UBC Social Ecological Economic Development Studies (SEEDS) Student Report

An Investigation into Triple Bottom Line Assessment of Eco-Friendly Office Supplies: File Folders

John Zhong Yu Gong, Guanzheng Wang

University of British Columbia

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APSC 261 Sustainability Project:

An Investigation into Triple Bottom Line Assessment of Eco-Friendly Office Supplies: File Folders

John Zhong Yu Gong

Guanzheng Wang

Course instructor: Dr. Carla Paterson

Tutorial instructor: Dr. Saloome Motavas

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Abstract

This report investigates how “green” eco-friendly file folders actually are through conducting an in-depth triple-bottom-line (TBL) analysis. As of now, many people are acknowledging the various benefits of eco-friendly office supplies. UBC’s main suppliers for office products, OfficeMax and Staples, are also promoting their most popular file folders. These items are labelled as either “green” or “non-green”. Primary and secondary researches are conducted in this investigation to reveal the various impacts that these products could potentially have on the environment, society, and economy.

The analysis is primarily conducted by comparing the “green” and “non-green” labelled file folders from a spreadsheet provided by the stakeholders. For the secondary research, the prices, popularity, durability, green materials, and certifications of the file folders are deterministic indicators for the TBL analysis. Based on the data from the spreadsheet, most of the “green” labelled file folders were much more popular than their “non-green” counterparts, and were surprisingly cheaper too. Also, almost all of the “green” products were made of some percentage of recycled and post-consumer products, and were also third-party certified. Therefore, in all the environmental, economic, and social aspects of the TBL, “green” file folders stands unanimously superior to their “non-green” counterparts.

Based on this investigation, “green” labelled file folders did live up to their labels. Currently, UBC already follows a sustainable purchasing plan for office supplies that promotes green products. Therefore, it is highly recommended that UBC should continue to follow this plan, and purchase a lot more “green” file folders and a lot less “non-green” ones.

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Glossary and Abbreviations

APSC: Applied Science

Laminated paper: paper manufactured in multiple layers with different materials including plastics and regular paper, so that the composite material achieves improved strength, stability,appearance, etc.

Recycled content (%): percentage of materials made up of pre- or post-consumer waste

Pre-consumer waste: made up typically of scrap material leftover from manufacturing stages

Post-consumer waste (%): percentage of materials made up of a finished product after it's been bought, used up, and gone through the recycling process to be made into a new product

SFI Certification: stands for Sustainable Forestry Initiative, an internationally recognized and trusted certification standard used to validate the environmental and social responsibilities of corportations, and has requirements for forest management, fiber sourcing, chain of custody, and certified sourcing.

TBL: Triple-Bottom-Line assessment, an analysis based on social, economic, and environmental aspects.

UBC: University of British Columbia

1.0 Introduction

As part of UBC's sustainability initiative, the campus is encouraging the purchasing of sustainable products. As a result, many eco-friendly office supplies are beginning to rise in popularity, including file folders. To promote sustainability and give positive impressions to consumers, many suppliers, such as OfficeMax and Staples Advantage, choose to label their products "green". However, this raises a question: are these so-called "green" file folders actually green?

This report investigates the impacts that these "green" file folders have on the environmental, social, and economic aspects, as well as comparing them to their non-green counterparts. For an in-depth triple-bottom-line (TBL) analysis, a spreadsheet provided by the stakeholders is used as a primary source of investigation. It lists all the file folders purchased by UBC from April 2013 to March 2014, as well as their corresponding prices and purchase quantities. More importantly, this report will also illustrate and define the true meaning of "green" file folders, and determine whether or not if it is feasible for UBC to continue purchasing these "green" products.

2.0 Green and Non-Green File Folders

There are many speculations concerning the validity of green products. For example, Mahenc mentioned that green products tend to be more expensive than non-green ones (Are Green Products Over-priced, 2007, page 1). Also, many green claims made by producers cannot be verified (Are Green Products Over-priced, 2007, page 1), and are not as accurate as they seem. UBC has a sustainable purchasing guide for office supplies, but is it really feasible for the campus to continue following this plan? Before unravelling the mysteries of these so-called “green” products, it is imperative to properly define the term “green”. In order to do that, a TBL analysis is required. The following analysis will resolve any speculations concerning green file folders.

3.0 Methodology

This investigation was done primarily based off of Figure 3. It shows the spreadsheet containing the file folders (as well as prices and quantities shipped) given to us by the stakeholders. The "Cost per File Folder" column of the table was separately calculated by dividing the "Spend" column by the "Quantity Shipped" column. The only exceptions were the folders with "per Package Quantity" as 100, in which case we divide the "Spend" by "Quantity Shipped x 100". The results yield unit prices of the individual file folders, which is the proper measurement of prices when comparing these products with one another. In general, the lower the unit price, the cheaper the file folder.

Bar plots in Figures 4 and 5 correspond to the "Cost per File Folder" and "Quantity Shipped" columns respectively. It is important to mention here that the "Cost per File Folder" in Figure 3 has discrepancies with the prices listed on the Staples and OfficeMax websites. Various factors could have resulted in this difference, such as possible discounts, inflation, and/or contract details. Since we base our investigation on UBC's purchases of file folders over this past year, it was best to stay with the original record and not the current prices on the suppliers' websites.

In order to delve deeper into the environmental aspect of the TBL analysis, we went onto the suppliers' websites to look for detailed product descriptions, potential green claims and/or third party certifications. We collected these information and inserted them under the "Descriptions" column of Figure 1. We then plotted the graph in Figure 2 based on the percentage of recycled and post-consumer content for each file folder that was applicable. We also referred to secondary sources and articles for information regarding SFI, recycling, and laminated paper.

Based on the graphs generated, as well as looking general trends of what the green and non-green file folders have in common, we came up with these results and recommendations through TBL analysis of the data. We also did additional secondary research to back up our points.

4.0 Environmental Impacts

Some important environmental indicators for evaluating green products would be the percentage of recycled and/or post-consumer waste used, durability of the products, as well as the existence of any third-party certifications. For this investigation, we looked at a list of purchased file folders that the stakeholders provided, and verified information as needed on the supplier's websites (OfficeMax and Staples Advantage).

PRODUCT NUMBER	DESCRIPTION	Green (Y/N)	Descriptions
53443	PORTFOLIO LINEN FINISH NAVY	Y	10% recycled and post-consumer waste, SFI certified, acid free
99133	G&T BRAND TWIN POCKET-NAVY	Y	100% recycled, 70% post-consumer, no acid, bleach, or pollutants, eco-friendly water based technolc
67511	PORTFOLIO 2 POCKET RED LTR	Y	10% recycled and post-consumer waste, SFI certified
97419	G&T BRANDED TWIN PKT - GREEN	Y	100% recycled, 70% post-consumer, no acid, bleach, or pollutants, eco-friendly water based technolc
99337	FILE FOLDER IVORY LTR	Y	10% recycled and post-consumer waste, SFI certified, acid free
ECD1257BL	LTR CLASSIFICATION FOLDER BLU	Y	SFI certified sourcing (fibre from responsible/legal sources), moisture/smudge resistant
83536	MEDALLION FOLD LINEN NAVY CERI	Y	30% post-consumer waste, FSC certified
97260	SHELF FILE FOLDER LTR IVORY	Y	10% recycled and post-consumer waste, SFI certified, acid free
ESS57538	PORTFOLIO,2POCKET,LETTER,DBE (Staples)	Y	10% post-consumer content
ESS52501	COVER,REPORT,TANG,LETTER,LBE (Staples)	Y	20% post-consumer waste
ESS51743	PORTFOLIO,2POCKET,DARK BLUE (Staples)	N	high gloss laminated, no eco qualifier
ESS57701	PORTFOLIO,2POCKET,LETTER,LBE (Staples)	N	10% post-consumer content, no eco qualifier

Figure 1: Description of File Folders Purchased

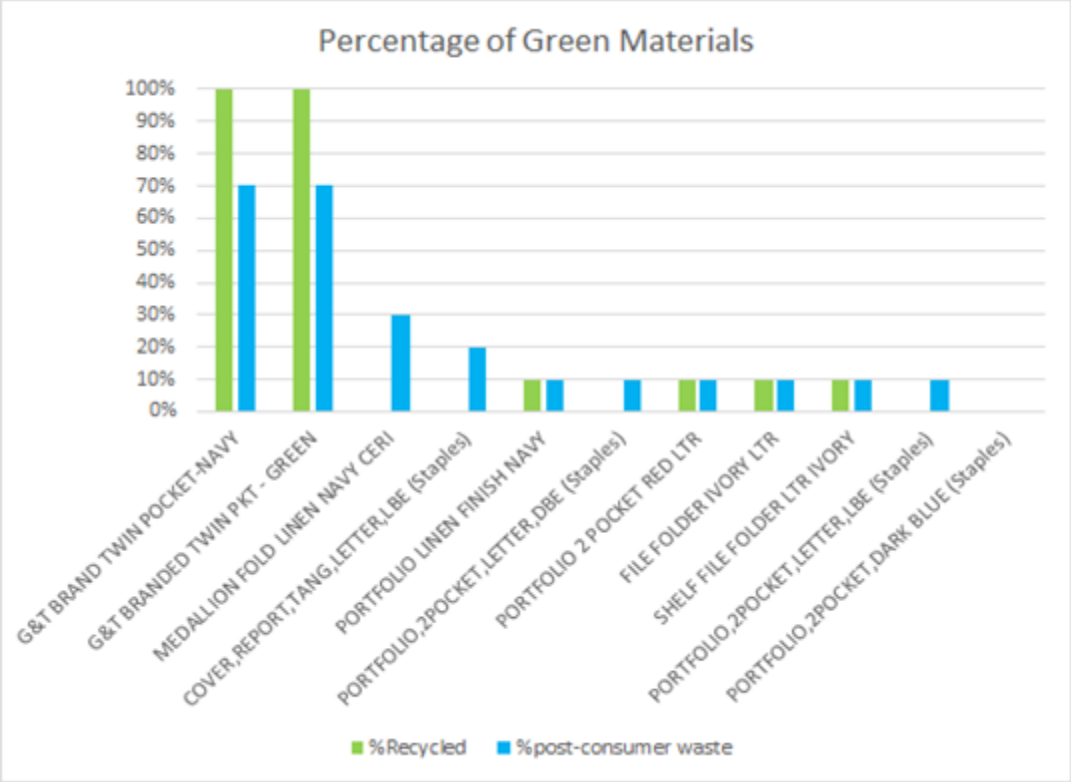

Figure 2: Percentage of Green Materials

From Figure 1, we can see that almost all of the green-labelled file folders have some form of certification (SFI or FSC), as well as having averagely high percentages of post-consumer materials. SFI stands for Sustainable Forestry Initiative, which is an internationally recognized and trusted standard. Any products certified by SFI have met strict requirements and proved to avoid controversial forestry and environmental issues such as illegal logging and sources (How to Certify to the SFI Standards). Also, some of these green folders, such as product numbers 53443 and 99133, have special features. These folders are both made of acid-free paper, which is very durable and resists aging (Preservation of Paper Based Materials: Present and Future Research and Developments in the Paper Industry, 1983, page 9). This means that these folders can be used for quite some time, and are not used up too quickly, hence reducing consumption and extends lifetime (Guide to the Business Care & Benefits of Sustainability Purchasing, 2007, page 12). Also, these materials can be recycled easily as post-consumer content, and can possibly be used to make other folders rather than going to waste in the landfill. On the other hand, folder number ESS51743, a non-green labelled folder, is made of laminated paper, and does not have any form of certification nor post-consumer content. Although laminated designs may be physically appealing, they are by no means recyclable (Paper vs Plastic: Can Laminated Paper be Recycled, 2011). This is because laminated paper is a mixture of paper and plastic, and these two components each have

distinct ways of processing (paper by water and plastic by heat). However, a mixture of the two will result in an usable product that can only be thrown out and pollute the environment further (Paper vs Plastic: Can Laminated Paper be Recycled, 2011). Therefore, by comparing the green and non-green file folders, we find that many of the green ones implemented clever strategies to reduce waste and increase durability, while the same cannot be said about the non-green folders.

Figure 2 shows a graph of the percentage of recycled and post-consumer materials used for the file folders in Figure 1. Looking at both figures, we see that almost all the green-labelled file folders are on the left of the graph, with the exception of product number ECD1257BL (which does not have enough information regarding green materials, and is thus not applicable). The two rightmost folders on the graph are labelled non-green. As we can see, the green-labelled products have at least 10% post-consumer materials, while the non-green folders have at most 10% post-consumer. Also, the green folders have higher percentages of recycled materials in general. As a rule of thumb, the higher the percentage of recycled and post-consumer materials, the better (Buying Postconsumer Recycled Products Saves More Than Trees, Kravetz). Post-consumer materials are materials from products recycled by consumers after they were used up. This is extremely beneficial to the environment since less materials go to the landfill (Guide to the Business Care & Benefits of Sustainability Purchasing, 2007, page 12), which results in less waste and pollution. Recycled materials are also important towards achieving a cleaner environment. These are materials left over from manufacturing, and are later used for further production of file folders, thus minimizing waste and once again, less pollution. In this sense, the green-labelled file folders has a higher percentage, and are thus more eco-friendly than their non-green counterparts.

Overall, the green-labelled folders are much more eco-friendly than the non-green ones in terms of recycled/post-consumer content, as well as receiving more certifications. Moreover, based on the UBC Sustainable Purchasing Guide, it is recommended that people should choose products with high percentage of recycled and post-consumer content, as well as items labelled with certification logos (The UBC Sustainable Purchasing Guide, page 19). This reduces the negative impact that the vast consumption of file folders may have on the environment.

5.0 Economic Impacts

To determine the economic impacts of green and non-green file folders, price is the most essential factor. The price per unit file folder bought by UBC is shown below in Figures 3 and 4.

PRODUCT NUMBER	DESCRIPTION	Green (Y/N)	UNIT	PER PACKAGE QUANTITY	QUANTITY SHIPPED	SPEND	CATEGORY	Cost per File Folder
53443	PORTFOLIO LINEN FINISH NAVY	Y	EA	1	1345	$ 1,548.65	File Folder	$1.15
99133	G&T BRAND TWIN POCKET-NAVY	Y	EA	1	475	$ 314.25	File Folder	$0.66
67511	PORTFOLIO 2 POCKET RED LTR	Y	EA	1	137	$ 82.06	File Folder	$0.60
97419	G&T BRANDED TWIN PKT - GREEN	Y	EA	1	75	$ 73.75	File Folder	$0.98
99337	FILE FOLDER IVORY LTR	Y	BX	100	54	$ 586.21	File Folder	$0.11
ECD1257BL	LTR CLASSIFICATION FOLDER BLU	Y	EA	1	50	$ 168.00	File Folder	$3.36
83536	MEDALLION FOLD LINEN NAVY CERI	Y	PK	5	33	$ 360.47	File Folder	$2.18
97260	SHELF FILE FOLDER LTR IVORY	Y	BX	100	11	$ 253.61	File Folder	$0.23
ESS57538	PORTFOLIO,2PCCKET,LETTER,DBE (Staples)	Y	EA	1.00	1116	$368.28	File Folder	$0.33
ESS52501	COVER,REPORT,TANG,LETTER,LBE (Staples)	Y	EA	1.00	251	$100.39	File Folder	$0.40
ESS51743	PORTFOLIO,2PCCKET,DARK BLUE (Staples)	N	EA	1	114	$344.10	File Folder	$3.02
ESS57701	PORTFOLIO,2PCCKET,LETTER,LBE (Staples)	N	EA	1	0	$0	File Folder	$2.20

Figure 3: Prices of File Folders

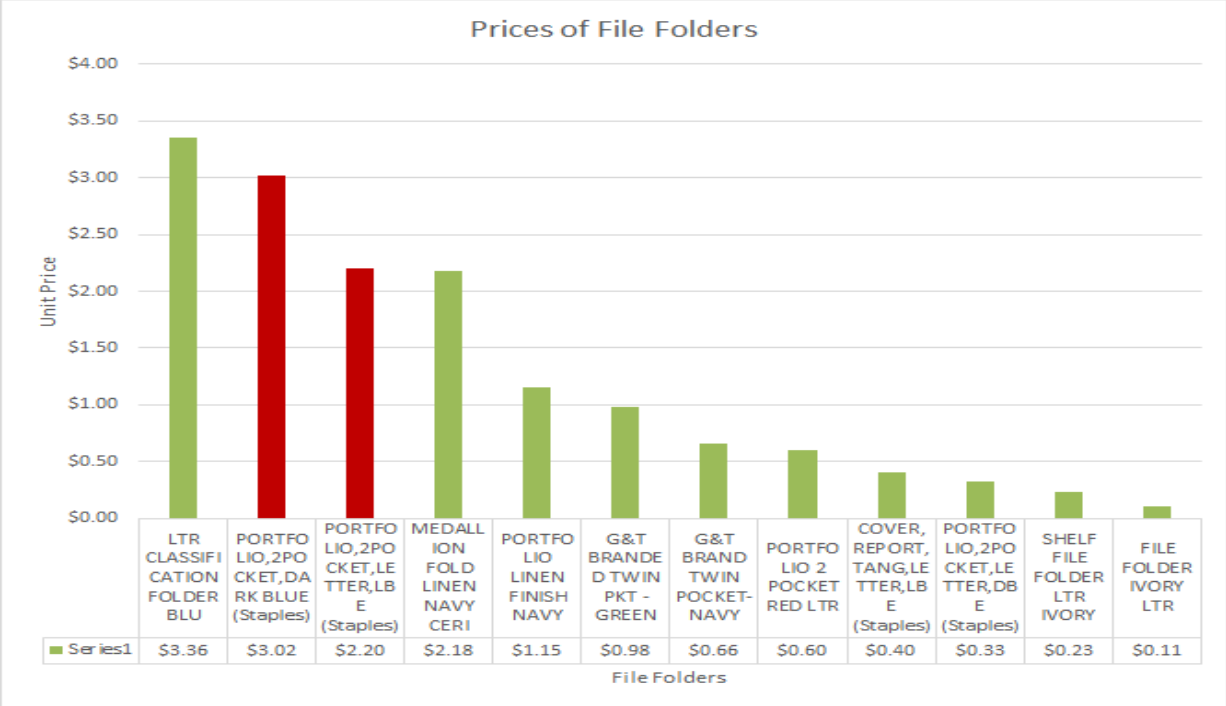

Figure 4: Unit Prices of File Folders

As shown in the bar chart above, the prices are sorted in decreasing order. The bars coloured in green indicate green products and the bars coloured in red indicate non-green products.

As people may assume, since it takes some complex processes to recycle paper and post-consumer wastes, green file folders should be more expensive. But interestingly, the figures above show that the majority of green file folders are actually cheaper than non-green products. This unusual result is due to the fact that the two non-green file folders shown above are made from laminated paper. As mentioned in section 3.0 above, laminated paper is not recyclable, which is one of the main reasons why those two "non-green" file folders are labelled as such. Laminated paper is made from multiple layers with different materials including plastics. Therefore, the processes required to make laminated paper is also more complex than making regular paper, which results in higher costs. Despite the higher costs, laminated paper can provide better stiffness and are waterproof. Apart from these functionalities, laminated paper is generally more aesthetically appealing. And because of this, some people prefer file folders made from laminated paper regardless of the price and whether it is green or not. Nevertheless, the majority of green file folders are more affordable. In daily uses, if customers do not have strong demands about stiffness and fancy looking products, green file folders are more cost-effective. In the next section we will discuss about how prices affect consumers' behaviours.

6.0 Social Impacts

As we enter twenty-first century, industrialization has brought severe problems to the ecological environment, as well as our society. Nowadays, many environmentalists are aware of issues like pollution and global warming, and strongly support the idea of sustainability. This awareness of sustainability may affect how consumers choose green or non-green products. Based on the data we have gathered on the amount of green and non-green file folders purchased by UBC (Figure 5), it provided some idea as to how consumers choose products nowadays. The figure is shown below.

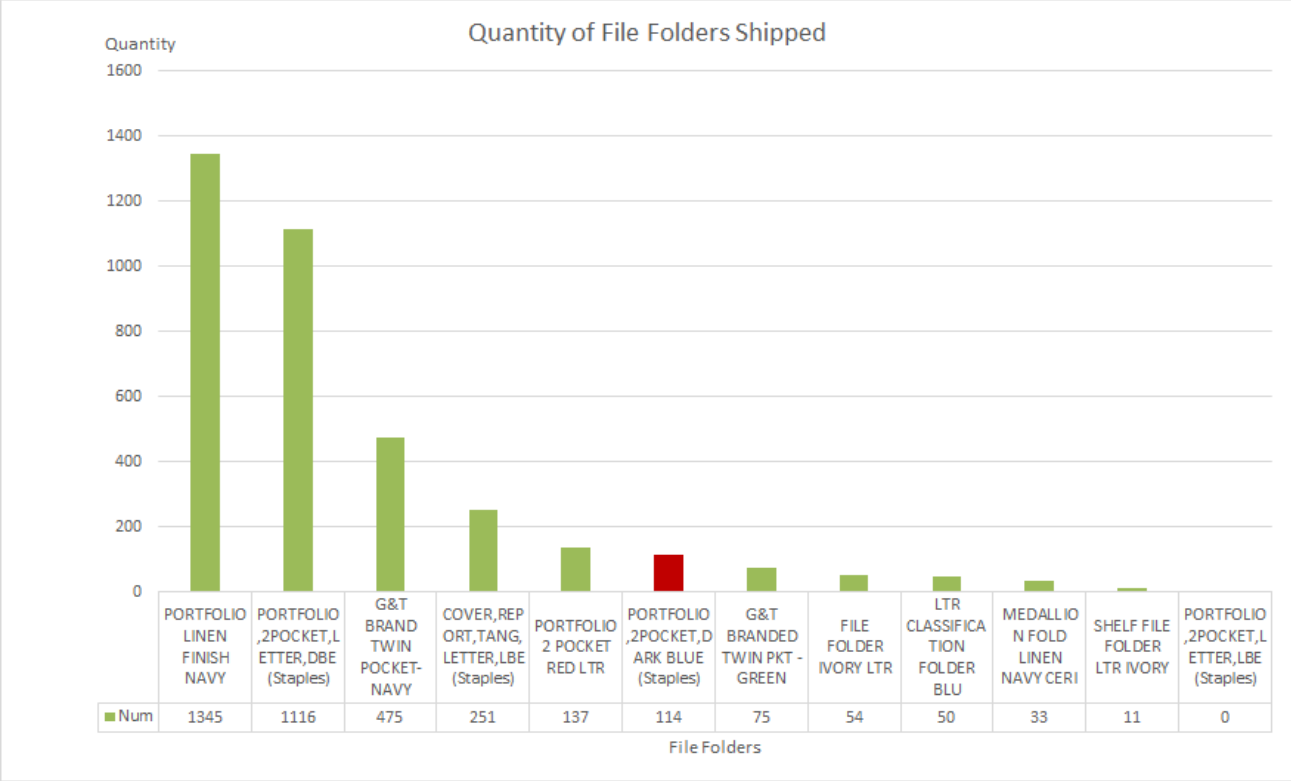

Figure 5: Quantity of File Folders Shipped

As shown in this chart, the quantity purchased is sorted in decreasing order. The green bars indicate green file folders and the red bar indicates non-green products. Note that the rightmost entry, "Portfolio, 2 Pocket, Letter, LBE (Staples)" with zero sales volume, is also a non-green product.

From Figure 5, it is easy to conclude that green products are sold a lot more than non-green ones. There are several reasons why this happens.

First, as discussed before, non-green file folders are more expensive than green ones. It is reasonable for consumers to choose the most cost-effective products if the functionalities of both products are more or less similar.

Secondly, the idea of sustainability is well spread across the UBC community. By partnering up with OfficeMax and Staples, as well as having a purchasing guide that directs people to green purchasing, UBC has done an excellent job in educating people about sustainability. In terms of the curriculum, there are several courses that teach students about sustainable development such as APSC 261 and its equivalents. In addition, there are public advertisements about "living green" that can be seen almost everywhere on the campus. Students and staff living in this environment are more than likely to choose "green" products.

As more and more products claim to be "green", most of the consumers nowadays are becoming aware that some "green-labelled" products are not genuinely green. Some consumers have a hard time making rational purchasing decisions, since they do not know for sure whether a product is actually green or not. According to João Pedro Pereira Luzio and Lemke, F., they suggest that the market should establish "information transparency, credibility, and no dissatisfaction with greenwashing or skepticism" (João *et al.*, 2013). Those are identified as potential preconditions for the development of market-oriented sustainability, and thus a healthier buyer-seller relationship will be achieved. By understanding green consumers' psychological needs and behaviours, some manufacturers of file folders have certificates like SFI to convince consumers that their products indeed fulfill the requirements of sustainable development, which is one of the reasons why they gain large sales volumes.

7.0 Conclusion and Recommendations

In this project, we looked into the various aspects of green and non-green file folders, and conducted an in-depth TBL analysis based on the information of each of them. Based on the environmental standpoint, we believe that the "green"-labelled file folders are indeed ecologically sustainable. They are quite durable, certified, and have high percentages of recycled and post-consumer content. These folders can easily be recycled, and would certainly reduce the amount of waste going to the landfill, which would assist UBC in meeting its waste targets.

In the economic perspective, we also believe that "green" file folders are sustainable and sound. A major concern that many people may initially have had regarding green products would be their prices. Mahenc believes that green products are more expensive (Are Green Products Over-priced, 2007, page 1), but our investigation proved otherwise. As a matter of fact, the "non-green" file folders had higher unit prices than all of the "green" ones. Also, green file folders are found to be more durable, last longer, and thus saves money in the long run. Therefore, the green folders are much more cost-effective than their non-green counterparts overall.

In addition to the numerous environmental and economic benefits, green file folders are also socially sustainable. We found that the most popular choices for file folders turned out to be labelled green. As the idea of sustainability is widely spread, consumers nowadays are more willing to buy green file folders, which results in a virtuous cycle for sustainable development.

Taking the above points into consideration, in order to help UBC realize its sustainability goals, we strongly recommend the UBC campus community (students, staff, visitors, Bookstore, etc.) to purchase more file folders that are labelled "green". In particular, we strongly recommend the green file folders with product numbers 53443 and 99133 in Figure 1. These are the file folders that have the best balance of environmental, economic, and social factors from our TBL analysis. To help promote these green folders, we encourage the suppliers (Staples Advantage and OfficeMax) and UBC Bookstore to continue placing some form of sustainability logos on these products and their websites, as they are doing right now. As for the non-green file folders, we recommend that UBC should minimize purchases of these products, since they are non-recyclable (laminated folder ESS51743), unpopular (folder ESS57701), and expensive. Throughout this investigation, we have found that proper certification standards like SFI are really important in verifying these green file folders. Through the SFI chain of custody and certified sourcing, suppliers can proudly make green claims such as high percentages of post-consumer content,

and accurately show customers how much they care for the environment (How to Certify to the SFI Standards). It would be an interesting idea for UBC to adopt this certification as part of its sustainable purchasing guidelines, since it would pressure suppliers to adopt more sustainable practices and offer more eco-friendly products.

8.0 Summary

UBC's campus community currently purchase a vast amount of file folders from OfficeMax and Staples Advantage. Many of the products that they sell are labelled to be "green". The real question is: are they really green? The purpose of this project is to investigate the impacts that these so-called "green" file folders have on the environment, society, as well as the economy, and compare them with the "non-green" folders. The outcome of this investigation will influence UBC's future plans for sustainable purchasing.

Based on the triple-bottom-line assessment on those file folders, we found out that the green labelled file folders have more recycled/post-consumer content, and are certified by a third party such as SFI. Since non-green file folders are made from laminated paper, it is not surprising that most of the green file folders are more affordable and cost-effective than non-green ones. Apart from prices, as consumers are more aware of sustainability, they are more likely to choose green products as well. Therefore, green-labelled file folders on this list indeed satisfy the standards of sustainability.

Some great recommendations would be for file folder manufacturers to produce more green file folders than non-greens, and sell to make greater profit. Also, they need to improve information transparency and credibility when it comes to making green claims by acquiring credible third party certificates, and thus build a healthier buyer-seller relationship. UBC should also continue its sustainable purchasing plan by purchasing more green file folders, and accept less non-green ones. The campus can take the initiative as well, and use SFI as one of the guidelines for sustainable purchasing.

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Appendix:

Green Brands Recommended:

OfficeMax: Grand & Toy (Product No. 99133), Oxford (Product No. 53443)