

UBC Social Ecological Economic Development Studies (SEEDS) Student Report

An investigation of the sustainability of file folders
used by the Campus Community

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EXECUTIVE SUMMARY

With the development of the sustainability concept and greener manufacture processes, there are more sustainable products on the market. This project has the purpose to analyze file folders used by the UBC community and determine if the “green” file folders are actually more sustainable than the “non-green” similar items and also compare these products to determine if some are better than others. A list of 11 file folders is taken from the most commonly used office supplies purchased by UBC to be analyzed. This process is done by using a Triple Bottom Line (TBL) assessment approach in which social, environmental and financial impacts are evaluated. In order to complete this analysis, an assessment tool combining 15 questions each divided equally between those three factors. Each item is evaluated based on the same criteria and is given a score for each question. After assessing all products, the total score can help compare all products against each other.

This assessment using the TBL approach allows a fair and equitable comparison against similar items by making sure the three factors (social, environmental and financial) are weighted equally. This analysis shows that the products branded as “green” actually show some more sustainable characteristics that “non-green” products do not have. With that being said, all the green marketed products do not stand at the same level on the “sustainability ladder”. In fact, their final score varies from 45% to 87% based on our evaluation. As for the non-green products, they have low scores of 32% and 45%. The major differences found between the high score and the low score products are the portion of recycled content, the location of the manufacturing facility and the presence of a variety of materials involved in the manufacture making them hard to fully recycle at the end of their life. There are many differing opinions regarding recycling paper fibers, however, it is a deep and complicated subject and beyond the scope of this paper.

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GLOSSARY

Triple Bottom Line Assessment: a reporting framework that takes into account social, environmental and financial performances

Green/Sustainable office supplies: products that respect the environment in the manufacturing processes and in the use of somewhat recycled primary material

File folder: a folding holder used to store loose papers together for organization and protection

Sustainable Forest Initiative (SFI): initiative supported by an independent third-party that audit and ensure paper fibers are sourced responsibly from protected and well-managed forests

Post-consumer fibers: paper product used by consumers and recycled back into the paper manufacturing process

1.0 INTRODUCTION

Nowadays, as a consumer, it is difficult to make clear and informed decisions on the products that are presented to us with all the marketing done over sustainability. Do the “green” marketed products really stand behind their claims? Are they truly better for the environment and the community? The focus of this project is on whether the advertised green file folders used by the campus community are actually green and sustainable. A wide range of products annually purchased by UBC were examined thoroughly using a standard we developed that complies with the Triple Bottom Line (TBL) approach. Although most of these products are marketed as green products, two non-green folders were used to make the comparison. A brief list of these items can be found in table 1 below. Each item was given a letter and a specific color to differentiate them better. Information on these products were collected from online sources as well as directly from the manufacturer. Additional supporting information on paper recycling processes was consulted through academic and non-academic articles. Also, the second goal of this project is to find and recommend the most sustainable file folder that is also economically reasonable.

#		Product number	Store	Description	Green / Non-green
A		57538	Staples	Twin Pocket Portfolio - Dark Blue 25/Box	GREEN
B		52501	Staples	Panel and Border Report Cover - Light Blue 25/Box	GREEN
C		51743	Staples	Laminated Twin Pocket Portfolio - Navy 25/Box	NON-GREEN
D		57701	Staples	Twin Pocket Portfolio/ Fasteners - Light Blue Blue 25/Box	NON-GREEN
E		53443	OfficeMax	Linen Twin Pocket Portfolio - Navy 25/Box	GREEN
F		99133	OfficeMax	G&T Recycled 2-pkt fldr,Blue,25/bx	GREEN
G		67511	OfficeMax	PORTFOLIO STD RED - RETAIL	GREEN
H		97419	OfficeMax	GRAND&TOY P/L 2-PKT PORTFOLIOS - GREEN	GREEN
I		99337	OfficeMax	5*8 Self adhesive vinyl pockets	GREEN
J		1257BL	OfficeMax	Pressguard Classification Folders Light Blue 2 Dividers Letter 50/Box	GREEN
K		97260	OfficeMax	End Tab File Folder Ivory Letter 100/Box	GREEN

Table 1: List of items selected for the analysis

2.0 METHODOLOGY

Information on the file folders under examination were obtained from the manufacturer as well as from the websites of Staples and OfficeMax. This information was then organized and combined with supporting information from SFI and articles regarding the sustainability of recycling versus non-recycling processes.

After the relevant information was obtained, we felt necessary to develop an assessment tool that follows the TBL in order to assess this information. However, to avoid biases, the assessment tool is not based upon this information; but rather, it covers economic, environmental, and social aspects that use that information as supports to score the file folders.. This tool is composed of questions covering those three aspects. Each was developed with file folders in mind in order to maintain relevance and achieve a maximum coverage of all. There are a total of fifteen questions divided among the three factors of the TBL assessment. All questions are weighed equally with a maximum score of five.

Some of the aspects analyzed are using numerical data and facts which make it easy to score and compare. On the other hand, some aspects are evaluated using non-numerical data which need to be weighted using our own judgment. Also, some aspects are evaluated by the mean of physically testing the file folders. A clear and precise description of these questions is presented in the following section.

This assessment tool was developed after looking over some already existent certification programs such as the SFI and the LEED certifications. These programs were consulted only to give us an idea on how to build such a tool and no questions were taken directly from them. All the 15 questions were put together, defined and agreed on by the team members before the assessment was conducted.

3.0 ANALYSIS AND RESULTS

An assessment tool was developed by our team to evaluate each file folder based on the same criteria and taking into account the three factors approach: social, environmental and financial impacts. As presented in the table 2, five questions were put together per category and a well define scoring scheme was established for each of them. The score definitions and some comments are exposed below. Each question is out of a total of five points for a total possible score of 25 points per factor and 75 points overall. It is important to note that this scoring system is based on the highest score being the most sustainable product. Therefore, the score of 5 for each question is given to the products that represent the most viable option based on economic, environmental and social factors.

#	TLB Assessment tool questions
	Economic
1	How expensive is it based on current average price? (per unit)
2	How many types of material is it made of?
3	Where is it shipped from?
4	In what country is it manufactured?
5	What is the portion of products purchased over the overall top purchased?
	Environmental
6	How much material comes from recycled sources?
7	How much material comes from post-consumer fibers?
8	How much environmental regulation are there regarding production?
9	Where does this product go after usage?
10	How durable is it? (useful life of the item)
	Social
11	Is the packaging of this product misleading in any way towards green?
12	Does it look water resistant and shear resistant?
13	Does the company use greener production technology safer for employees?
14	Are workers in the production country usually unionised?
15	Is it creating jobs in Canada? (country of usage)

Table 2: TBL assessment tool 15 questions

3.1 Economical factor

This first factor is evaluated using both direct data (numbers) and indirect data (economic concepts). The total maximum score for this section is 25 points.

QUESTION 1: How expensive is it based on the current average price?

COMMENTS: The average price is determined by calculating the average price per file folder using table 3 below. The average unit price is \$1.19 and the average unit price range is defined as +/- 10% this price (which is between \$1.07 and \$1.31). This question directly impacts the price paid by UBC for those products

SCORE DESCRIPTION: 5: Cheap (< \$1.07), 3: average (\$1.07 - \$1.31), 1: Expensive (> \$1.31)

QUESTION 2: How many types of material is it made of?

COMMENTS: Since each and every file folder is composed of a mix of paper, ink and glue, this is used a base line. This question relates to the economic factor as a higher quantity of material involved in the manufacture of the item increase production costs, raw material costs and recycling costs.

SCORE DESCRIPTION: 5: 3 type, 3: 4 types, 1: 5 types of more

QUESTION 3: Where is it shipped from?

COMMENTS: It is obvious that the longest distance an item has to travel, the highest its unit cost of transportation.

SCORE DESCRIPTION: 5: Canada, 3: USA-Mexico, 1: Outside of North America

QUESTION 4: In what country is it manufactured?

COMMENTS: This question relates to the level of which the manufacture of the item is helping the development of the country in which it is manufactured in. The economic impacts of a

product manufactured in a developing country are much more important than in an already developed country.

SCORE DESCRIPTION: 5: Developing, 4: Underdeveloped, 1: Developed

QUESTION 5: What is the portion of the product purchased over the overall top purchased?

COMMENTS: A product that is purchased in large quantity (bulk) can be bought at a much lower unit price than individually purchased. UBC can save money by purchasing very popular items in bulk. For this question, the quantity of a file folder purchased annually is divided by sum of all folders purchased annually. Therefore, the items purchased in much higher quantities have the highest portion of sales. The values can be seen from table 1 above.

SCORE DESCRIPTION: 5: More than 30%, 3: Between 10-30%, 1: Less than 10

#		Product number	U of M	Annual Usage	% of total purchase	Avg Price per unit	Ext Price	Components	Where is it manufactured?	Where is it shipped from?
A		57538	EA	1116	11.1%	0.33	368.28	Paper, Ink, Glue, Packaging	Union, MO	Union, MO
B		52501	EA	251	2.5%	0.4	100.39	Paper, Ink, Metal Prongs, Poly Report Cover, Glue	Reynosa, MX	Union, MO
C		51743	EA	114	1.1%	3.02	344.1	Tinted Lamination, Paper, Glue Packaging	Reynosa, MX	Union, MO
D		57701	EA	0	0.0%	2.2	0	Paper, Ink, Metal Prongs, Glue, Packaging	Union, MO	Union, MO
E		53443	EA	1345	13.4%	1.15	1548.65	Paper, Ink, Glue, Packaging	Union, MO	Union, MO
F		99133	EA	475	4.7%	0.66	314.25	Tinted Lamination, Paper, Glue Packaging	Montreal, Canada	Montreal, Canada
G		67511	EA	137	1.4%	0.60	82.06	Paper, Ink, Glue, Packaging	Union, MO	Union, MO
H		97419	EA	75	0.7%	0.98	73.75	Tinted Lamination, Paper, Glue Packaging	Montreal, Canada	Montreal, Canada
I		99337	EA	5400	53.7%	0.11	586.21	Vinyl, adhesive, peel away strip	China	Union, MO
J		1257BL	EA	50	0.5%	3.36	168	Pressboard, Tyvek, Glue, Fasteners, Kraft Dividers	Reynosa, MX	Union, MO
K		97260	EA	1100	10.9%	0.23	253.61	Paper, Packaging	Union, MO	Mississagua, ON

Table 3: Economic impacts data

3.2 Environmental impacts

The second factor evaluated relates to environmentally friendly factors such as recycled content, production regulations and quality of the material. The more the product is respectful for the environment, the highest score it gets. The total maximum score for this section is 25 points.

QUESTION 6: How much material comes from recycled sources?

COMMENTS: The data used to answer this question was provided by Mr. Douglas Mudd from Esselte North America. It can be found in table 4 below. Recycled content can come from pre-consumer paper (which is paper that has not reached consumers and has been recycled) and post-consumer paper (which is paper product used by consumers and recycled back into the paper manufacturing process). Note that a file folder is composed of post-consumer fibers, it automatically has recycled fibers in it.

SCORE DESCRIPTION: 5: 61-100%, 3: 31-60%, 1: 1-30%, 0: none

QUESTION 7: How much material comes from post-consumer fibers?

COMMENTS: The data used to answer this question was provided by Mr. Douglas Mudd from Esselte North America. It can be found in table 4 below.

SCORE DESCRIPTION: 5: 61-100%, 3: 31-60%, 1: 1-30%, 0: none

QUESTION 8: How much environmental regulations are there regarding production?

COMMENTS: This question is evaluated based on regulations given by government policies in the countries and states in which the manufacture occur. General environmental manufacturing policies from the manufacturing country were taken into account to score the products for this question.

SCORE DESCRIPTION: 5: Heavily regulated, 3: somewhat regulated, 1: no regulation

QUESTION 9: Where does this product go after usage?

COMMENTS: This calls for the end-of-life of the product. A product that can be recycled after use is definitely a more sustainable one than one that will be thrown into the directly garbage and end up in the landfill. Again, the information provided by Esselte was used to score the items.

SCORE DESCRIPTION: 5: Fully recyclable, 3: Partially recyclable, 1: Not recyclable - Garbage

QUESTION 10: How durable is it?

COMMENTS: This question calls for the useful life of the item. It is evaluated by looking at the item and playing around with it. Each file folder was opened and closed multiple times, bended, sheared against textbooks and binders for an extended period of time. Each folder was also imposed a tension stress and an eraser was used on them to evaluate their durability. All these tests were conducted the same way and their goals were to imitate the useful life of file folders. A durable file folder kept its shape, color and strength after these tests as opposed to a “not very durable” folder which did not stay in good shape after such experience. The score given for this question was based on judgment.

SCORE DESCRIPTION: 5: Very durable, 3: Somewhat durable, 0: Not very durable

#		Product number	<u>Recycled Content</u>	<u>Paper Certification</u>	Where is it manufactured?	Are they fully recyclable?
A		57538	10% Recycled content, 10% PCW	SFI	Union, MO	Yes
B		52501	Paper 10% PCW	SFI	Reynosa, MX	No, poly
C		51743	0%	SFI	Reynosa, MX	partially
D		57701	10% Recycled content, 10% PCW	SFI	Union, MO	Yes
E		53443	35% Recycled content, 10% PCW	SFI	Union, MO	Yes
F		99133	100% recycled fibre with 70% post-consumer content	SFI	Montreal, Canada	partially
G		67511	10% PCW	SFI	Union, MO	Yes
H		97419	100% recycled fibre with 70% post-consumer content	SFI	Montreal, Canada	partially
I		99337	10% Recycled content, 10% PCW	SFI	China	No
J		1257BL	30% PCW	SFI	Reynosa, MX	Yes
K		97260	10% Recycled content, 10% PCW	SFI	Union, MO	Yes

Table 4: Environmental impacts data

3.3 SOCIAL IMPACTS

The third factor being analyzed is the social aspect which was evaluated based on product marketing values, physical resistance and conditions of production employees. This aspect was a little more difficult to address since social impacts are hard to evaluate over such a short period of time of which this assessment was done. Some tests were conducted to complete the analysis. The total maximum score for this section is 25 points.

QUESTION 11: Is the packaging of the product misleading in any way towards a “green” product?

COMMENTS: The packaging and the online marketing of this product are looked at and the claims made are compared to the actual data and facts. If the marketing of the product is fully supported by the actual data, the item receives full score.

SCORE DESCRIPTION: 5: Not misleading, 3: Somewhat misleading, 0: Very misleading

QUESTION 12: Is it water resistant and shear resistant?

COMMENTS: This calls to the useful life of the item. A product that resists spills and tears will have a much longer life. This was evaluated by doing physical tests to the file folders. To test the water resistance, part of the file folder was submerged in water for 5 seconds and then dried. If the paper was still rigid and the color still even, the item was water resistant. To test the shear resistance, a medium tearing force was applied to a side of the folder using two hands. If it withstand tear, it was tear resistant.

SCORE DESCRIPTION: 5: Water resistant & Shear resistant, 3: Water resistant OR Shear resistant, 0: No chance

QUESTION 13: Does the company use greener production technology safer for employees?

COMMENTS: This information is provided by the manufacturer and also found on the products' websites. Manufacturing acid-free paper and using water-based ink and coloring technologies are safer for the employees.

SCORE DESCRIPTION: 5: Yes, 0: No

QUESTION 14: Are workers in the production country usually unionized?

COMMENTS: This is based on available information from laws and government regulations.

SCORE DESCRIPTION: 5: Yes, 3: Some advantages, 0: No

QUESTION 15: Is it creating jobs in Canada? (Country of usage)

COMMENTS: Since Canadians are the ones purchasing and using these items, it is socially beneficial that either the manufacture or the shipping of the items create jobs in the country

SCORE DESCRIPTION: 5: Production and Shipping, 3: Production OR Shipping, 0: None

3.4 RESULTS

After scoring each file folder for every single question, a final score was attributed to each item. The complete details of the scoring are presented in table 5. The two highest scores are boxed in red in the table and they define the two most sustainable options based on the TBL assessment. Those two items offer a score of 87% and 81%. There are multiple similarities between those two items that make them “greener” than the other file folders. They are both manufactured in Canada. They are both made of 100% recycled material with 70% post-consumer fibers. They both contained a limited number of different materials. They are both durable and offer good resistance against water and tear. Moreover, the production facility uses water based ink coloring and finish on their products making them more environmentally friendly and making the work environment safer for the employees. Figure 1 shows the cumulative score of all the items examined and shows their progressions as they receive their score question by

question. It is important to remember that questions 1 to 5 were based on the economic impacts, questions 6 to 10 were based on environmental impacts and questions 11 to 15 were based on social impacts. Again, file folders F and H are at the top of the chart and even stand out as soon as the environmental impacts are evaluated by question 6.

Another important conclusion that can be made by looking at the scores is that green marketed products scored higher than the similar non-green items. The only two non-green items were items C and D. As the table 5 shows, both C and D received very low scores and they do not present a lot of sustainable characteristics. It is also important to note that product B scored the lowest. File folder B was categorized as a green product but does not shows appropriate characteristics for this matter. In fact, it is not recyclable, it does not contain a lot of recyclable material (only 10% of post-consumer fibers) and it contains a lot of different material. Moreover, it is not very durable and its resistance to water and tear is very poor. This product is very disappointing and failed to confirm its claims of “green product”. In conclusion, most of the green marketed file folders do stand behind their claims and are truly more sustainable.

#	TLB Assessment tool questions	A	B	C	D	E	F	G	H	I	J	K
		57538	52501	51743	57701	53443	99133	67511	97419	99337	1257BL	97260
	Economic											
1	How expensive is it based on current average price? (per unit)	5	5	1	1	3	5	5	5	5	1	5
2	How many types of material is it made of?	5	1	5	3	5	5	5	5	1	3	5
3	Where is it shipped from?	3	3	3	3	3	5	5	3	3	5	3
4	In what country is it manufactured?	1	5	5	1	1	1	1	1	5	1	1
5	What is the portion of products purchased over the overall top purchased?	3	1	1	1	3	1	1	1	5	1	3
	Environmental											
6	How much material comes from recycled sources?	1	1	0	1	3	5	1	5	1	1	1
7	How much material comes from post-consumer fibers?	1	1	0	1	1	5	1	5	1	1	1
8	How much environmental regulation are there regarding production?	3	1	1	3	3	5	3	5	1	1	3
9	Where does this product go after usage?	5	1	3	5	5	3	5	3	1	5	5
10	How durable is it? (useful life of the item)	3	0	5	0	5	5	3	5	0	5	0
	Social											
11	Is the packaging of this product misleading in any way towards green?	5	3	5	0	5	5	5	5	5	5	0
12	Does it look water resistant and shear resistant?	0	0	5	0	3	5	3	3	0	5	0
13	Does the company use greener production technology safer for employees?	0	0	0	0	0	5	0	5	5	0	5
14	Are workers in the production country usually unionised?	5	0	0	5	5	5	5	5	0	0	5
15	Is it creating jobs in Canada? (country of usage)	0	0	0	0	0	5	0	5	0	0	3
		40	22	34	24	45	65	43	61	33	34	40
		53%	29%	45%	32%	60%	87%	57%	81%	44%	45%	53%

Table 5: Summary of the scores

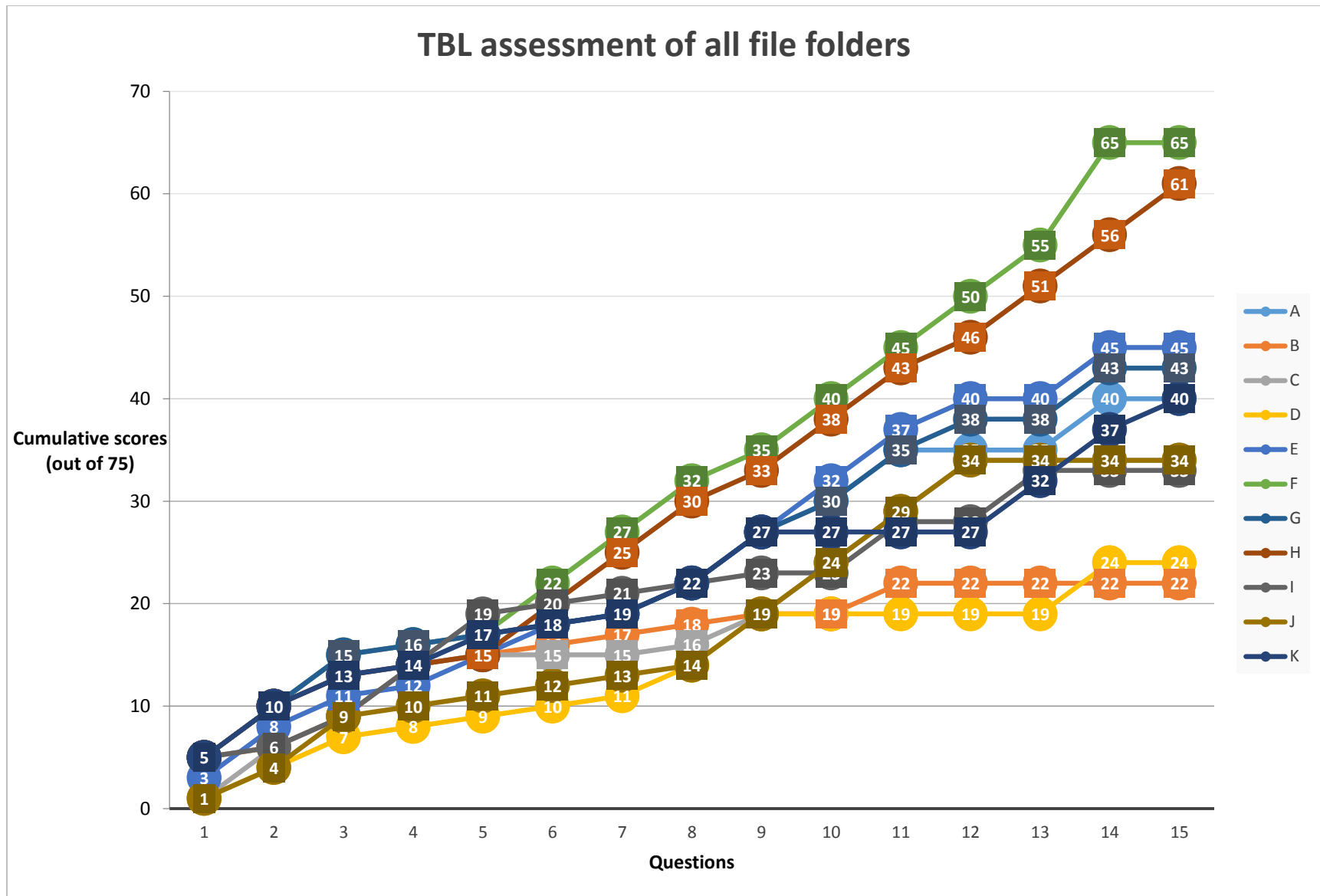


Figure 1: Cumulative score of all file folders after assessment

4.0 CONCLUSION AND RECOMMENDATION

It is clear that file folders **F (file folder #99133)** and **H (file folder #97419)** are the most sustainable choices and are recommended over the other file folders analyzed. However, it is important to keep in mind that the results of this assessment were based on a tool developed by the member of this team and inspired by the TBL approach. The conclusions could be different coming from another perspective. As represented in the figure 1, all file folders seems to be pretty close in the first part of the analysis covering the economic impacts. The gap in the scores between all the products grows much bigger and faster as soon as the second factor is evaluated. Products F and H definitely stands out and are recommended for purchasing in higher quantities by UBC. Moreover, the price of these two items is also below the average price per unit currently spent by UBC on file folders. Their high durability could also mean longer useful life and therefore cost reduction of the long term.

The second goal of this project was to determine if the green marketed file folders were actually more sustainable than the non-green ones. As illustrated by the individual scores in table 5, all green products beside product B have higher scores than the non-green similar items C and D with 45% and 32 %. This shows that there is actually a different between them. The file folder B was definitely a surprise by scoring so low on the scale with only 29% (which is even below the non-green products). It seems like the marketing of this product is very misleading. Of course, the terms “green product” and “sustainable product” do not have a really clear and specific definition which makes it debatable, but based on this analysis, file folder B fails to prove its capability.

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APPENDIX A – Recycling

Currently, the capacity of a product to be recycled is almost the definition of sustainability. It is held in such high regard that many think simply recycling something is being sustainable (Sopha, 2013). However, many recycling processes are not free and do have a high carbon cost associated with them (Morton, 2014). These processes include collection, refining, and distribution to manufacturers (Craighill and Powell). This should raise the question of whether this process as a whole is more sustainable, i.e. less carbon footprints, than logging and making new paper altogether. Many have different opinions on this subject matter, some, like Craighill and Powell, show that recycling paper in the United Kingdom for example has less environmental impact than waste disposal processes; and cost over 200 pounds less per ton of paper produced from the recycling process. Others have differing opinions regarding the environmental impacts of recycling and whether it is better than making fresh paper. It is also important to keep in mind that the fibers in paper can only be recycled up to seven times before it is too short to hold the integrity of the paper (Morton, 2014). This means that the more recycled content, the less durable a paper could possibly be; and if other materials like glue and plastics are added along with the paper to increase integrity, like Staples and OfficeMax do, the resulting products could very well be non-recyclable. Less durable paper products could change the behavior of the people using them towards more consumption and being more careless with the products that will drive sustainability in the opposite direction even though the product itself is recycled (Sopha, 2013). This would also fail in the social aspect of the TBL assessment meaning it's not as sustainable as people believe.