THE EFFECT OF SUPPLY CHAIN MANAGEMENT ON CUSTOMER RETENTION AMONG GENERAL PRACTITIONERS IN PERAK: A CASE-STUDY OF INTERNATIONAL PHARMACEUTICAL COMPANY

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APRIL 2017

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BY

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A research project submitted in partial fulfillment of the requirement for the degree of

MASTER OF BUSINESS ADMINISTRATION (CORPORATE MANAGEMENT)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

APRIL 2017

DECLARATION

We hereby declare that:

(1) This postgraduate project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) The word count of this research report is 20688.

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Date: 13th APRIL 2017

ACKNOWLEDGEMENTS

I would like to thank everyone who had contributed to the successful completion of this project. I would like to express my gratitude to my research supervisor, Dr. Chen, I-Chi for her invaluable advice, guidance and her enormous patience throughout the development of the research. She has spent countless time and effort to check my progress and gave me opinions to further improve my project.

In addition, I would also like to express my gratitude to all the respondents who were willing to spend their time and effort to participate in my survey. Without their honest contributions, it would be impossible for me to complete this research project. Their cooperation means a lot to me.

Last but not least, I would like to thank my family members for their endless moral support and motivation.

DEDICATION

Dedicated to:

Dr Chen I-Chi

Supervisor who is supportive and able to help me and guide me throughout the process of this research project.

Universiti Tunku Abdul Rahman (UTAR)

For giving me the opportunity and facilities to conduct this research project.

Family members and friends

Who are always there to support me regardless of what situation. Your moral supports give me the strength and motivation to complete this research project.

Respondents

To all respondents who are willing to spend their precious time to complete the questionnaires for this research study.

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LIST OF ABBREVIATIONS

α	Cronbach Alpha
β	Regression Coefficient
ANOVA	Analysis of Variance
KMO	Kaiser-Meyer-Olkin
R2	Coefficient of Determination\
SCM	Supply Chain Management
SPSS	Statistical Package for the Social Sciences

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PREFACE

This research project was written as partial fulfillment of the requirement for the degree of Master of Business Administration (Corporate Management) at Universiti Tunku Abdul Rahman (UTAR). This research project is carried out to analyse the importance of Supply Chain Management (SCM) in developing and delivering effective supply chains in the pharmaceutical industry and analyze the impact of supply chain management on relationship quality of case company. Other than that, it also help to determine the nature and extent of problems affecting the independent variables (standardization and specification, responsiveness, delivery, customer relationship and after-sales service) in case company.

For the past few decades, researchers only focus mainly on the roles of SCM practices such as responsiveness, customer relationship, standardization and specification, delivery, after sale service and their impacts towards customer satisfaction or brand loyalty. However, currently the idea of studying the customer retention itself has involved semi-structured interview and had further understanding towards the respondents. The reason is because customer retention is found important in all companies. For any business, customers are the greatest asset. This makes customer retention an important business strategy to increase profits and reduce churn. Hence, customer retention is chosen to be studied instead of customer satisfaction or brand loyalty.

Furthermore, the expectation from customers had changed with the current economic conditions which leave an impact on customer retention in pharmaceutical industry. Understanding about the SCM practices that will influence their customer retention had become an issue that management need to be concerned about. In addition, this research is also committed to any organizations which faced the same problem and aiming to offer some useful information to the management of organization in formulating effective strategies to cope with the issue.

ABSTRACT

In competitive business environments companies have identified the need to understand their supply chain management practices to increase customer retention. This study sought to determine the effects of supply chain management practices on customer retention in selected clinics in Perak. This research conceptualizes and develops five dimensions of SCM practice (delivery, customer relationship, after-sale service, responsiveness, standardization and specification) and tests the relationships between SCM practices, and customer retention. Data for the study were collected from 150 respondents and the relationships proposed in the framework were tested using structural equation modeling. Convenient sampling was used to select a sample of respondents. IBM SPSS Statistics 22 was used in this study for data analysis. Findings indicated that standardization and specification, responsiveness and deliveries are positively significant related to customer retention while customer relationship is negatively significant related to customer retention. After-sale service is insignificant to customer retention. It is believed that this study is able to enhance the literature gap since not much researchers had emphasized on SCM practices on customer retention among general practitioners. In addition, the top management of the pharmaceutical company should look into these areas in order to increase their customer retention by improve SCM practices when they deal with their customers.

CHAPTER 1: INTRODUCTION

1.1 Background of Study

In today's global market environment, every company no matter its scale, category of business or geography faces more demanding consumers, increasingly tough competition, and soaring expenditure for development (Treves, 2015). Because of this, companies are forced to experiment with different ways to operate their business and remain profitable and competitive, whilst deliver the consumer needs with affordable price. In order to achieve this, many companies are looking into their SCM practices to increase efficiency and deliver value to the customers (Treves, 2015).

This issue is of particular relevance to the pharmaceutical industry which is characterised by extensive product development as well as lead times, different supply chain networks at various stages of product development, and whose final products has had a direct real life impact on the end consumer. Most pharmaceutical companies currently have supply chains that are neither flexible nor cost effective. This combined with reduced profits that industry leaders previously enjoyed through their blockbuster drug exclusivity due to the influx of generic competition, has led to many traditional Pharmaceutical Companies beginning to refine and redefine their supply and value chains, and their management (Treves, 2015).

1.2 Pharmaceutical Industry

Pharmaceutical industry plays an important role in global and SCM structure has become more complex. In terms of sizes contribution, the pharmaceutical industry

is control over by few countries such as US, Europe and Japan (Abdallah, 2013). Driven by the aforementioned markets, the consumption of medicines in global has propelled immensely and is projected to increase again with the focus on rapid growth markets (Abdallah, 2013).

The pharmaceutical industry's contribution reached RM29.4 billion in 2014 and is still growing in Malaysia. The sector's growth forecasted improve by 8.2% annually until 2018 due in part to the changes by the Economic Transformation Programme (ETP) (Ministry of International Trade and Industry Malaysia, 2015). The pharmaceutical sector's worth in Malaysia was estimated at RM6.1 billion in 2012 with prescription medicine accounting for RM4.4 billion (Ministry of International Trade and Industry Malaysia, 2015). Generic and patented drugs in the prescription medicine category is at approximately 56% and 44% of the market share respectively. Most of the specialized and patented drugs in use in Malaysia are overseas made. A net importer in the pharmaceutical industry with a total of RM 5.0 billion worth of imports in the year 2014, Malaysia imports the most medicine from Germany (13%), then the United States (11%) followed by Switzerland (9%). Products that are made for import include medicines in the form of ampoules, tables, capsules and syringes (Ministry of International Trade and Industry Malaysia, 2015).

With the increasing demand and production trend seen worldwide, due to the sensitivity of the pharmaceutical produce as well as their respective raw materials, coherence and quality control become crucial. This is due to the fact that there is no shortage of supply chain companies operating within the same sphere. To be competitive in the global industry, companies have been improving their supply chain efficiency and quality. The major competitors in the pharmaceutical sector include but are not limited to (Abdallah, 2013):

(i) Big research and development focused multinational corporations with well-known brands, both over-the-counter as well as prescription medications.

(ii) Large-scale generic pharmaceutical companies, who manufacture over-the-counter (OTC) products and out-of-patent prescription

(iii) Production plants who are locally based, manufacturing both generic products as well as branded products with license from the founding company.

This study will be focusing on the first category of companies which are the patented drug manufacturers. These are the establishments that possess extensive supply chain arms throughout the world.

1.3 Problem Statement

Customer satisfaction has been identified as the main concern in business due to the fact that enhancing inter-management relationships will go a long way to making a company successful. Nowadays, the business climate is worlds apart compared to the business environment of yesteryears. As more and more corporations enter the pharmaceutical space, vying for the customers' attention becomes tougher. Tasks like supply and demand planning, material preparation, production and product planning, product service, maintenance and inventory control, distribution, delivery, and customer service are promoted as tools to better company performance (Chandrasekaran, 2015) . To manage a supply chain optimally is to have complete control and coordination all these tasks. A well-thought-out supply chain management ensures lower cost to clients, fast and reliable services without compromising on quality. Over the past 10 years, many a research paper had been conducted on how to manage the marketing aspect of managing which includes as pricing, scope of products and customer services. In contrast, there is a severe lack of studies regarding the connection between customer retention and supply chain management.

Customer retention covers the initiatives and steps that corporations and organizations execute to reduce the amount of customer shift towards rival products. Customer retention programmes aim to maintain the number loyal purchasers. This can be achieved through the transparency and efficiency of its service initiatives. Once a company expands globally, the needs of customers that have to be met will skyrocket as well. Thus, the expansion of the supply chains

can help to increase profit margins, customer follow-up, and the capability to give value back to the purchasers. Besides that, a big supply chain will strengthen interconnectivity between firms. Most clients expect producers to provide them with perfect order deliveries through supply chain management. For instance, late delivery is the most frequent complaint. A survey done by company Canstar Blue and consumer research in 2016 found that 28% of companies have experienced late deliveries while 10% described the recent used services are not reliable (White, 2015). More than hundreds of companies who have experienced a distributor found that responsiveness is the main factor contributed to customer satisfaction, followed by customer service handling complaints (White, 2015).

The research purpose is to improve SCM by looking to other options at case company, which in turn will raise relationship retention and quality. This study also examines the relationship between effective SCM and customer retention, with the aim of having a complete order and time delivery framework. In order to achieve this, the study will focus on the relationship with customers, specifications and standards, delivery and after-sales services, and how these will impact the quality of services' dimensions (responsiveness and trust) in general practice in Perak from the perspective of medical officers.

1.4 Research Objectives and Research Questions

Based upon these research questions, an answer will be found whether effective SCM can be used as a tool for delivering competitive advantage during a period of increased economic and operating difficulties and to address future business challenges.

RO1: Analyse the value of SCM in delivering and developing efficient supply chains in pharmaceutical companies.

RO2: Analyze the effect of SCM on relationship quality of case company.

RO3: Determine the nature and extent of problems affecting the SCM practice in case company.

Acting on these research objectives, two research questions are developed accordingly and presented as follows:

RQ1: How can the pharmaceutical industry achieve efficient SCM in order to retain the customers?

RQ2: How does SCM affect relationship and customer retention of case company?

RQ3: What is the nature and extent of problems affecting the SCM practice in case company?

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

2.1 Current Issue and Competition Analysis of Market

2.1.1 Limited Approval of New Chemical Entities

New Chemical Entities (NCEs) are the compounds that emerge from the process of drug discovery. IMS research shows that there has been a significant decline in the number of NCEs launched over the last ten years (Baines, 2010). This occurrence is not been just limited to handful of therapeutic sectors or corporations and is amplified by the fact that the launch values that have occurred are much decreased than in those years where blockbuster medicines provided a substantial income increase. The cause for deterioration has been due to multiple factors which are heightened scrutiny and increased safety benchmarks initiated by the Food and Drug Administration (FDA) authorities, wide-range catalogue of first-line medicines being considered but unable to come up with novel products in the most of the region, even with cutting-edge technology and methods. Whatever the reasons, the establishments must face the fact that the approvals of products have become more stringent and this means that they have been unsuccessful in achieving their potential to give the best treatment for patients and at the same time provide commercial advantages to their corporations (Baines, 2010).

2.1.2 Increased Generic Competition

Generic drugs have consistently been a significant hurdle for the established major pharmaceutical corporations. Big pharmaceutical corporations invest numerous years and millions of dollars (around $802 million calculated by the Congressional Budget Office, CBO) from research to product launching. Estimates were $137 million dollars in 1976 and when 1990 arrived it had rocketed to $445 million dollars (Baines, 2010). Those corporations are able to reap the rewards of their tireless efforts and investments as long as whatever patents they hold remain exclusive effect, but when these patents expire, the generic manufacturers will be undercutting the big pharmaceuticals' net income within 6 months by producingcheaper, and in the majority of cases extremely viable alternatives. The economic crisis of recent times, healthcare reforms in multiple regions and decreasing spending power for clients have propelled generic medicines to the eyes of customers, insurance companies and payors who are concerned about rising costs (Baines, 2010). Due to this fact, the generic medicine manufacturers have been gradually progressing in their product sales, this, together with patent expiry issues, have been leading to forecasts of an upward trend in the purchasing of generic products totalling an improvement of $12 billion dollars, reaching $30 billion in 2012 from $18 billion in 2008 (Baines, 2010). Generic medicines will be here for the long term, and there will be plenty that state that they play a critical role to cushion the increasing healthcare costs for purchasers, more so with the perpetually rising medical as well as insurance costs. In today's competitive and unforgiving climate, major pharmaceutical corporations have to get their heads cracking and either create or innovate their business practices to achieve success.

2.1.3 Regulatory Changes and Political Impact

The economic recession of recent years (2006-2010) has gone in overdrive and put the spotlight on pharmaceutical legislations (Abhishek, 2016). Examples of this include the points of debate held in the United States regarding the health

industry during the fall of 2009. The thirst for the advancement in regulation as per the demands of the shareholders as well as the compulsion for cost effectives has fuelled the debate further. This realization will drive major Pharmaceutical corporations to revise their pricing schemes as insurance companies, governments, patients and payors prioritize on medical cost savings (Abhishek, 2016). Nowadays, it is not only about innovation, but Pharmaceutical establishments are required to manufacture value-for-money products that attract patients and distributors alike.

2.2 Relationship between Healthcare Providers and Company Representatives

The relationship between doctors and sales agents is has been well established since the advent of medical practice itself. The fundamental value of a medical representative is to keep the doctor up to date regarding the brand's medication and equipment. However, there is a very important ethical guideline to follow, which is that the patient will be the main benefiter of this interaction (Bansal & Sanjoy, 2016). Continuous medical education is a vital cog of a effective health care set-up. At the very least, Malaysia's Medical Council recommends all licensed doctors to improve their theory and practical skills for the good of their patients. Thus, a link can be seen between the well-being of patients and the knowledgeof their doctors which is affected directly or indirectly by drug promotion (Bansal & Sanjoy, 2016). According to WHO, the definition of drug promotions is all informative and persuasion actions by distributors and manufacturers to influence the sales and usage of drugs. The suggested use of drugs; drug pricing regulations, and drug distribution balance are all influenced by drug promotion. This makes it a core public health concern (Bansal & Sanjoy, 2016).

The pharmaceutical companies interact with doctors in order to promote their medical products. The doctors are being reminded from time to time in the form of gimmicks and brochures by pharmaceutical companies such as keychains,

writing materials, posters, free samples of medicines, sponsored overseas conferences and more. Many physicians believe that their interactions with drug companies have educational value for themselves and also provide benefits for patients because physicians are kept informed about available therapeutic agents and the poor patients can be given free drug samples provided by different companies (Bansal & Sanjoy, 2016). A disturbing trend growing within the doctor circle is that giving premium-priced drugs to patients will guarantee a higher success rate of curing illnesses compared to generic brands.

2.3 Independent Variables

2.3.1 Customer Relationship

Customer relationship management (CRM) is a management that helps to increase revenue and profit by consolidating, coordinating and integrating all the customers from enterprises, which affect marketing, service and sales (Österle, Fleisch, & Alt, 2000):

• Sales process: CRM assists customer with product detail and call centre activities etc.

• Marketing process: CRM assist customers and companies with information, customer profiling , campaigns products etc.

• Service process: CRM assists customer with compliant handling, goods tracking, etc.

The objective of CRM is to manage, assist and create personal relationships with customers. Customer-oriented management approach is commonly used in CRM and normally relies on business information systems which assimilate the information required to support the processes in front-desk such as sales, service and marketing. Similarly to Pharmaceutical industry, integrated information systems can provide same information for all the customer contact points. With the aim of achieving an effective CRM concept, an integrated view of customers

across all the departments of an organization is therefore critical (Österle, Fleisch, & Alt, 2000).

2.3.2 Standardization and Specification

Standards offer a superb set of tools to achieve consistent quality time to time. Standards lay out good practice for carrying out a whole range of services, processes and systems that underpin them. In an interconnected global economy, standards can help a company work seamlessly with supply chains and provide assurance to those procuring service (McGraw, 2003). They do this by providing a common language and helping to define service requirements, customer expectations and recognized terms and definitions. Standards can help a company to plan, design and deliver services. It helps to embed reliable processes, systems and crucially behaviours. The standards can take the form of specifications, guidelines, methodologies for particular tasks, and terms and definitions which help company systems draw on global best practice (Ellram, 2002). Organization involved in delivering or procuring services will see value from standards designed to help embed quality processes, policies and procedures and to help reduce risks to customers (Ellram, 2002). Therefore, many pharmaceutical companies have developed a number of standards working with specific service industries in order to set the benchmarks for good practice, professionalism and to help provide assurance to customer and ensure their expectations are met.

"Purchase" is a word which is inevitably associated with the customer-supplier symbiosis. Purchasing's main role of focusing on a business requirement – locating a supplier, working out a deal and finalizing the order is dependent on the initial step. Testing the waters with both feet can prove fatal to a business, as it is so with below-par buying decisions which underestimate the total cost. Specifications either fall into 2 categories, one which is attributed to items like a section of a machine, and another category which involves (the processes, functions, services, procedures, and performance. A tight specification allows purchasers to analyze the market to suit their demands and where consumers will

be able to save on their costs (McGraw, 2003). A lenient specification provides purchasers with a wider scope. The downside to this is that there is always the chance of the party who raised the requisition changing their decision or in a lesser sense, modifying their specifications as they receive quotes. If any doubts arise the specification can be utilized as a valid protocol to determine how the expectations of the buyer stacks up against the actual delivered item. (Ellram, 2002).

Other than that, compliance is also important in pharmaceutical industry. To develop and manufacture a product successfully, company should list in their product as listed drug which is also approved by FDA. For instance, dosage, active ingredient, route of administration, strength, indications and bioequivalent, etc. This is to present guidance deals specifically with the health care industry. The goal of the guidance is to recommend pharmaceutical manufacturer to be compliant with existing health care laws and regulations which includes False Claims Act, Medicaid Drug Rebate Act etc. Besides that, sales representative needs to convince doctors to prescribe companies' drugs to patients. Sales representatives will be trained with products knowledge and sent by companies to provide products information, samples, latest update in medical science and inquiries of products. Companies also maintain the relationship with doctors by provide gifts or gimmicks and befriend with doctors to influence doctors' prescription habit. Pharmaceutical industry is regulated strictly in Malaysia by code of conduct. No gifts are allowed to doctors. If companies are caught bribing the doctors for prescription, FDA will impose hefty fines to the companies. Hence, companies need to follow all sorts of guidelines, terms and condition, regulation, code of conduct to achieve their compliance goal.

2.3.3 Delivery

A service delivery process is a special process describing a complete and integrated approach for performing a specific project type. It provides a complete end-to-end lifecycle and can be used as a reference for running projects with

similar characteristics (Ako-Nai, 2016). As a corporate business entity, company can afford to offer the low prices to their customers when compared to small pharmaceutical company. By providing excellent customer service, company can offset the effect of higher prices by offering a better customer experience. Customer retention in pharmaceutical industry (Ako-Nai, 2016) can be justified in different ways. These include:

- customer relationships – developing a rapport and ongoing connection with customers and customers' needs are always come first, so that they will feel valued by companies.
- convenience – educating customers with product information which is easy to understand and designing services that are easy to access.
- effective payment systems – ease the customers to pay in ways that are convenient to them
- effective complaints procedure – handling problems professionally and promptly
- after-sales service – manage customer satisfaction after purchase and offer other relevant services to prolong the customer relationship.

2.3.4 After-sales Service

After-sales service refers to many steps which include maintenance or provide solutions and make sure customers are satisfied with the purchased items and services of an organization. Nowadays, positive word of mouth is important in product and brands promotion. Customers' needs and demands need to be fulfilled in order for them to spread the good things about the companies (Egonsson, Bayarsaikhan & Ly, 2013). After sales service is getting more and more important to makes sure products and services meet the customers' expectations. It also plays an important role in customer retention, satisfaction of customers, generates customers' loyalty and eventually bring more revenue to the companies. Other than that, it also helps to strengthen the bond in between customers and organizations. For instance, never ignore customers calls, provide supportive materials and services and keep in touch with the customers even after

the purchase (Egonsson, Bayarsaikhan & Ly, 2013). Items that found damaged must be changed immediately, always listen to customers first and they will feel more comfortable while communicating with the sales representatives. Focus on the feedback of the customers because its helps companies to understand the customers better and with the appropriate changes to retain the customers and fulfil their satisfaction (Egonsson, Bayarsaikhan & Ly, 2013).

2.3.5 Responsiveness

Responsiveness can be defined as the "ability to react purposefully and within an appropriate time-scale to customer demand or changes in the market place, to bring about or maintain competitive advantage" (Shekhar & Devi, 2007). The responsiveness of supply chains to changing customer requirements and their overall efficiency are important issues in supply chain design and management. To identify the rate at which the supply chain provides products to the customers, Procurement time and Production Cycle Time metrics were used (Shekhar & Devi, 2007). A survey revealed that in 33 percent of the cases Production Cycle time was 1-3 days while in 36% of the cases it was above 10 days While Procurement Time i.e. the time elapsed from the time manufacturer places an order to when he receives it in 43% of the cases was within 1-10 days and for about almost 36% it was above 16 days. Procurement time is relatively higher in the case of pharmaceutical companies when compared with that of chemicals and petrochemicals industry (Shekhar & Devi, 2007).

2.4 Dependent Variable

2.4.1 Customer Retention

Retaining customers is now one of the main priorities for most companies; customer retention can generate a mutual benefit situation for both the companies

and its customers, while offering economic, social and psychological transactions throughout for customers. Likewise, the creation and use of relationship marketing as a tactic to keep customers loyal can boost the company with strong and long term competitive advantages (Abdallah, 2013). It is crucial to maintain the customers with the highest profit margin. The strong emphasis on customer retention is influenced by the heightened competition between the overseas and local industries, and that is assuming that customers' retention will definitely achieve cost efficiency (Al-Saa'da et al., 2013). Hence, improving long-term bonds between customers and suppliers might be affected throughout different variables like responsiveness, trust, customer relationship, after sales service and delivery through information sharing. Another point to note is that the advancement and expansion of companies will largely depend on the companies' ability to distinguish various types of purchasers and manage each one of them as an individual market and valuable asset. A study has showed that increasing profits by 75 percent can be attained by boosting customer retention by a mere 5 percent.This they call it as net present value.

2.5 Conceptual Framework and Hypothesis

The current literature remains lacking in displaying a conceptual model of the effect of SCM from pharmaceutical company on customer retention among general practitioners. Therefore, empirical research is needed to detail the determinants of customer retention and their relationship on SCM. Customer retention dimension suggested by the research which are linked to SCM include customer relationship, standardization and specification, delivery, after sales service, responsiveness and trust. The proposed model presents six hypotheses (H1 to H6) that represent the impact of six independent variables on the dependent variables (Customer Retention).

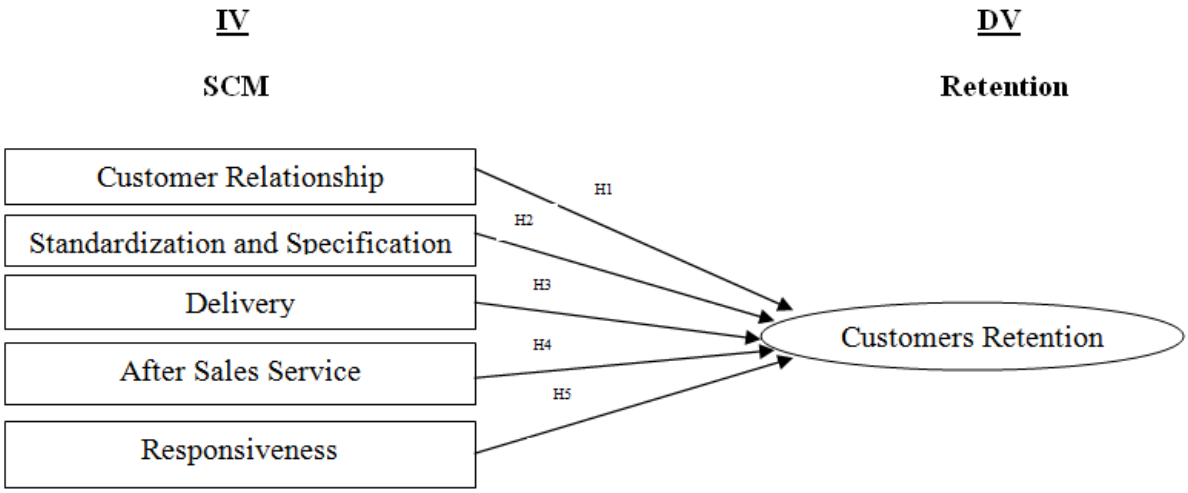


Figure 2.1: Conceptual framework

2.5.1 Relationship in Between Customer Relationship and Customer Retention

In the past few decades, customer choice has exploded in pharmaceutical industry and become a much more complex environment. With these constantly changing circumstances has come the need to develop stronger, deeper relationships with customers, and the ability to monitor the strength of these relationships with increasing levels of sophistication (Ako-Nai, 2016). This has led to the advent of customer relationship management and customer retention measurement. The new era of customer relationships recognizes the power shift from the seller to the buyer. Company is no longer about helping sellers sell; the focus of the future is on helping buyers buy (Ako-Nai, 2016). This requires company to look at customer-focused, people-driven, pragmatic and customer relationship management (CRM) processes (Ghavami & Olyaei, 2006). The fundamental principle behind customer satisfaction and its measurement is that business performance creates retention, customer retention are more likely to be loyal (recommend service to others) and create greater market shares and profits (Ghavami & Olyaei, 2006). Therefore, this leads to the first hypothesis in this study.

H1: There is a significant influence of customer relationship on customer retention.

2.5.2 Relationship in Between Standardization and Specification and Customer Retention

Customers are encouraged to engage in standardization and specification work and to ensure that standards for products are as comprehensive as possible and correspond to real customers' need. Customers and the organizations can play a crucial role in raising general public awareness of the existence of agreed standards, thereby ensuring that buyers demand services rendered, according to the standards (McGraw, 2003). Organization involved in delivering or procuring services will see value from standards designed to help embed quality processes, policies and procedures and to help reduce risks to customers. Many pharmaceutical companies have developed a number of standards working with specific service industries to set the benchmarks for good practice, professionalism and to help provide assurance to customer and ensure their expectations are met (McGraw, 2003). When customer expectations are met, customers are more likely to be retained and create greater market shares. Therefore, this leads to the second hypothesis in this study.

H2: There is a significant influence of standardization and specification on customer retention.

2.5.3 Relationship in Between Delivery and Customer Retention

Delivery can be a pain for SCM. Company can sell great product, provide an excellent after sales service, yet the final step in the process is often in the hands of third parties who do not necessarily share the company's values **(**Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006). A reliable logistic and close monitoring of service levels helps, but company can also keep customers informed on the

progress of their delivery and make the process as convenient as possible. For example, customer put an order, customer will received a call from the driver an hour before the package arrived. SCM practices impact not only overall organizational performance, but also competitive advantage of an organization (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006). They are expected to improve an organization's competitive advantage through cost, quality, delivery dependability, time to market, and product innovation. In addition, recent studies have included time-based competition as an important competitive priority. For example, high level of supply chain integration by enabling organizations to make dependable delivery and introduce products to the market quickly. Supply chain integration contributes positively to customer retention (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006). Firms with high levels of SCM practices will have high levels of competitive advantage. This leads to the third hypothesis in this study.

H3: There is a significant influence of delivery on customer retention

2.5.4 Relationship in Between After Sales Service and Customer Retention

It is well known that after sales service is considered a key revenue generator in pharmaceutical industry. Hence, offering a large number of after-sales service to customer leads to higher profitability (Rizaimy, Khaizir Muzani, Shamsul, & Wan, 2009). Recent marketing management focuses on lifetime value of a customer and maintaining long-term relationships with customers. From this customer-relationship viewpoint, after-sales service is regarded as an important factor that has an impact on establishing good relationships with customers. On the other hand, a default and free basic after-sales service, also plays an important role in attracting more customer attention in a market with severe brand competition (Rizaimy, Khaizir Muzani, Shamsul, & Wan, 2009). Offering adequate after-sales service to customers has become a major generator of revenue, profit, and competency in modern industries (Alireza, Fatemeh, & Pegah, 2011). Accepting the claim that returning customers are the most profitable ones, as they require

less marketing effort and relationship building, after-sales service acquires a critical role as a means to achieve customer retention (Alireza, Fatemeh, & Pegah, 2011). This leads to the forth hypothesis in this study.

H4: There is a significant influence of after sales service on customer retention

2.5.5 Relationship in Between Responsiveness and Customer Retention

Responsiveness concerns the willingness or readiness of employees to provide service. This dimension is concerned when dealing with the customer's requests, questions and complaints promptly and attentively (Iddrisu, Nooni, Fiankoc, & Mensah, 2015). A firm is known to be responsive when it communicates to its customers how long it would take to get answers or have their problems dealt with. To be successful, companies need to look at responsiveness from the view point of the customer rather than the company's perspective. When the customer's need is met, there will not be an issue to retain the customers (Iddrisu, Nooni, Fiankoc, & Mensah, 2015). Customer retention is developed over a period of time from a consistent record of meeting, and sometimes even exceeding customer expectations such as high responsiveness in goods delivery. Furthermore, a research shows that the degree to which a customer exhibits repeat purchasing behaviour from a service provider, possesses a positive attitudinal disposition toward the provider, and considers using only this provider when a need for this service exists (Iddrisu, Nooni, Fiankoc, & Mensah, 2015). Therefore, this leads to the fifth hypothesis in this study.

H5: There is a significant influence of responsiveness on customer retention

CHAPTER 3: METHODOLOGY

3.0 Introduction

The research methodology is a systematic way for conducting research by using data collection and analysis. Research is done with the help of study, observation, analysis, comparison and reasoning. Research is conducted through research design, designation of sampling, research instruments, construct measurements, data processing, collecting data and method of data analysis. More precisely, research methodology seeks predictions of events, explanations, relationships and theories behind them. This is to provide assurance that proper research steps are followed.

3.1 Research Design

Research design is a guideline to conduct a study and with appropriate control of factors that could interfere with the validity and reliability of results. Researcher can obtain answers through research questions and hypothesis testing presented in research design. Research design helps to plan and implement the study in a way that will help them obtain the intended results.

3.1.1 Descriptive Research

Descriptive research gathers quantifiable information that can be used for statistical inference on target population through data analysis. This type of research takes the form of closed-ended questions, which limits its ability to provide unique insights.

3.1.2 Mixed Method Research

Mixed methods research is defined as the combination of quantitative and qualitative research techniques, methods, approaches, concepts into a single study ("Data collection methods", 2010). Mixed methods research also attempt to legitimate the use of multiple approaches in answering research questions. It is an expansive and creative form of research, not a limiting form of research. Key features of many mixed method studies are the use of instruments such as surveys to collect data, and reliance on probability theory to test statistical hypotheses that correspond to research questions of interest and using interview to understand the weaknesses of the results ("Data collection methods", 2010). The purpose of applying mixed method research in this study is to examine the effects of supply chain management on customer retention among general practitioners. In addition, the final aim of mixed method research is to test for significance of the developed hypotheses and further understand and elaborate the weaknesses of the results. In order to achieve that, interview need to be conducted after the survey. Semi-structured and open-ended questions for interview are engaged in this paper. Semi-structured interview allowed interviewees to have some basic concept or guidance on what to discuss about, reduce confusion of respondents and often used in healthcare research. Other than that, it allows the researcher to discover and elaborate more of the information that is significant to the respondents but may not have previously been thought in the questionnaires (Gill, Stewart, Treasure, & Chadwick, 2017). The interviews are conducted with two experienced general practitioners who have more than five years of experience and knowledge in healthcare. Then, the respondents are required to answer four questions which are predetermined by the researcher in 15 minutes.

3.2 Data Collection Methods

Collection of data is a systematic way to collect information stemming from many different resources to have a clearer image of the area of interests. The sources of data include only primary data. Data from respondents are gathered through

questionnaire and interview in this study. Mixed methods encompass multifaceted approaches that combine to capitalise on strengths and reduce weaknesses that stem from using a single research design ("Data collection methods", 2010). This approach will increase the validity and reliability of the research.

3.2.1 Primary Data

Primary data can be explained as information collected from sources such as personal interviews, questionnaires with specific reason, observation and discussion by researcher, which information is then assessed by the researcher. (Srivastava, & Yadav, 2016). It is a direct approach and, as it is tailored to the researcher needs, reveals apparently, much-needed information to that researcher. The results are used for the purpose for which they were originally intended. It can be a lengthy process but does provide first-hand information (Srivastava, & Yadav, 2016). Interview and self-administered surveys will be used to gather information and was distributed among general practitioners in clinics. Each questionnaire requires respondents to spend 10 -15 minutes to complete. The questionnaire consists of close-ended question with Likert scale. By using fixed response questions, it can minimize variability in the result that may be differences in interviewers, and improves reliability of the responses. The data gathered are then inserted into IBM SPSS (version 22.0) software by means of coding. Various analyses will be carried out on the data gathered and the results will be compared against the proposed conceptual model ("primary data and secondary data", 2015).

3.2.2 Secondary Data

Secondary data is information that is already available in journals, on the internet, in a company's records or, in corporate or governmental archives ("primary data and secondary data", 2015). This refers to data that is collected routinely as part of

the day-to-day operations of an organization or institution. Secondary data tends to be readily available and inexpensive to obtain. In addition, secondary data tends to have large samples and most of the secondary data are collected over a long period ("primary data and secondary data", 2015). That allows researchers to detect change over time. Secondary data allows us to utilize existing collection of facts to follow up a new research other than its original works. For this study, most of the secondary data used were obtained from online journals, dissertations, books, etc. Besides, researcher also gathers data from newspapers, reference books, websites, etc. ("primary data and secondary data", 2015). The secondary data will be supporting material for this research project.

3.3 Sampling Design

Sampling stands for adopting a sample from a population that must be represent the population drawn. It is a theoretical basis and the practical steps whereby data are collected so characteristics of the population can be intervened with none estimates of error. In short, sampling design incorporates adopting a group which represents the population and uses the collected data as the research information.

3.3.1 Target Population

Target population is a group of people who meet the criteria of the studies. In this study, the identified target population are general practitioners in Perak. Based on the statistics displayed by Department of Statistic Malaysia the website, the number of private clinic in Perak is 242 ("Perak - Number of health & rural clinics", 2017).

3.3.2 Sampling Location

The sampling location chosen for this study are the general practitioners working in private clinics in Perak. This area is selected because the study is focus on the effect of supply chain management on customer retention among general practitioners in their working place. Therefore, it is a necessary for the research to reach to the representative number of target population in Perak thus increasing the accuracy of data obtained from the questionnaire. The private clinics chosen are from Tapah, Kampar, Seri Manjung, Tanjung Malim, Ipoh, Taiping, Teluk Intan, Batu Gajah, Bidor, Kuala Kangsar, Parit Buntar, Gopeng, Seri Iskandar, Gerik and Bagan Datuk.

3.3.3 Sampling Element

The sampling elements of this study are people currently involved and are currently open their own clinic in Perak with registered medical certificates. The age range is chosen from age 25 and above, and the respondents of this survey include of male and female doctors.

3.3.4 Sampling Technique

Sampling technique may be broadly categorized as probability and non-probability. Non-probability sampling technique depends on the personal judgments of the researchers instead of the chance to choose sample elements. And for probability sampling, sampling units are chosen by chance. In this study, convenience sampling is used. Researchers take whatever individuals happen to be easiest to access as participants in this study and this is because researcher work on medical field and it is easily for researcher to identify suitable respondents. This sampling method is adopted due to it is cost efficient, less time consuming and easy to administer. It is used when researcher failed to get to wider population as they face cost and time constrictions.

3.3.5 Sampling Size

Sample size is extremely important in all research studies. Sufficient sample size will increase validity and reliability of the studies. Decent sample size is required to reduce the error margin to the minimum. Deficient sample size can result in problems such as under-coverage, selection bias, poor data collection quality and misspecification of target population. According to the Number of health & rural clinics (Private Sector), released by the Department of Statistics Malaysia in 2011, there are total of 242 general practitioners from private clinics as shown in Figure 3.1. By referring to the Krejcie and Morgan (1970), which is developed in 1970 for sampling size determination purpose, 148 respondents are needed as sample size from the population of 240 ("Perak - Number of health & rural clinics", 2017).

Table 3.1: Table for Determining Sample Size of a Known Population

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Source: Krejcie & Morgan, 1970

3.4 Research Instrument

The research instrument is a self-administered questionnaire to target population via face-to-face.

3.4.1 Questionnaires

Questionnaire is espoused in the research study since it is undeniably a concrete technique applied in the collection of primary data. In general, questionnaire comprises of numbers of questions that the respondents will provide their answers. This research instrument requests participants of the survey to respond to identical sets of questions. After that, the questionnaire results are quantified immediately through IBM SPSS (version 22.0) software. Furthermore, objective and scientific analyses can be obtained through the interview and questionnaire's results when compared to other form of research instruments. Close-ended type of questions are used in this research project which mean respondents answering the questionnaire will be limited by the choices or options offered for each items in the questionnaire (Urša, Lozar, Hlebec, & Vasja, 2003). With usage of close-ended questions, irrelevant and confused answers can be avoided. In addition, the answers can be coded conveniently and analyzed statistically. Open-ended type of questions will only be used during interview which means respondents can freely answer the questions by telling their honest opinion (Urša, Lozar, Hlebec, & Vasja, 2003). With usage of open questions, respondents permits an unlimited range of answers, reveals how the respondents think about the question, responses can be used to expand on and clarify closed responses.

3.4.2 Questionnaire Design

The questionnaire is separated into three sections and consisted of thirty-four questions. Section A is demographic profiles which consisted of the respondent's demographic data. It has ten questions in this section which was gender, age,

occupation status, duration of usage, education level, purchase frequency, service duration, type of items purchase, income level, tolerant level and delivery performance criteria. Section B consisted of eighteen questions which are divided into five parts – five latent variables (customer relationship, standardization and specification, delivery, after- sales service and responsiveness). Section C consists of six questions regarding the dependent variable (customer retention) that are important in this study.

3.4.3 Pilot Test

The pilot test will assist the research in determining if there are flaws, limitations, or other weaknesses within the questionnaire design and will allow researcher to make necessary revisions prior to the implementation of the study. A pilot test should be conducted with participants that have similar interests as those that will participate in the implemented study. The pilot test will also assist the researchers with the refinement of research questions. Adequate pilot test was done to check the validities and correctness of questionnaires; a total of 30 pilot test samples for questionnaire were distributed from 15th till 20th January 2017 to a number of respondents in Ipoh areas. Most of the respondents feel that the questions are easy to understand and there is no ambiguous wording. Therefore, no amendments were done to the questionnaire before being distributed to the target respondents (Daniel, 2010).

Table 3.2: Result of Reliability Test for Pilot Test

No	Construct Measure	Cronbach's Alpha
1	After-Sales Service	0.828
2	Customer Relationship	0.660
3	Standardization and Specification	0.820
4	Delivery	0.621
5	Responsiveness	0.777
6	Customer Retention	0.841

Sources: Developed for the research

3.5 Constructs Measurement

3.5.1 Scale Definition

There four basis types of measurement scales are as follows: Nominal, Ordinal, Interval, & ratio scales. There are total of 3 sections in this questionnaire, listed as Section A, Section B, and Section C. Nominal scale and ordinal scale are used for questions in Section A, whereas interval and nominal scale is used for questions from Section B and only interval scale in Section C. Likert scale is used to measure variables in the current research. It is a commonly used rating scale that expects the respondents to either decide their level of answers with each of the item in the questionnaire about the stimuli objects.

3.5.2 Origins of Construct

Table 3.3 Table of Construct

Construct	Sources
After-sales Service	John, & Howard, 2016
	Yuan, 2013
Responsiveness	John, & Howard, 2016
Customer Relationship	Yuan, 2013
Standardization and Specification	John, & Howard, 2016
Delivery	John, & Howard, 2016
Customer Retention	Jessica, 2009
	Yuan, 2013

Sources: Develop for the research

3.5.3 Operational Definitions of Construct

Table 3.4 Measurement of Variables in the Study

Variables	Items	• Measurement
Customer Relationship	5	• Degree of passion and friendliness of sales personnel • Degree of courteousness of sales personnel • Product knowledge of sales personnel • Does the sales personnel offer comprehensive products introduction to customers • Does the sales personnel available in timely manner
Standardization and Specification	3	• Billing accuracy • Accurate documentation • Compliance with instructions

Delivery	2	• How efficient of logistic service • Company tracking and tracing capabilities
After-sales service	5	• Does sales personnel telephone return visit service • Does sales personnel inform customers about new promotion activities • Does sales personnel and customer service staff remain patient, professional and passionate after purchase • Does the sales personnel manage client complaints proactively • Does company provide unconditional returns
Responsiveness	3	• Response time to inquiries and orders • Overall of customer service • Timeliness of orders executed by the company
Customer Retention	6	• Will the customer continue to use company as distributor • Will the customer choose company as their distributor even there are other similar distributor • Will the customer continue to choose company even its commodity price raise • Will the customer recommend to other people about the company • Can customer tolerate company's

		small mistake • Does the customer build a good relationship with company

3.6 Data Processing

Data processing is an operation which transforms raw data contained in the questionnaires into a suitable data before they can be used in statically analysis. It starts with questionnaire checking, followed by editing, coding, transcribing and cleaning of data.

3.6.1 Data Checking

Questionnaire checking involves checking to see whether all questionnaires were answered completely and also to check for the quality of the interview. The content of the questionnaire has been checked to measure the appropriateness with having pilot test and the reliability test will be conducted using the IBM SPSS (Version 22.0) software. The reason of checking questionnaire is to ensure that the quality of the questionnaire is integral.

3.6.2 Data Editing

The data editing process comprised of reviewing the questionnaires to improve the level of precision and accuracy. It is conducted for checking mistake made by either the researchers or the respondents. Questionnaires with incomplete answers or double answers are assumed as missing values and are discarded.

3.6.3 Data Coding

Data coding is the code of identity assignation in order to symbolize specific responses to specific questions alongside with the record of data and position of column occupied by the code.

3.6.4 Data Transcribing

Data transcribing involves translating the coded data done from the questionnaires, coding sheets into computers by key-punching, mark-sense forms, optical scanning or computerize sensory analysis. The data must be double-checked to assure zero entry error.

3.6.5 Data Cleaning

The process of data cleaning involved checking for consistencies as well as treating any missing responses in the completed questionnaire. Questionnaires were checked meticulously. Consistency checks are closure to distinguish data that are inconsistent or out of range. Out of range data can be caused by respondent errors and it can be identified with the help of IBM SPSS (Version 22.0) software. Missing values including the values of variables which are unknown as a result of equivocal answer in question happened in data cleaning process.

3.7 Data Analysis

Data analysis is to evaluate the goodness of the data and the hypotheses formulated for the research by utilizing reliability test, descriptive statistics and others that are fit for data analysis. Data accumulated are generated before they can be converted into meaningful information. IBM SPSS (Version 22.0) software

statistics will be utilized to generate the results of data analysis. The results will be portrayed through graphics like tables, pie charts or graphs.

3.7.1 Descriptive Analysis

Descriptive analysis is employed to signify the elemental features of data in this research study in which respondents' characteristics or demographic profile will be summarized. Frequency analysis is used by researcher in order to observe the responses and present the numbers of individual item. By conducting a descriptive analysis, researcher can describe and know the respondents' characteristics. In Section A, frequency & percentage are utilized to display the nominal and ordinal data on respondents' demographic profiles. In Section B and C which depicts interval data, the values of mean, median & standard deviation will be determined and generated through the IBM SPSS (Version 22.0) software to measure every questions' central tendencies. The values of mean, mode, and median exert an effect on the skewness of distribution of the data collected.

3.7.2 Reliability Testing

Reliability is capability of research instrument in terms of measuring consistently. Cronbach's Alpha functions to determine internal consistencies of a test or scale. Alpha computed is referring to reliability of a test associated with other tests having identical quantity items and identical constructs that are measured. It is denoted in a value ranging from 0 to 1. The correlation of every variables is determined using the IBM SPSS (Version 22.0) software. The Rules of Thumb shows that $0.6 \leq \alpha \geq 0.9$ is deemed to be reliable.

3.7.3 Inferential Analysis

3.7.3.1 Pearson's Correlation Coefficient Analysis

Pearson's Correlation Coefficient is an analytical tool which has the sole purpose of determining the strength of relationship between the independent variable(s) and dependent variable(s). The value range from -1 to +1 whereby the positive or negative signs indicate occurrence of either positive or negative correlations. 0 value indicates a zero relationship between the two different variables. The table 3.5 below depicts the rules of thumb as suggested by Hair, Wolfinbarger, Bush, & Ortinau (2012):

Table 3.5 Rules of Thumb indicating the strength of correlation between the two variables

Correlation Coefficient	Strength of Correlation
± 0.81 - ± 1.00	Very Strong
± 0.61 - ± 0.80	Strong
± 0.41 - ± 0.60	Moderate
± 0.21 - ± 0.40	Weak
± 0.00 - ± 0.20	Very weak to no relationship

Source: Hair, J., Wolfinbarger, M., Bush, R., & Ortinau, D. (2012). Essentials of Marketing Research (3rd ed.). New York: McGraw-Hill.

3.7.3.2 Factor Analysis

Factor Analysis and Principal Components Analysis are the techniques utilized when researcher wants to determine a smaller number of within a huge number of

observed variables. A factor is formed when there is grouping of variables which are highly correlated among each other and also greatly independent of other variable subsets. The commonly used analyses are the "principal component analysis" and "factor analysis" in order for researcher to develop objective instruments for constructs measurements which are not directly observable.

In this study, conduction of the exploratory factor analysis will be carried out as researcher is interested in exploring the underlying dimensions that could have caused correlations among the variables. There are few processes to go through in the factor analysis. Firstly, is the extraction process which is the process of obtaining underlying factors or components. Through factor analysis, factor loadings are produced for every combination of factors that are extracted and the observed variables. Factor loadings are almost the same with the correlation coefficients between the factors and the variables. Thus, the higher the factor loadings, the more likely it is that the factor underlies that observed variable. Factor loadings help to identify which variables are associated with which particular factors. Secondly is the factor rotation. The factor loadings which are obtained from the factor extraction may not show a clear picture of the factor structure of the data set. After extraction, although we can identify the number of factors, we may not know exactly how the observed variables will load on the different factors. Un-rotated factor loadings are very hard to be interpreted, even after doing the factor extraction.

3.7.3.3 Multiple Regression Analysis

Multiple linear regressions could examine the significance of relationship between the IV(s) and DV. It manifests the extent of effect an independent variable is varied, while the other independent variables are held constant. The multiple regression equation of this is written as:

$Y= a + bX1 + cX2 + dX3 + e$

Y = the value of the Dependent variable (Y),

a = a constant; equals the value of Y

when the value of X1=X2=X3=0

b, c, d = the slope of the regression line

X1, X2, X3 = the value of each Independent variable (X)

E = a random term associated with each observation.

3.8 Data Validation Using Semi-structured Interview

Qualitative interviews can range from highly exploratory to addressing specific hypotheses. As a result, the structure of interviews can range from loose conversations to structured exchanges in which all interviewees are asked the exact same set of questions. More structured interviews increase the likelihood that the findings of the research will be generalizable and can be used to test specified hypotheses (Urša, Lozar, Hlebec, & Vasja, 2003). An effective research question for interview includes the following elements: open-ended (respondents should be able to choose their own terms when answering questions) and questions need to be as neutral as possible (avoid wording that might influence answers).

Considering the various types of interviews, semi-structured interview is selected in undertaking the data validation. Reasons are flexible, deeper understanding of the topic and easier to analyse. Therefore, two experts are chosen to be interviewed. Next, there is a sense making criteria to identify the experts: must using Zuellig distributor for more than 3 years and minimum 5 years of experience as general practitioners in Perak. Two general practitioners with working experience of more than five years are selected for the semi-structured interview to validate the two independent variables. The targeted general practitioners are currently working as: 10 years of experience in general practitioners in Ipoh and 23 years of experience in general practitioners in

Sitiawan. In summary, four pre-determined questions are asked and the comments are discussed and shown in Chapter 5.

3.9 Conclusion

Chapter three discusses the research design, data collection method, sampling design, research instruments, content measurement, data processing and method of data analyses. The following chapter will analyze the data obtained from the survey to come out with the results of the research project.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In this chapter, the questionnaires results are interpreted. The purposes are to examine and interpret the collected data from the survey. The measurement tools include the customer retention questionnaire (24 questions) and demographic information questionnaire (10 questions) making up a total of 34 questions. The demographic information of people like age, gender, monthly income, occupation status, level of education, service duration, purchase frequency, purchase items, level of tolerance, and delivery performance were also collected. Whereas, customer retention questionnaire responses are measured with a five item scales (1) (Strongly Disagree, SD), (2) (Disagree, D), (3) (Neutral, N), (4) (Agree, A), or (5) (Strongly Agree, SA) and (1) (Excellent), (2) (Good), (3) (Acceptable), (4) (Bad), or (5) (Very Bad) in section B and C based on 5 point-Likert scale through feedback of respondent.

Generally, customer retention is measured through conducting interviews and using questionnaire of self-administration. In most studies the self-administration questionnaire is used for measuring customer retention. In terms of self-administration questionnaire, there are already different tools among which the following tools can be mentioned: The questionnaire of "Customer Retention Survey" (CRS) with 24 questions and measuring 6 sub domain with the titles of "Standardization and Specification", "Customer Relationship", "Responsiveness", "Delivery", "After-sale Service", and "Customer Retention". The data compiled will be analyzed using IBM SPSS (Version 22.0). The analyses of result will be further classified into several sections like the analysis of demographic profiles, reliability and validity testing, Pearson Correlation Analysis, Factor Analysis and Multiple Linear Regression.

4.1 Scale Measurement

In the questionnaire, the measurement scales employed in this research are nominal, ordinal and interval scales. The following section will discuss statistical analysis used to determine the validity and reliability of each construct. Reliability testing is conducted in order to measure the variables and ensure that the measures are error-free and hence enable consistent results to be generated. Basically, reliability analysis consists of internal consistency testing as well as stability testing. To measure internal consistency and also correlation of the items in the questionnaire, Cronbach's alpha coefficient (α) will be used. According to Sekaran & Bougie (2016), the closer the Cronbach's alpha value to 1 is, the higher is the internal consistency reliability. Table 4.10 shows the level of reliability for each Cronbach's alpha ranges.

Table 4.10 Cronbach's Alpha Coefficient (α)

Coefficient alpha (α)	**Level of Reliability**
0.80 - 0.95	Very good reliability
0.70 - 0.80	Good reliability
0.60 - 0.70	Fair reliability
Less than 0.60	Poor reliability

Source: Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.). Chichester, West Sussex: John wiley & Sons, Inc *(page 436).*

Table 4.11 Summary of Reliability Analysis for Each Variable

Variables	**Dimensions**	**Cronbach's Alpha**
Independent Variables	Customer Relationship	0.658
	Standardization and Specification	0.820
	Delivery	0.613
	After-sale Service	0.828
	Responsiveness	0.765
Dependent Variable	Customer Retention	0.841
Total	**24 Items**	**0.853**

Source: Developed for the research

Reliability analysis was conducted using 24 items that measure the six dimensions. According to Table 4.10, a variable should have α-value of at least 0.60 to avoid having poor reliability. Table 4.11 displays the result of reliability analysis testing for full study with the α-value of 0.853 from total 24 items and 150 responses. Based on the result obtained in Table 4.11, customer relationship and delivery with α-value of 0.658 and 0.613 respectively are considered to have fair reliability. Responsiveness with α-value of 0.765 is considered to have good reliability. The remaining variables which are standardization and specification, after-sale service and customer retention have α-value > 0.80, which indicate that the three variables fall under the very good reliability category. Hence, it can be concluded that there exist an internal consistency of reliability in this research.

4.2 Factor Analysis

As mentioned in the previous chapter, factor analysis aims to determine the underlying factors which describe the correlations patterns within a group of observed variables. Factor analysis is commonly applied in data reduction so that smaller number of factors which are able to explain most of the observed

variances in more manifest variables can be identified. This analysis also can form hypotheses about causal mechanisms or to filter variables for the next analysis. In this study, the factor analysis steps which include varimax rotation would be chosen to determine which questions can be grouped together as a factor. Furthermore, the reduction of data or uncorrelated questions would reduce the variables used in future analysis.

Table 4.12: KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.881
Bartlett's Test of Sphericity	Approx. Chi-Square	1624.000
	df	276
	Sig.	.000

The KMO measure of sampling adequacy result displayed in Table 4.12 tells us that as the KMO value is more than 0.5, factor analysis can be proceeded. Hence, no variables will need to be excluded. Furthermore, the Bartlett's test is significant at 1% level and thus it is decided that factor analysis could be further carried out.

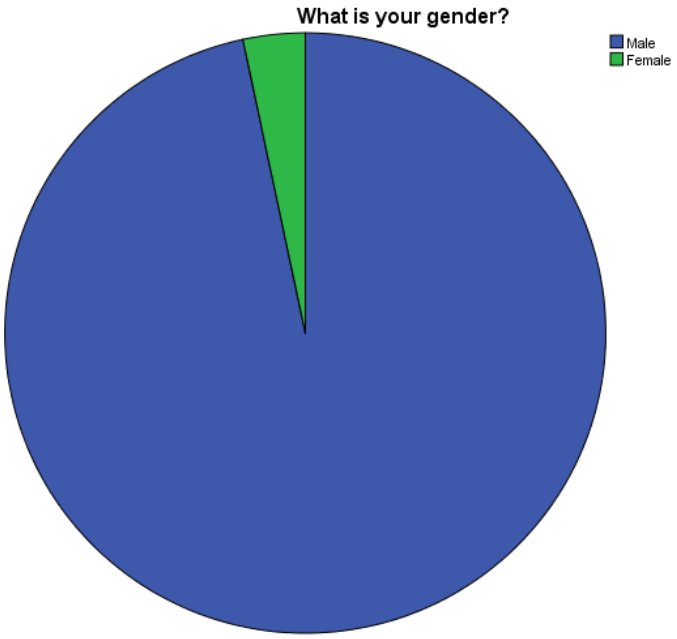
4.3 Descriptive Analysis

4.3.1 Respondent Demographic Profile

This section presents analyses of the respondents' demographic profiles which includes age group, gender, education level, occupation status of respondent, monthly income level, and service duration, purchase frequency, level of tolerance, delivery performance using one-way frequencies analysis.

4.3.1.1 Gender

Figure 4.10: Gender



Source: Developed for the research

According to Figure 4.10, majority of respondents are male that made up of 96.7% of the total number of respondents and the rest is female respondents which represent 3.3% of total respondents.

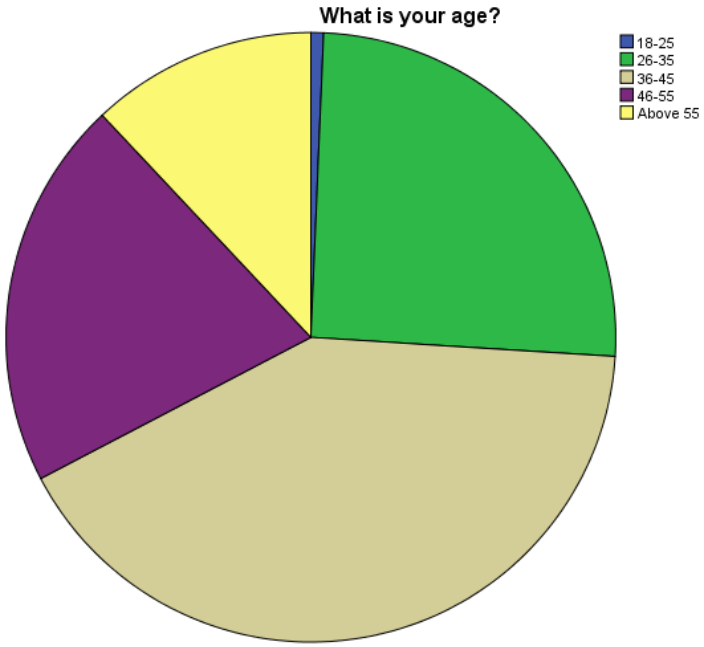
4.3.1.2 Age Group

Table 4.13: Age Group

	Frequency	Percent	Valid Percent
18-25	1	0.7	0.7
26-35	38	25.3	25.3
36-45	62	41.3	41.3
46-55	31	20.7	20.7
Above 55	18	12.0	12.0
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.11: Age Group



Source: Developed for the research

As presented in Table 4.13 and Figure 4.11, most of the respondents belong to the age group 36-45 years old which comprise of 41.3%, followed by 26-35 years old, 46-55 years old, above 55 years old and 18-25 years old and above which comprise of 25.3%, 20.7%, 12% and 0.7% respectively.

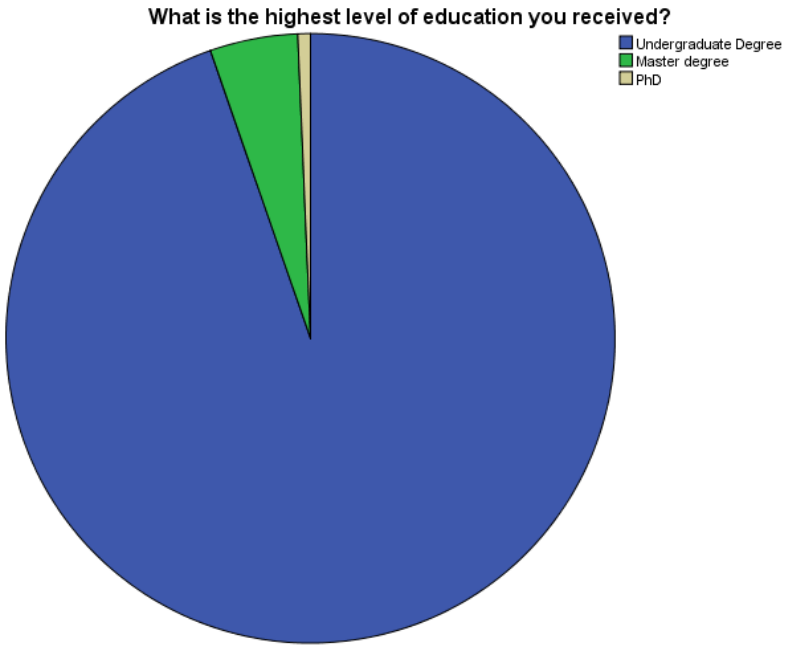
4.3.1.3 Level of Education

Table 4.14: Level of Education

	Frequency	Percent	Valid Percent
Undergraduate Degree	142	94.7	94.7
Master degree	7	4.7	4.7
PhD	1	0.7	0.7
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.12 Level of Education



Source: Developed for the research

As portrayed in Table 4.14 and Figure 4.12, undergraduate degree is the largest portion of the respondents which is 94.7% of total number of respondents. This is followed by Master degree (4.7%), and PhD (0.7%).

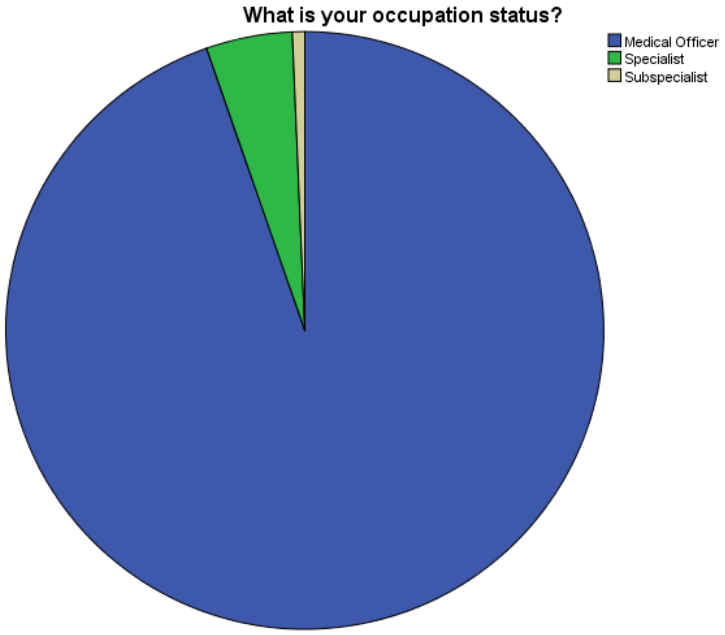
4.3.1.4 Occupation Status

Table 4.15: Occupation Status

	Frequency	Percent	Valid Percent
Medical Officer	142	94.7	94.7
Specialist	7	4.7	4.7
Subspecialist	1	.7	.7
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.13: Occupation Status



Source: Developed for the research

As shown in Table 4.15 and Figure 4.13, medical officer is the largest portion of the respondents which is 94.7% of total number of respondents. This is followed by Specialist (4.7%), and Subspecialist (0.7%). This result is in line with the Education Level of the respondents.

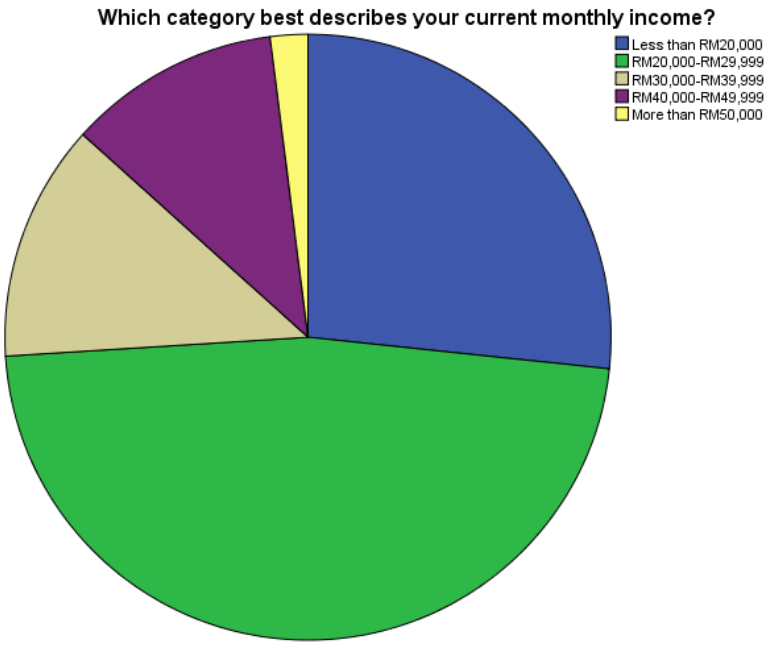
4.3.1.5 Monthly Income

Table 4.16: Monthly Income

	Frequency	Percent	Valid Percent
Less than RM20,000	40	26.7	26.7
RM20,000-RM29,999	71	47.3	47.3
RM30,000-RM39,999	19	12.7	12.7
RM40,000-RM49,999	17	11.3	11.3
More than RM50,000	3	2.0	2.0
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.14: Monthly Income



Source: Developed for the research

Table 4.16 and figure 4.14 shows the distribution of monthly income. There are 71 respondents (47.3%) with monthly income of RM20,000-RM29,999, 40 respondents (26.7%) with less than RM20,000, 19 respondents (12.7%) with monthly income of RM30,000-RM39,999, 17 respondents (11.3%) salary is RM40,000-RM49,999 and 3 respondents (2.0%) with salary more than RM50,000

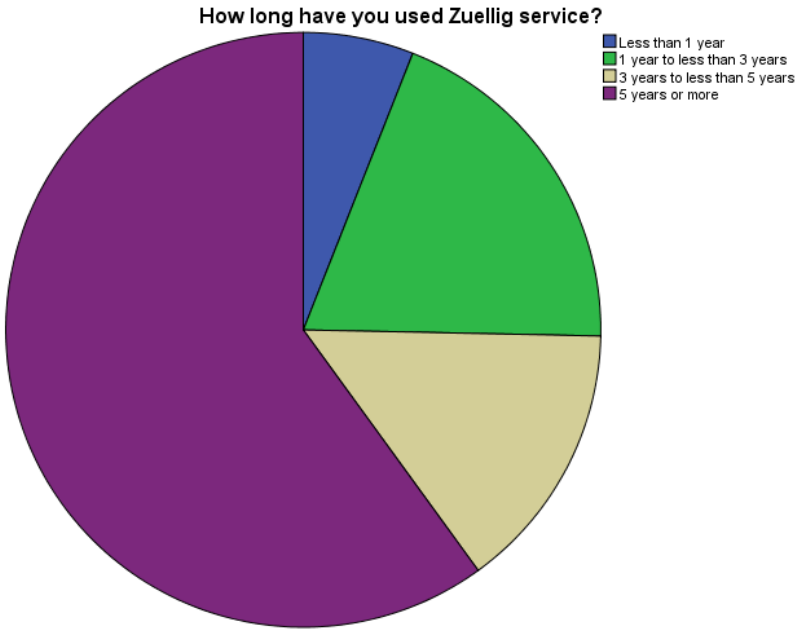
4.3.1.6 Service Duration

Table 4.17: Service Duration

	Frequency	Percent	Valid Percent
Less than 1 year	9	6.0	6.0
1 year to less than 3 years	29	19.3	19.3
3 years to less than 5 years	22	14.7	14.7
5 years or more	90	60.0	60.0
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.15: Service Duration



Source: Developed for the research

Table 4.17 and figure 4.15 shows the diagram of service duration. There are 90 respondents (60%) with service duration of 5 years or more, 29 respondents (19.3%) with 1 year to less than 3 years, 22 respondents (14.7%) with service duration 3 years to less than 5 years, 9 respondents (6%) with service duration less than 1 year.

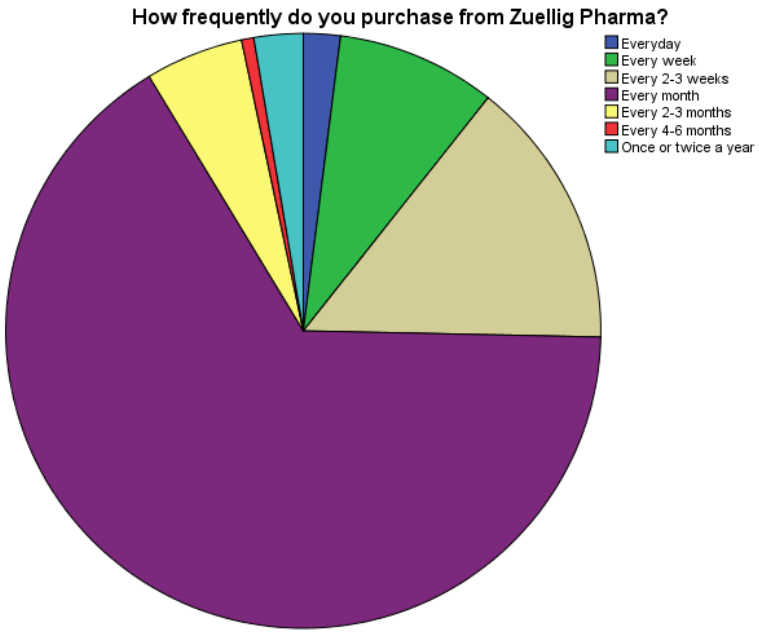
4.3.1.7 Purchase Frequency

Table 4.18: Purchase Frequency

	Frequency	Percent	Valid Percent
Everyday	3	2.0	2.0
Every week	13	8.7	8.7
Every 2-3 weeks	22	14.7	14.7
Every month	99	66.0	66.0
Every 2-3 months	8	5.3	5.3
Every 4-6 months	1	0.7	0.7
Once or twice a year	4	2.7	2.7
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.16: Purchase Frequency



Source: Developed for the research

Table 4.18 and figure 4.16 showed the distribution of purchase frequency. There are 99 respondents (66.0%) with purchase frequency of every month, 22 respondents (14.7%) with purchase frequency of every 2-3 weeks, 13 respondents

(8.7%) with purchase frequency of every week, 8 respondents (5.3%) purchase frequency is every 2-3 months, 4 respondents (2.7%) is once or twice a year, 3 respondents (2.0%) with everyday purchase and 1 respondent (0.7%) with every 4-6 months.

4.3.1.8 Purchase Item

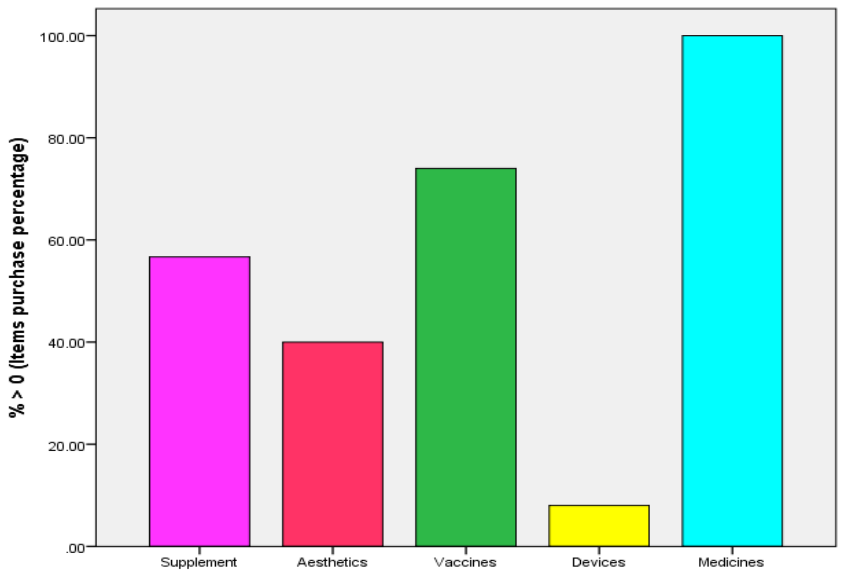
Table 4.19: Purchase Item

		Responses		Percent of Cases
		N	Percent	
Item purchase	Supplements	85	20.3%	56.7%
	Aesthetics	60	14.4%	40.0%
	Vaccines	111	26.6%	74.0%
	Medical Devices	12	2.9%	8.0%
	Medicines	150	35.9%	100.0%
Total		418	100.0%	278.7%

a. Dichotomy group tabulated at value 1.

Source: Developed for the research

Figure 4.17: Purchase Item



Source: Developed for the research

Table 4.19 and figure 4.17 showed the distribution of purchase items. There are 85 respondents (56.7%) purchase supplements from the distributors, 60 respondents (40%) purchase aesthetics of every 2-3 weeks, 111 respondents (74%) purchase vaccines, 12 respondents (8.0%) purchase medical devices, 150 respondents (100%) purchase medicines from Zuellig Pharma distributor.

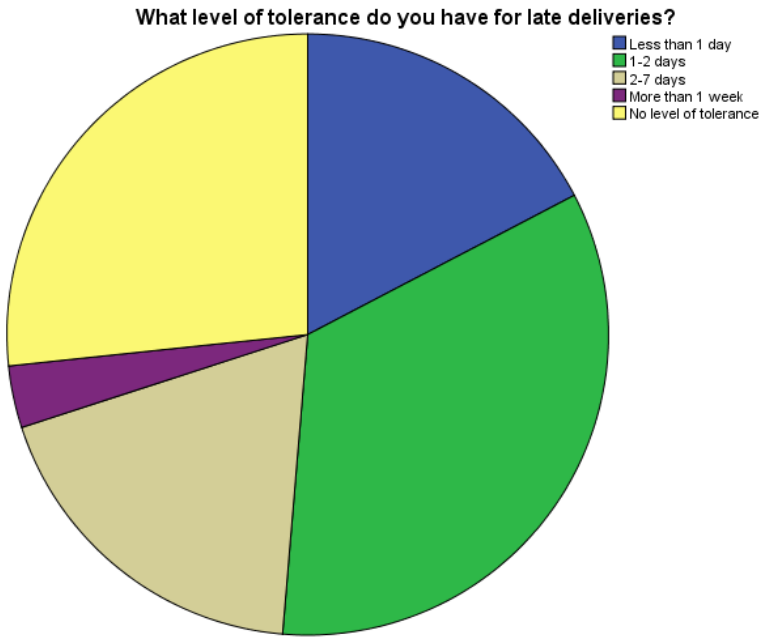
4.3.1.9 Level of Tolerance

Table 4.20: Level of Tolerance

	Frequency	Percent	Valid Percent
Less than 1 day	26	17.3	17.3
1-2 days	51	34.0	34.0
2-7 days	28	18.7	18.7
More than 1 week	5	3.3	3.3
No level of tolerance	40	26.7	26.7
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.18: Level of Tolerance



Source: Developed for the research

Table 4.20 and figure 4.18 showed the tolerant level of the respondents toward the late deliveries. There are 51 respondents (34.0%) can tolerate 1-2 days delay from the distributors, 40 respondents (26.7%) have no level of tolerance for the delay, 28 respondents (18.7%) can tolerate 2-7 days delay, 26 respondents (17.3%) can tolerate less than 1 day delay and only 5 respondents (3.3%) can tolerate more than 1 week from distributor.

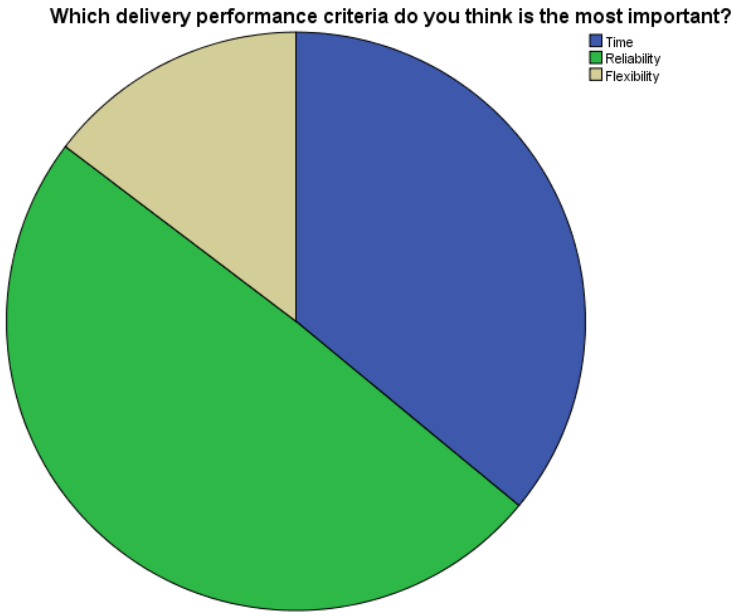
4.3.2.0 Delivery Performance

Table 4.21: Delivery Performance

	Frequency	Percent	Valid Percent
Time	54	36.0	36.0
Reliability	74	49.3	49.3
Flexibility	22	14.7	14.7
Total	150	100.0	100.0

Source: Developed for the research

Figure 4.19: Delivery Performance



Source: Developed for the research

Table 4.21 and figure 4.19 showed the criteria that respondents felt the most important on delivery performance. There are 74 respondents (49.3%) chose reliability is the most important, 54 respondents (36.0%) chose time is the most important and 22 respondents (14.7%) chose flexibility is the most important criteria.

4.4 Customer Relationship

Table 4.22: Central Tendencies Measurement of Customer Relationship

	N	Mean	Std. Deviation
Sales personnel available in a timely manner	150	3.7267	.70375
Sales personnel always offer comprehensive products introduction for customer	150	3.5533	.83976
Sales personnel have knowledge of products	150	3.5133	.69259
Sales personnel have passion and friendly to customers	150	3.2600	.68962
Sales personnel were courteous throughout.	150	2.9067	.86967
Valid N (listwise)	150		

Source: Developed for the research

Table 4.22 depicts the central tendencies measurement of customer relationship among sales personnel. The ranking is arranged in descending order. According to the table, the question "Sales personnel available in a timely manner" obtained the highest mean value (3.727). The question "Sales personnel were courteous throughout" shows the lowest mean value which is 2.907 and with the highest standard deviation (0.870). Whereas, the lowest standard deviation is question

"Sales personnel have passion and friendly to customers" which is 0.690. Therefore, sales personnel are courteous throughout the conversation with customers but most of the sales personnel are not available in timely manner. Overall, the customer relationship still has room to improve.

4.5 Standardization and Specification

Table 4.23: Central Tendencies Measurement of Standardization and Specification

	N	Mean	Std. Deviation
Compliance with instructions	150	3.1933	1.03429
Accurate documentation (incl. Shipping documents / etc):	150	2.8000	.96933
Billing accuracy	150	2.4267	.99897
Valid N (listwise)	150		

Source: Developed for the research

According to central tendencies measurements shown in table 4.23, it is observed that the question "Billing accuracy" has the smallest mean value (2.427) with the standard deviation (0.999). On the other hand, the question "Compliance with instructions" has the highest mean value (3.193) with the highest standard deviation value as well (1.034). This shows that the standardization and specification of the billing system is clear due to the fact that the computerize system will leave less rooms for human error. Whereas, customers feel troublesome to follow specific compliance with instructions due to their busy schedules.

4.6 Delivery

Table 4.24: Central Tendencies Measurement of Delivery

	N	Mean	Std. Deviation
Zuellig Pharma provides efficient logistics service	150	2.9933	.85528
How do you think about the company tracking and tracing capabilities	150	2.6333	1.03895
Valid N (listwise)	150		

Source: Developed for the research

Table 4.24 shows the measurements of central tendency for delivery. From the table above, the question "Zuellig Pharma provides efficient logistics service" has the highest mean value (2.993) and with lowest standard deviation. Question with the lowest mean value (2.633) is "How do you think about the company tracking and tracing capabilities" and high standard deviation (1.039). From the mean values, the Zuellig Pharma has a good delivery service which provides efficient logistics service and good tracking capabilities.

4.7 After-sale Service

Table 4.25: Central Tendencies Measurement of After-sale Service

	N	Mean	Std. Deviation
Zuellig Pharma provides unconditional returns and exchanges policy	150	3.3467	1.06176
Sales personnel always inform customers about the new promotion activities	150	3.2733	1.21455
Zuellig Pharma's staff and sales personnel manage all client complaints and dissatisfaction issues proactively and ensure closure	150	3.2600	1.17827
Sales personnel has telephone return visit services	150	3.2600	1.10174
Zuellig Pharma's staffs and sales personnel are patient, professional and passionate after purchase.	150	3.1867	1.10755
Valid N (listwise)	150		

Source: Developed for the research

Table 4.25 shows the measurements of central tendency for after-sale service. From the table above, we can see that the question "Zuellig Pharma provides unconditional returns and exchanges policy" has the highest mean value (3.347) and lowest standard deviation value (1.062). Question with the lowest mean value (3.187) is "Zuellig Pharma's staffs and sales personnel are patient, professional and passionate after purchase." Question "Sales personnel always inform

customers about the new promotion activities" has the highest value of standard deviation (1.215). From the mean values, we can say that after-sale service is not so good in overall due to the customers prefer not to be disturbed during business hour by sales personnel and the staff from Zuellig Pharma.

4.8 Responsiveness

Table 4.26: Central Tendencies Measurement of Responsiveness

	N	Mean	Std. Deviation
Timeliness of orders executed by the company	150	3.0667	.87214
Overall of customer service (kindness, interest in solving problems)	150	2.6333	.82264
Response time to inquiries and orders	150	2.2533	1.09414
Valid N (listwise)	150		

Source: Developed for the research

Table 4.26 shows the measurements of central tendency for responsiveness. From the table above, we can see that the question "Timeliness of orders executed by the company" has the highest mean value (3.067). Question with the lowest mean value (2.253) is "Response time to inquiries and orders" and highest standard deviation (1.094). Question "Overall of customer service (kindness, interest in solving problems)" has the lowest value of standard deviation (0.823). From the mean values, we can say that the responsiveness of Zuellig Pharma is quite good but the timeliness of orders can be improved due to some delay cases especially life saving items need to be delivered on time.

4.9 Customer Retention

Table 4.27: Central Tendencies Measurement of Customer Retention

	N	Mean	Std. Deviation
I would like to choose Zuellig Pharma even if there are some other similar distributors.	150	2.9000	1.01499
I would like to recommend Zuellig Pharma to other people	150	2.8867	1.12648
I would like to choose Zuellig Pharma even if its commodity price raised	150	2.7800	1.19209
In some situations, I can tolerate Zuellig Pharma's small mistake	150	2.7600	1.26746
I think I have built a good relationship with Zuellig Pharma	150	2.7133	1.29706
I would like to continue to use Zuellig Pharma as the distributor.	150	2.5600	1.16711
Valid N (listwise)	150		

Source: Developed for the research

Table 4.27 shows the measurements of central tendency for customer retention. From the table above, we can see that the question "I would like to choose Zuellig Pharma even if there are some other similar distributors." has the highest mean value (2.900) and lowest value of standard deviation (1.015). Question with the lowest mean value (2.560) is "I would like to continue to use Zuellig Pharma as the distributor". Question "I think I have built a good relationship with Zuellig Pharma" has the highest value of standard deviation (1.297). From the mean

values, we can say that the customers are satisfied with the services of Zuellig Pharma and they would like to use Zuellig Pharma as their distributor again.

4.10 Inferential Analysis

Inferential analysis is applied to generate the findings of study obtained from collected data (Burns & Bush, 2000). Inferential analysis is conducted with the purpose of examining and distinguishing the relationships between one variable with the other variables. For this study, the hypotheses developed will be tested using Pearson Correlation Analysis and Multiple Linear Regression.

4.10.1 Pearson's Correlation Analysis

The Pearson correlation coefficients are indication of strengths, directions & significances of bivariate relationships among the variables which are measured at a ratio level or interval level. When negative coefficients are obtained, this indicates that both variables analyzed are having a negative relationship. This means that when a variable increase, the other variable decreases. In contrast, if two variables are having positive relationship whereby when the former variable increases, the latter also increases, this will be indicated by a negative Pearson correlation coefficient. The rules of thumb regarding the range of coefficient and the strength of association proposed by Hair, Wolfinbarger, Bush, & Ortinau in 2012 is shown below in Table 4.28:

Table 4.28: Rules of Thumb about Pearson Correlation Coefficient

Coefficient range	Strength of Association
± 0.91 to ± 1.00	Very strong
± 0.71 to ± 0.90	High
±0.41 to ± 0.70	Moderate
±0.21 to ± 0.40	Small but definite relationship
±0.01 to ± 0.20	Slight, almost negligible

Source: Hair, J., Wolfinbarger, M., Bush, R., & Ortinau, D. (2012). Essentials of Marketing Research (3rd ed.). New York: McGraw-Hill.

Table 4.29 Summary of Pearson Correlation Analysis

Correlations

	RA	CRA	SSA	DAA	ASSA	CRTA
RA	1					
CRA	.276**	1				
SSA	.641**	.218**	1			
DAA	.664**	.243**	.654**	1		
ASSA	-.121	.024	-.128	-.114	1	
CRTA	.770**	.157*	.800**	.770**	-.164*	1

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Note: RA=responsiveness, CRA=customer relationship, SSA= Standardization and specification , DAA= Delivery, ASSA= After-sale service, CRTA= Customer retention

Source: Developed for the research

Based on Table 4.29, it is observed that all of the variables are significant at p-value less than 0.05. The tables shows that after-sale service (-0.164) is significantly and negatively related with customer retention. On the other hand, responsiveness (0.770), customer relationship (0.157), standardization and specification (0.800) and delivery (0.770) are found to have positive significant relationship with customer retention. By referring to Table 4.28, after–sale service and customer relationship are slightly related to customer retention. Whereas, responsiveness, standardization and specification and delivery are highly related to customer retention.

4.11 Multiple Regression Analysis

Multiple regression analysis is conducted when a few independent variables are present to explain the variance in a dependent variable. In this research, the five independent variables (responsiveness, customer relationship, standardization and specification, delivery and after-sales service) will be examined to see whether they are significant in explaining the variance in customer retention or not.

Table 4.30: Multiple Linear Regression (Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897[a]	.804	.797	.39697

a. Predictors: (Constant), Responsiveness, After-sale Service, Customer Relationship, Standardization and Specification, Delivery

b. Dependent Variable: Customer Retention

Source: Data generated for research

The R square value is a measure which indicate how fit the points of data are replicated by the model, when proportion of the total variation of outcomes are explained by the model. Based on Table 4.30, the value resembling coefficient of determination (R^2) is 0.804 which means that 80.4% variations of customer retention can be explained by responsiveness, after-sale service, customer relationship, standardization and specification and delivery. On the other side, 19.6% variation of customer retention is unexplained under this model and could be explained by other variables.

Table 4.31: Multiple Linear Regression (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	93.142	5	18.628	118.214	.000[b]
Residual	22.692	144	.158		
Total	115.833	149			

a. Dependent Variable: Customer retention

b. Predictors: (Constant), Responsiveness, After-sale service, Customer relationship, Standardization and specification, Delivery

Source: Data generated for research

F-test result will determine whether the variances of two populations are equal. It aims to discover which model best matches the population where the data were collected and tested. According to the table above, the F-value obtained is 118.214 with p-value of 0.000. Since the p-value of ANOVA is lower as compared to the significant value of 0.05, this implies that those five independent variables each has significant relationships with the dependent variable (customer retention). Hence, this model is deemed reliable and appropriate to determine relationships between these variables.

Table 4.32 Multiple Linear Regression (Coefficients)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.356	.267		1.333	.185
Customer relationship	-.171	.069	-.096	-2.486	.014
Standardization and specification	.416	.054	.406	7.730	.000
Delivery	.333	.059	.305	5.655	.000
After-sale service	-.035	.038	-.035	-.931	.354
Responsiveness	.377	.061	.330	6.171	.000

a. Dependent Variable: Customer retention

Source: Data generated for research

$Y = a + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5$

Initial equation:

$Y = 0.356 - 0.171X_1 + 0.416X_2 + 0.333X_3 - 0.035X_4 + 0.377X_5$

Revised equation (due to non-significant value of X_4):

$Y = 0.356 - 0.171X_1 + 0.416X_2 + 0.333X_3 + 0.377X_5$

Where,

Y = DV = Customer Retention

X_1 = IV 1 = Customer Relationship

X_2 = IV 2 = Standardization and Specification

X_3 = IV 3 = Delivery

X_4 = IV 4 = After-sale Service

X_5 = IV 5 = Responsiveness

a = the regression line intercept or a point where the straight line intersects the y-axis (when x=0)

β = the regression line slope or regression coefficient for X (the change in y for every 1 unit change in x, when other variables remain constant)

The analysis of multiple linear regression is carried out to investigate and distinguish the relationship between more than one independent variables and a dependent variable. Based on the linear regression equation generated above customer relationship has significant negative relationship with customer retention as the significant level is less than 0.05. On the contrary, delivery, responsiveness, standardization and specification have significant positive relationship with customer relationship as the significant level is also less than 0.05. Customer Relationship and after-sale service also have negative relationship with customer retention; however, it is insignificant to explain the variance of after-sale service in this model has the significance level 0.354 more than 0.05. Thus, it indicates that after-sale service is not statistically significant to explain variance in customer retention. In other words, decrease in after-sale service does not significantly relate to increase in customer retention.

Based on Table 4.17, standardization and specification is the predictor that produced greatest contribution to the variation of intention to perform as β-value under standardized coefficients is 0.406, higher than the other three variables. This means that standardization and specification is the strongest contributor in explaining the variation in customer retention as other variables in the model are hold constant concurrently. When other variables are held constant, responsiveness has the second highest contribution to explain the variation of customer retention with β-value (0.330) under standardized coefficients. Delivery has the third and customer relationship has the least contribution towards customer retention with β value 0.305 and -0.096 respectively under standard coefficients.

By referring to the β-value of unstandardized coefficient, it can be said that every 1 unit increases in customer relationship will result in 0.171 decrease in customer retention by holding other variables constant. As for standardization and specification, every 1 unit increases in standardization and specification will result in 0.416 increase in customer retention by holding other variables constant. As for delivery, every 1 unit increases in delivery will result in 0.333 increase in customer retention by holding other variables constant. Lastly, every 1 unit increases in responsiveness will result in 0.377 increase in customer retention by holding other variables constant.

4.12 Results for Interview

The respondents in the open-ended questions interview session expressed their experience respectively in almost similar ways. However, the expressions are generally simple, straight-forward and clear. The interview is conducted within 15 minutes for each respondent in order to capture the main points that are needed for the discussion in this paper. From the interview session, the results and discussion are highlighted as follows: Respondent A respond to customer relationship: "*Well, firstly I expect the sales personnel to be competent in his or her knowledge of the products that they are covering. I need reliable and useful facts. Secondly, I*

expect the medical representatives to be professional in their dealings with us. More focus should be placed on the needs of the patients instead of just trying to boost their sales numbers. A sales representative should also be attentive towards the doctor's business scale and suggest the suitable quantity tiers for them. He or she should conduct follow-ups upon request to answer any queries regarding their products". Similarly, Respondent B added: "*Nowadays, there are more and more sales representatives who are covering a whole catalogue of products. I have no problem with that per se, but what I cannot stand is their superficial "touch-and-go" knowledge of the products. I do not want to engage in petty talk with a salesperson as I have a very busy schedule with patients to care for. We are professionals, and thus should be asked more relevant and thought-provoking questions"*. In sum, both of the respondents expect to have an enlightening conversation with sales personnel with substance. Respondent A said: "*A person who takes my time away from my patients better provide me with good value. He or she must come well-stocked with updated information and data*". Whereas, Respondent B added: "*I do not appreciate sales representatives beating around the bush. Doctors simply dislike being asked redundant questions time and time again. They should get straight to the point regarding the standout features and pricing of a certain product. Some of the personnel are also too "pushy" in selling their products and will try to get me to purchase the higher tiers in terms of quantity*". However, in terms of after-sale service questions, Respondent A said: "*The after sales service from Zuellig Pharma is virtually non-existent. They only send their representatives to collect payments from me. I am only giving them a 2 out of 5 rating because I do not need to remind them that their cheque is ready*" and the Respondent B added: "*They do conduct follow-up visits to my clinic, but their timing can sometimes be off. They will come during my busy hours or worse still, just before I depart for lunch! They have much room for improvement; for that I will give Zuellig a rating of 2 out of 5. With all due respect, I for one do not see the value in after-sales service. I have been a Zuellig customer for more than 10 years, and if I have any queries or issues with the products under them, I would rather give them a call to communicate with them directly. As I have mentioned earlier, I have many patients whose time are more important than mine or any sales representatives' time for that matter*". In this sense, there will be plenty of

unforeseeable certainties that are hardly captured in a theoretical framework like the execution of projects.

4.13 Conclusion

In this chapter, the hypotheses testing had been conducted. The results generated from this chapter will be further discussed in Chapter Five which is the last chapter, then proceeded with the interview, managerial implications & also limitations observed from the study with provision of few recommendations relevant to this study.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

In Chapter Five, the major findings are discussed. Moreover, this study's limitations & recommendations for future research are also highlighted. Other than that, the overall conclusion for the whole research project is stated to project a clear image, intended message and idea of this research project.

5.1 Summary of Statistical Analysis

This section consists of all analyses regardless descriptive or inferential; conducted in the previous Chapter Four.

5.1.1 Descriptive Analysis

Overall, there are total of 150 respondents who are participated in this research project. These respondents are made up of male and female general practitioners from the clinic setting in Perak. Almost all of the respondents are male (96.7%) while female had only occupied 3.3% of the sample size. Next category is regarding the age of respondents. Based on the statistics, majority of the respondents (41.3%) are in the age range of 36-45 years old. The lowest age range observed is 18-25 years old with only 1 respondent that account for 0.7% of sample size. For level of education and occupation status, more than half of the total respondents (94.7%) are undergraduate degree (medical officer), followed by 7 respondents who are master degree (specialist) with percentage of 4.7% and 1 respondent is PhD (subspecialist). This is because occupation status of a doctor is

based on his level of education and this is in line with the results shown in Table 4.2 and Table 4.3. Apart from that, 71 respondents (47.3%) have monthly income in between RM20,000-RM29,999 which is the salary earn by the majority of the respondents, followed by less than RM20,000 (26.7%) and also RM30,000-RM39,999 (12.7%). The lowest range of salary is more than RM50,000 which is the total percentage of 2.0%. 90 respondents (60.0%) are using Zuellig Pharma as their distributor for 5 years or more. 29 respondents (39.3%) have used the service provider for 1 year to less than 3 years. There is only 9 respondents (6.0%) have used this service provider for less than 1 year. Other than that, there are 99 respondents (66.0%) with purchase frequency of every month, 22 respondents (14.7%) with purchase frequency of every 2-3 weeks, 13 respondents (8.7%) with purchase frequency of every week and only 1 respondent (0.7%) with every 4-6 months. Moreover, the most commonly items purchase by the respondents are medicine which is 100% and vaccines (74.0%), followed by supplements (56.7%), aesthetics products (40.0%) and the least purchased item is medical device which is only 8%. This is because of the fact that the medical devices can be used repeatedly and with long life span. This in turn will delay the repeat purchase of the medical devices. Apart from that, there are 51 respondents (34.0%) can tolerate 1-2 days delay from the distributors, 40 respondents (26.7%) have no level of tolerance for the delay and only 5 respondents (3.3%) can tolerate more than 1 week from distributor. This is because the respondents need the medicines urgently and the time for deliveries is sensitive in medical line. Therefore, the tolerance level of the respondents can be very low. There are 74 respondents (49.3%) chose reliability as their most important criteria, followed by 54 respondents (36.0%) chose time as their most important criteria and only 22 respondents (14.7%) chose flexibility as their most important criteria for delivery service. Almost half of the respondents choose reliability as the most important criteria because they need their medicine to be delivered on time, at the right quantity, right place and right goods to avoid unnecessary hassle.

5.1.2 Inferential Analyses

There are four tests applied under inferential analysis for this research. These include Reliability testing, Pearson Correlation Analysis and Multiple Regression Analysis.

5.1.2.1 Reliability Test

According to the results of the reliability testing, all five variables have the reliability result of 0.6 and above which signifies that the research's questionnaire is reliable. The Cronbach's alpha of the total value for 24 items is 0.853. The value of Cronbach's alpha for delivery is 0.613, customer relationship is 0.658, whereas the value of Cronbach's alpha for responsiveness is 0.765, standardization and specification is 0.820, after-sale service is 0.828, and lastly the value for customer retention is 0.841. Based from the results, it shows that this is a good result of reliability for all the independent variables which the value falls under the range in between 0.6 to 1.0.

5.1.2.2 Pearson Correlation Analysis

From the data analysis, it shows after-sale service (-0.164) have a negative significant correlation with customer retention. On the other hand, responsiveness (0.770), customer relationship (0.157), standardization and specification (0.800) and delivery (0.770) have a positive significant correlation with customer retention. Responsiveness, standardization and specification and delivery highly related with customer retention whereas customer relationship has a slight and almost negligible positive relationship with customer retention. For the after-sale service has slight and almost negligible negative relationship with customer retention.

5.1.2.3 Factor Analysis

Referring to the table of KMO and Bartlett's test (Table 4.20), it is deduced that there are five factors in this research study.

5.1.2.4 Multiple Regression Analysis

Referring to Table 4.24, the F-value is 118.214 with a p-value of 0.000. As the p-value of ANOVA is not more than α-value 0.05, it indicates that the five independent variables (responsiveness, delivery, standardization and specification, customer relationship and after-sale service) are significantly related with customer retention. Hence, the proposed model is reliable and fit to distinguish the relationship between these variables. Standardization and specification is the determinant with greatest contribution towards variations of customer retention (standardized β coefficients = 0.406) when the other predictor variables in the model are controlled. By controlling other predictor variables constant, responsiveness contributes the second highest, followed by delivery with standardized β coefficients (0.305). Customer relationship has the least contribution towards customer retention with standardized β coefficients 0.096. However, based on the p-value, it shows that only responsiveness, standardization and specification, delivery and customer relationship are significant explaining the variance in customer retention while after-sale service is not significant in explaining the variance due to p-value 0.354 is more than the α-value 0.05.

5.2 Discussion of Major Findings

Table 5.1: Summary of Hypothesis Testing Results

Hypothesis	Accepted/ Rejected
H_1: There is a significant influence of customer relationship on customer retention.	Accepted
H_2: There is a significant influence of standardization and specification on customer retention	Accepted
H_3: There is a significant influence of delivery on customer retention	Accepted
H_4: There is a significant influence of after sales service on customer retention	Rejected
H_5: There is a significant influence of responsiveness on customer retention	Accepted

5.2.1 H1: There is a significant negative influence of customer relationship on customer retention

According to table 5.1, H_1 is accepted as it has a correlation coefficient value of 0.157 which indicates slight correlation in strength with 0.000 as p-value which is not exceeding α-value 0.05. Therefore, it shows customer relationship is positively related to customer retention. In contrast, there is slightly different in multiple linear regression result which shows negative relationship with customer retention (β value -0.096 under standard coefficients). This negative relationship had been supported by the interview from respondent A and B where majority of the sales personnel do not have time or chances to deal with doctors as doctors will always put their patients' priority first. Apart from that, the doctors do not perceive the sales personnel's medical knowledge to be as comprehensive as their and this will lead to a superiority complex. In addition, they prefer to see sales personnel with sufficient knowledge and manage to update him with latest information and with

data provided. Other than that, the most common mistakes that sales personnel made are being “too pushy” to their sales and products. They hope to see sales personnel can understand doctor’s business scale and focus to patients’ need instead of their own sales. Thus, customer relationship was found to present a negative direct effect towards customer retention in this study.

5.2.2 H2: There is a significant positive influence of standardization and specification on customer retention

According to table 5.1, H_2 is accepted as it has correlation coefficient value of 0.800 which signifies high correlation in strength and its p-value of 0.000 is not exceeding α-value of 0.05. Thus, standardization and specification is significantly positive related to customer retention. This positive relationship had been supported by Al-Saa’da (2013) where standardization and specification is contributed in predicting customer retention. The high value positive coefficient of standardization and specification refer to the importance of the compliance, guidelines, terms and condition and the regulation in pharmaceutical industry. This is because pharmaceutical regulatory compliance world is becoming more complicated and increasingly more challenging for pharmaceutical industry to navigate (Hickman, 2017). Noncompliance can cause lawsuits. Potential penalties for violating this statute include jail time, hefty fines, and being banned from participating in federal healthcare programs (Hickman, 2017). As a result, majority of the professional healthcare are very concern about the standardization and specification. Thus, standardization and specification was found to present a highly positive direct effect towards customer retention in this study.

5.2.3 H3: There is a significant positive influence of delivery on customer retention

According to table 5.1, H_3 is accepted as it has correlation coefficient value of 0.770 which indicates high correlation in strength and its p-value of 0.000 is not exceeding α-value of 0.05. Due to this, delivery is significantly positive related to

customer retention. The results generated from this study is consistent when compared to the study conducted by Al-Saa'da (2013) in healthcare industry. According to Al-Saa'da (2013) and Cudjoe, Anim, & George (2017) study, delivery is significant related to customer trust where customer trust is highly related to customer retention from Sarwar, Abbasi, & Pervaiz, (2012). Healthcare expenditures always correlated with high quality and efficiency in the delivery services to improve health outcomes (Ginsberg et al., 2009). If the services offered are fast and reliable, this will be simple way for doctors to add merit to their name as they can provide efficient treatment to their patients. Therefore, delivery was found to present a highly positive direct effect towards customer retention in this study.

5.2.4 H4: There is insignificant influence of after-sales service on customer retention

According to table 5.1, H_4 is rejected as it has correlation coefficient value of -0.164 which indicates slight negative correlation in strength and its p-value is not exceeding α-value of 0.05. But, when it comes to multiple linear regression result which shows insignificant relationship with customer retention (0.354 in p-value which exceeding α-value of 0.05). Due to this, after-sale service is insignificant to customer retention. Thus, it indicates that after-sale service is not statistically significant to explain variance in customer retention. In other words, decrease in after-sale service does not significantly relate to increase in customer retention. The insignificant relationship had been supported by respondents A & B through interview whereby doctor B preferred to call sales personnel and Zuellig Pharma's staff if there is something related to the products or delivery issue. He dislikes the interruption from sales personnel during his working time unless there are new updates regarding the drugs. Whereas, doctor A preferred sales personnel to be considerate and well prepared before they approach him for follow up purposes, understand the needs of his practice, able to answer his questions and make good use of his time. Otherwise, he preferred not to see sales personnel for after-sale service. This is because they feel that there is no need for them to purchase again

just for the intention of helping sales personnel to gain their sales. Therefore, it is concluded that after-sale service will not affect the customer retention.

5.2.5 H5: There is a significant positive influence of responsiveness on customer retention

According to table 5.1, H_5 is accepted as it has correlation coefficient value of 0.770 which signifies high definite correlation in strength and its p-value of 0.000 is not exceeding α-value of 0.05. Due to this, responsiveness is significantly positive related to customer retention.

This finding is considered as logical because according to Muala (2016), responsiveness is positively related to customer satisfaction where customer satisfaction has significant relationship with customer retention from IBOJO (2017). Responsiveness refers to quickness and timeliness of the delivery service. This contains operating quickness and abilities to react immediately to the demands of the customer. More specifically, it is looked at the desire and preparedness of sales personnel and Zuellig staff to offer quality service to the doctors. It relates to the services timeliness. It also consists observing the needs and demands of customers, easy and fast processing time, taking care of customers individually by the staff and solving problems (Muala, 2016). When the customer feels satisfied, they will become loyal advocates to the brand (Muala, 2016), recommend their friends and have repeat purchase. Therefore, it is concluded that responsiveness will affect the customer retention.

5.3 Implications of the Study

5.3.1 Managerial Implications

From the results of the study, several practical implications can be highlighted and suggestions can be provided to enhance supply chain services. From the results

generated, it shows that responsiveness, delivery, standardization and specification are positively related to customer retention while customer relationship is negatively related to customer retention. Therefore, the top management of the company should look into these areas in order to increase their customer retention by improve service quality of supply chain when they deal with their customers. As the results, customer relationship is negatively related to customer retention. This is because doctors are increasingly showing their disinterest in meeting medical representatives. The main concern for pharmaceutical companies should be that the doctors do not think that medical representative add any value to their medical practice (Chandra, 2017). But, majority of doctors still prefer interact with pharmaceutical companies through online channels for product information and other proprietary knowledge as doctors are getting busy with greater patient load, medical representatives are finding it hard to engage with doctors (Chandra, 2017). Top management of pharmaceutical companies must pay attention to this changing behaviour of doctors which has a potential to impact their supply chain and marketing performance.

Apart from that, after-sale service is insignificant to customer retention. This results is expected as doctors do not have time to build relationship with medical representatives and do not even mention about after-sale service where majority of the doctors said that they do not want to meet representative more than once a month (Chandra, 2017). The reasons behind it is because their occupancy with the patients during their practice and patients' perceptions about doctors meeting sales personnel while patients were waiting, were major areas of concern for them. It will not be wrong to say that due to increased awareness about medicolegal risks and increased patients demands, doctors too are changing their behaviours at practice (Chandra, 2017). The change in this behaviour is now also reflected in the allocation of time to sales personnel. When doctors were asked about how much time they would give to each sales personnel**,** majority of the doctors convincingly said that they cannot spend more than 10 minutes with each medical sales representative (Chandra, 2017). If the doctors can only give sales personnel maximum 10 minutes a month, this is almost impossible for sales personnel to expect doctors will change their prescription behaviour in company favour as well

as spend time to sales personnel for after-sale service. Following that, there are few actions that the upper management can initiate in order to handle current and future issues.

Firstly, pharmaceutical companies need to focus only customers who give them business. Since, doctors have tight schedule with frequently changing appointments and emergencies. This means that a face-to-face meeting with them becomes rare. Therefore, information of the products and other proprietary knowledge delivered via the internet allows them to go through at their convenience. Additionally, this information remains available for them for much longer duration (Chandra, 2017).

Secondly, doctors expect sales personnel to know everything about their products. If they do not know much about their product, it diminishes the credibility from doctors. Doctors need sales personnel to be an instant resource for questions about new medications (Christopher, 2002). If the sales personnel has to ask the medical advisor to send the information, chances for doctors to read the material is less or never. Sales people should read everything they can about their products, for both approved and non-approved indications (Christopher, 2002). They must be familiar with the latest articles in the commonly read medical journals before they meet the doctors.

Lastly, the world of medicine is changing at an ever-increasing pace. Sales personnel must know what are the latest models of the diseases that the drugs treat (Christopher, 2002). If they want to be regarded as professionals who can help doctors do their job, they must be well versed in their field. The information is readily available. If their company cannot provide it, sales personnel can check with local doctors to find out where they can access the latest information about relevant diseases (Christopher, 2002).

5.4 Limitation of the Study

This research focuses on supply chains, and the development of SCM in pharmaceutical companies, and does not attempt to examine SCM in other business sectors as this would have made the research field too large, generalised and labour intensive in information gathering. It also only focuses on large multi-national pharmaceutical companies and does not examine smaller generic drug manufacturers as they tend not to have such dispersed supply chains. This is because most of the international pharmaceutical companies are under the same distributor – Zuellig Pharma. It covers almost all the branded companies no matter where they are located within the Malaysia, and therefore made the gathering and comparison of information easier because they all have to operate according to the same set of regulations where ever they are located

within the Malaysia. Therefore, Perak is chosen to be the target area in this research. Other than that, the research is only targeted the private clinics in Perak and does not include the private hospitals, government hospital and health clinic from government.

5.5 Recommendations for Future Research

In order to produce a better research in future, future researchers should take a longer time frame for data collection period so that larger amount of responses can be collected for analysis. A representative sample from different area needs to be obtained for better generalizability to the population at large. Longitudinal study is also encouraged in order to determine the causal relationship and whether variable effects change over time. Besides, future research should expand its sample size which is more than this research. Furthermore, it is recommended for future research to investigate customer retention by identifying more independent variables or target larger area of the studies such as private hospital, government hospital and health clinic or other states when conducting similar studies.

5.6 Conclusion

In short, this research had revealed that standardization and specification, responsiveness and deliveries are positively significant related to customer retention while customer relationship is negatively significant related to customer retention. After-sale service is insignificant to customer retention. This research thus contributes to fill the scarcity of research on the supply chain management service towards the customer retention among general practitioners from private clinics in Perak.

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APPENDICES

APPENDIX A: Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

The Effect of Supply Chain Management on Customer Retention among General Practitioners in Perak: A Case-study of International Pharmaceutical Company

Dear respondents,

Firstly, I would like express my gratitude for your participation. I am postgraduate student of Master of Business Administration (Corporate Management) from University Tunku Abdul Rahman (UTAR). I am currently doing a research of customer retention among general practitioners.

This set of questionnaire consists of two sections. Section A is related to respondent's general information. Section B contains questions related to supply chain management (SCM) service measurement and Section C contains questions related to customer retention.

Kindly answer all the questions. There is no right or wrong answers to any of these statements. All information will be kept **PRIVATE** and **CONFIDENTIAL**. For any questions or inquiries, please do not hesitate to contact us.

Thank you for your participation.

Yours Sincerely,

Name	Student ID	Email Address
Stella Ling Sye Chee	15ABM08117	stella_ls_03@hotmail.com

Final Year Project Supervisor: Dr.Chen, I-Chi

Section A: General Information

1. What is your gender?

- □ Male
- □ Female

2. What is your age?

- □ 18-25
- □ 26-35
- □ 36-45
- □ 46-55
- □ Above 55

3. What is the highest level of education you received?

- □ Undergraduate Degree
- □ Master Degree
- □ PhD

4. What is your occupation status?

- □ Medical officer
- □ Specialist
- □ Subspecialist

5. Which category best describes your current monthly income?

- □ Less than RM20,000
- □ RM20,000 - RM29,999
- □ RM30,000 – RM39,999
- □ RM40,000 – RM49,999
- □ More than RM50,000

6. How long have you used Zuellig service?

- □ Less than 1 year
- □ 1 year to less than 3 years
- □ 3 years to less than 5 years
- □ 5 years or more

7. How frequently do you purchase from Zuellig Pharma?

- □ Everyday
- □ Every week
- □ Every 2-3 weeks
- □ Every month
- □ Every 2-3 months
- □ Every 4-6 months
- □ Once or twice a year

8. Which type of the items that you purchased from Zuellig Pharma? (You may select **more than one answer.)**

- □ Supplement
- □ Aesthetic products
- □ Vaccines
- □ Medical devices
- □ Medicine

Section B: Supply Chain Management towards Customer Retention

This section is seeking your opinion regarding the factors that influence customer retention among general practitioners. Please tick to which you agree or disagree with each statement below.

NO	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
(1) Customer Relationship						
1	**Sales personnel have passion and friendly to customers**	□	□	□	□	□
2	**Sales personnel were courteous throughout.**	□	□	□	□	□
3	**Sales personnel have knowledge of products**	□	□	□	□	□
4	**Sales personnel always offer comprehensive products introduction for customer**	□	□	□	□	□
5	**Sales personnel available in a timely**	□	□	□	□	□

	manner					
NO	**Questions**	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
(2) Standardization and Specification of Zuellig Pharma service						
1	**Billing accuracy**	☐	☐	☐	☐	☐
2	**Accurate documentation (incl. Shipping documents / etc):**	☐	☐	☐	☐	☐
3	**Compliance with instructions**	☐	☐	☐	☐	☐

(3) Delivery

No	**Questions**	**Excellent**	**Good**	**Acceptable**	**Bad**	**Very Bad**
a.	**Zuellig Pharma provides efficient logistics service**	☐	☐	☐	☐	☐
b.	**How do you think about the company tracking and tracing capabilities:**	☐	☐	☐	☐	☐

c. What level of tolerance do you have for late deliveries?

- ☐ Less than 1 day
- ☐ 1 – 2 days
- ☐ 2 – 7 days
- ☐ More than 1 week
- ☐ No level of tolerance (The delivery should be on time)

d. Which delivery performance criteria do you think is the most important?

- ☐ Time
- ☐ Reliability
- ☐ Flexibility

No.	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
(4) After-sale Service						
1	**Sales personnel has telephone return visit services**	☐	☐	☐	☐	☐
2	**Sales personnel always inform customers about the new promotion activities**	☐	☐	☐	☐	☐
3	**Zuellig Pharma's staffs and sales personnel are patient, professional and passionate after purchase.**	☐	☐	☐	☐	☐
4	**Zuellig Pharma's staff and sales personnel manage all client complaints and dissatisfaction issues proactively and ensure closure**	☐	☐	☐	☐	☐
5	**Zuellig Pharma provides unconditional returns and exchanges policy**	☐	☐	☐	☐	☐

(5) Responsiveness

Below is a list of words that can be use to describe your feeling towards responsiveness of the service. We would like you to **SELECT** the answer that most closely resembles your past experienced with Zuellig Pharma.

No.	Questions	Excellent	Good	Acceptable	Bad	Very Bad
1	**Response time to inquiries and orders**	☐	☐	☐	☐	☐
2	**Overall of customer**	☐	☐	☐	☐	☐

	service (kindness, interest in solving problems)					
3	**Timeliness of orders executed by the company**	☐	☐	☐	☐	☐

Section C: Customer Retention

NO	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
(7) Customer Retention						
1	**I would like to continue to use Zuellig Pharma as the distributor.**	☐	☐	☐	☐	☐
2	**I would like to choose Zuellig Pharma even if there are some other similar distributors.**	☐	☐	☐	☐	☐
3	**I would like to choose Zuellig Pharma even if its commodity price raised**	☐	☐	☐	☐	☐
4	**I would like to recommend Zuellig Pharma to other people**	☐	☐	☐	☐	☐
5	**In some situations, I can tolerate Zuellig Pharma's small mistake**	☐	☐	☐	☐	☐
6	**I think I have built a good relationship with Zuellig Pharma**	☐	☐	☐	☐	☐

Thanks for Your Cooperation

APPENDIX B: Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.660	31.919	31.919	7.660	31.919	31.919	7.288	30.366	30.366
2	2.964	12.350	44.269	2.964	12.350	44.269	3.028	12.615	42.981
3	2.072	8.632	52.901	2.072	8.632	52.901	1.803	7.511	50.491
4	1.040	4.332	57.233	1.040	4.332	57.233	1.239	5.163	55.654
5	1.004	4.182	61.415	1.004	4.182	61.415	1.214	5.058	60.712
6	.914	3.807	65.222	.914	3.807	65.222	1.082	4.509	65.222
7	.840	3.500	68.721						
8	.758	3.159	71.881						
9	.687	2.861	74.741						
10	.643	2.681	77.423						
11	.601	2.506	79.928						
12	.559	2.330	82.258						
13	.538	2.241	84.499						
14	.489	2.036	86.536						
15	.451	1.881	88.416						
16	.426	1.777	90.193						
17	.400	1.665	91.858						
18	.382	1.591	93.449						
19	.328	1.366	94.815						
20	.306	1.273	96.088						
21	.288	1.201	97.289						

22	.242	1.007	98.295						
23	.239	.994	99.290						
24	.170	.710	100.000						

Extraction Method: Principal Component Analysis.