentalism is no longer effective. This book is a collection of work from around the world that displays reliable and understandable contemporary visual language for communicating sustainability. The examples presented in this book get the message across by utilizing graphic design, information graphics, illustrations, and photography. The examples in the book inspire graphic designers and challenge consumers. They describe relationships and complex technical processes serve as a unique presentation of the most significant, intelligent, and entertaining communication standards and proposed solutions for sustainability today.

This book examines techniques and methods to aid graphic designers to create environmentally friendly design decisions. This book features the best of these earth-friendly designs. It showcases the design work of ad agencies and in-house designers that are innovative and creative. Mainly focuses on printed materials, but also showcases samples of environmental graphic design, repurposed designs, and the new anti-packaging trend. The book illustrates examples of marketing materials designed using environmentally friendly means. By the collection of this book, the authors intend to inspire freelance designers, printers, and other creative professionals in the field to take a similar direction.
This book concentrates on creating, improving, and executing package designs from a marketing perspective. The design bar is always high for those confident to engage in the industry. Today's designers must be educated on all the actions needed to create designs that stand out in an increasingly competitive market. This book takes an in-depth strategy, enabling designers to discover how to create work that is aesthetically appealing, strategy-driven, and intelligent.


This book is a reference that provides a visual inspiration for the creation of interesting packaging designs. The various types of carton templates demonstrate the diversity of packaging possibilities. This book covers product appropriateness and distinguishing features for each design, and a system of symbols provides clear access to information on all aspects of the designs, from their ecological connections through to their material suitability. Authoritative essays feature the principles of packaging, along with the concerns and challenges encountered by contemporary packaging designers. A beneficial guide includes all the main kinds of closure, and a quick reference list abstracts traditional packaging materials and their typical uses.

This resource provides statistical facts about different domains in Kuwait. The Annual Statistical Abstract includes statistical data that cover many economic and social activities in Kuwait. This report is one of the most important official references of statistical data in the country. This report includes the most relevant up-to-date data published by the Central Statistical Bureau, in addition, to other data provided by ministries and governmental organizations in Kuwait. It examines quantities and qualities of residential, commercial, agricultural, and construction wastes. The General Census of Population is another important source for population data. It provides detailed data on population size and demographic, economic, and social characteristics. This dataset will be very useful for the creation of economic and social development plans. Another essential report is the Household Income and Expenditure Survey. It identifies the products and services consumed by different levels of society. It also classifies consumer spending in several goods and services categories.


This is a great resource for journals, maps, articles, reports, and photo albums related to Kuwait’s environments. The Waste Management section of the website provides 159 journal issues and 72 articles about waste in general. Number of articles discuss sustainability actions, household waste, and disposal infrastructure. This resource provides factual and statistical information describing the past, current, and future situations and plans of Kuwait’s environment.

This series encounters critical ethical and professional regarding designers and their clients. This brochure presents graphic designers with an introduction to design and print production practices that express challenges of critical issues of today: the balance between economic profit and environmental degradation. For design to be responsive to a client’s requirements, it should be responsible and suitable. This issue includes best-practices tips and resources that will improve the ability to design and print responsibly. Social responsibility has economic and environmental dimensions. Sustainable design has become a term-of-art for developing economic activity without harming the future’s potential. Exhibiting respect for these consequences is no longer a fringe matter. Designers should perform reliable communication methods to serve clients efficiently.


For the increasing number of people looking to adopt an eco-friendly lifestyle without losing quality, this book is the ultimate one-stop materials resource. This edition of this comprehensive source book includes listings for more than seven hundred consumer products that have a minimal impact on the nature while remaining beneficial and attractive. This book has an extensive index reference section presenting detailed and illustrated entries of eco materials, and another part provides information on manufacturers, design studios, and green organizations.

CONCLUSION

Understanding all aspects involved in sustainable design will enable me to build an easy-to-follow bilingual guidebook to educate, inform, and promote ethical design practices for Kuwaiti undergraduate graphic design students to adopt in their design processes. It will also motivate and help them find new ways to embrace the “cradle to cradle” philosophy in their design process and become more aware of creating sustainable designs. This research intends to further design academia by helping students understand sustainable food packaging principles and applications.
GUIDEBOOK OUTLINE & CONTENT

This project will provide the basics of sustainable packaging design for graphic designers and design educators. Chapters will explain the definition of sustainable design from an environmental, social, and economic perspective, environmental impacts of packaging design, importance of sustainable design practices to retailers and consumers, designer’s role and responsibility, sustainable design ethics and principles, design ecology, packaging safety, shelf-life and life cycle, design methodologies, material choices, type techniques, and ink-saving typographic solutions. The chapters of this guidebook will include:

1  THEORETICAL: INTRODUCTION TO SUSTAINABLE PACKAGING
   The definition of sustainability
   The definition of the ecology of design
   The various sustainable design strategies and applications
   The backfire effects and behavioral change
   Guidelines and criteria for evaluation and assessment

2  PRACTICAL: PACKAGING DESIGN FOR KUWAIT
   A study of Kuwait’s infrastructure and context
   The best sustainable design strategies and applications for Kuwait
Design Ideation

Top to bottom. Backfire effect and ecology system charts. Study areas related to sustainable packaging design and consumer buying decision survey. Questions to consider, Walmart scorecard, and visualizing sustainability in different contexts.
Top to bottom. Kuwait’s consumer culture survey questions and visualizing the supply chain. William McDonough’s Cradle to Cradle design lecture, guidebook contents, and visualizing sustainability principles around the world. Cherry tree example of William McDonough and sustainability principles from an Islamic perspective.  


Middle. "Method Laundry Detergent," aims to reduce waste by using light material packaging to refill the main reusable pump bottle.12

Bottom. "Replenish" green packaging design system, uses 90 percent less materials than conventional spray bottles.13


Methodological Design

AUDIENCE & OBJECTIVE
The final guidebook will benefit undergraduate graphic design students as reference work for their professional preparation and practice, as well as professional graphic and package designers with little or no understanding of sustainability. This research intends to advance Kuwaiti undergraduate education and academia by helping them understand sustainable packaging principles and applications.

APPROACH
1. Research theoretical and technical approaches and include illustrative examples of existing packaging designs.

2. Conducting a survey to study the consumer culture in Kuwait and analyze the results. Design information graphics to portray the results and build data relationships. Find solutions to the existing situation analysis of Kuwait’s consumer culture.

3. Documenting and designing the chapters information in a basic and simple way using information graphics to ease the understanding on the target audience.

4. For the success of the guidebook, professors in the fields of graphic design, sustainability, and packaging science will review and revise the process. In addition, small assignments will be given to RIT graphic design students who are not familiar with sustainable design to measure clarity of the content presented in the guidebook. The students’ responses and completion of the assignments will determine the clarity and simplicity of the content being presented. Feedback will be taken into consideration to develop the guidebook.

5. Final production will be implemented digitally as an e-book and/or printed sustainably in an eco-printing press. The final project will be disseminated.
Implementation Strategies

Production will be implemented digitally as an e-book and/or printed sustainably in an eco-printing press. My design understanding and skills of layout design, typography, information graphics, and system design will aid me in building this project. However, this requires me to understand technical design aspects of sustainability to demonstrate an easy step-by-step design process for my audience. The final outcome of this project will combine collective information and knowledge from all available resources, then verbally and visually simplified to a basic level.

REQUIREMENTS
The project requires Adobe Creative Suite and Microsoft Office software. Hardware includes computer, scanner, camera, printer and ink cartridges.

Dissemination

The sustainable food packaging design guidebook will be displayed in the RIT Thesis Show exhibition as well as being available at the RIT Library. It will also be uploaded into the Proquest International Thesis Database. In addition, it will be submitted to the Kuwait University’s Library as a guidebook for undergraduate graphic design students and as a publication for the AIGA Design Business and Ethics series. This guidebook will also be published on my personal website.

Evaluation Plan

The step-by-step guidelines will be presented to volunteer design students in RIT who are not familiar with sustainable design principles as short assignments. The guidelines will be evaluated based on the students’ understanding of the book, responses, and assignment completion without further verbal explanations. My thesis advisors and consultants, professors from the United States and Kuwait, will also evaluate the guidebook from graphic design, sustainability, and packaging science perspectives. Feedback will be taken into consideration to develop the guidebook.
Pragmatic Considerations

THESIS Budget

$450 Thesis Show
Print Materials
Promotional Posters
Business Cards
Book(s)

$250 Dissemination
Submitting final thesis research and book to AIGA

$600 Publishing
Final Proposal
Final Bound (5 Copies)

$1300 TOTAL

Numbers shown above are estimates only.
Bibliography


Gratitudes

I would like to express my deepest gratitude to all those who have supported me throughout this thesis process. I am privileged to have had the opportunity to work with so many extraordinary individuals without whose encouragement and inspiration this thesis would not have been possible.

I want to begin by thanking my chief advisor, Professor Nancy Ciolek, for her invaluable guidance. Her unwavering faith and optimism gave me the courage and determination to persevere.

I would also like to thank Professors Karen Proctor and Alex Lobos for their insight and immense knowledge of packaging sustainability; they serve as true technical and scientific geniuses.

I want to thank my advisor Professor Lorrie Frear and my consultants Professors Bruce Meader and Carol Fillip, who have all been powerful role models, providing me with new insights into learning and incomparable professional support.

I would like to thank the College of Architecture at Kuwait University for giving me this golden opportunity to study abroad at the graduate level; the experience has been both remarkable and invaluable. I want to give a special thank you to Dr. Yousef Salem for providing me with a higher level of mental clarity, which allowed me to push beyond the confines of my comfort zone, expanding my horizons and challenging the full scope of my abilities.

I would like to thank Wallace Library at RIT for providing me with phenomenal resources, which eliminated any expenditure for additional reference materials, and Tutor.com for providing convenient 24/7 proofreading and editing services and helping to improve my composition and language skills.

Finally, I would like to thank my friends, family, and classmates: my family, who have always encouraged me to follow my dream; especially my mother, for her unconditional love and kindness; my loyal and devoted friends, who have assisted and supported me throughout the entirety of this process; and my brilliant classmates, whose stimulating conversations and challenging discussions have been nothing short of delightful.

Last, but not least, I would like to extend a huge thank you to all of the survey participants; none of this would have been possible without the generous donation of your time and efforts.
Bibliography


