# MARKETING RESEARCH FOR THERMO FISHER SCIENTIFIC INSTRUMENTS INC.

by

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# ABSTRACT

This article attempts to assess the customer perception, customer satisfaction and brand loyalty of Thermo Fisher Scientific in British Columbia. The analysis was done by conducting a survey in June 2008 among the users of analytical instruments in British Columbia. The survey results showed that Thermo Fisher Scientific is not ranked number one in terms of its attributes and needs to improve its brand reputation and customer awareness in order to elevate its rating in the market. Nevertheless, the number of organizations who purchased analytical instruments from Thermo Fisher Scientific in the past and are willing to purchase in the future is high, which can be interpreted as reflecting a high level of customer satisfaction and brand loyalty.

Statistical analysis identified that durability of instruments, sales representative knowledge, and brand reputation are major factors in overall rating of brands.

Results also showed that sales representatives' visits, participation in tradeshows, print catalogues, and email advertisement are the most effective marketing activities to promote analytical instruments.



**Keywords:** Thermo Fisher Scientific, Analytical Instrument, Customer Survey

# DEDICATION

For my husband Keyvan. Thank you for being understanding and patient about why I could not spend time with you over the last year. Your endless support enabled me to complete this program successfully and your love brightened my darkest days.

Also for my parents and my sisters. Without your support, I could not reach my goals and dreams.

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# TABLE OF CONTENTS

**Approval** ..... **ii**
**Abstract** ..... **iii**
**Dedication** ..... **iv**
**Acknowledgements** ..... **v**
**Table of Contents** ..... **vi**
**List of Figures** ..... **viii**
**List of Tables** ..... **ix**
**Introduction** ..... **1**
**Brands and Brand Attributes** ..... **3**
**Laboratory Analytical Instruments** ..... **5**
Primary Leaders ..... 5
Agilent Technologies Inc. ..... 7
Varian Inc. ..... 8
Waters Corporation ..... 8
ABI/ MDS Sciex ..... 9
Potential Customers ..... 9
Market Size ..... 10
**Background and History of Thermo Fisher Scientific** ..... **12**
**Research Design** ..... **16**
Research Methodology ..... 17
Questionnaire ..... 18
Survey ..... 19
Survey Administration ..... 20
**Survey Results** ..... **23**
Survey Coverage ..... 23
General Results ..... 23
Brand Preference and Customer Awareness ..... 24
Purchase Behaviour ..... 28
Correlation Test ..... 35
Thermo Fisher Scientific ..... 36
Agilent Technologies Inc. ..... 37
ABI/MDS Sciex ..... 37
Varian Inc. ..... 38
Waters Corporation ..... 38

Regression Analysis ..... 40
Overall Brand Rating vs. Brand Attributes (All Brands) ..... 40
Future Purchase Likelihood vs. the Brand Attributes for Each Brand ..... 41
Percentage of Budget Spent on Each Brand vs. Brand Attributes ..... 41
Regression Analysis Results for Thermo Fisher Scientific ..... 42
**Conclusion and Recommendation ..... 43**
Project Limitations ..... 45
**Reference List ..... 47**
**Appendix A – Survey Questionnaire ..... 50**
**Appendix B – Correlation Between Dependent Variables ..... 56**
**Appendix C – Correlation Between Dependent and Independent Variable (Individual Brands) ..... 58**
THERMO FISHER SCIENTIFIC ..... 59
ABI/ MDS Sciex ..... 60
VARIAN Inc. ..... 61
WATERS Corporation ..... 62
AGILENT Technologies ..... 63
**Appendix D – Overall Rating vs. Brand Attributes (All Brands) ..... 64**
**Appendix E – Purchase Likelihood vs. Brand Attributes (All Brands) ..... 66**
**Appendix F – Percentage of Budget Spend vs. Brand Attributes (All Brands) ..... 68**
Percentage of Budget Spend vs. Brand Attributes (All Brands) ..... 69
**Appendix G – Overall Rating vs. Brand Attributes (Thermo Fisher Scientific) ..... 70**
Overall Rating vs. Brand Attributes (Thermo Fisher Scientific) ..... 71
**Appendix H – Purchase Likelihood vs. Brand Attributes (Thermo Fisher Scientific) ..... 72**

# LIST OF FIGURES

Figure 1 Thermo Fisher Scientific Portfolio Mix ..... 13
Figure 2 Thermo Fisher Scientific Revenue by End Market..... 13
Figure 3 Revenue (in billions) ..... 14
Figure 4 Average Rating of Listed Factors in Selecting a Brand (Minor factor:1, Major factor: 7) ..... 25
Figure 5 Average Rating of Each Attribute for Each Brand..... 26
Figure 6 Average Overall Rating of Thermo Fisher Scientific and its Major Competitors ..... 28
Figure 7 Percentage of Respondents Who Have Purchased from Each Brand* ..... 29
Figure 8 Percentage of Respondents Who Selected Each Brand for Their Last Purchase..... 30
Figure 9 Average Rating of Purchase Intention for Each Brand in Future (Definitely Would not Purchase: 1, Definitely Would Purchase: 7) ..... 31
Figure 10 Average Percentage of Company's Budget Spent on Each Brand..... 32
Figure 11 Average Rating of Marketing Activities in Promoting Analytical Instruments ..... 33
Figure 12 Survey Demographic (Positions)..... 34
Figure 13 Survey Demographic (Industry) ..... 34

# LIST OF TABLES

Table 1 Segments Revenue Changes after Merger ..... 15

# INTRODUCTION

British Columbia's life science industry is the fastest growing biotech industry in Canada. Regional growth of this young industry is expected to increase the demand for scientific instruments in British Columbia (Growing Canada's Bio Economy, 2003). The government regulations and strict requirements for environmental testing in BC are other potential grounds for the rise in demand for scientific equipments.

The leaders in manufacturing and distributing scientific instruments are Thermo Fisher Scientific, Agilent Technologies, Waters Corporation, PerkinElmer Inc., ABI/MDS Sciex Inc., and Varian Inc.

The objective of this paper is to evaluate Thermo Fisher Scientific Inc. from the customers' perspective; verify the purchase decision criteria for analytical instruments; determine how Thermo Fisher Scientific Inc. is perceived in British Columbia by measuring customer satisfaction and awareness; and forecast the market demand in BC. The framework for this evaluation is as follows:

- Review the overall background of Thermo Fisher Scientific Inc.
- Prepare and conduct a customer survey by email
- Analyze the survey results

- Provide recommendation to improve the success of Thermo Fisher Scientific Inc. in British Columbia

This paper includes:

- A summary of brand definition, brand attributes and their impact on the sales
- Analytical instruments market, potential costumers and market leaders
- A summary of the research conducted
- Survey results and recommendation

## BRANDS AND BRAND ATTRIBUTES

Brand names are an important asset for an organization since they have long served as a kind of shorthand for perceived quality to consumers. Perceived quality directly influences customer satisfaction and increases purchase intention (Keiningham, Aksoy, Perkins-Munn, and Vavra, 2005). Brand preference and customer satisfaction are the two important parameters in predicting future purchase behaviour.

The high-level brand attributes normally associated with a company's name in B2B markets are quality, durability, ease of use and stability. These attributes convey the company's general integrity and increase consumer willingness to purchase the products or services. A few brand attribute perceptions can be formed through marketing, but most are gained after a period of time in the market place and are based on consumer perceptions of the company's products.

It is very important for companies to monitor customer perception of brand attributes. Brand attributes must be measured frequently to ensure the brand has continuing value in the market and to take corrective action if needed. (Baker, 2005). The best way to determine the brand's status in the market is to monitor both existing and potential customers. This can be done through online surveys, mailers, and interviews by phone or face-to-face.

The number of products that a firm offers is a key marketing mix variable (Berger, Draganska and Simonson, 2007). Product variety can influence perceived brand quality and consequently enhance the repeat purchase rate. It is evident that for many firms, offering a greater variety of options usually becomes a core competency. These firms generally enhance their perceived quality and purchase likelihood.

It should be noted that unfocused product variety may backfire and negatively affect perceptions of expertise. Therefore, having a good method in place to update and properly inform consumers about the range of products will positively affect the brand in the purchase decision.

Customer loyalty is another major factor in assessing a brand's status in the market. Loyal customers give a greater share of their spending to their trusted high value brands or service providers. When customers become more satisfied with a company, they are willing to spend more money with that company (Keiningham et al, 2005).

# LABORATORY ANALYTICAL INSTRUMENTS

Analytical instruments are the equipment used for measuring and analyzing materials (Kumar, 2005). These instruments are primarily used in laboratory and industrial settings in a variety of technologies. They can be combined with a range of accessories, consumables, software, spectral reference databases, services and support systems to provide a complete solution for the customer.

The global market for laboratory analytical instrumentation can be divided into three segments: separation technology, molecular analysis, and elemental analysis (Kumar, 2005). Some of the technologies in each group are:

- Separation Analysis: Gas Chromatography (GC), Electrophoresis and Liquid Chromatography (LC)
- Molecular Analysis: Mass Spectrometer (MS), Raman Spectrometer, UV-Visible, Nuclear Magnetic Resonance (NMR), and Infrared Spectrometer (IR)
- Elemental Analysis: Atomic Absorption Spectrometer (AAS), Atomic Emission Spectrometer (AES) and X-Ray Spectrometer

## Primary Leaders

The global market for laboratory analytical instrumentation is a mature market with growth opportunities that are challenging to attain (Kumar, 2005).

The companies that are in the analytical instrumentation market vary in size and nature. They may be directly involved in the development, manufacturing and marketing of the analytical instruments or they may be active in areas that are supplementary to analytical instrumentation. There are many players in the analytical instruments market with few leaders. Some of the key participants in the analytical instrumentation field are:

- ABB
- ABI/MDS Sciex
- Agilent Technologies
- BD
- Beckman Coulter
- Invitrogen
- JEOL
- Perkin Elmer
- Shimadzu
- Thermo Fisher Scientific
- Varian
- Waters Corporation

Leading manufacturers of analytical instruments include companies such as Thermo Fisher Scientific, Agilent Technologies Inc., Waters Corporation, PerkinElmer Inc., and Varian Inc. (Koundinya, 2006)

Thermo Fisher Scientific Inc. was formed by the merger of Thermo Electron with Fisher Scientific International, which were among the largest companies in the scientific and technical instruments field. The wide range of products that Thermo Fisher Scientific had after the merger meant that the company faced more competitors but also became stronger to compete against them (Hoover's Company Records, In-depth Records, 2008). Their major competitors are Agilent Technologies Inc., ABI/MDS Sciex, Varian Inc. and Waters Corporation.

In the next section, the profiles of the four companies are presented.

**Agilent Technologies Inc.**

Agilent Technologies Inc. provides bio-analytical and electronic measurement solutions for the communications, electronics, life sciences, and chemical analysis industries. Its product categories include gas chromatography, liquid chromatography, mass spectrometry, microfluidics, microarrays, atomic force microscopy, PCR (Polymerase Chain Reaction) instrumentation, software and informatics, and related bioreagents, as well as consumables and services. In addition, the company provides therapeutic nucleic acid development services and manufacturing solutions for the biotech and pharmaceutical industries. Agilent Technologies was founded in 1999 and is headquartered in Santa Clara, California. ("Profile for Agilent technologies", n.d.)

**Varian Inc.**

Varian Inc. engages in the design, development, manufacturing, marketing, sales, and service of scientific instruments and vacuum products. Its scientific instruments include analytical instruments such as mass spectrometers, chromatography instruments, optical spectroscopy instruments, and dissolution testing equipment; and magnet-based products, including nuclear magnetic resonance spectroscopy systems, magnetic resonance imaging systems, fourier transform mass spectrometry systems, and superconducting magnets. These products are used in the life science and industrial applications, such as identification, quantification, and analysis of the elemental, molecular, physical, or biological composition or structure of liquids, solids, or gases. The company offers its products and services to customers in North America, Europe, the Asia Pacific, and Latin America. Varian was founded in 1999 and is headquartered in Palo Alto, California. (“Profile for Varian Inc.”, n.d.)

**Waters Corporation**

Waters Corporation operates as an analytical instrument manufacturer primarily in the United States, Europe, Japan, and Asia. It designs, manufactures, sells, and services High Performance Liquid Chromatography (HPLC), Ultra Performance Liquid Chromatography (UPLC), and Mass Spectrometry (MS) instrument systems and support products, including chromatography columns, other consumable products, and post-warranty service plans. The company was founded in 1958 and is based in Milford, Massachusetts. (“Profile for Waters Corporation”, n.d.)

**ABI/ MDS Sciex**

Applied Biosystems/MDS SCIEX Instruments provides mass spectrometry systems and software for drug discovery research. It offers its products to researchers and scientists in biotechnology, biomedical, and pharmaceutical fields. The company's products are used for analysis in proteomics, clinical research, and drug metabolism studies. Applied Biosystems/MDS SCIEX Instruments was formerly known as PE SCIEX. The company was founded in 1986 and is based in the United States. (Applied Biosystem/MDSc Sciex , 2008)

## Potential Customers

The industry of laboratory analytical instruments is an international business dominated by large and innovative companies, who typically sell their products to different laboratories in:

- Life-sciences and Pharmaceutical firms
- Environmental laboratories
- Hospitals and clinical laboratories
- Forensic laboratories
- Academic and research laboratories
- Mining, agricultural, food organizations, biotechnology and other organizations that work with chemicals or analyze substances.

Among these end-users, the environmental testing laboratories and life sciences are the fastest-growing end-user segment for analytical instruments. (Koundinya, 2006)

## Market Size

Market share in the analytical instrument industry is concentrated. Approximately 950 firms are active in the industry, but only about 100 companies have sales above $50 million (Market Profile, 2008). The top 25 companies have 50% of the worldwide market and 80% of the market is dominated by companies located in US, Japan and Europe.

The global market for analytical instrumentation increased modestly from approximately $22 billion in 2000 to more than $30 billion in 2005. The last few years have been lackluster due to economic uncertainties, but the future looks promising to the industry participants (Market Profile, 2008). The total analytical instrument market is projected to generate nearly $42 billion in annual revenues by 2010.

The analytical instruments market in US is expected to grow from 10 billion dollars in 2006 to 13.7 billion dollars in 2010, an annual average growth rate (AAGR) of 7% (Tim Sudt, 2007).

One of the largest drivers for analytical instruments is the life science industry. The instrumentation market for life science applications in 2005 was estimated to be $15 billion and expected to reach to $22.9 billion by 2010. The market has been growing at an AAGR of about 9% (Tim Sudt, 2007).

The significant demand for analytical instruments in recent years is mainly due to the growing concerns about health, safety, and security in developed countries such as the United States, Canada, Japan and the United Kingdom. These regions therefore account for nearly all of the demand for the latest, most advanced, and most expensive instruments, which are used in the development of medical diagnostic tools, disease studies, and drug development (Market Profile, 2008).

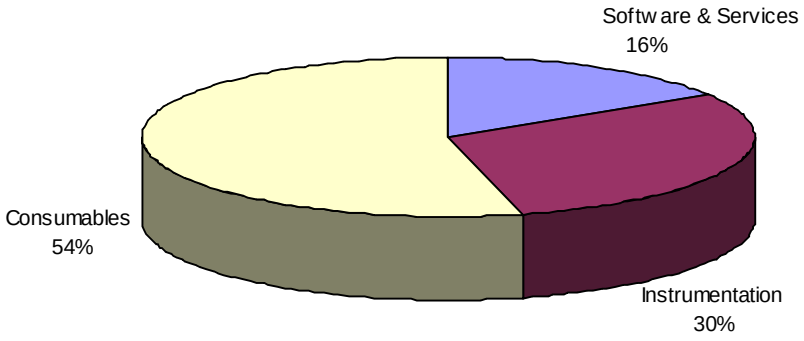
Meanwhile, increasing demand for environmental pollution measures in China and other developing countries has also led to the growth of the market for analytical instruments used in the environmental field (Koundinya, 2006).

# BACKGROUND AND HISTORY OF THERMO FISHER SCIENTIFIC

Thermo Fisher Scientific Inc. (NYSE:TMO) is one of the world leaders in the scientific instrument industry. Thermo Fisher Scientific Inc. was formed in November 2006 by merger of Thermo Electron with Fisher Scientific International. Thermo Fisher Scientific Inc. has more than 30,000 employees and serves over 350,000 customers within pharmaceutical and biotech companies, hospitals and clinical diagnostic labs, universities, research institutions and government agencies, as well as environmental and industrial process control settings. The company has annual sales of more than $10 billion with 7500 sales staff and service professionals.

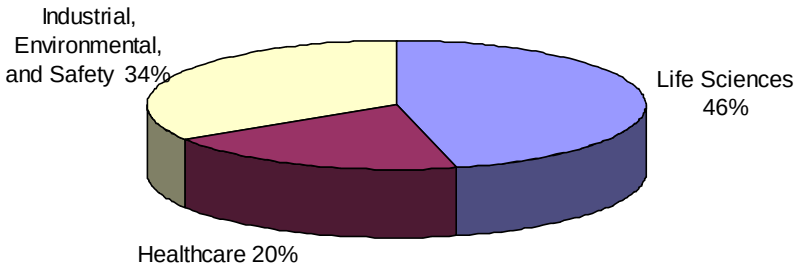
The company provides its products to customers through two brands: Thermo Scientific and Fisher Scientific. Thermo Scientific, which is a new name for Thermo Electron, offers a complete range of high-end analytical instruments as well as laboratory equipment, software, services, consumables and reagents to enable integrated laboratory workflow solutions. Figure 1 shows the Thermo Fisher Scientific portfolio mix.

**Figure 1 Thermo Fisher Scientific Portfolio Mix[1]**




Fisher Scientific provides a complete portfolio of laboratory equipment, chemicals, supplies and services used in healthcare, scientific research, safety and education. (Refer to Figure 2)

**Figure 2 Thermo Fisher Scientific Revenue by End Market[2]**

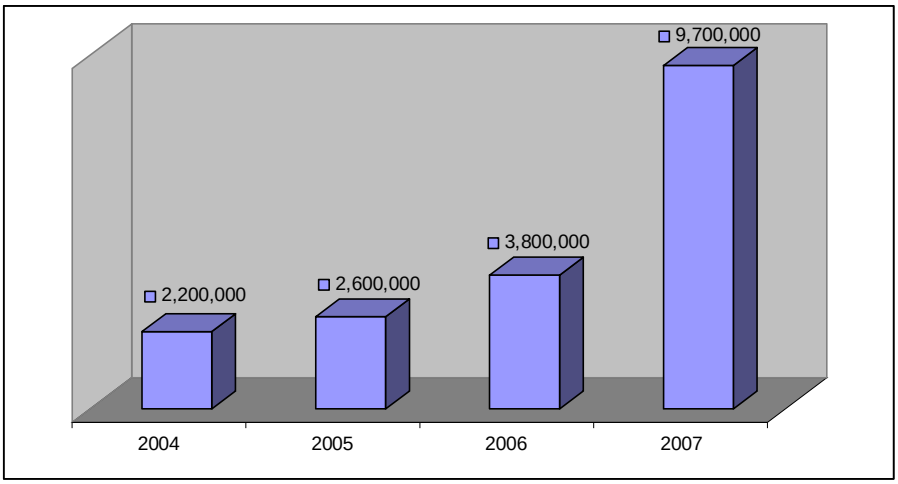



The company revenue has increased from $2.63 billion in 2005 to $9.75 billion in 2007 primarily due to the merger with Fisher and other acquisitions. Figure 3 shows the company revenue between 2004 and 2007.

[1] 2007 Thermo Fisher Scientific Inc. catalogue

[2] Source: 2007 Thermo Fisher Scientific Inc. catalogue

**Figure 3 Revenue (in billions)**




Analytical technologies cover 42% of the revenue, and the remaining 58% is from laboratory products and services.[3]Due to the merger, sales in the analytical technologies segment increased by $1.83 billion to $4.26 billion in 2007, and sales in the laboratory products and services segment increased $4.44 billion to $5.84 billion in 2007. Table 1 shows the changes in revenue for these two segments.

[3] Thermo Fisher Scientific 2007 annual report

**Table 1 Segments Revenue Changes after Merger**

| Revenues (Dollars in millions) | 2006 | 2007 | Change |
|---|---|---|---|
| Analytical Technologies | $2,425.8 | $4,256.0 | 75% |
| Laboratory equipment and products | $1,406.6 | $5,842.2 | 315% |

The merger of Thermo Fisher Scientific has boosted its top line growth and has given exposure to a much wider customer base.[4] Together, Thermo Fisher Scientific Inc. offers the most convenient purchasing options to customers.

[4] Hoover's Company Records-In-depth Records, June 17, 2008

# RESEARCH DESIGN

Since the life sciences industry in British Columbia is growing, it is very important for Thermo Fisher Scientific to analyze and measure the customer perception and brand awareness, and to estimate the demand for analytical instruments in this region, if it is to capture a strong share of this growing demand.

Therefore a research study was designed which entails an online survey of health institute, environmental, mining, biotechnology, academic and research laboratories in British Columbia.

In the survey, which consisted of 15 statements with a mix of seven-point scale and one open-ended question, attributes of five top manufacturers of analytical instruments were analyzed. These organizations are Thermo Fisher Scientific and its four major competitors: Agilent Technologies Inc., ABI/MDS Sciex, Varian Inc. and Waters Corporation.

The marketing department of Thermo Fisher Scientific, the project sponsor, provided a database of 512 existing and potential customers of analytical equipment in British Columbia. This list was provided by their sales representatives in British Columbia.

This section presents details of the research, including methodology, questionnaire and survey administration.

## Research Methodology

The research methodology consists of designing a questionnaire, collecting data, analyzing and interpreting the responses. The questionnaire was designed with 15 statements, with vital questions at the beginning and demographic and less important questions at the end of the questionnaire (see Appendix A). By this approach, the chance of obtaining results was improved, if the respondents were bored or for any reason refused to answer all the questions, they were more likely to at least have answered the important questions. The same strategy was used for one of the questions that compared the attributes of all five companies. Because the question was long and included several attributes, Thermo Fisher Scientific was placed first with the rest of the companies following. In this approach, the focus was on Thermo Fisher Scientific, as the survey result for this company had an important role in the research report.

Two samples were composed for the survey. The first sample, which was provided by the project sponsor, included their existing and potential customers in the British Columbia region. The second sample was randomly collected from websites of science departments of different colleges, biotechnology firms, and environmental and analytical laboratories in BC, who may be potential users of analytical instruments.

The collected data was then analyzed using Excel data analysis tools.

## Questionnaire

The questionnaire was designed to quantify the brand perceptions, major determinants of purchasing, purchase intention, brand loyalty, effectiveness of marketing activities, and demographics. Thermo Fisher Scientific and its four major competitors: ABI/MDS Sciex, Agilent Technologies, Varian and Waters Corporation were analyzed in this questionnaire. These companies were selected by consulting with the marketing department of Thermo Fisher Scientific, the project sponsor.

The questionnaire was designed using a mix of multichotomous and open-ended questions. The sentences were simple and short to avoid respondents skipping the questions. The questions that were important were asked in the beginning but the ones that were sensitive (e.g. budget) were asked later in the questionnaire to reduce the number of skipped questions. The Simon Fraser University logo was used in the header of the questionnaire in order to make the questionnaire look more professional and identify the non-commercial source of the survey.

The questionnaire consisted of the following sections:

- The respondents were asked if they have purchased analytical instruments in the past two years and whether they have intentions to purchase in next three years.
- Perceptions of the eight determinants of customer brand choice : accuracy, accessories, ease of use, warranty, price, sales representative knowledge, delivery time, and brand perception. The respondents were

asked to rate each factor on a seven point scale, where ‘1’=‘Poor’ and ‘7’= ‘Excellent’.

- Brand awareness, attributes and purchase intention of all five companies were measured using a seven-point scale. The total number of measured brand attributes was 14 in this segment of the questionnaire.
- Customer loyalty was measured for each brand.
- Finally, the demographic questions and comments for scientific equipment were asked.

The sample questionnaire was sent out to 15 individuals who use analytical instruments in their organization or laboratory, to pre-test the questionnaire, identify the deficiencies and receive feedback from the respondents. Using the pre-test feedback, some of the questions that did not provide adequate information were eliminated and some were modified.

The questionnaire was revised nine times in total before being approved by Dr. Payman Jula, Dr. Colleen Collins and Marketing department of Thermo Fisher Scientific.

## Survey

The survey was hosted online by SurveyMonkey.com, which is a web-based company for creating online surveys. Their intelligent software facilitates writing of the online survey and collecting the data. The advantage of email survey over other alternatives such as mail, telephone, and interview is that it is quick and cost effective. Using this method, the emails were sent out to the

respondents as a cover letter in text format, explaining that the survey is to understand the perception of scientific equipment users, and providing the link to the survey. To encourage the respondents to respond to the questions, it was indicated in the email that the survey is for an MBA project, which is a requirement for graduation. In addition, the respondents were ensured that no representative of any company would contact them in the future regarding this survey and the responses will remain confidential.

The disadvantage of using email survey is that it may be treated as spam. Because the emails were in text format rather than HTML and they were not personalized, there was a possibility that the survey email is mistaken for spam and is therefore ignored. However because the email was sent to the British Columbia region where the respondents are expected to recognize the Simon Fraser University name, the chances of disregarding the survey were lessened.

## Survey Administration

The web survey was delivered to the 474 email addresses that were provided by Thermo Fisher Scientific Marketing department on June 19, 2008, using Microsoft Outlook. A total of 51 out of the 474 (11 %) emails could not be delivered due to email errors and nine of the emails bounced back with an “out of office” auto reply. Three respondents replied to the email stating that they either do not purchase instruments and only rent, or that they forwarded the email to the right persons who are the decision makers. In total, 19 responses were collected in June 24, 2008.

Because the survey did not generate significant results, a follow up email was sent to all respondents on June 24, 2008. For this round of surveys the method for handling the survey administration was revised and the list management tool on SurveyMonkey.com was utilised for sending the emails. The list management tool sends personalized emails, enables the user to track who responds to the survey, and sends follow-up reminders to those who do not. It also manages opt-outs automatically. In addition, the cover letter was revised and it was attempted to convince the respondent of the value of the research and the importance of their participation. The follow up was done on Tuesday morning, June 24, therefore the email was in the respondents' mailboxes for a longer time (in comparison to the initial email survey) before they leave the office for the weekend.

A total of 471 emails were sent out for the follow up reminders using the list management tool. In total 25 useable responses were received, 48 emails were bounced back, and six emails opted-out. A total of nine emails returned with an "out of office" auto reply and eight respondents replied that they no longer work in the lab, do not use analytical instruments, and/or are not familiar with the companies in the questionnaire.

In addition to the existing and potential customers whose contact information was provided by the marketing department of the project sponsor, a total of 90 leads were generated through different websites of colleges, environmental laboratories, food laboratories and other general laboratories in British Columbia. This additional sample size was small due to the time

constraint. Since the leads were generated randomly, there was a high risk that these leads were not analytical instrument users. In total, four completed web surveys were obtained for the analysis from the original 90 emails. One email opted out and two emails bounced back.

There was a total of 48 survey responses, which was equivalent to approximately 10% of the contacted individuals. Although the response rate was low, it is not unusual in B2B type surveys therefore, the analysis was conducted using this sample. Refusal of respondents to participate in the survey depends on the nature of the respondent, the nature of the subject, the culture of respondent and the auspices of the research (Churcill and Iacobucci, 2003, P533).

# SURVEY RESULTS

This section presents the survey results including survey coverage, general results, correlation tests and regression analysis.

## Survey Coverage

The following topics were included in the questionnaire to test brand perception, customer loyalty and future purchase behaviour.

- Brand preference and customer awareness: customer choice, factors that determine purchases, attributes of each brand and overall rating of each brand
- Purchase behaviour: intention to repurchase, most recent purchase, repurchase, percentage of the companies' budget spent on each brand, and future purchase likelihood

## General Results

The survey data was analyzed using the SurveyMonkey.com analysis tool and MS Excel data analysis to generate a number of statistical tables and ultimately obtain meaningful results.

The data showed that 66.7% of responding organizations have purchased analytical instruments in the last two years. These products were: Ion coupled Plasma (ICP), Gas Chromatography (GC), Mass Spectrometer(MS), High Performance Liquid Chromatography (HPLC), Liquid Chromatography/ Mass Spectrometer(LC/MS), Atomic Absorption Spectrometer(AAS) and UV-Visible, and the rest were general laboratory equipment like balances, real time PCR and

Gel electrophoresis. 51.1% of the respondents are expecting to purchase analytical instruments in the next three years.

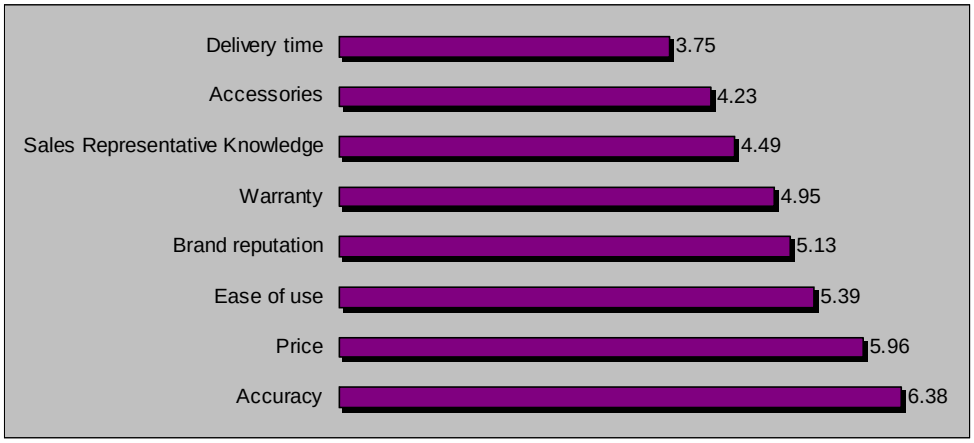
It can be concluded from the results that all respondents were likely relatively familiar with the current state of the market and had the requisite knowledge of the brands. It also suggests that firms are not in the market for equipment every year and so a firm that may not be interested at one time, may well be interested in the future.

**Brand Preference and Customer Awareness**

In response to the question of what factors determine a brand for purchasing, the survey results showed that from the list of provided factors, accuracy and price were key aspects in choosing a brand and in contrast, delivery time was the least important factor (See Figure 4). The respondents also indicated other factors as important in the comments section of the questionnaire. These factors are:

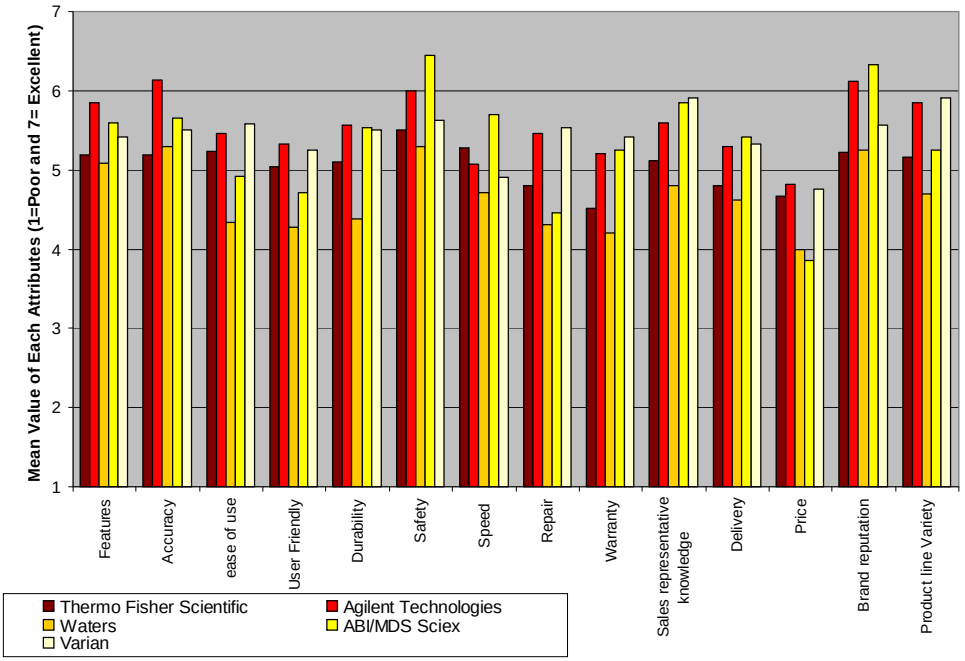
- Providing technical support in Canada
- Availability of demo models to test out the equipment before choosing the best one
- Personal experience with the instruments
- Relationship history with manufacturer
- Cost of repair and consumables
- Availability of parts in long term

**Figure 4 Average Rating of Listed Factors in Selecting a Brand (Minor factor:1, Major factor: 7)**




In order to determine the brand perceptions for each company, respondents were requested to rate each company's attributes on a scale of 1 to 7. These independent variables give a broad idea of how the company has been perceived, provide a basis for comparison of brands' attributes, and reveal the real determinant factors for each brand. Figure 5 shows the average rating of each attribute for each brand and provides a broad idea of how differently the brands are perceived.

**Figure 5 Average Rating of Each Attribute for Each Brand**




These results show that:

- Agilent Technologies is ranked as the best in features, accuracy, user friendliness, durability and price.
- Varian Inc. has the highest ratings in ease of use, repair and maintenance, warranty, sales representative knowledge and product line variety.
- ABI/MDS Sciex has the highest ranking for safety of instruments, speed of installation and brand reputation.
- Thermo Fisher Scientific is ranked in the middle for all the attributes

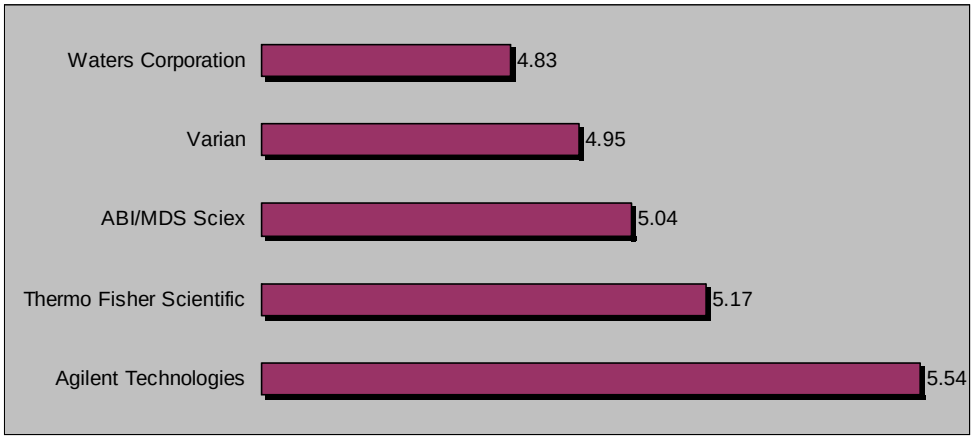
It can be concluded from the results that Thermo Fisher Scientific is not seen as a leader on any one dimension, however it not viewed as particularly poor either. Perhaps some insight into this positioning comes from the comments of one of the respondents.

"*Fisher cannot really be compared equally with the other companies on your list since Fisher carries a large number of products from different companies. The other companies in your list tend to carry primarily their own products. I will purchase items from Fisher simply because they carry other companies' products and it can be cheaper to buy from Fisher rather than directly from the other companies."*

This may also explain why Thermo Fisher Scientific is ranked as lowest in brand reputation while its brand portfolio is diverse. However it does not explain why it would be ranked  second lowest in product line variety despite the fact that the product portfolio of Thermo Fisher Scientific is greater than other brands, especially after merger with Fisher Scientific that happened in November 2006. This may suggest that there and the respondents may not be fully familiar with the new merger.

Figure 6 depicts the mean values of independent variable "overall rating" of the five companies. This variable gives a general idea of customer satisfaction for each brand.

**Figure 6 Average Overall Rating of Thermo Fisher Scientific and its Major Competitors**



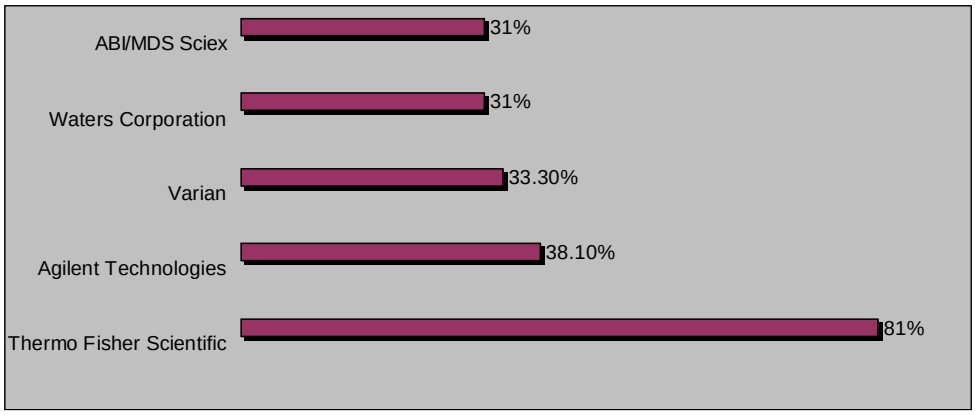

The results show that Agilent Technologies has the first ranking and Thermo Fisher Scientific is ranked as the second company with 95% confidence level. Therefore Thermo Fisher Scientifics' overall ranking is slightly higher than its average rating for individual attributes reported in the previous section.

## Purchase Behaviour

In order to determine repurchase intention and brand loyalty, respondents were asked what analytical instruments they have ever purchased and from which brand, their last brand purchased, and which brand they will purchase from in future.

Figure 7 summarizes the answers to the first question and shows the percentage of respondents who have purchased analytical instruments from each brand.

**Figure 7 Percentage of Respondents Who Have Purchased from Each Brand***




*Respondents could choose more than one company

The results show that:

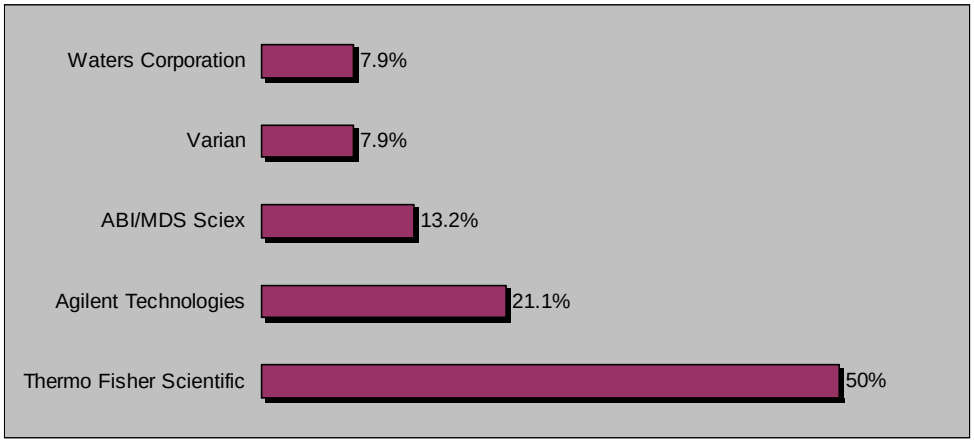
- Most of the respondents selected Thermo Fisher Scientific (81%) and then Agilent Technologies (38.10%).
- Waters Corporation and ABI/MDS Sciex (31%) had the lowest result.
- Varian was in the middle (33.30%)

Since the respondents were customers and potential customers of Thermo Fisher Scientific, one might say that the results are biased toward Thermo Fisher Scientific. Although a selection of non customers was also included in the sample.

The results also show the instruments that were purchased most are Inductively Coupled Plasma (ICP), Gas Chromatography (GC), Liquid Chromatography/Mass Spectrometer (LC/MS), and High Performance Liquid Chromatography (HPLC). Other products were general laboratory equipments such as real time PCR, shaker, autosampler and UV-Visible.

Figure 8 presents the answers to the second question and shows the percentage of respondents who purchased their last analytical instruments from each brand:

**Figure 8 Percentage of Respondents Who Selected Each Brand for Their Last Purchase**

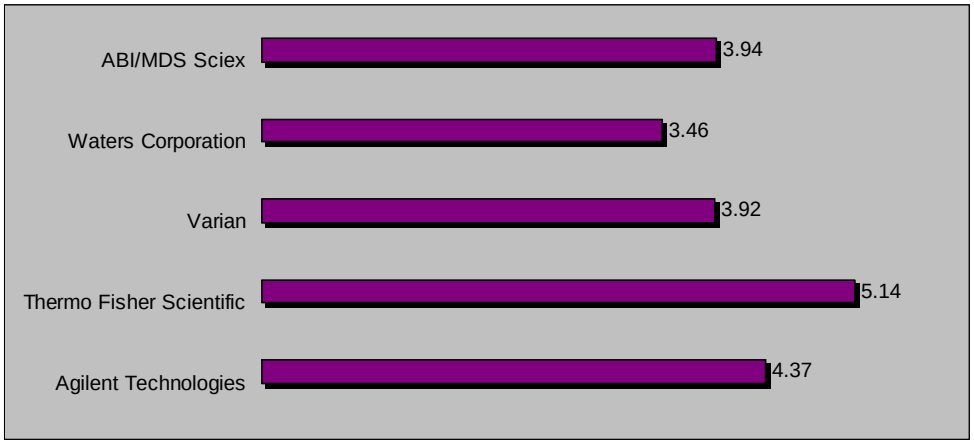



The results show that:

- The last purchase of the organizations was mostly from Thermo Fisher Scientific (50%) and then Agilent Technologies (21.1%).
- ABI/MDS Sciex, Varian and Waters Corporation had the smaller market share for the last purchase of the organizations.

Figure 9 summarizes the answers to the third question and shows the percentage of respondents who will purchase analytical instruments from each brand in future. In this question the respondents were asked to rate their intention of a future purchase from each brand on a scale from 1 to 7. Answers to these questions will ascertain the customer loyalty for each brand.

**Figure 9** **Average Rating of Purchase Intention for Each Brand in Future (Definitely Would not Purchase: 1, Definitely Would Purchase: 7)**



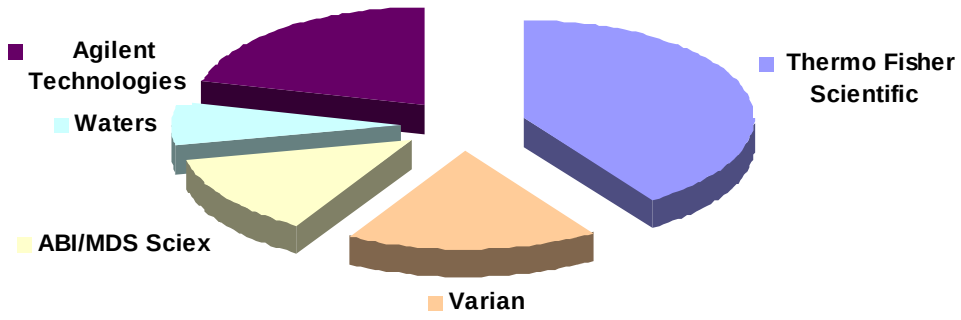

The mean value of future purchase intention, presented in Figure 9, provides evidence that organizations are willing to purchase from Thermo Fisher Scientific more than from the other companies. However, the results can also be interpreted to mean that the purchase probability of Thermo Fisher Scientific is higher because they have a larger product portfolio than their competitors and therefore, having a higher mean value does not necessarily mean that the future purchase will definitely be done from Thermo Fisher Scientific. In fact, given the relatively high purchase levels from Thermo Fisher in the past, this purchase intention is relatively low, which suggests customers are not inherently loyal and consider a variety of brands for their next purchase.

Comparing the results presented in Figure 8 for the last purchase and in Figure 9 for the future purchase show that purchase intention and customer loyalty for Thermo Fisher Scientific is higher than other brands. However, there is also a contrast between the overall ratings, last purchase and repurchase

attitude of brands. This can be because of different products and/or different prices.

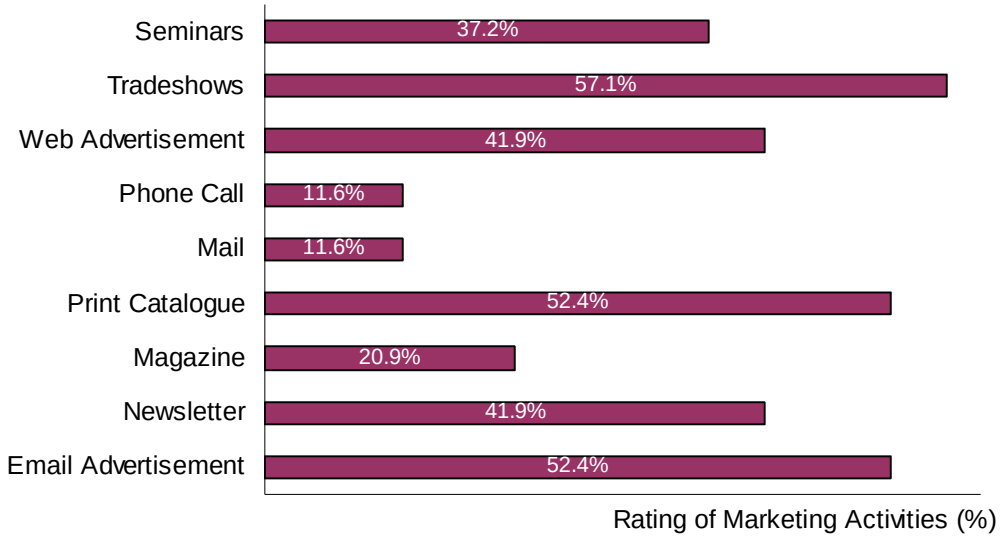
Figure 10 shows the mean value of the percentage of the company's budget that was spent on each brand. This shows that 30% of the organization's budget for laboratory equipment in average was spent on purchasing from Thermo Fisher Scientific. After Thermo Fisher Scientific, Agilent Technologies and Varian were the companies with the highest percentage.

**Figure 10 Average Percentage of Company's Budget Spent on Each Brand**




In order to examine what marketing activities are more effective in promoting analytical instruments, the respondents were asked how their organizations keep up-to-date with analytical instruments. Figure 11 shows the average rating of each marketing activity.

**Figure 11 Average Rating of Marketing Activities in Promoting Analytical Instruments**




The results show that:

- Respondents keep up-to-date by participating in tradeshows (57.1%), email advertisement (52.4%) and print catalogue (52.4%).
- Phone calls and direct mail were the least effective approaches for promoting the products.
- Out of eight additional comments that respondents provided in the comments section, five mentioned that sales representative visits and word of mouth were other factors for keeping up-to-date with analytical instruments.

Figure 12 shows the respondents' positions. The results show that the majority of the respondents are laboratory managers (39%) and the remaining are postdoctoral fellows, lab technicians, laboratory analysts and scientific specialists.

**Figure 12 Survey Demographic (Positions)**

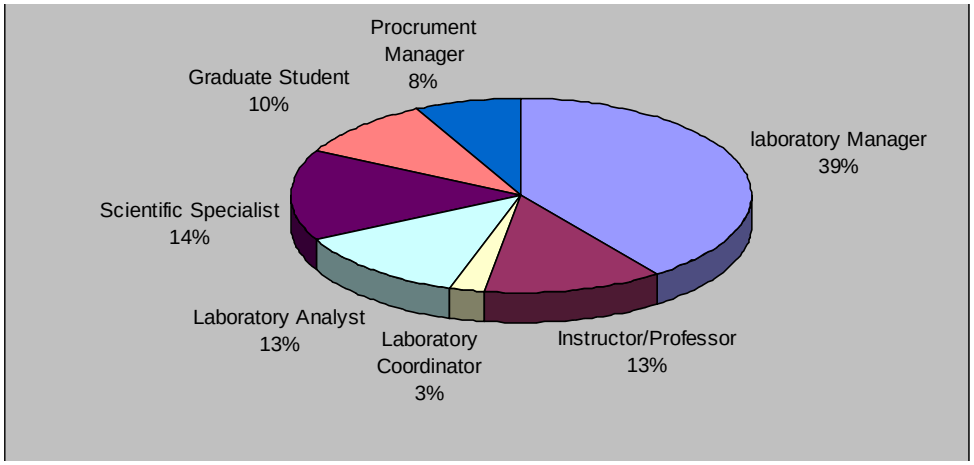
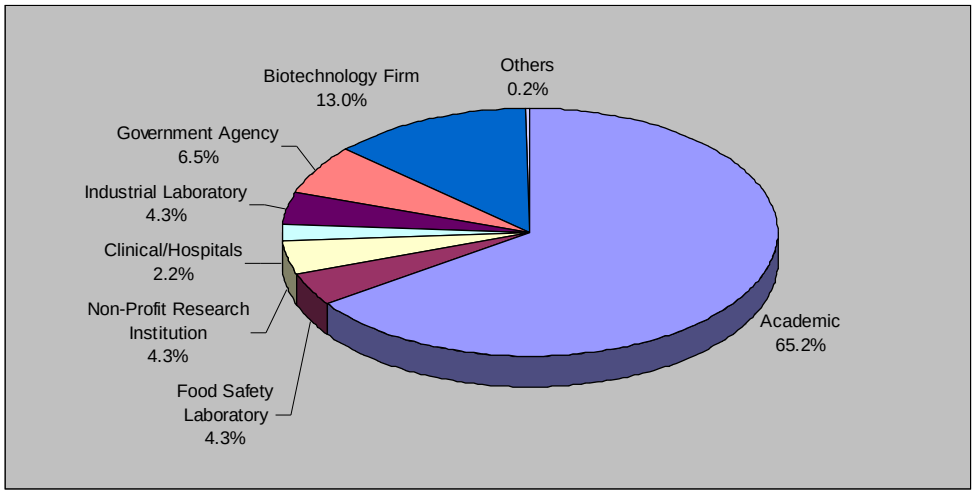



Figure 13 shows the percentage of respondents who work in academic organizations, biotechnology firms, government agencies, hospitals and Industrial laboratories.

**Figure 13 Survey Demographic (Industry)**




A separate question revealed that:

- 58.7% of the respondents had the authority to recommend the purchase
- 15.2% and 21.7% had the authority to evaluate and authorize the purchase, respectively

- Only 4.2% had no role in purchasing the systems

## Correlation Test

Correlation analysis involves measuring the degree of relationship between two or more variables. Correlation analysis was conducted using the Excel analysis tool for three dependent variables:

- Overall rating of brands
- Probability of future purchase
- Percentage of budget spent for analytical instruments.

The results showed that:

- There is a fairly strong correlation (0.71) between the overall rating for brands and the future purchase intention, meaning that more than 50% of variation in future purchase is explained by overall rating for the analytical instruments. ( See Appendix B)
- Correlation between the probability of future purchase and percentage of budget is moderate (0.52), meaning that 27% of variation in the probability of future purchase is explained by the percentage of company's budget spent on each brand.
- Correlation between the overall rating for all brands and the percentage of budget spent on each brand is very low (0.21), meaning that only 5% of variation in the overall rating is explained by percentage of company's budget spend on analytical instruments. This low correlation shows that

some parameters other than overall rating must be driving their share of spending on each brand. Two potential reasons are:

-Product availability: The seller company may not carry the exact products or the product may be out of stock

-Different quality in products: One company might be better than other companies overall, but product of other might perform better

In addition to this analysis, the correlation analysis was conducted for each brand individually for three dependent variables (see appendix C):

- Overall rating of brands
- Probability of future purchase
- Percentage of budget spent for analytical instruments

as well as the 14 independent variables which were the attributes listed in the questionnaire.

The results for each brand are as follows:

**Thermo Fisher Scientific**

Correlation between the overall rating and brand reputation is fairly strong (0.86), meaning that 74% variation in overall rating of Thermo Fisher Scientific is explained by its brand reputation. Other variables that had a relatively strong relationship to overall rating include accuracy (r=0.74), durability (r=0.73), repair (r=0.71) and product line variety (r=0.70). In contrast price had the lowest impact (r=0.30) on the overall rating.

Correlation between the future purchase and sales representative is medium (0.64), meaning that the 40% of variation in future purchase of Thermo Fisher Scientific is explained by sales representative. Correlation between the percentage of budget spent on Thermo Fisher Scientific brand and all attributes is much lower, suggesting that something other than Thermo Fisher Scientifics' own attributes (ie. competitors attributes) or other missing attributes explain percentage of budget. Delivery is the highest (r=0.4), meaning that 16% of variation in the percentage of budget spend on Thermo Fisher Scientific is explained by its delivery.

**Agilent Technologies Inc.**

The correlation results showed that the correlation between overall rating and durability is strong for Agilent technologies (0.74), meaning that 54% of overall rating of Agilent Technologies brand is attributable to its durability. There is fairly strong correlation between the future purchase likelihood and the speed of Installation (0.74), indicating that 54% variation in future purchase likelihood is explained by speed of installation of instruments. Correlation between the percentage of budget spent on Agilent technologies instruments and sales representatives is low(0.185), meaning only 3% variation in percentage of budget spent on Agilent Technologies instruments is explained by sales representatives.

**ABI/MDS Sciex**

For ABI/MDS Sciex the correlation of overall rating and durability is very strong (0.82), meaning that 74% variation in overall rating of ABI MDS Sciex is

explained by durability of its products. There is a strong correlation between the future purchase likelihood and accuracy of instruments (0.66), meaning 43% variation in future purchase likelihood is explained by accuracy of instruments. The correlation of percentage of budget spent on ABI/MDS Sciex is low (0.30), meaning only 3% of variation in percentage of budget spent on instruments is explained by ease of use of instruments.

**Varian Inc.**

There is a strong correlation between overall rating and features of Varian instruments (0.95), meaning that 90% variation in overall rating is attributed to its product features. Correlation between future purchase likelihood and features of instruments is very strong (0.92), meaning that 84% of variation in future purchase likelihood is explained by the features of Varian Inc. instruments. Correlation between the percentage of budget spent on Varian Inc. and speed of Installation is medium (0.40), meaning 16% of variation in percentage of budget spent on Varian Inc. is explained by speed of installation.

**Waters Corporation**

For Waters Corporation there is a strong correlation between overall rating and brand reputation (0.92), meaning 85% of variation in overall rating is explained by brand reputation. The correlation between future purchase and brand reputation is same as above (0.92). Correlation between the percentage of budget and durability is medium (0.45), which means 20% of variation in

percentage of budget spent on Waters Corporation instruments is explained by its durability.

## Regression Analysis

This section summarizes the regression analysis results conducted on the received data.

### Overall Brand Rating vs. Brand Attributes (All Brands)

In a section of the questionnaire, the respondents were asked to identify the important factors for choosing a brand. Results identified accuracy and price as the most important factors in overall rating of brands, which seems obvious. However, determining what really matters in overall rating of a brand can also be determined indirectly through a multivariate regression analysis. The multivariate regression analysis was conducted to find out the determinant attributes for overall brand rating. Results show that brand attributes explain 90% of variation in overall brand rating. The regression analysis revealed that durability of instruments, sales representative knowledge and brand reputation have a great influence on the overall evaluation for brands (see Appendix D); therefore, it is evident that the determinant factors for overall rating are different from the ones expected, which were accuracy and price. The potential reasons are:

- A large number for respondents (39%) are laboratory managers who are mostly decision makers, and decision makers usually select price and accuracy as important factors, as these are the obvious criteria.
- These five brands are almost the top five brands in the market and their accuracy and price are not appreciably different. Therefore, these two factors may not be very determinant.

The regression analysis also shows that accuracy, ease of use, and product line variety have the least impact on the overall rating of brands

**Future Purchase Likelihood vs. the Brand Attributes for Each Brand**

A regression analysis was also conducted for future purchase likelihood and the percentage of budget that was spent on each brand. Results show that 70% of variations in future purchase likelihood can be explained by brand attributes. Sales representative knowledge and features are determinant factors for future purchase intention. Warranty and brand reputation have the lowest impact on future purchase intention (See Appendix E).

**Percentage of Budget Spent on Each Brand vs. Brand Attributes**

The multivariate regression analysis conducted on brand attributes and percentage of budget spent on each brand shows that 34% of variation in percentage of budget spent on each brand can be explained by the brand features; however, the regression between these two parameters is not statistically significant.

The results also show that the instrument features and repair/maintenance are the major factors, and durability and ease of use are the minor factors in the percentage of budget that was spent for analytical instrument (See Appendix F).

**Regression Analysis Results for Thermo Fisher Scientific**

The regression analysis conducted exclusively for Thermo Fisher Scientific shows that:

- 99% of both variations in overall brand rating, and future purchase likelihood are explained by Thermo Fisher Scientific's attributes.
- Brand reputation and ease of use are the variables that have the greatest influence on overall evaluation.
- Speed of installation, durability and accuracy are the variables that have the greatest influence on future purchase likelihood (See Appendix G& H).

It can be expected that improving these attributes for Thermo Fisher Scientific would have the greatest impact on the overall evaluation.

# CONCLUSION AND RECOMMENDATION

An email survey was conducted to evaluate customer perception of Thermo Fisher Scientific and to determine customer satisfaction, overall quality, and future purchase behaviour for this brand in British Columbia. The survey results show that:

- Although Thermo Fisher Scientific brand is not ranked number one in British Columbia, it is performing well and demand for this brand is higher than other competitors.
- Agilent Technologies is a strong competitor of Thermo Fisher Scientific in British Columbia. Therefore, although the variety of products that Thermo Fisher Scientific provides is a core competency, the company should try to improve its brand reputation and customer awareness of its product line to be able to elevate its rating and consequently compete better with its competitors. The variety of the product line may in fact be a limiting factor for the brand reputation as there may be issues in consistency of the products across all lines.
- The status of Thermo Fisher Scientific in customer satisfaction and customer loyalty is good but not dominant, however, in order to enhance this status, it is recommended to support the existing customers more

actively by providing them with new applications, seminars, and repair and maintenance services.

- Although it was expected that the price and accuracy of analytical instrument are the most important factors in evaluating a brand, statistical results show that durability of instruments, sales representative knowledge and brand reputation have a great influence on the overall rating of a brands. Therefore, in order to improve the overall rating of Thermo Fisher Scientific in British Columbia, it is recommended that this company focus on these factors.

The results also showed that effective marketing activities to promote products are sales representatives' visits, participation in tradeshows, print catalogues and email advertisement. Therefore, to increase the customer awareness in British Columbia, it is recommended that Thermo Fisher Scientific:

- Focus more on participating in local trade shows, distribute brochures and catalogues, and send email advertisements on a regular basis to build public awareness.
- Increase the number of sales representatives in the region and visit potential customers more actively. It is suggested that sales representatives visit the laboratory managers to promote the products, as the survey showed they have the authority to either recommend a product or make the decision.

- Organize regional interactive training and seminars to introduce their features and products to the market more effectively. These training activities can be a key competitive advantage for Thermo Fisher Scientific

Finally, it is recommended that Thermo Fisher Scientific conduct similar surveys in the British Columbia area on a regular basis to measure the customers' perspective and revise or modify their marketing strategy accordingly, especially since demand for analytical instruments in this market is growing. By conducting an annual survey of all the major users of scientific instruments, Thermo Fisher Scientific can assess their customer satisfaction, customer loyalty, and purchase intention.

## Project Limitations

The response rate of this survey was limited, mainly due to time and budget constraints. Survey results, observation and conclusion would be more accurate by having a larger response rate. A number of factors that can improve the response rate, and therefore are recommended for future work include:

- Send out the survey to a larger number of people
- Prepare personalized emails
- Send advance notice informing recipients to expect the survey email soon
- Provide better information regarding the purpose of the survey to the respondent and indicate how the result may benefit them

- Offer rewards/incentives for those who participate in the survey. Incentives and rewards do not need to be very expensive or even be financial rewards. As previous studies showed, that even less than or equal to $0.50 incentives are more effective than the expensive ones (Churchill and Icoboucci, 2002, P537)
- Follow up individually by telephone after the second follow up email
- Arrange personal interviews with users of analytical instruments
- Utilize specialised software to perform the statistical analysis. Excel is limited in its ability to handle missing values and address issues like multicollinearity among the independent variables in the regression.

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# APPENDIX A – SURVEY QUESTIONNAIRE

## Analytical instrument survey-SFU MBA PROJECT

**1. Has your company/organization purchased any analytical instruments in the last two years?**

- ◯ Yes
- ◯ No
- ◯ I don't know

If yes please specify which product

**2. Are you expecting to purchase analytical instruments in the next three years?**

- ◯ Yes
- ◯ No
- ◯ Maybe
- ◯ I don't know

**3. How do the following factors determine the brand you decide to purchase for analytical instruments?**

**1: Minor factor**

**7: Major factor**

| | 1 Minor factor | 2 | 3 | 4 | 5 | 6 | 7 Major factor |
|---|---|---|---|---|---|---|---|
| Accuracy | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Accessories | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Ease of Use | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Warranty | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Price | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Sales representative knowledge | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Delivery time | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Brand reputation | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |

Other (please specify)

## Analytical instrument survey-SFU MBA PROJECT

**4. Please rate each company from your own perspective.**

**1:Poor**

**7:Excellent**

| | Thermo Fisher Scientific | Waters Corporation | ABI/MDS Sciex | Agilent Technologies | Varian |
|---|---|---|---|---|---|
| Features | | | | | |
| Accuracy | | | | | |
| Ease of use | | | | | |
| User-friendly software | | | | | |
| Durability | | | | | |
| Safety | | | | | |
| Speed of installation | | | | | |
| Repair and maintenance | | | | | |
| Warranty | | | | | |
| Sales representative knowledge and courtesy | | | | | |
| Delivery time | | | | | |
| Price | | | | | |
| Brand reputation | | | | | |
| Product line variety | | | | | |

**5. Overall how do you rate the following brands?**

**1: Poor**

**7: Excellent**

| | 1 Poor | 2 | 3 | 4 | 5 | 6 | 7 Excellent |
|---|---|---|---|---|---|---|---|
| ABI/MDS Sciex | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Agilent Technologies | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Thermo Fisher Scientific | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Varian | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Waters Corporation | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**6. From which one of the following companies have you ever purchased analytical instruments?(Check all that apply)**

☐ ABI/MDS Sciex ☐ Agilent Technologies ☐ Thermo Fisher Scientific ☐ Varian ☐ Waters Corporation

## Analytical instrument survey-SFU MBA PROJECT

**7. From which one of the following companies did you purchase last time?(Please check only one)**

◯ ABI/MDS Sciex ◯ Agilent Technologies ◯ Thermo Fisher Scientific ◯ Varian ◯ Waters Corporation

Please specify which product

**8. What is the purchase probability for each brand in future?(Please check all that apply)**
**1:Definitely would not purchase**
**7:Definitely would purchase**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| ABI/MDS Sciex | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Agilent Technologies | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Thermo Fisher Scientific | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Varian | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Waters Corporation | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |

**9. What percentage of your company's budget approximately was spent on each brand?**

| | 0% | Under 20% | 20%-40% | 40%-60% | 60%-80% | 80%-100% | I don't know |
|---|---|---|---|---|---|---|---|
| ABI/MDS Sciex | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Agilent Technologies | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Thermo Fisher Scientific | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Varian | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Waters Corporation | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |

**10. How do you keep up-to-date with analytical instruments?**
**(Please check all that apply)**

☐ Email advertisement ☐ Newsletter ☐ Magazine ☐ Print catalogue ☐ Mail ☐ Phone call ☐ Web advertisement ☐ Tradeshows ☐ S

Other (please specify)

## Analytical instrument survey-SFU MBA PROJECT

**11. Which of the following best describe your title?**

- ◯ CEO
- ◯ Director
- ◯ Instructor/Professor
- ◯ Laboratory Manager
- ◯ Laboratory Coordinator
- ◯ Laboratory Analyst
- ◯ Scientific Specialist
- ◯ Laboratory Coordinator
- ◯ Graduate Student
- ◯ Procurement Manager

Other (please specify)

**12. In which type of organization do you work?**

- ◯ Academic
- ◯ Biotechnology firm
- ◯ Clinical/Hospital
- ◯ Environmental laboratory
- ◯ Food Safety Laboratory
- ◯ Government agency
- ◯ Industrial Laboratory
- ◯ Non-profit Research institution

Other (please specify)

**13. What best describes your purchasing authority?**

- ◯ Authorize
- ◯ Recommend
- ◯ Evaluate
- ◯ No purchase Role

## Analytical instrument survey-SFU MBA PROJECT

**14. What is your department's average annual budget for purchasing new analytical instruments?**

- ◯ Less than $20,000
- ◯ $20,000-$40,000
- ◯ $40,000-$80,000
- ◯ More than $80,000
- ◯ I don't know

**15. Do you have any other comments about your purchase of scientific equipment?**

# APPENDIX B – CORRELATION BETWEEN DEPENDENT VARIABLES

**Correlation between Dependent Variables**

| | Overall Rating | Future purchase likelihood | Percentage of firm's budget spent on analytical instrument |
|---|---|---|---|
| Overall rating | 1.00 | | |
| Future purchase likelihood | 0.71 | 1.00 | |
| Percentage of firm's budget spent on analytical instrument | 0.21 | 0.52 | 1.00 |

# APPENDIX C – CORRELATION BETWEEN DEPENDENT AND INDEPENDENT VARIABLE (INDIVIDUAL BRANDS)

## THERMO FISHER SCIENTIFIC

| | *Overall Rating* | *Future Purchase* | *% budget* | *Feature* | *Accuracy* | *Ease of Use* | *User Friendly* | *Durability* | *Safety* | *Speed of Insatllation* | *Repair* | *Warranty* | *Sales rep* | *Delivery* | *Price* | *Brand Reputatio* | *Product line* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overall Rating | 1.00 | | | | | | | | | | | | | | | | |
| Future Purchase | 0.37 | 1.00 | | | | | | | | | | | | | | | |
| % budget | -0.01 | 0.48 | 1.00 | | | | | | | | | | | | | | |
| Feature | 0.65 | 0.38 | 0.00 | 1.00 | | | | | | | | | | | | | |
| Accuracy | 0.74 | 0.38 | 0.11 | 0.82 | 1.00 | | | | | | | | | | | | |
| Ease of Use | 0.45 | 0.42 | 0.23 | 0.65 | 0.51 | 1.00 | | | | | | | | | | | |
| User Friendly | 0.51 | 0.05 | -0.08 | 0.49 | 0.61 | 0.50 | 1.00 | | | | | | | | | | |
| Durability | 0.73 | 0.09 | -0.33 | 0.59 | 0.66 | 0.32 | 0.60 | 1.00 | | | | | | | | | |
| Safety | 0.49 | 0.33 | 0.30 | 0.70 | 0.62 | 0.46 | 0.24 | 0.58 | 1.00 | | | | | | | | |
| Speed of Insatllation | 0.46 | -0.03 | -0.04 | 0.47 | 0.52 | 0.24 | 0.25 | 0.40 | 0.56 | 1.00 | | | | | | | |
| Repair | 0.71 | 0.21 | 0.18 | 0.63 | 0.65 | 0.45 | 0.37 | 0.56 | 0.50 | 0.62 | 1.00 | | | | | | |
| Warranty | 0.39 | 0.28 | -0.03 | 0.44 | 0.28 | -0.09 | -0.09 | 0.30 | 0.55 | 0.34 | 0.35 | 1.00 | | | | | |
| Sales rep | 0.48 | 0.65 | 0.23 | 0.16 | 0.20 | -0.07 | -0.08 | 0.20 | 0.28 | 0.01 | 0.29 | 0.59 | 1.00 | | | | |
| Delivery | 0.37 | 0.54 | 0.41 | 0.35 | 0.55 | 0.27 | 0.25 | 0.29 | 0.28 | 0.42 | 0.36 | 0.17 | 0.37 | 1.00 | | | |
| Price | 0.30 | 0.45 | 0.32 | 0.43 | 0.44 | 0.35 | 0.23 | 0.28 | 0.49 | 0.28 | 0.40 | 0.23 | 0.27 | 0.55 | 1.00 | | |
| Brand Reputation | 0.87 | 0.38 | 0.25 | 0.49 | 0.68 | 0.42 | 0.43 | 0.67 | 0.50 | 0.36 | 0.67 | 0.32 | 0.53 | 0.38 | 0.30 | 1.00 | |
| Product line Variety | 0.70 | 0.23 | -0.20 | 0.71 | 0.68 | 0.54 | 0.45 | 0.60 | 0.50 | 0.58 | 0.61 | 0.18 | 0.16 | 0.47 | 0.60 | 0.68 | 1.00 |

## ABI/ MDS Sciex

| | *Overall Rating* | *Future Purchase* | *% budget* | *Feature* | *Accuracy* | *Ease of Use* | *User Friendly* | *Durability* | *Safety* | *Speed of Insatllation* | *Repair* | *Warranty* | *Sales rep* | *Delivery* | *Price* | *Brand Reputatio* | *Product line* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overall Rating | 1.00 | | | | | | | | | | | | | | | | |
| Future Purchase | 0.64 | 1.00 | | | | | | | | | | | | | | | |
| % budget | 0.34 | 0.70 | 1.00 | | | | | | | | | | | | | | |
| Feature | 0.67 | 0.10 | -0.07 | 1.00 | | | | | | | | | | | | | |
| Accuracy | 0.53 | 0.67 | -0.01 | 0.47 | 1.00 | | | | | | | | | | | | |
| Ease of Use | 0.55 | 0.27 | 0.30 | 0.79 | 0.41 | 1.00 | | | | | | | | | | | |
| User Friendly | 0.14 | 0.58 | 0.10 | 0.22 | 0.48 | 0.57 | 1.00 | | | | | | | | | | |
| Durability | 0.82 | 0.25 | -0.37 | 0.64 | 0.65 | 0.57 | 0.37 | 1.00 | | | | | | | | | |
| Safety | 0.43 | 0.24 | -0.08 | 0.27 | 0.70 | 0.20 | 0.00 | 0.48 | 1.00 | | | | | | | | |
| Speed of Insatllation | 0.64 | 0.41 | -0.59 | 0.39 | 0.54 | 0.20 | 0.52 | 0.82 | 0.54 | 1.00 | | | | | | | |
| Repair | 0.43 | 0.48 | -0.19 | 0.38 | 0.30 | 0.14 | 0.30 | 0.55 | -0.13 | 0.63 | 1.00 | | | | | | |
| Warranty | 0.65 | 0.45 | -0.15 | 0.74 | 0.49 | 0.70 | 0.40 | 0.77 | 0.14 | 0.67 | 0.42 | 1.00 | | | | | |
| Sales rep | 0.14 | 0.28 | 0.21 | 0.29 | 0.19 | 0.34 | 0.03 | 0.17 | 0.13 | 0.24 | 0.09 | 0.74 | 1.00 | | | | |
| Delivery | 0.68 | 0.40 | 0.16 | 0.50 | 0.60 | 0.62 | 0.50 | 0.71 | 0.41 | 0.44 | 0.06 | 0.72 | 0.62 | 1.00 | | | |
| Price | -0.05 | 0.11 | 0.10 | 0.05 | -0.23 | 0.33 | 0.32 | 0.22 | -0.19 | -0.09 | 0.19 | 0.03 | -0.36 | -0.01 | 1.00 | | |
| Brand Reputation | 0.38 | 0.35 | -0.28 | 0.65 | 0.30 | 0.23 | -0.05 | 0.45 | 0.17 | 0.72 | 0.71 | 0.61 | 0.46 | 0.17 | -0.18 | 1.00 | |
| Product line Variety | -0.44 | -0.14 | -0.47 | -0.16 | -0.23 | 0.15 | 0.08 | 0.20 | 0.20 | 0.21 | 0.08 | 0.32 | 0.25 | 0.03 | 0.36 | 0.02 | 1.00 |

## VARIAN Inc.

| | *Overall Rating* | *Future Purchase* | *% budget* | *Feature* | *Accuracy* | *Ease of Use* | *User Friendly* | *Durability* | *Safety* | *Speed of Insatllation* | *Repair* | *Warranty* | *Sales rep* | *Delivery* | *Price* | *Brand Reputatio* | *Product line* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overall Rating | 1.00 | | | | | | | | | | | | | | | | |
| Future Purchase | 0.83 | 1.00 | | | | | | | | | | | | | | | |
| % budget | 0.45 | 0.65 | 1.00 | | | | | | | | | | | | | | |
| Feature | 0.95 | 0.93 | 0.21 | 1.00 | | | | | | | | | | | | | |
| Accuracy | 0.86 | 0.82 | 0.18 | 0.90 | 1.00 | | | | | | | | | | | | |
| Ease of Use | 0.68 | 0.65 | -0.08 | 0.66 | 0.70 | 1.00 | | | | | | | | | | | |
| User Friendly | 0.23 | 0.28 | -0.10 | 0.36 | 0.15 | 0.51 | 1.00 | | | | | | | | | | |
| Durability | 0.91 | 0.84 | 0.16 | 0.96 | 0.89 | 0.72 | 0.42 | 1.00 | | | | | | | | | |
| Safety | 0.67 | 0.76 | 0.27 | 0.67 | 0.64 | 0.73 | 0.68 | 0.62 | 1.00 | | | | | | | | |
| Speed of Insatllation | 0.91 | 0.90 | 0.40 | 0.90 | 0.70 | 0.72 | 0.49 | 0.85 | 0.89 | 1.00 | | | | | | | |
| Repair | 0.91 | 0.91 | 0.15 | 0.83 | 0.81 | 0.83 | 0.25 | 0.83 | 0.83 | 0.84 | 1.00 | | | | | | |
| Warranty | 0.67 | 0.72 | 0.11 | 0.70 | 0.50 | 0.72 | 0.60 | 0.73 | 0.75 | 0.90 | 0.76 | 1.00 | | | | | |
| Sales rep | 0.32 | 0.27 | 0.35 | -0.22 | -0.15 | -0.26 | -0.37 | -0.34 | -0.26 | -0.22 | 0.00 | -0.21 | 1.00 | | | | |
| Delivery | 0.89 | 0.78 | 0.09 | 0.91 | 0.87 | 0.85 | 0.28 | 0.94 | 0.54 | 0.91 | 0.83 | 0.80 | 0.27 | 1.00 | | | |
| Price | 0.70 | 0.79 | 0.14 | 0.69 | 0.47 | 0.60 | 0.52 | 0.66 | 0.79 | 0.87 | 0.74 | 0.82 | -0.09 | 0.73 | 1.00 | | |
| Brand Reputation | 0.93 | 0.90 | 0.29 | 0.93 | 0.96 | 0.70 | 0.16 | 0.92 | 0.63 | 0.75 | 0.88 | 0.58 | 0.50 | 0.90 | 0.58 | 1.00 | |
| Product line Variety | 0.80 | 0.74 | 0.08 | 0.74 | 0.89 | 0.77 | 0.01 | 0.73 | 0.36 | 0.57 | 0.84 | 0.39 | 0.34 | 0.88 | 0.39 | 0.91 | 1.00 |

## WATERS Corporation

| | *Overall Rating* | *Future Purchase* | *% budget* | *Feature* | *Accuracy* | *Ease of Use* | *User Friendly* | *Durability* | *Safety* | *Speed of Insatllation* | *Repair* | *Warranty* | *Sales rep* | *Delivery* | *Price* | *Brand Reputatio* | *Product line* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overall Rating | 1.00 | | | | | | | | | | | | | | | | |
| Future Purchase | 0.84 | 1.00 | | | | | | | | | | | | | | | |
| % budget | 0.40 | 0.63 | 1.00 | | | | | | | | | | | | | | |
| Feature | 0.84 | 0.76 | 0.29 | 1.00 | | | | | | | | | | | | | |
| Accuracy | 0.89 | 0.83 | 0.38 | 0.89 | 1.00 | | | | | | | | | | | | |
| Ease of Use | 0.74 | 0.78 | 0.18 | 0.85 | 0.79 | 1.00 | | | | | | | | | | | |
| User Friendly | 0.86 | 0.82 | 0.15 | 0.96 | 0.87 | 0.93 | 1.00 | | | | | | | | | | |
| Durability | 0.79 | 0.86 | 0.45 | 0.72 | 0.69 | 0.58 | 0.75 | 1.00 | | | | | | | | | |
| Safety | 0.83 | 0.60 | -0.67 | 0.82 | 0.79 | 0.71 | 0.82 | 0.44 | 1.00 | | | | | | | | |
| Speed of Insatllation | 0.89 | 0.84 | -0.58 | 0.87 | 0.83 | 0.90 | 0.96 | 0.78 | 0.93 | 1.00 | | | | | | | |
| Repair | 0.69 | 0.63 | 0.16 | 0.87 | 0.70 | 0.65 | 0.76 | 0.62 | 0.81 | 0.86 | 1.00 | | | | | | |
| Warranty | 0.84 | 0.84 | -0.03 | 0.81 | 0.75 | 0.53 | 0.82 | 0.93 | 0.93 | 0.80 | 0.88 | 1.00 | | | | | |
| Sales rep | 0.81 | 0.66 | -0.21 | 0.86 | 0.86 | 0.82 | 0.92 | 0.53 | 0.95 | 0.92 | 0.63 | 0.71 | 1.00 | | | | |
| Delivery | 0.76 | 0.74 | -0.42 | 0.97 | 0.81 | 0.85 | 0.93 | 0.87 | 0.94 | 0.92 | 0.93 | 0.89 | 0.96 | 1.00 | | | |
| Price | 0.64 | 0.45 | -0.42 | 0.64 | 0.63 | 0.56 | 0.67 | 0.32 | 0.91 | 0.90 | 0.73 | 0.83 | 0.83 | 0.85 | 1.00 | | |
| Brand Reputation | 0.92 | 0.93 | 0.54 | 0.96 | 0.92 | 0.82 | 0.90 | 0.91 | 0.86 | 0.89 | 0.79 | 0.80 | 0.78 | 0.87 | 0.62 | 1.00 | |
| Product line Variety | 0.78 | 0.74 | 0.00 | 0.87 | 0.71 | 0.89 | 0.94 | 0.71 | 0.96 | 0.97 | 0.68 | 0.81 | 0.73 | 0.85 | 0.72 | 0.74 | 1.00 |

## AGILENT Technologies

| | *Overall Rating* | *Future Purchase* | *% budget* | *Feature* | *Accuracy* | *Ease of Use* | *User Friendly* | *Durability* | *Safety* | *Speed of Insatllation* | *Repair* | *Warranty* | *Sales rep* | *Delivery* | *Price* | *Brand Reputatio* | *Product line* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overall Rating | 1.00 | | | | | | | | | | | | | | | | |
| Future Purchase | 0.84 | 1.00 | | | | | | | | | | | | | | | |
| % budget | 0.43 | 0.70 | 1.00 | | | | | | | | | | | | | | |
| Feature | 0.60 | 0.51 | 0.04 | 1.00 | | | | | | | | | | | | | |
| Accuracy | 0.41 | 0.32 | -0.48 | 0.64 | 1.00 | | | | | | | | | | | | |
| Ease of Use | 0.18 | 0.04 | -0.21 | 0.23 | 0.43 | 1.00 | | | | | | | | | | | |
| User Friendly | 0.46 | 0.31 | 0.07 | 0.46 | 0.45 | 0.67 | 1.00 | | | | | | | | | | |
| Durability | 0.74 | 0.40 | -0.06 | 0.51 | 0.46 | 0.14 | 0.63 | 1.00 | | | | | | | | | |
| Safety | 0.52 | 0.38 | 0.00 | 0.94 | 0.68 | 0.22 | 0.47 | 0.44 | 1.00 | | | | | | | | |
| Speed of Insatllation | 0.63 | 0.44 | -0.04 | 0.83 | 0.55 | -0.05 | 0.59 | 0.72 | 0.80 | 1.00 | | | | | | | |
| Repair | 0.72 | 0.50 | 0.19 | 0.64 | 0.33 | 0.19 | 0.79 | 0.79 | 0.72 | 0.79 | 1.00 | | | | | | |
| Warranty | 0.43 | 0.28 | -0.19 | 0.82 | 0.58 | 0.03 | 0.27 | 0.52 | 0.85 | 0.74 | 0.50 | 1.00 | | | | | |
| Sales rep | -0.03 | -0.07 | 0.16 | 0.30 | 0.16 | -0.03 | -0.42 | -0.40 | 0.31 | -0.28 | -0.55 | 0.21 | 1.00 | | | | |
| Delivery | 0.46 | 0.17 | -0.23 | 0.68 | 0.71 | 0.39 | 0.72 | 0.63 | 0.72 | 0.68 | 0.60 | 0.45 | -0.33 | 1.00 | | | |
| Price | 0.62 | 0.40 | 0.09 | 0.70 | 0.43 | 0.29 | 0.55 | 0.46 | 0.78 | 0.78 | 0.85 | 0.75 | -0.13 | 0.61 | 1.00 | | |
| Brand Reputation | 0.62 | 0.38 | -0.23 | 0.23 | 0.57 | 0.47 | 0.62 | 0.73 | 0.30 | 0.34 | 0.41 | 0.15 | -0.13 | 0.64 | 0.25 | 1.00 | |
| Product line Variety | 0.05 | -0.05 | -0.29 | 0.52 | 0.53 | 0.15 | -0.11 | -0.06 | 0.47 | 0.25 | -0.24 | 0.62 | 0.72 | 0.11 | 0.15 | -0.06 | 1.00 |

# APPENDIX D – OVERALL RATING VS. BRAND ATTRIBUTES (ALL BRANDS)

## Overall Rating vs. Brand Attributes (All Brands)

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.95 |
| R Square | 0.91 |
| Adjusted R Square | 0.86 |
| Standard Error | 0.44 |
| Observations | 40 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *ignificance F* |
|---|---|---|---|---|---|
| Regression | 14 | 47.2 | 3.37 | 17.68 | 0.00 |
| Residual | 25 | 4.77 | 0.19 | | |
| Total | 39 | 52 | | | |

| | *Coefficients* | *tandard Err* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept | 0.24 | 0.44 | 0.54 | 0.59 | -0.67 | 1.15 |
| Feature | 0.23 | 0.17 | 1.40 | 0.17 | -0.11 | 0.58 |
| Accuracy | -0.02 | 0.16 | -0.15 | 0.88 | -0.35 | 0.30 |
| Ease of Use | -0.07 | 0.13 | -0.56 | 0.58 | -0.34 | 0.20 |
| User Friendly | 0.06 | 0.14 | 0.45 | 0.65 | -0.22 | 0.34 |
| Durability | 0.35 | 0.12 | 2.90 | 0.01 | 0.10 | 0.60 |
| Safety | -0.29 | 0.16 | -1.80 | 0.08 | -0.62 | 0.04 |
| Speed of Installatic | 0.25 | 0.11 | 2.15 | 0.04 | 0.01 | 0.48 |
| Repair | 0.05 | 0.08 | 0.58 | 0.56 | -0.12 | 0.22 |
| Warranty | -0.19 | 0.09 | -1.99 | 0.06 | -0.38 | 0.01 |
| Sales rep | 0.35 | 0.09 | 3.78 | 0.00 | 0.16 | 0.54 |
| Delivery | -0.25 | 0.09 | -2.78 | 0.01 | -0.43 | -0.06 |
| Price | 0.23 | 0.11 | 2.16 | 0.04 | 0.01 | 0.44 |
| Brand Reputation | 0.31 | 0.13 | 2.33 | 0.03 | 0.04 | 0.58 |
| Product line Variety | -0.03 | 0.10 | -0.30 | 0.77 | -0.22 | 0.17 |

# APPENDIX E – PURCHASE LIKELIHOOD VS. BRAND ATTRIBUTES (ALL BRANDS)

## Purchase Likelihood vs. Brand Attributes (All Brands)

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.84 |
| R Square | 0.70 |
| Adjusted R Square | 0.54 |
| Standard Error | 1.07 |
| Observations | 41 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *ignificance F* |
|---|---|---|---|---|---|
| Regression | 14 | 70.59 | 5.04 | 4.39 | 0.00 |
| Residual | 26 | 29.90 | 1.15 | | |
| Total | 40 | 100.49 | | | |

| | *Coefficients* | *tandard Err* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept | 0.25 | 1.07 | 0.23 | 0.82 | -1.95 | 2.45 |
| Feature | 0.55 | 0.41 | 1.35 | 0.19 | -0.29 | 1.40 |
| Accuracy | 0.23 | 0.39 | 0.60 | 0.55 | -0.57 | 1.03 |
| Ease of Use | -0.33 | 0.32 | -1.03 | 0.31 | -0.98 | 0.33 |
| User Friendly | 0.30 | 0.33 | 0.90 | 0.37 | -0.38 | 0.98 |
| Durability | 0.20 | 0.29 | 0.71 | 0.48 | -0.39 | 0.79 |
| Safety | -0.15 | 0.38 | -0.38 | 0.70 | -0.93 | 0.64 |
| Speed of Installatic | 0.04 | 0.28 | 0.15 | 0.88 | -0.52 | 0.61 |
| Repair | 0.09 | 0.20 | 0.44 | 0.66 | -0.33 | 0.51 |
| Warranty | -0.44 | 0.23 | -1.92 | 0.07 | -0.90 | 0.03 |
| Sales rep | 0.84 | 0.23 | 3.72 | 0.00 | 0.38 | 1.31 |
| Delivery | 0.14 | 0.22 | 0.63 | 0.53 | -0.31 | 0.58 |
| Price | 0.10 | 0.26 | 0.41 | 0.69 | -0.43 | 0.64 |
| Brand Reputation | -0.41 | 0.31 | -1.34 | 0.19 | -1.05 | 0.22 |
| Product line Variety | -0.21 | 0.23 | -0.93 | 0.36 | -0.68 | 0.26 |

# APPENDIX F – PERCENTAGE OF BUDGET SPEND VS. BRAND ATTRIBUTES (ALL BRANDS)

## Percentage of Budget Spend vs. Brand Attributes (All Brands)

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.59 |
| R Square | 0.34 |
| Adjusted R Square | -0.20 |
| Standard Error | 22.50 |
| Observations | 32 |

ANOVA

| | *df* | *SS* | *MS* | *F* |
|---|---|---|---|---|
| Regression | 14 | 4493.37 | 320.96 | 0.63 |
| Residual | 17 | 8603.50 | 506.09 | |
| Total | 31 | 13096.88 | | |

| | *Coefficients* | *Standard Erro* | *t Stat* | *P-value* | *ower 95.0%* | *pper 95.0%* |
|---|---|---|---|---|---|---|
| Intercept | 78.39 | 56.03 | 1.40 | 0.18 | -39.82 | 196.60 |
| Feature | 15.91 | 11.53 | 1.38 | 0.19 | -8.42 | 40.25 |
| Accuracy | -12.54 | 11.39 | -1.10 | 0.29 | -36.58 | 11.50 |
| Ease of Use | -7.73 | 8.62 | -0.90 | 0.38 | -25.92 | 10.45 |
| User Friendly | 3.30 | 8.08 | 0.41 | 0.69 | -13.75 | 20.35 |
| Durability | -7.84 | 6.82 | -1.15 | 0.27 | -22.24 | 6.56 |
| Safety | -1.79 | 8.77 | -0.20 | 0.84 | -20.30 | 16.71 |
| Speed of Insatllation | -3.26 | 7.68 | -0.42 | 0.68 | -19.46 | 12.94 |
| Repair | 6.65 | 5.85 | 1.14 | 0.27 | -5.68 | 18.99 |
| Warranty | -5.70 | 4.94 | -1.15 | 0.26 | -16.12 | 4.72 |
| Sales rep | 0.88 | 5.93 | 0.15 | 0.88 | -11.63 | 13.39 |
| Delivery | 2.11 | 4.95 | 0.43 | 0.68 | -8.33 | 12.55 |
| Price | -1.02 | 7.25 | -0.14 | 0.89 | -16.31 | 14.28 |
| Brand Reputation | 3.33 | 7.75 | 0.43 | 0.67 | -13.02 | 19.67 |
| Product line Variety | -0.61 | 5.56 | -0.11 | 0.91 | -12.33 | 11.11 |

# APPENDIX G – OVERALL RATING VS. BRAND ATTRIBUTES (THERMO FISHER SCIENTIFIC)

## Overall Rating vs. Brand Attributes (Thermo Fisher Scientific)

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 1.00 |
| R Square | 1.00 |
| Adjusted R Square | 0.99 |
| Standard Error | 0.11 |
| Observations | 16 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *ignificance F* |
|---|---|---|---|---|---|
| Regression | 14 | 12.99 | 0.93 | 83.00 | 0.09 |
| Residual | 1 | 0.01 | 0.01 | | |
| Total | 15 | 13 | | | |

| | *Coefficients* | *tandard Err* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept | -1.62 | 1.53 | -1.06 | 0.48 | -21.06 | 17.81 |
| Feature | 0.16 | 0.18 | 0.89 | 0.54 | -2.18 | 2.50 |
| Accuracy | 0.17 | 0.16 | 1.05 | 0.49 | -1.89 | 2.23 |
| Ease of Use | 0.26 | 0.16 | 1.59 | 0.36 | -1.80 | 2.31 |
| User Friendly | 0.21 | 0.09 | 2.22 | 0.27 | -0.98 | 1.40 |
| Durability | -0.13 | 0.24 | -0.56 | 0.67 | -3.12 | 2.86 |
| Safety | -0.25 | 0.10 | -2.44 | 0.25 | -1.57 | 1.07 |
| Speed of Installatic | 0.39 | 0.18 | 2.12 | 0.28 | -1.95 | 2.74 |
| Repair | -0.30 | 0.18 | -1.66 | 0.35 | -2.59 | 1.99 |
| Warranty | 0.24 | 0.07 | 3.43 | 0.18 | -0.64 | 1.12 |
| Sales rep | 0.08 | 0.09 | 0.93 | 0.52 | -1.01 | 1.16 |
| Delivery | -0.18 | 0.08 | -2.23 | 0.27 | -1.18 | 0.83 |
| Price | 0.06 | 0.09 | 0.62 | 0.65 | -1.09 | 1.20 |
| Brand Reputation | 0.46 | 0.18 | 2.65 | 0.23 | -1.76 | 2.69 |
| Product line Variety | 0.12 | 0.22 | 0.55 | 0.68 | -2.67 | 2.91 |

# APPENDIX H – PURCHASE LIKELIHOOD VS. BRAND ATTRIBUTES (THERMO FISHER SCIENTIFIC)

## Purchase Likelihood vs. Brand Attributes (Thermo Fisher Scientific)

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 1.00 |
| R Square | 1.00 |
| Adjusted R Square | 0.97 |
| Standard Error | 0.27 |
| Observations | 17 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *ignificance F* |
|---|---|---|---|---|---|
| Regression | 14 | 38.33 | 2.74 | 38.03 | 0.03 |
| Residual | 2 | 0.14 | 0.07 | | |
| Total | 16 | 38.47 | | | |

| | *Coefficients* | *tandard Err* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept | -24.27 | 3.79 | -6.41 | 0.02 | -40.57 | -7.98 |
| Feature | -0.11 | 0.42 | -0.27 | 0.81 | -1.92 | 1.69 |
| Accuracy | 2.54 | 0.34 | 7.51 | 0.02 | 1.08 | 3.99 |
| Ease of Use | 2.08 | 0.39 | 5.38 | 0.03 | 0.42 | 3.75 |
| User Friendly | -0.75 | 0.19 | -3.92 | 0.06 | -1.56 | 0.07 |
| Durability | 2.81 | 0.48 | 5.84 | 0.03 | 0.74 | 4.89 |
| Safety | -1.72 | 0.26 | -6.71 | 0.02 | -2.82 | -0.62 |
| Speed of Installatic | 2.98 | 0.47 | 6.37 | 0.02 | 0.97 | 5.00 |
| Repair | -3.25 | 0.46 | -7.12 | 0.02 | -5.22 | -1.29 |
| Warranty | 0.89 | 0.17 | 5.12 | 0.04 | 0.14 | 1.64 |
| Sales rep | -0.51 | 0.20 | -2.51 | 0.13 | -1.39 | 0.36 |
| Delivery | 0.78 | 0.15 | 5.21 | 0.03 | 0.14 | 1.42 |
| Price | 0.97 | 0.22 | 4.48 | 0.05 | 0.04 | 1.91 |
| Brand Reputation | 2.21 | 0.44 | 4.97 | 0.04 | 0.30 | 4.12 |
| Product line Variet | -3.17 | 0.50 | -6.31 | 0.02 | -5.34 | -1.01 |