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We Know You Want It: Perspectives on Predictive Shopping

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Acknowledgements

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I could not have done this without all of you.

Thank you.

Contribution Statement

To date, minimal research was conducted with regards to predictive shopping. Cass Sunstein, Harvard professor and primary researcher on the subject, reviewed and studied individual's attitude towards predictive shopping. Sunstein touched on each form of predictive shopping to give insight on the subject. Sunstein conducted a nation-wide survey in which he used a sample of 500 participants from a variety of demographics. In addition to a nation-wide representative survey, Sunstein also did a smaller informal study with university students. Sunstein asked similar questions to the larger survey and used these findings to make assumptions about predictive shopping (Sunstein, 2015).

Analyzing Sunstein's results, the information gathered was used as secondary research for this study. The primary research conducted broke down the feelings towards predictive shopping from a sample of 125 college students at Bridgewater State University and examined, in-depth, each form of predictive shopping and the attitude towards the severity within each form. The results of this study and the analysis within it; contribute to the initial findings on predictive shopping and add to the secondary research surrounded by the topic.

Abstract

Predictive shopping is a branch of predictive analytics that has surfaced over the past year. It is a concept whereby companies use predictions to enroll the consumer in special programs in which they receive goods and services, and are asked to pay for them, before they have actually chosen them. This is a revolutionary concept that could potentially change the face of online shopping. Through research and analysis I explored how a sample of 125 college students at Bridgewater State University felt about predictive shopping and what place it has in society today or in the near future. Through the creation and distribution of printed surveys, based on my own inquiries along with previously examined questions done by Harvard Law professor and lead researcher Cass Sunstein, I analyzed the results of the questionnaire. I created a database of my findings, analyzed that data, and explored topics within this field to make predictions and conclusions. I determined that about 1 out of 5 college students were in favor of predictive shopping. Out of this group, fifty percent of them would be willing to enroll into predictive shopping programs that did not explicitly ask for the buyers' consent for the product.

Introduction

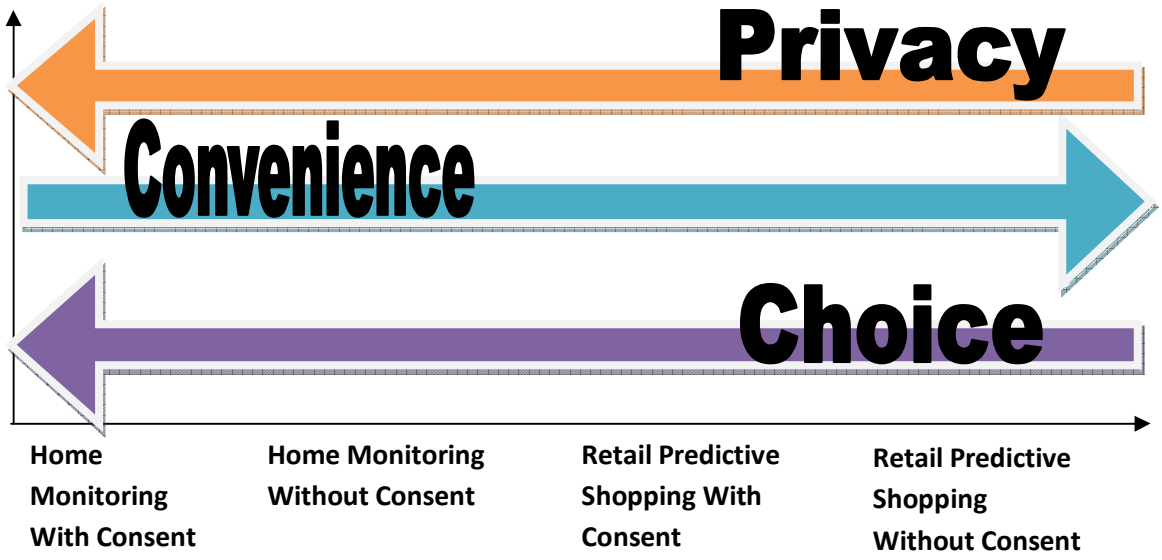
Background

Many companies have made suggestions to buyers about products they feel could satisfy their needs and wants for future purchases. These companies looked at customers' past shopping history, recently viewed items, along with stored personal information, to create a list of potential preferred items. With the development of predictive shopping, industries took this concept a step further. Predictive shopping is defined as, with the use of analytics and research, a way in which companies understand and follow behaviors to know what their prospective customers will want to purchase before they are fully aware of that need (Sunstein, 2014). Instead of just making the suggestion, companies are now choosing the product, sending it to the customer, and then charging their credit cards. Market researchers are able to do this by using a

scientific algorithm based on predictive analytics, an area of data mining. Data mining is the process of extracting patterns in data sets, and then using that information to predict trends and behavior patterns for its given subject (Collins English Dictionary, 2015). These algorithms allow companies to methodically interpret and make educated guesses on what the consumer will want or may want in the future. Predictive analytics are not always one hundred percent accurate, but it gives companies the chance to market and sell goods to consumers who will most likely benefit from a given product. This, in turn, will allow them to sell more goods to a more precise target market.

There are different forms and types of predictive shopping that are either being used today or are being worked on for the future (see figure 1). The first is a home monitoring system. A home monitoring system is a program that monitors specific items in a consumer's household and is designed to know when a given product or good runs out. Within the home monitoring system, there are two different routes that the business to customer relationship can take. There can be explicit consent from the consumer for the activity that occurs within this program or it can be designed so that explicit consent is not required and the program operates without the acknowledgement or intervention of the buyer. The most extreme level of predictive shopping is retail predictive shopping. In retail predictive shopping a company takes information from its consumers and uses it to predict products that they will want to purchase in the future, even if they have never bought that product before. Some retail predictive shopping programs ask for explicit consent and some do not.

Figure 1:



The diagram above demonstrates from left to right the different predictive shopping forms along with the amount of choice, privacy and convenience within them. Convenience increases from left to right but privacy and choice decrease.

The different forms of predictive shopping seen in figure 1 are not all in use in today's market. With the concept of predictive shopping being so new, industries and consumers have not completely grasped the purpose or potential of such programs. Some larger companies such as Amazon are utilizing similar systems, similar to a home monitoring system with consent, through the use of smartphone applications and in-home buttons for convenience (Amazon, 2015). Walmart is also using a smartphone application for suggesting household products to their customers (Sunstein, 2015). Smaller online retailers are using mailing systems to send consumers products of the month. These customers are agreeing to the enrollment into the program and accept the idea that they are paying a certain amount each month for an item from a list of potentially 'liked' products. Some of these retailers include, Trunk Club and Stitch Fix (Sunstein, 2015).

Positives and Negatives to Predictive Shopping

There are many positives and negatives to a predictive shopping program. When looking at the consumer side of the process, it is convenient for the buyer and allows them to not have to worry about rudimentary purchases that might have once seemed mundane. But with this convenience for the consumer comes a cost: loss of privacy. With the loss of privacy comes the loss of choice. When this is in relation to products being predictively purchased inwhich the consumer would give only small amounts of thought and dedication, minimal concerns should arise. This may be a nonissue, but if it is concerned with purchases that require research and rely on previous knowledge, the loss of choice may become a significant issue.

When looking at the business side of the process, there are many positives. Predictive shopping encourages first time prospective buyers to become longtime clients, since it is creating a continual shopping experience for them. Predictive shopping also allows for higher turnover of products. If a product is not selling as well as the company predicted, through a predictive shopping program, it could find a way to match it up with consumers who might not be aware of its benefits. Predictive shopping also adds value for the customers, because the company is so focused on convenience for them that there is minimal wait time for the product. This, as a result, adds value to customer.

Some negatives, with regards to predictive shopping, for the companies, is the general idea that customers may be unaware of the benefits of predictive shopping programs. Also customers might have some inkling about the programs but might not have a full appreciatation of the added convenience. If the buyer is uncomfortable with the idea of giving a business extra

power to control, track, and know information about them, they might not want to use their shopping programs and could consider shopping elsewhere (Selinger, 2014).

As predictive shopping is such a new concept, only a few researchers have studied it. The most prominent researcher is Cass Sunstein, who has published a few papers, articles and a book discussing his findings and interpretations.

Cass Sunstein Interpretation

The term predictive shopping was coined by Cass Sunstein, law professor at Harvard, when he wrote an article highlighting a study he had conducted on the subject (Sunstein, 2014). Sunstein conducted a nationwide survey to see how Americans felt about predictive shopping. Sunstein has discussed his findings in a variety of publications and has published an influential op-ed article in the New York Times in 2014 (Sunstein, 2014). That was the first exposure to the public of predictive shopping and opened the door to many questions that consumers want answered (Sunstein, 2014).

Some of the questions and results that Sunstein asked and found within his survey that influenced the survey that was given to the Bridgewater State University participants were as follows:

> Suppose that over the years, your favorite online bookseller has compiled a great deal of information about your preferences. On the basis of a new algorithm, it thinks it knows what you will want to buy before you do. I asked, would you enroll in a program in which the seller sent you books that it knew

> you would purchase, and billed your credit card? Anyone could send the book back for a refund or just opt out of the program (Sunstein, 2014).

This question formulates the impression of a retail predictive shopping program with explicit consent. This demonstrates a high level of convenience and a high loss of choice and privacy. Forty-one percent said "yes", they were in fact in favor of such a program (Sunstein, 2014).

> Would you approve or disapprove if the seller automatically, and without your explicit consent, enrolled you in a program in which it sent you books that it knew you would purchase, and billed your credit card (Sunstein 2014)?

This question formulates the impression of a retail predictive shopping program without explicit consent. This demonstrates a high level of convenience but an extreme high loss of choice and privacy. Twenty-nine percent said "yes", they were in fact in favor of such a program (Sunstein, 2014).

> Imagine that [your] home came equipped with a monitor designed to "know" when such goods ran out. I asked, would you approve of a system in which the home monitor automatically, and *without* your explicit consent, bought goods for you and billed your credit card? As with the books, you could return the goods for a refund, or just opt out (Sunstein, 2014).

This question was asked to both the nationwide representation as well as the university sample. This question formulates the impression of a home monitoring system *without* consent.

This demonstrates a mid-level gain of convenience and choice but a high loss privacy. Sixty-nine percent said "yes", they were in fact in favor of such a program (Sunstein, 2014).

According to Sunstein, the basic issue of predictive shopping is consumer's choice and that convenience can overrule the selection process. It is more convenient for the buyer to have a system choose a product that satisfies their needs. Sunstein's research looks at how predictive shopping can take the effort of frivolous spending away from buyers, but still keep them satisfied. Sunstein argues that it relieves the redundancy of day-to-day or ordinary shopping. He uses this concept to understand if people are willing to sign up for a program that scientifically chooses for them (Sunstein, 2014).

Even though there may not be an extreme form of retail predictive shopping used today, there are many things that are in existence that work very closely to it in which companies are utilizing. Sunstein was able to sum up the instances in which customers would want predictive shopping software very well. In his book, *Choosing Not to Choose*, he wrote, "in such cases, sensible people might choose not to choose, because the default serves them perfectly well. It gives them what they want without requiring them to take annoying, unnecessary, or burdening steps to obtain it (Sunstein, 2015)". Sunstein asks whether this gives too much power to an industry, or if this is an option that people want. Are people willing to give up their choice to choose?

Rebuttal and Concerns to Sunstein Interpretation

Cass Sunstein is an academic researcher and the primary lead on predictive shopping research. Sunstein tends to have a positive outlook on the system and even though he has support

from his analysis of his data, he shows some signs of bias towards his work. Sunstein drafted an article in February 2014 entitled, *Choosing Not to Choose*. He wrote, "For those who reject paternalism and who prize freedom of choice, active choosing has evident appeal (Sunstein, 2014)". It is important to understand how the rest of the scientific and business community feel about this issue. Sunstein acknowledges that the people who do not like to give up their right to decide prefer the choice of actively selecting what they want. Other investigators discuss their concerns about not actively choosing.

Other views look at Sunstein's work and bring up the drawbacks of predictive shopping. Researchers are concerned about the effects that predictive shopping will have on society in the future. Some feel that predictive shopping could potentially leave long-term consequences on the choices, or non-choices that Americans make. In contradiction to Sunstein, in an article published in Forbes Magazine, Evan Selinger,, discusses how predictive shopping will disrupt the lives of consumers and how basic human functions will be lost. He makes the argument:

> Shopping lists for the grocery store may seem mundane and be a hassle to write. But they're not just about ensuring we have enough soap and toilet paper. Viewed as a *ritual* that involves *deliberation* and *self-guided action* (including writing or typing), they're a practice that pivots our consciousness beyond the present. Writing shopping lists ourselves and meeting the goals they outline by doing the shopping ourselves keep us sensitized us to the passing of time and our shifting place in it (Selinger, 2014).

Ritual, deliberation, and self-guided actions are among the words and phrases Selinger chooses, ironically, to describe everyday practices that will be lost if predictive shopping is in the forefront. Tasks that seem mundane will not occur once a systematic algorithm takes precedence.

If duties such as creating grocery lists become bothersome for consumers, he debates that other tasks could do the same. Simple tasks that are part of a daily routine will seem daunting and the initial meaning undervalued (Selinger, 2014). This follows the concept of a slippery slope argument. A slippery slope argument is a fallacy in which a snow ball effect occurs and small issues or concerns become larger and more complicated ones (Slippery slope, 2015). Predictive shopping starts with boring tasks, but before it is recognized, it gets extended into more important areas that once required an extensive thought process.

The overall idea of predictive analytics draws up some concern as well. The Commissioner of Canada wrote a report about predictive analytics and the security and privacy issues that arise from it. Predictive analytics chooses something before prospective consumers even realize they want it. Too much control could be given to a company and society could be losing their right to privacy to these database systems. Many people are not on board with predictive shopping and see the idea as creepy and unsettling (Office of Privacy, 2012). These individuals do not feel comfortable giving up so much power to a specific company.

Referencing George Orwell's novel, *1984,* it is the indication that Big Brother is watching you (Orwell, 1950). People, in general, have a fear of the unknown, of innovations, and new forms of intelligence. When new systems are introduced into everyday situations, many see it as ridiculous or unnecessary. They only look at the negatives they may create and not necessarily recognize the positives that can result.

Predictive Shopping in Action

Many industries have weighed the ideas brought up by both Sunstein and the other researchers and looked at the positive and negative effects of predictive shopping. Through this,

the features of the different trends within predictive shopping are incorporated into their daily operations.

Companies that are utilizing such algorithms include Walmart, Amazon, along with other small startup companies (Sunstein, 2015). Walmart has created a mobile application that generates a list of items after analyzing the customer's usual products that they purchase. Walmart feels that the future is going to run on technology and consumers will want to shop simply by opening their phone. The company also believes that, "the best shopping list is the one you don't have to create, so that's what we are working on (Sunstein, 2015)". If they can create a list of items that the consumer wants and displays it on the home screen of the application page, it saves the customer time comparing items and searching for them. Along with Walmart, corporations like Amazon are doing something similar. Amazon allows customers to subscribe to periodic shipments of everyday consumer products. Amazon is not predictively choosing the products or delivery dates, but the consumer is indicating the choice upfront and making the general assumption that they will want that product in the future (Sunstein, 2015). Amazon has taken this subscription service a step further as of April 2015. They announced the creation of the Dash Button. The Dash Button is a service that allows Amazon Prime Members to simply press a button that can adhere or clip on their washing machines, hook in their pantries, etc. that automatically places an order for a consumer good once they realize they are running low. The button syncs with the customer's smart phone allowing, yet again, for technology to take the lead in retail shopping (Amazon, 2015).

The Dash Button is receiving unfavorable reviews from some reporters. The New Yorker posted an article shortly after its commercial launch discussing the fear that many have with this innovative solution. Like the researchers that worry about Sunstein's work and feel that his

research is too swayed in one direction, people feel that the Dash Button is too aggressive. They feel that it treats its users like an experiment; push a button, get rewarded. The fear of giving up the choice to shop and compare worries many (Crouch, 2015).

Even with this backlash from the press, companies like Amazon are slowly, but gradually, moving into successful predictive shopping programs. First they started with the simplicity of allowing their customers to sign up to receive goods on a set schedule. Now Amazon is permitting them to press a button to receive products right when they want them (Amazon, 2015). From here, they could create an algorithm to record and track how often the Prime Members are pressing the button to eventually eliminate the button all together. An explanation could be given to the buyer letting them know that they no longer need to order a specific product because a database can alert the company through predictive analytics. They will receive that product, potentially, before they realize they even needed it; or parallel to the time they would ordinarily press the Dash Button. It is only a matter of time until a full-fledged operating predictive shopping program is put in place.

Purpose and Significance

The purpose and significance of this research is to answer the question, how do college students feel about predictive shopping, what do they think of it, and are they in favor of such a program? Predictive shopping, in general, allows the consumer to enjoy a more convenient shopping experience. Predictive shopping allows shoppers to abstain from redundant purchases and gives consumers the freedom to value their time. Purchasers may spend their freedom how they wish instead of using valuable time for routine shopping. Choosing not to choose may force

the consumer to neglect the choice of a product, but gives them the liberty to choose how they want to spend the extra time they gain by predictive shopping.

Methods

Procedure

A survey of twenty questions was formatted and sent to the University Institutional Review Board where it was approved to be distributed on campus. Some of the predictive shopping questions that were used came directly from Cass Sunstein's survey. This was done in order to make thorough comparisons between his research and the results of this study. The rest of the predictive shopping and demographic questions were generated in order to get an improved understanding of the sample participating. Participants were handed a blank survey with the multiple-choice questions. They were asked verbally for permission to record their answers with the understanding that their information would be protected and identification remain anonymous. If any students did not wish to complete the survey, the investigator directed said individuals to pass in a blank survey to ensure their identity remained private.

Once the students completed the survey, the results were collected, numbered, and stored in a safe area (see figure 2). The survey instrument can be found in the appendix at the end of report. The information was saved in a database created in Excel and each question and possible answer was given a numerical value in order to create a unique code for each one.

Figure 2:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	DEMOGRAPHICS										PREDICTIVE SHOPPING QUESTIONS					
2	Survey ID #	QUEST 1	QUEST 2	QUEST 3	QUEST 4	QUEST 5	QUEST 6	QUEST 7	QUEST 8	MAJOR	QUEST 9	QUEST 10	QUEST 11-1	11-2	11-3	11-4
3	1	5	1	2	1	2	7	1	2	0	2	2	0	0	0	0
4	2	5	1	2	2	2	6	1	3	0	2	1	1	2	0	4
5	3	5	1	1	1	2	7	1	4	0	2	1	1	2	0	4
6	4	5	1	2	2	3	5	2	6	0	2	1	0	2	0	0
7	5	5	1	2	2	2	1	1	3	0	2	2	0	0	0	0
8	6	5	1	2	1	2	6	1	2	0	2	2	0	0	0	0
9	7	4	1	2	3	2	6	1	2	0	2	2	0	0	0	0
10	8	5	1	2	2	2	7	1	1	0	2	1	0	0	0	0
11	9	5	1	2	2	2	1	1	1	0	2	1	0	0	0	0
12	10	5	1	2	2	2	1	1	1	0	2	1	0	0	0	0
13	11	5	1	2	1	2	1	1	1	0	2	2	0	0	0	0
14	12	5	1	1	1	2	7	1	4	0	2	1	0	0	0	0
15	13	5	1	2	1	2	4	1	1	0	2	1	0	0	3	4
16	14	5	1	2	2	2	7	1	3	0	2	1	0	2	3	0
17	15	5	1	1	2	2	2	2	6	0	1	1	1	2	3	4
18	16	5	1	2	2	2	4	1	2	0	2	2	0	0	0	0
19	17	5	1	1	1	2	1	2	6	0	1	1	0	2	0	4
20	18	5	1	2	1	2	7	2	6	0	1	1	1	2	0	0
21	19	3	1	1	2	2	2	1	4	0	2	1	0	2	0	0

The last two questions on each survey allowed the students to leave an email to receive further information, thirty participants did so. They also had the opportunity to leave comments or notes that they felt would benefit the researcher. After the creation of the database, analysis of each column [question] was completed. General analysis and percentages were used to understand the attitudes towards predictive shopping. Once the general analysis was completed a more extensive analysis was performed. Comparisons were made between each question. These numbers were calculated by sorting the questions that were deemed important then examined the data within. The questions that were deemed important were the questions that considered the trends within predictive shopping programs, gender, and then deciding if the product mattered.

This was done in a two-step process. The first step was looking at general trends of the entire sample. The second step was evaluating how those trends differed by demographic. The purpose of this analysis was to see any differences among segments of the sample and how they felt about the different forms of predictive shopping.

Participants

A total of 125 students, 65 males, 59 females and 1 student who identified as "other", from Bridgewater State University participated in this study. The researchers were allowed access to a selection of classrooms where students were asked to participate in a survey at the conclusion of the class period. Participants were asked to participate and identities were left anonymously, unless they chose to leave an email to receive a report of the results. All 125 students understood that they might not directly benefit from the findings but their answers would aid in understanding predictive shopping in society. See Table 1-7 for participant demographics.

Table 1

Ethnicity:

African American	8.8%	**Pacific Islander**	<1%
Asian	1.6%	**White**	79.2%
Hispanic	3.2%	**Other**	6.4%

Table 2

Residence:

Resident on Campus	36%
Commuter of Campus	64%

Table 3

E***mployment other than student:***

Yes	89.5%
No	10.5%

Table 4

Age (in years):

<18	0%
18-24	84%
25-34	10.4%
35-44	4.8%
45-54	<1%

Table 5

Total household income before taxes during the past 12 months:

< $25,000	20.8%	**$75,000- $99,999**	9.6%
$25,000-$34,999	7.2%	**>$100,000**	17.6%
$35,000-$49,999	7.2%	**Not sure**	21.6%
$50,000-$74,999	9.6%	**Prefer not to answer**	6.4%

Table 6

Gender

Male	52%
Female	47%
Other	1%

Table 7

Hours per week worked:

>35	19.2%	**5-15**	20%
25-35	16.8%	**<5**	2.4%
15-25	28.8%	**Not employed**	12.8%

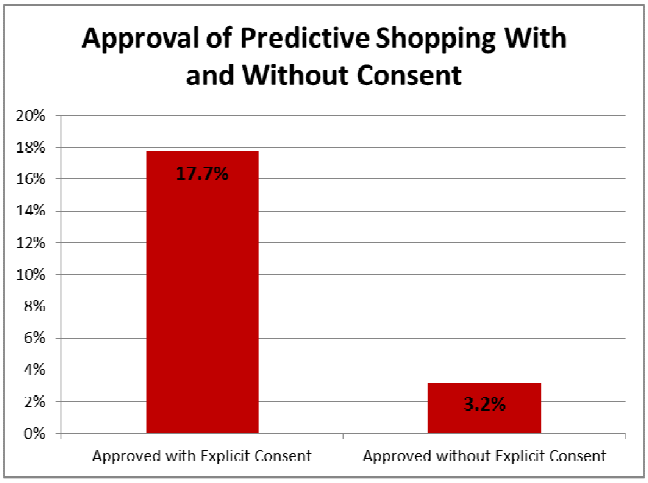
The majority of the students in the sample were between the ages of eighteen and twenty four years and from middle-class families. A majority of the participants held employed positions outside of being a student, and about one third of the sample commuted to school instead of residing in campus housing.

Results

Total Sample Predictive Shopping Results

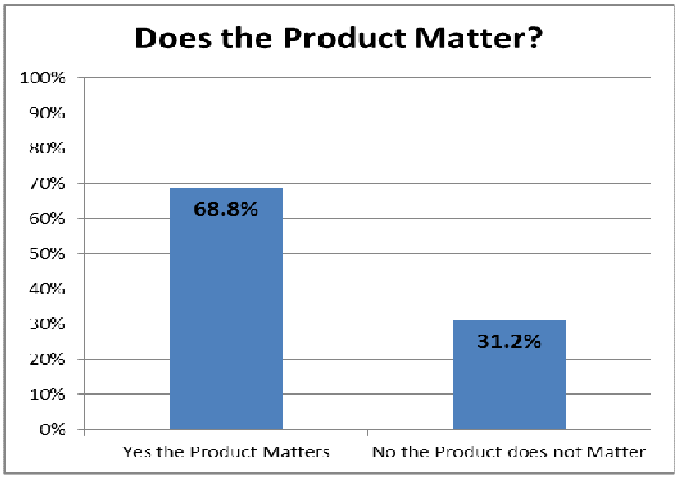
After surveying the 125 student sample the following was established from the demographic and predictive shopping questions.

Figure 3



Examining the most severe form of predictive shopping, where a retailer enrolls consumers in a program, sent them items that they knew the consumer would purchase, and then bill their credit card, 17.7% of the whole sample approved when giving explicit consent (see Figure 3). When considering enrollment without explicit consent, 3.2% of the whole sample approved of the algorithm. The majority in both cases, with and without consent, disapproved of a predictive shopping program when it dealt with items being suggested to them.

Figure 4



When considering if the product mattered when enrolling into a type of predictive shopping program, figure 4 demonstrates that, 68.8% of the whole sample said yes, that it did in fact matter the type of product or service being sold to them when enrolling into a predictive shopping program. The whole sample, even those who did not approve of a retail predictive shopping program, felt that the type of product was still important. The participants chose from a list of services and goods that they felt would most likely serve their needs if they were involved in a predictive shopping program.

Figure 5

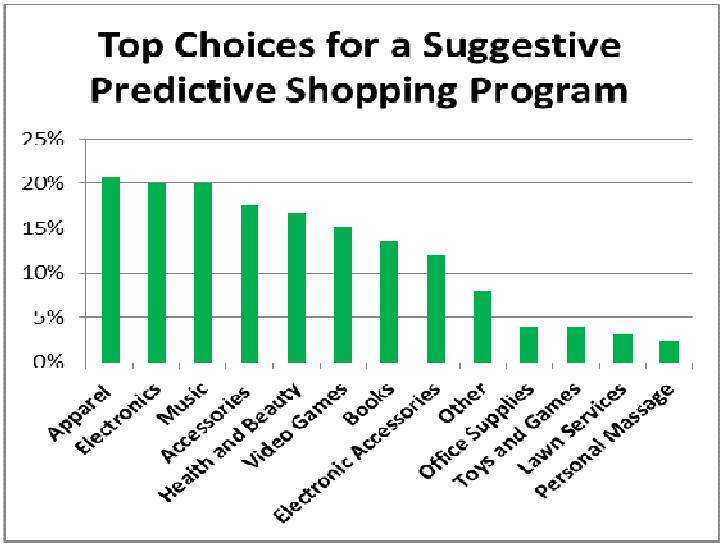
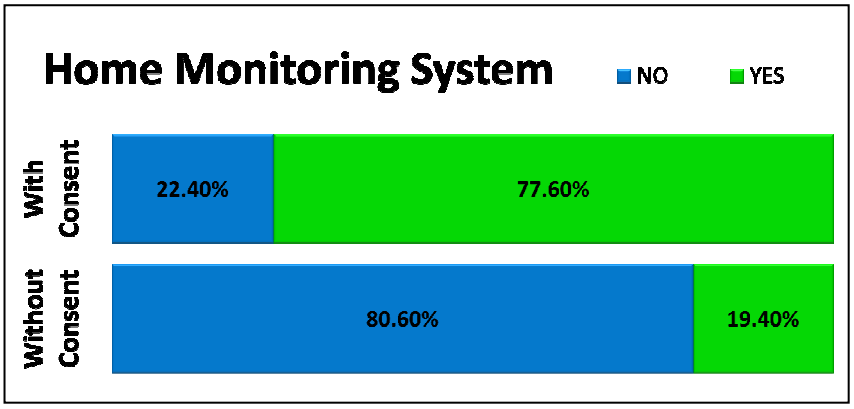


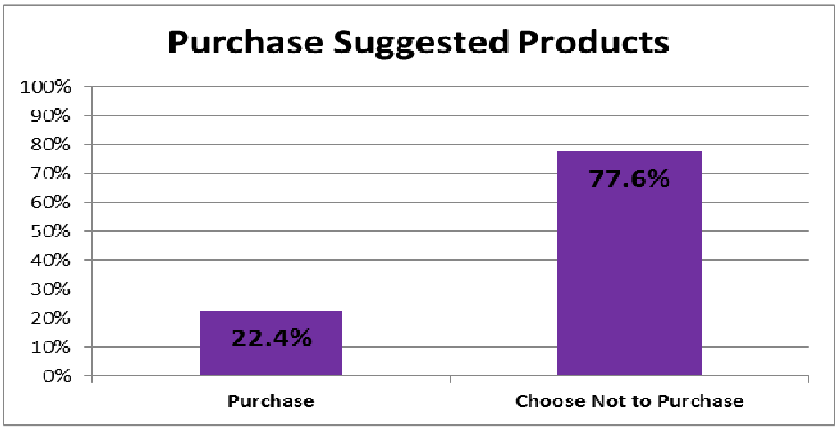
Figure 5 highlights the choices for a product or service that would be most popular in a retail predictive shopping program. The list was generated by considering frequent categories or items listed on online shopping sites such as Groupon and Amazon. The top choice chosen was apparel, with about 21% of the sample in favor of it. Closely following are electronics and music at 20%. With respects to offering a service like mowing services and personal massage, the sample rated them the least favorable.

Figure 6



In figure 6 it can be seen that 77.6% of the whole sample approved of a home monitoring system, within predictive shopping, that was designed to monitor and know when certain goods ran out, and did so with explicit consent from the buyer. 19.4% approved of this home monitoring system even without giving explicit consent from the retailer. The majority of the sample felt that consent was vital when enrolling in a home monitoring system.

Figure 7



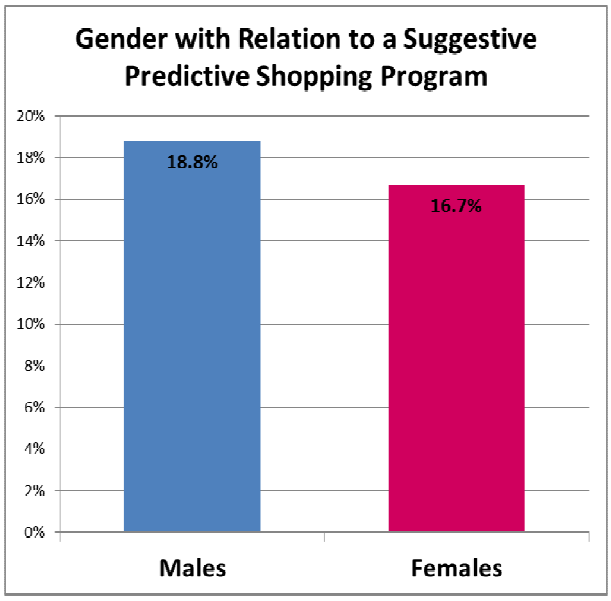
As seen in figure 7 the majority of the sample does not usually choose the items that are suggested to them on the bottom of a sales receipt or in the suggested items section on the side panel on a website. Still, about 22% do consider and will purchase the items that are generated for them.

Impact of Demographic Variables on Results

Gender

With the consideration of gender the following was established: Males are about 2% more likely than females to approve of a retail predictive shopping program. The majority of males and females still disapprove of predictive shopping (see Figure 8).

Figure 8



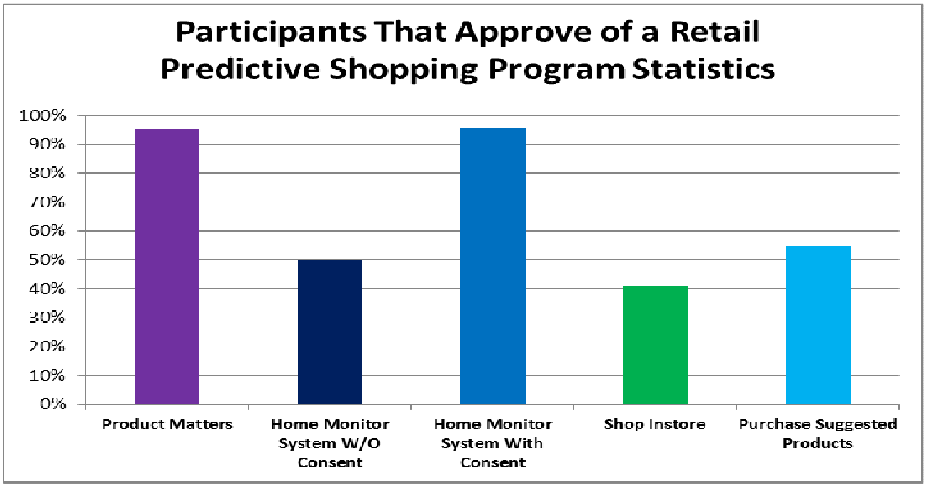
Retail Predictive Shopping with Consent

With consideration to question 9, it was established that about 95% of individuals who approved of a retail predictive shopping program with direct consent felt that the product or service being offered was important and also approved of a home monitoring system that monitored and was designed to know when certain goods ran out, and did so with explicit consent from the buyer. Of the participants who approved of this program, 50% of these individuals also considered enrolling into a home monitoring system that did not explicitly ask them for consent.

Figure 8 also shows that about 41% of individuals who approved of a retail predictive shopping program with direct consent tend to shop in-store rather than catalog or online.

More than 50% of the participants who approved this program tend to purchase the products that are suggested to them from the side panel on an online shopping site or at the bottom of a printed receipt (see figure 9).

Figure 9



Home Monitoring System *Without* Consent

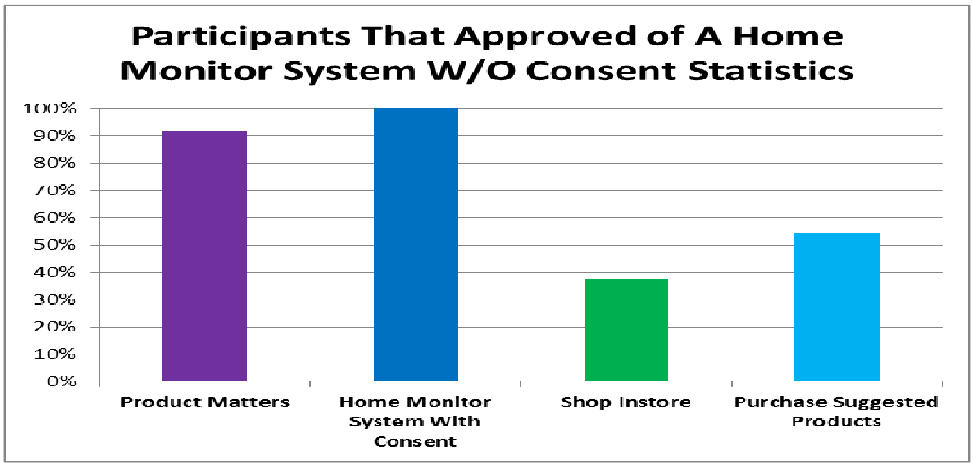
With consideration to question 13, it was established that 100% of individuals approved of a home monitoring system that monitored and designed to know when certain goods ran out, and did so without explicit consent from the buyer approved of a system in which the home monitor automatically, and with their explicit consent. About 92% of these individuals felt that the product they were purchasing did matter when enrolling into a home monitoring system *without* asking consent first.

Of this sample, 54.2% of individuals approved of a home monitoring system that monitored and was designed to know when certain goods ran out, and did so without explicit

consent from the buyer tend to purchase the products that are suggested to them from the side panel on a online shopping site or at the bottom of a printed receipt.

About 37.5% of individuals approved of a home monitoring system that monitored and was designed to know when certain goods ran out, and did so *without* explicit consent from the buyer tends to shop in-store rather than catalog or online (see figure 10).

Figure 10



Home Monitoring System *With* Consent

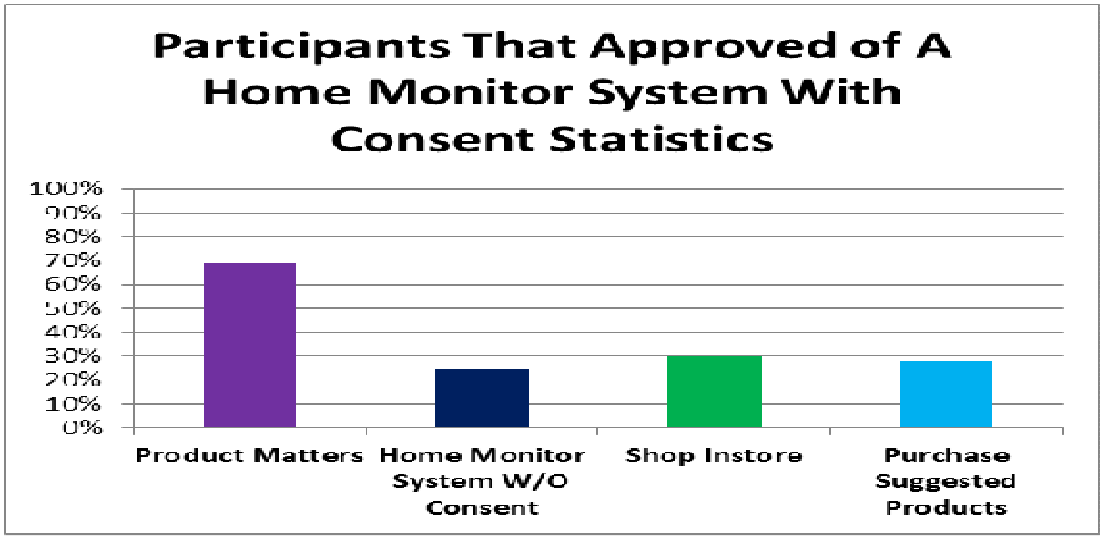
With consideration to question 14, it was established that about 69% of individuals approved of a home monitoring system that monitored and was designed to know when certain goods ran out, and did so *with* explicit consent agreed that it did matter the type of products or services that are being sold when enrolling into a predictive shopping program.

Of this sample about 25% of individuals approved of a home monitoring system that monitored and knew when certain goods ran out, and did so *with* explicit consent approved of a system in which the home monitor automatically, and without their explicit consent purchased products for them.

About 30% of individuals approved of a home monitoring system that monitored and knew when certain goods ran out, and did so *with* explicit consent tend to shop in-store rather than catalog or online.

It can also be seen that 27.8% of individuals approved of a home monitoring system that monitored and knew when certain goods ran out, and did so *with* explicit consent tend to purchase the products that are suggested to them from the side panel on an online shopping site or at the bottom of a printed receipt (see figure 11).

Figure 11



Interest in Predictive Shopping

With consideration to the interest in predictive shopping programs, it was established that over 80% of individuals who approved of a retail predictive shopping program, with direct consent, felt that as a consumer, predictive shopping is something they would want to find more information about. The next group of individuals that were interested in learning more about predictive shopping was the group that was interested in the home monitoring system that did not ask for explicit consent; 75% of those individuals wanted to know more. And lastly, less than

50% of individuals approved of a home monitoring system with explicit consent agreed that as a consumer, predictive shopping is something they would want to find more information about.

Consumers who are most concerned with privacy and choice are not as likely as consumers who are not concerned with privacy to be interested in predictive shopping programs (see figure 12).

Figure 12

Interpretation

Findings

The most outstanding finding that was brought about in the research was that about 20% of college students are willing to enroll into a home monitoring system that will, without their explicit consent, buy goods for them and bill their credit cards. This might mean that almost one in every five individuals in this sample are willing to give up control to an organization, and trust that the company will not take advantage of them. It could be suggested that the consumer might dislike the intrusiveness of the company by its program but appreciates the convenience of the

service. Even though the majority of students might not want to enroll in a program where they cannot give consent at all, it cannot be over looked that the number of students who would, is substantial, given the circumstances.

Predictive shopping without consent is a hard concept to grasp. Predictive shopping without consent is like walking into a supermarket, blindfolded, with a shopping bag in one hand and money in the other. Then employees fill up the bag with items they believe are important, take the money, and send the buyer on their way. The buyers will not know what they actually purchased until the products are unpacked and placed in their pantry. It is only a matter of time when the number of individuals who are willing to give up consent increases and predictive shopping for consumer goods is a part of every household. It is likely that this number will grow due to the fact that this generation will get older and the next generation will be even more concerned with instant satisfaction.

Reviewing the results I was able to conclude that 77.6% of individuals are willing to enroll into a home monitoring system that, with their explicit consent, bought goods for them and billed their credit cards. The majority of individuals feel that when it comes to products that they already purchase, or when considering routinely bought household products, a program like predictive shopping could make their lives easier and free up time for other activities. They are comfortable with giving up some choice if it means that they did not have to waste time thinking about the purchase.

This is a direct reflection of the generational effects on these students. The bulk of the participants are in their twenties, which means most have been surrounded by technology most of their life and do not know what it is like to go any extension of time without it. They have become accustom to instant gratification because of technology (Hepburn, 2013). They send a

text and want a response within minutes, Wi-Fi connection is considered weak when it takes longer than two seconds to load. If students are interested in researching a topic, they Google it, instead of reading the information in a textbook or encyclopedia (McGee, 2012). All of these attributes push them towards a system that can satisfy those needs and tendencies. The desire to receive products before they are even aware of it, feeds into, and even goes beyond instant satisfaction. The majority of the students are willing to enroll into a program that knows that they want before they even know.

The percent of individuals that were interested in a predictive shopping program that suggested a future product for them through predictive analytics was unfavorable when compared to the purchasing of previously bought items. This shows that individuals may not be willing to trust a company to know which products are best for them but they believe they could know the time frame that they might want to make purchase. This is significant since it shows that people might not be as willing to enroll into a full-fledged predictive shopping program if they were going to have to completely give up total choice. With household items they originally chose those products, but suggested purchases, through predictive shopping, most likely would suggest an item that they do not have already.

Companies that want to be successful with predictive shopping programs need to consider two ideas, and find a balance between them. The majority of the students in the sample are interested in a home monitoring system that asked for explicit consent to participate, but the individuals that were most interested in finding out more about predictive shopping programs are the students are were statistically in favor for the more extreme form of retail predictive shopping. If companies want their customers to be open to a new way to shop they are suggested

to ask for consent. The individuals that were comfortable with not giving explicit consent did not have an issue enrolling in a program that in fact requested explicit consent.

Companies are suggested to survey their customers to understand the amount of choice they are willing to give the company. This, in turn, could generate more sales, and create a successful retail predictive shopping program.

In conclusion, when deciding how college students felt about a predictive shopping program, the majority are willing to enroll in a program for a house monitoring system that asked for explicit consent, and about one in every five students would enroll into a program without giving explicit consent. College students are more likely to enroll in a program if it was for previously purchased products but were not as willing to enroll in a program that suggested future products to them. In general, four out of five students feel that predictive shopping is a bad idea when considering a full retail predictive shopping program even with consent. It drastically dropped when it was considered without consent from the buyer.

There are opportunities in the future for these feelings to change to a more positive outlook on predictive shopping programs, but it will most likely be gradual and done in small increments to familiarize society with these changes and innovative solutions.

Strengths, Limitations, Future Changes

With regards to the study, my interest, as the researcher, was focused on college students and how they felt about forms of predictive shopping programs. A limitation that occurred was the fact that it only included college students. More specifically, it only included students from one university. Inclusivity of the sample resulted in a narrow demographic. With relation to the demographics, the sample that was used was predominately of a white background. This caused a lack of racial diversity, potentially curving the results that were concluded.

Future researchers will want to look at different demographics and compare those findings with research already conducted. It is also important to note that if this study is done later in time, changes can be expected due to the changes and influences of technology.

Compared to Cass Sunstein's research the percentages of a university sample are fairly similar to what this survey discovered. Sunstein's college sample showed some willingness to enroll into a predictive shopping program although it was still the minority (Sunstein, 2014). When compared to a larger sample of a more diverse population that he conducted, the amount of individuals that approved of a predictive shopping program was minimal, almost nonexistent.

A change that could be beneficial to this research is tracking the college generation through their stages in life. With graduating from college, discovering new career opportunities, and for many, forced to become more economically independent, views on predictive shopping may change. It has been seen that people will alter their shopping patterns when something dramatic happens in their life (Hill, 2015). This could positively or negatively change how they feel about predictive shopping.

There is the opportunity to see if tracking the university students will more closely relate to Sunstein's findings of an older population or, or if they will continue to have some support, if not more, for a predictive shopping program.

Companies that are interested in creating a predictive shopping program, I suggest moving into a predictive shopping program gradually. Companies should start with a home monitoring system with consent from the buyer. If this is generating a favorable response from the consumers, use the information collected and the trends from the buyers to move into a more extensive retail predictive shopping program. All of this should be done with consent from the buyer to create value for them and ease their comfort into such a program.

There are opportunities for predictive shopping to explode into retailers worldwide but it must be executed keeping the customer as the main focus and understanding the security and uneasiness that it may cause. Stress on the buyer will not produce more sales and could damage the company's image. Allow the customer to feel like they are making the choice not to choose, and that it is something they still have control over even if they are not necessarily explicitly making the choice themselves.

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Appendix

Predictive Shopping Questionnaire

You are invited to participate in a survey about Predictive Shopping, defined as a concept whereby companies use predictions to enroll the consumer in special programs in which the consumer receives goods and services, and are asked to pay for them, before they have actually chosen them. If you decide to participate in this study, your participation will involve answering the questions below. Although you may not personally benefit, this study is important to society because it will be used to reflect the amount of control consumers are willing to share with larger companies. There are no foreseeable risks, and you may refuse to answer particular questions or withdraw from this study at any time. Your confidentiality will be kept to the degree permitted by the technology and methods being used. If you agree to participate please continue to the questions below.

Demographic Questions:

1. What is your ethnicity?
   - ○ African American
   - ○ Asian
   - ○ Hispanic
   - ○ Pacific Islander
   - ○ White
   - ○ Other [specify]_____

2. What is your affiliation with Bridgewater State University?
   - ○ STUDENT
   - ○ STAFF
   - ○ OTHER

3. Are you a resident or a commuter?
   - ○ RESIDENT
   - ○ COMMUTER

4. What is your gender?
   - ○ MALE
   - ○ FEMALE
   - ○ OTHER

5. How old are you?
   - ○ Younger than 18
   - ○ 18-24
   - ○ 25-34
   - ○ 35-44
   - ○ 45-54
   - ○ 55-64
   - ○ 65 or older
   - ○ Prefer not to answer

6. What was your total household income before taxes during the past 12 months?
   - ○ Less than $25,000
   - ○ $25,000-$34,999
   - ○ $35,000-$49,999
   - ○ $50,000-$74,999
   - ○ $75,000- $99,999
   - ○ $100,000+
   - ○ not sure
   - ○ Prefer not to answer

7. Do you have a job outside of being a student?
   - ○ YES
   - ○ NO

8. If so, how many hours a week do you usually work?
   - ○ 35+ hours
   - ○ 25-35hrs
   - ○ 15-25hrs
   - ○ 5-15hrs
   - ○ less than 5hrs
   - ○ I am not currently employed

MAJOR: If you are a student, what is your current major? Please write your answer in the text box below.

Predictive Shopping Questions:

9. Suppose that over the years, your favorite store has compiled a great deal of information about your preferences. On the basis of a new algorithm, it thinks it knows what you will want to buy before you do. Would you enroll in a program in which the seller sent you items that it knew you would purchase, and billed your credit card? (Anyone could send the item back for a refund or just opt out of the program.)
    - ○ YES
    - ○ NO

10. Would it matter the type of products or services that are being sold to you when enrolling into a predictive shopping program?
    - ○ YES
    - ○ NO

11. If YES to question 10 please indicate which products and services you would be willing to purchase through a predictive shopping program. If NO please move on to question 12.

- ○ Accessories
- ○ Apparel
- ○ Books
- ○ Electronics
- ○ Electronic Accessories
- ○ Health and Beauty
- ○ Lawn Services
- ○ Music
- ○ Office supplies
- ○ Personal massage
- ○ Toys & Games
- ○ Video Games
- ○ Other (please specify): _____

12. Would you approve or disapprove if the seller automatically, and without your explicit consent, enrolled you in a program in which it sent you a product that it knew you would purchase, and billed your credit card?
    - ○ APPROVE
    - ○ DISAPPROVE

13. Imagine that your home came equipped with a monitor designed to "know" when certain goods ran out. Would you approve of a system in which the home monitor automatically, and **without** your explicit consent, bought goods for you and billed your credit card?

    ○ YES

    ○ NO

14. Imagine that your home came equipped with a monitor designed to "know" when certain goods ran out. Would you approve of a system in which the home monitor automatically, and **with** your explicit consent first, bought goods for you and billed your credit card?

    ○ YES

    ○ NO

15. What form of shopping do you (the buyer) tend to use the most:

    ○ ONLINE

    ○ CATALOG

    ○ INSTORE

    ○ OTHER

16. When buying products online many stores give suggestions or "Item's you may like" on a side panel for you to consider purchasing or they might write suggestions for further purchases at the bottom of their printed receipts. Do you (the buyer) tend to purchase the products that are suggested to you from these methods?

    ○ YES

    ○ NO

17. Is predictive shopping something you as a consumer would want to find more information about?

    ○ YES

    ○ NO

18. Would you be interested in receiving a copy of the analysis of this study on predictive shopping once our investigation is complete?

    ○ YES

    ○ NO

19. If yes, please leave your email address and name below,

    _____

20. Are there any questions/concerns/suggestions you would like to share with the investigators of this project? Write answer in the text box below: