Eco-Friendly Office Supplies, Pens and Markers

Eunseo Shin (Martin), Henry Ye, Justin Chan, Rohaan Bhatti

University of British Columbia

APSC 261

November 23, 2014

Disclaimer: UBC SEEDS provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student project/report and is not an official document of UBC. Furthermore readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Coordinator about the current status of the subject matter of a project/report.

UBC Applies Science Sustainability Project Student Report



APSC 261

Eco-Friendly Office Supplies, Pens and Markers

Student names: Eunseo Shin (Martin) Henry Ye Justin Chan Rohaan Bhatti

SUMMARY

The objective of our eco-friendly office supplies project is to review and determine whether eco-friendly advertised office supplies are truly environmentally, economically, and socially sustainable or just one of many tools designed as a means of marketing strategy. In addition, the recommendation should be made in conclusion. By using triple bottom line on these projects, environmental, economic, and social aspects are taken into account in detail. Our team is responsible for analyzing pens and markers in specific.

We defined eco-friendly office supplies by products that include refillable, recycled material, and less plastic used advertisements. Although the impact of using eco-friendly pens and markers is subtle, the disparity of impact is going to be enormous if it is purchased in a large quantity. In the environmental aspect, eco-friendly logos are mainly focused in order to find out authentic eco-friendly products. Authentic environmentally sustainable logos should have third party verifications. Third party organizations such as Cradle to Cradle, Staples Eco Easy, and the Environmental Choice Program assess verification in a five level.

In the economic aspect, the price of regular pens and eco-friendly pens are compared, and as expected, the price of regular pens and eco-friendly products are generally more expensive than regular pens by 120% ~ 140%. The source of products are all from UBC Bookstore and Staples on Allison Road. Among 6 different companies, the company named Zebra has the least price difference in Z-Grip type eco and regular pens. In contrast, Pilot has the highest price differences. However, it should be noted that the price differences are not accurate since each product has different features like gel, retractable, and erasable types.

In the social aspect, transparency of each company on their eco-friendly office supplies information are analyzed. Through visiting the companies' websites, we conclude that Staedtler, Zebra, and Pilot have relatively higher transparency in revealing eco-friendly products' information. Staedtler even added why they are putting so much efforts on their environmentally sustainable office supplies. Zebra included the instruction on how to refill ink cartridges on their main page of the website.

Our team conducted 50 sample sized survey that consists of a total of 3 questions in the social analysis. 50 sample sizes are all based on UBC undergraduate students, and the purpose of

this survey is to obtain a general idea on how UBC students think of sustainability in office supplies. 34 students, 68% are willing to buy an eco-friendly pen even if it's slightly expensive than just a regular pen. In question 2, 16 students, 32% are willing to buy an eco-friendly product rather than a regular pen that has a special feature. Lastly, only 28 students, 56% trust an eco-friendly advertisement sign on product. It is apparent that there should be inclusive and reliable eco-friendly information on office supplies in order to gain support in an environmentally sustainable manner.

According to the social aspect, Staedtler has the most reliable environmentally sustainable office supplies; however, their products in UBC Bookstore and Staples are much more expensive in relation to other eco-friendly products. Therefore, our team recommends Zebra's \$1.45 Z-Grip eco pen since it only differs by 20 cents from their regular pen. They also explicitly provide eco-friendly products' information on their website.

Illustration

Figures:

figure1a : Verified Logo

- figure1b : Verified Logo
- figure1c : Verified Logo
- figure 2 : A range of prices of both eco-friendly and regular pen for each company

figure 3a : A survey question 1

- figure 3b : A survey question 2
- figure 3c : A survey question 3
- figure 4 : Recommended steps in purchasing office supplies

GLOSSARY

Ecological Footprint A measure of human demand on the Earth's ecosystems. It is a standardized measure of demand for natural capital that may be contrasted with the planet's ecological capacity to regenerate

LIST OF ABBREVIATIONS

APSC	Applies Science
	A discipline of science that applies existing scientific knowledge to develop more practical applications
UBC	University of Pritich Columbia
UBC	University of British Columbia
	A public research university with campuses and facilities in the province of British Columbia
TBL	Triple Bottom Line
	An accounting framework with three parts: social, environmental, and financial.

METHODOLOGY

The triple bottom line assessment is the main approach for the methodology. Economic, environmental, and social aspects were taken into account in order to achieve an inclusive and effective analysis on the products.

Secondary resources provided us a background of this project. Google Scholar, newspaper articles, books, and previous APSC 261 reports were mainly used to create an accurate data set. Journals provided us various ideas in the environmental and social section.

Our primary resources include UBC Bookstore and Staples on Allison Road. The costs of the products and the number of office supplies company were mainly collected from these stores. The price data in the economic aspect was solely based on these two stores. The analysis on the products' company websites were used in the social aspect in order to assess the level of transparency of the companies in revealing "green" information. In addition, a survey was conducted to find out how people think about eco-friendly products. The sample size of this survey is 50 UBC students. Since it's solely based on the students, the statistics may not be accurate to represent the whole of the UBC population.

Three members of the four-man team were assigned each part of the triple bottom line, and the last member was responsible for the remaining part of this project.

Table of Contents

SUMMARYi	
ILLUSTRATION ii	
GLOSSARY & LIST OF ABBREVIATIONS	
METHODOLOGYiv	
1.0 INTRODUCTION	1
2.0 ENVIRONMENTAL ANALYSIS	2
2.1 What Is Eco-friendly?	2
2.2 Why Eco-friendly?	2
2.3 Ensuring Eco-friendliness	3
2.3.1 Identifying Eco-friendly Products	3
2.3.2 Third Party Certification	3
2.4 Recommendation	5
3.0 ECONOMIC ANALYSIS	6
3.1 General Information	6
3.2 Economic Research	7
3.2.1 UBC Bookstore	7
3.2.2 Staples	8
3.2.4 Online Source	8
3.3 Economic Conclusion	8
4.0 SOCIAL ANALYSIS	10
4.1 Health Implication	10
4.2 Companies' transparency	10
4.2.1 Type 1 - Low Transparency	10
4.2.2 Type 2 - Mediocre Transparency	11
4.2.3 Type 3 High Transparency	11
4.3 Public Response and Survey	12
4.3.1 Customers' preferences	12
4.3.2 Customers' trust	13
4.4 Recommendation on promoting green products	14
5.0 CONCLUSION AND RECOMMENDATIONS	15

1.0 INTRODUCTION

Eco-friendly office supplies project is one of the UBC sustainability project option to review and evaluate the most commonly used office supplies at UBC advertised as "green" products. The main purpose of this project is to determine whether the eco-friendly advertised products are truly environmentally, economically, and socially sustainable.

Currently, Officemax/Grand & Toy (online), Staples (20135 Allison Road), and the UBC Bookstore are the main sources where the campus community can easily access and purchase office supplies. By assessing triple bottom line approach on the products advertised as "greener" in these stores, we hope to suggest truly eco-friendly products to UBC community to make a large scale initiative toward sustainable lifestyles.

The last objective is to identify and recommend products that are truly eco-friendly in order to assist in meeting UBC's waste targets. Through reviewing three sustainable aspects on different office supplies' company plan and their website, the recommendation and conclusion will be drawn which would encourage users to support sustainability in UBC. In addition, our team provided an effective way of how eco-friendly products should be promoted to increase the awareness of sustainability.

Our team was assigned to analyze pens and markers specifically among office supplies. By using triple bottom line approach which involves the analysis on environmental, economic, and social aspects, the ultimate goal, recommending eco-friendly products, will be achieved to support sustainable action in UBC.

2.0 Environmental Analysis

In this part of the Triple Bottom Line assessment, we will look at some of the environmental aspects of eco-friendly office supplies. We need to determine how eco friendly the office supplies really are and whether or not we are making a difference if we switch over to eco-friendly products. There has been a large influx of sustainable products recently due to consumers having a raised sense of awareness regarding the environment and this is beneficial when considering switching over to eco-friendly supplies. Many companies are trying to make their products as eco-friendly as possible without sacrificing sales and therefore we must be aware about products that claim to be eco-friendly but actually aren't.

2.1 What is Eco-Friendly?

We defined eco-friendly items as items that are either refillable, recyclable, or made out of reused materials. Refillable items are items such as pens that once the ink runs out, you can buy ink cartridges for much cheaper than the pen costs and use that same pen with new ink. This saves on buying new pens and it helps the environment because old pens are not being thrown out. Recyclable items are items that can be reused after they are finished and then made back into other things. These may have a higher initial cost, but they are much better for the environment than regular pens. Pens that are made out of reused materials are another option. These pens can be cheaper initially as they are made using lower grade materials but they are good for the environment as they are usually recyclable.

2.2 Why Eco-Friendly?

Ever since it was discovered how much harm we are doing to our environment, there has been much more emphasis on reducing the impact that we are having and becoming more environmentally friendly. If we can reduce our impact in a simple matter such as purchasing new eco-friendly office supplies, then it is worth the extra cost or the extra hassle of purchasing new supplies because we are helping make a better world for society. UBC, especially, places a high emphasis on being a University that cares about the environment and UBC will usually go out of its way to be a "greener" university.

2.3 Ensuring Eco-Friendliness

One big thing to consider when talking about eco-friendly items is to ensure that the items actually are better for the environment. There would be no point of switching over to eco-friendly office supplies if the items themselves were not eco-friendly. Since we were told not to test whether the items were green or not, the only way to know whether an item was eco-friendly was to assume that the manufacturer would label any of their products that were eco-friendly. We believe that this was a logical assumption to make since no company would put that amount of time and effort into making their products eco-friendly and then not advertise them.

2.3.1 Identifying Eco-Friendly Products

If a company advertises that their products are eco-friendly, a good way to check out whether they really are is to see how they label their products. Some companies like to label individual items while others like to label the packaging that the items come in. Individual items are usually labeled when they will be sold in bulk or in big packages. Usually for individual labeling there will be a recycle logo somewhere on the product. This just means that the product is recyclable and its materials can be reused. For labeling on the box, they can either have a recycling logo or they can have logos for t hird-party organizations that ensure eco-friendliness.

2.3.2 Third Party Certification

An example of some third-party organizations are: Cradle to Cradle, Staples Eco Easy, and the Environmental Choice Program also known as Ecologo. Cradle to Cradle is a third party certification program that gives five certifications (Basic, Bronze, Silver, Gold, and Platinum) based on environmental impacts of the products life cycle. To be certified, a product must be able to meet the minimum requirements for that certification in five different categories: Material Health, Material Reutilization, Renewable Energy Use, Water Stewardship, and Social Fairness. Staples Eco Easy is a program designed so that consumers can find eco-friendly products with ease. Each item printed with the Staples Eco Easy logo meets the highest environmental standards for their company. The Environmental Choice program is a certification program started by Environment Canada that helps identify products which are more eco-friendly. Eco logo is used to make it easier for the consumer to identify products that are eco-friendly and sustainable.





Figure 1a

Figure 1b



Figure 1c

These third-party organizations are usually non-profit and they are very reliable in their testing and certifying whether products meet the sustainability requirements. Since we are not able to test products ourselves, this is the best way to ensure that a product is sustainable. Many of Staples' products had the Eco Easy logo including some of the pens and markers that we were looking at as viable options to switch to. This makes it much easier for the consumer as they can be assured that the products are eco-friendly and they can worry about other things to base their decision on such as price and personal preference.

2.4 Environmental Recommendation

From an environmental standpoint, it is greatly beneficial to switch from regular office supplies to eco-friendly ones. We recommend always being aware of products that advertise eco-friendliness but also being aware about the third-party companies that certify that a product is eco-friendly. Staples is a good store with a variety of options including many eco-friendly choices. Staples also does a good job being transparent with their Eco Easy certification and it is a solid store to start at if thinking about switching to more eco-friendly supplies. We recommend that UBC takes a look at what Staples has to offer regarding eco-friendly options and we believe that it would be beneficial to all that are involved if UBC changed its office supplies to more eco-friendly ones.

3.0 ECONOMIC ANALYSIS

We must figure out whether or not it is feasible to switch office supplies such as pens and markers to ones that are eco-friendly. We already defined a product being eco-friendly if it was either recyclable, refillable, or made out of reused materials. We need to focus on the price differences between products that are eco-friendly and products that aren't. A good way to see the price trends of eco-friendly products is to compare their prices to non eco-friendly products. Although most of the time the products that are eco-friendly will be more expensive than the products that are not eco-friendly, sometimes there are products that are made out of reused materials and these will usually be cheaper than other similar products.

3.1 GENERAL INFORMATION

To accurately assess which product is better, we must do a side by side comparison of the two products. However there are many complications when trying to find the more economically suitable product. For one, a lot of times, the two items are made by different companies and some of the items might certain features that the other doesn't have that might drive the price up. Another complication is when the two products that are being compared will have a different quantity of items. This makes it difficult to get a clear understanding of the price difference between eco-friendly items and non eco-friendly items.

We were able to find a few items to compare price over such as a set of markers made by Expo. There were two different packages with one of them having a big eco-friendly logo on the top and the other without the logo. As is seen in the environmental analysis, the logo on the top means that the product was third-party certified and it is sustainable. When a direct price comparison is done between the two products, we can see a 30% increase in price for the product that is more environmentally responsible.

3.2 ECONOMIC RESEARCH

3.2.1 UBC BOOKSTORE



Figure 2

In researching UBC bookstore for office supplies (pens and markers), it was determined that they supply a wide range of sustainable, re-useable, and retractable stationary products and art supplies including pens and markers. Brands include Stabilo, Pental, Staedtler, Zebra, Pilot, Clairefontaine Moleskine, Papermate, and many more. After speaking to one of the UBC Bookstore stationary's buyers, he pointed out that UBC bookstore is very supportive of the APSC 261/262 office supplies project from the previous years. The UBC bookstore buyer noted that UBC bookstore is interested in supplying office supplies through the UBC bookstore but would not be able to sell the office supplies to UBC students directly at their original price, but a slight increase of 32% of the original price. The reason is mainly because UBC bookstore wants to make profits by selling the office supplies. The buyer noted that although the average prices of "green" eco-friendly stationary products are slightly more expensive by 30% than regular stationary products, but it will save the purchaser's money over the long term. For example, the price of an eco-friendly pen costs \$3.75 and the price of a regular pen costs \$2.65. Also, the buyer also noted that from his past experience, many students are not concerned about the types of the pens/ markers they are using but the price of the pens/

markers. The cheaper the pens/ markers, there is a high possibility the students will buy that stationary product.

3.2.2 STAPLES

The second source of product pricing is from Staples which is located in the UBC Village. In researching Staples for office supplies (pens/ markers), Staples sells many eco-friendly stationary products at competitive prices on national brands. After speaking to one of the Staples's buyer, he pointed out that Staples is also support the APSC 261/262 office supplies project from previous years. He noted that Staples office supplies are mostly considered eco-friendly because Staples are concerned about the environment in the future. The buyer also noted that Staples are not willing to sell the office supplies at their original price to the students. The store buyer also noted that Staples gain profits by buying office supplies in large amount. The difference prices of the eco-friendly and non eco-friendly office supplies (pens/ markers) can be found in store or online at their website.

3.2.4 ONLINE SOURCES

The third source of the product pricing using internet source such as www.ebay.ca and www.amazon.com were used to determine the stationary products selling price. We realized that online suppliers usually sell products with a discount of 50% and they are cheaper compared to those products sold in UBC bookstore or Staples. This price difference can be used to compare between the stationary products found online and found in store.

3.3 ECONOMIC CONCLUSION

Eco-friendly pens are 120% ~ 140% more expensive than regular pens in general, and Zebra Company has the least price difference between eco-friendly and regular pens according to the market price research we conducted. However, it's ambiguous to tell which one is better than others since they all have different kinds of features. Therefore, it all depends on consumer's choice eventually. Even if an item is cheaper sometimes people have personal preferences and those might be greater than the desire to buy eco-friendly products. We do recommend opting for a product that is higher in price but eco-friendly as we believe that UBC places a high emphasis on going the extra mile to be more eco-friendly.

4.0 SOCIAL ANALYSIS

In this section of the report, we are going to examine all social impacts of eco-friendly office supplies as our final part of Triple Bottom Line (TBL) assessment. Three major indicators needed to be identified, and those are health implication, transparency of company, and consumer preferences. We have to verify these three fields in order to contribute to our final decision on whether eco-friendly supplies are worth replacing non eco-friendly supplies on campus. After all these examination, a more efficient way of promoting eco-friendly products will be generated to raise sustainability awareness.

4.1 Health implication

One of the main social issues we want to address is positive/negative health implication of eco-friendly products. From our observation on the most commonly seen marker brand EXPO MARKER, they are providing markers with low odor. With their low odor markers, users will not inhale as much chemicals while writing on whiteboards or papers. On top of low odor, EXPO MARKER guarantees the marker is "Certified AP Nontoxic and conforms to ASTM D-4263 standard". (http://www.expomarkers.com/markers/low-odor)

4.2 Companies' transparency

Since sustainability is playing a much bigger role in companies nowadays than few decades ago, consumers need to know how willingly companies are in revealing their green information. We did a research on many companies that provide eco-friendly supplies. Among all of those we researched on, we've concluded three major trends on how transparent companies are about revealing their green information.

4.2.1 Type 1- low transparency

- Labeled some sort of eco-friendly signs, but no further information can be found

• Sample company: EXPO MARKER

• Details: on their low odor marker package, it specifies a partnership with TerraCycle (a company using recycled material to reproduce new products) and the marker is made with 90% recycled material)

In EXPO MARKER's case, the company did not reveal how exactly were their products made or how they made their products greener. Therefore, we would say this kind of company is not transparent about how they classify their green products, and it's also very hard for customers to access their green information.

4.2.2 Type 2 – mediocre transparency

- Labeled some sort of eco-friendly signs, but green information is not directly found
- Sample company: STAPLES
- Details: although STAPLES has their own eco-friendly logo, there is no direct information about what the logo is about or what kind of item qualifies the standard

In STAPLES case, the company has its own eco-friendly logo with third party verification, but the company is not promoting this green behaviour by putting the information on their main website. We've concluded that STAPLES are willing to reveal their green information but the way they are presenting the information is not prioritized. Therefore, customers may have to spend more time to search about what their eco logos are and how STAPLES is in partnership with other third party verification organizations.

4.2.3 Type 3 – high transparency

- •Labeled some sort of eco-friendly signs, all descripted information can be directly found
- Sample company: STAEDTLER
- Details: displaying eco-friendly signs on their products while presenting all their green information on website to back them up

In STAEDTLER case, the company is very transparent about how the company is striving to be more eco-friendly both on their products and the company itself. The company is providing an entire page on how they are becoming a more sustainable company. (<u>http://www.staedtler.ca/en/company/corporate-social-responsibility/efficient-for-ecology/</u>) Customers can access their green information easily.

In PILOT & ZEBRA case, both companies are very transparent about how their company is striving to be more eco-friendly on their products. Each company has dedicated an entire page on how they have started eco-friendly commitment where all their pens are recyclable. PILOT has started the "BeGreen" project and information can be found on this website (http://pilotbegreen.us/about-begreen/index.php). ZEBRA has provided a third party testing results and other related information on their site (http://www.zebrapen.com/ink-innovation/). For both companies, green information can be easily obtained by general consumers.

4.3 PUBLIC RESONSE AND SURVEY

4.3.1 Customers' preferences

We have conducted a survey around 50 undergraduate students studying at UBC currently, and the purpose of this survey is to obtain a general idea of what a student thinks about whether to purchase eco-friendly office supplies or not. The survey consists of three questions and those topics are related to price, personal preference, and trust on green information. The first question is based on students' willingness to purchase a relatively more expensive eco-friendly pen as opposed to a regular ball pen. The result is shown in the diagram D1A below, and it shows that majority students would choose an eco-friendly pen provided that the price difference isn't too big. Second question is based on students' personal preference in buying pens; in comparison with two identical priced pens (1 pen of your choice vs 1 eco-friendly pen), which option is in favour of students choice? Result for second question shows that majority students would want pens that they find more comfortable using rather than buying an eco-friendly pen which is less comfortable using. (Shown in figure 3a)

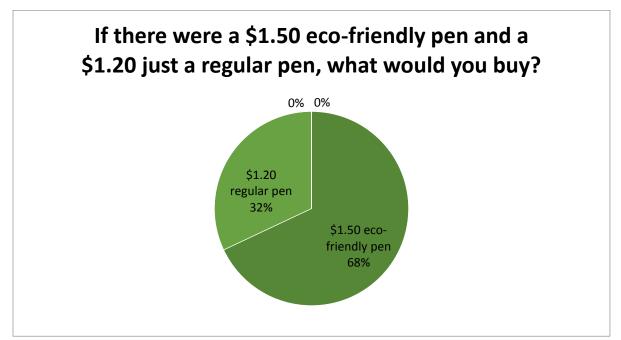
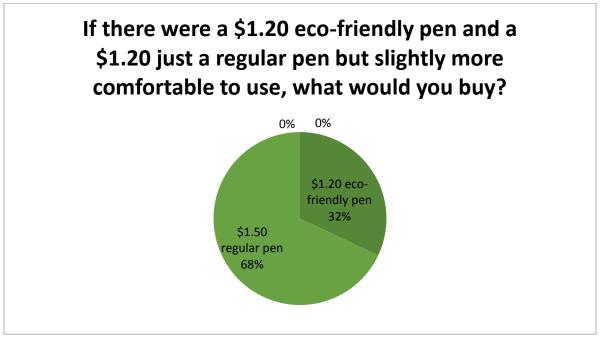
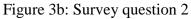


Figure 3a: Survey question 1





4.3.2 Customers' trust

The last question in our survey is in regard of customers' trust on "green items". A little over half of our participants believe that what companies advertise to be eco-friendly is indeed eco-friendly. (Shown in diagram D2A)

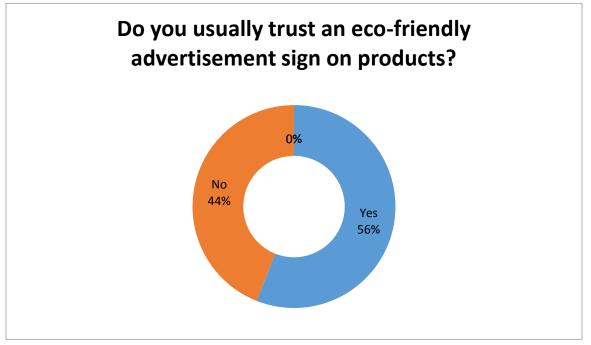


Figure 3c: Survey question 3

4.4 RECOMMANDATION ON PROMOTING GREEN PRODUCTS

To raise awareness of eco-friendly products among students or campus staffs, we need to partner up with companies like STAEDTLER, which is very transparent about their green information. For our existing partner like STAPLES, there should be more information relating to third party verifications given so that students/staffs will be able to see how eco-friendly office supplies are becoming another option other than our existing non eco-friendly supplies. Another suggestion on promoting eco-friendly products would be giving out free sample pens, so we can spread the information and ask for feedbacks on improving the design to suit more people. The following is a sample suggested procedure of purchasing eco-friendly products in store (diagram 4).



Figure 4: Recommended steps in purchasing office supplies

5.0 CONCLUSION AND RECOMMENDATIONS

Throughout this project, the triple bottom line that our group assessed has shown that there are both disadvantages and advantages in replacing regular pens to eco-friendly pens. From the environmental aspect, it is clear that eco-friendly products can minimize the ecological footprints whether by refilling ink or recycling plastic used in products. According to the economical analysis, although long term benefits for eco-friendly products seem prospective and guaranteed, the price difference between eco-friendly pens and regular pens is too distinct.

In environmental analysis, our group concluded that verified and authentic eco-friendly logos should be used widely to prove if they are virtually eco-friendly products. The problem is that since there are numerous kinds of logos that stand for "eco-friendly", it is always difficult to determine which one is affiliated to a third party verification. Furthermore, we believed that if manufacturers explicitly provide information on why their products are eco-friendly, the products are environmentally sustainable.

Among 6 companies including Stabilo, Zebra, Staedtler, Pilot, Papermate, and Pentel, we recommend Zebra pens. They have the least price difference between eco-friendly and regular pens. \$1.45 eco-friendly Z-GRIP ball point pen is a fairly inexpensive price compared to other companies. Moreover, they have high transparency on eco-friendly information which means they have actually worked to promote sustainability. Although Staedtler provided detailed information on their eco-friendly products, their products are relatively more expensive than other office supplies companies, at least among the products in Staples and UBC Bookstore.

References

Antoniadis, Anastasia (2014) "School Supplies Go Green", retrieved from http://web.b.ebscohost.com.ezproxy.library.ubc.ca/ehost/pdfviewer/pdfviewer?sid=f2d7 2ef5-4741-44a5-ac4c-fd66ec62a646%40sessionmgr113&vid=1&hid=106

Baker, G. (2007). Beyond the stationery cupboard. NZ Business, 21(9), 49-52. ISSN: 0113-4957

- Business strategies for sustainable development: Sustainable development: a business definition. Retrieved from https://www.iisd.org/business/pdf/business_strategy.pdf
- Cindy. *Eco-Friendly Products*. Retrieved from http://www.all-recycling-facts.com/eco-friendlyproducts.html
- Dunn, N. (2010). *30 Easy Ways to Go Green in the Office*, retrieved from https://www.americanexpress.com/us/small-business/openforum/articles/30-easy- ways-t o-go-green-in-the-office-1/
- John Austin (1993). Journal of Applied Behavior Analysis "INCREASING RECYCLING IN OFFICE ENVIRONMENTS: THE EFFECTS OF SPECIFIC, INFORMATIVE CUES", <u>26,</u> 247–253. DOI: 10.1901/jaba.1993.26-247, retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1297743/pdf/jaba00012-0109.pdf
- Seema Bhate & Kevin A. Lawler (1997). Technovation. *Environmentally Friendly Products: Factors that influence their adoption*, *17*, 457-465. DOI: 10.1016/S0166-4972(97)00006-0
- Smith, J. (2013, March 1). Top 5 eco-friendly office supplies, retrieved from

http://eco-officegals.com/top-5-eco-friendly-office-supplies/

Steve V. Walton (1998). International Journal of Purchasing and Materials Management - "*The Green Supply Chain: Integrating Suppliers into Environmental Management Processes*", *34,1*, 2–11. March 1998DOI: 10.1111/j.1745-493X.1998.tb00042.x

Office Furniture, A. (2014). Eco-Friendly Office Trends, retrieved from

http://www.atwork.ca/article/design-trends/ecofriendly-office-trends