UNIVERSITY OF CAPE COAST

CUSTOMER ASSESSMENT OF THE PRODUCTS AND SERVICES OF AIR LIQUIDE GHANA LIMITED

BY

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DISSERTATION SUBMITTED TO THE DEPARTMENT OF MANAGEMENT STUDIES, SCHOOL OF BUSINESS, UNIVERSITY OF CAPE COAST IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF BUSINESS ADMINISTRATION DEGREE IN MARKETING

SEPTEMBER, 2010

ABSTRACT

The study set out to investigate customers' assessment of the products and services of Air Liquide Ghana Limited in the light of its present position in a competitive market. A cross-sectional survey was conducted to collect data from a sample of 200 customers out of the 1100 customers in the study area.

The results from the study indicate that customers are generally satisfied with the product and service quality of Air Liquide Ghana Limited. Both the desire and expectation disconfirmation measures show that customers perceive the products and services of Air Liquide to be satisfactory. The overall satisfaction measure portrays that few customers belong to the zone of indifference where customers are merely "satisfied" and do not tend to be loyal customers with a high retention rate. The expected disconfirmation measures of product and service quality also suggest that, although the company has been performing well in both the service and product quality dimensions, it performs relatively better in the product quality dimensions than in the service quality dimension.

The study recommends that although, customers are satisfied with the performance of Air Liquide Ghana Limited in general, reduction in prices, improvements in customer care which includes distribution of souvenirs and customer training as well as establishment of more depots could help improve customer satisfaction which could ultimately lead to customer loyalty.

ACKNOWLEDGEMENTS

DEDICATION

This work is dedicated to my late mother Madam Agnes Owusu who willed me on all the time but did not live to enjoy the fruit of her labour and my late brother Michael Amofah Appiah.

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CHAPTER ONE

INTRODUCTION

Background to the study

In today's globalised information-driven economy, competition among firms is getting fiercer. Not only is the number of competitive offerings rising due to globalisation of production, sourcing, logistics and access to information, but also, many products and services face new competition from substitutes and from completely new offerings or bundles from industry outsiders. The products and services that an industrial company has to offer are generally organized around its customers' needs, in addition to the level of expertise and production capabilities of the firm.

Organizations, both private and public, in today's dynamic marketplace and marketspace are increasingly leaving antiquated marketing philosophies and strategies for the adoption of more customer-driven initiative that seek to understand, attract, retain and build intimate long term relationship with profitable customers (Kotler & Keller, 2006; Gronroos, 1994; Narver & Slater, 1990). As customer behaviour becomes more hybrid, the development of a strong relationship between customers and a company could likely prove to be a significant opportunity for competitive advantage. It is more the perceived experience a customer gains in his various interactions with a company (e.g. how fast, easy, efficient and reliable the process is) that can make or break the relationship. Problems during a single transaction can

damage a favourable customer attitude. It is believed that satisfied customers tell five other people about their good treatment, and five-percent increase in loyalty can increase profit by 25%-85%. Conversely, the average customer with a problem eventually tells eight to ten other people (SPSS White paper 1996).

Organizations are therefore increasingly being more customer-centric and are interested not just in acquiring new customers, but more importantly, retaining existing customers. This is perhaps because it costs more to attract new customers than to retain existing ones. Again it is more profitable retaining an old customer who is more likely to re-purchase or re-use a company's products and service and recommend them to others. Customer retention is, therefore, basically a product of customer loyalty and value which in turn is a function of the level of customer satisfaction or dissatisfaction (Reichhled, 1996). Customer perceptions are influenced by a variety of factors. Besides the actual outcome which involves whether the product or service delivers the expected function and whether it fulfils the customers need in the whole process of consumption and all interactions involved are of crucial importance.

Consequently, Organizations attempt to adopt measures to ascertain customer satisfaction and dissatisfaction. Some organizations traditionally rely on customer complaints to ascertain customer satisfaction. Many organizations no longer use only customer complaints; rather they adopt rigorous qualitative and quantitative mechanisms to measure customer satisfaction. In this regard, measuring customer satisfaction provides the feedback of how successful an organization is at providing product and services to the satisfaction of

customers at the market place and market space. This makes it imperative for organizations to take pragmatic and reliable steps towards improving the quality of service delivery, managing customer value and satisfaction more effectively.

The Air Liquide group operates in over sixty countries through one hundred and twenty five subsidiaries with employees in excess of twenty eight thousand people. It has seven major research centres and spends more than two hundred thousand dollars ($200,000) per day on gas related research. Air Liquide Ghana employs about 100 people. Like many companies, Air Liquide has the following as its mission statement: "We focus our attention on total customer satisfaction by providing quality, safe and efficient solutions tailored to meet customers' needs promptly in a dynamic environment".

A company policy guides the company on its modus operandi. The company realizing the risky nature of the industrial gases has set for itself a target which requires faultless commitment to high quality and safety. They have as a policy "zero accident", a synthesis of total commitment to safety and quality. This policy is implemented through total quality management (TQM). The quality of Air Liquide is checked right from the production point to where the product gets to the final consumer. By the time the final product gets to the consumer it is important to emphasize that the product becomes zero defective; a complete zero tolerance for defects. This principle ensures that the consumer enjoys 100 per cent satisfaction from the use of the product. As a recipe, the company spices its services by giving safety training to customers and employees, constant reminders on safety measures with flyers and testing of cylinders.

The shift to devoting considerable attention and reason to customer acquisition and retention through customer satisfaction is not different with Air Liquide Ghana Ltd. Air Liquide Ghana Limited is a gas manufacturing organisation which started operation in Ghana in 1957 as the sole producers and suppliers of industrial gas in the country. Over the past two decades, more industrial gas producing firms have entered the market to break the monopoly the company used to enjoy. Between 1989 and 2007 as many as 17 companies were producing and marketing industrial gas. As a result, competition has been keen in the industry. Available statistics from the company indicates that their market share has gone down, stemming from reduction in customer patronage. Since survival and growth are driven by customer loyalty, and retention which is in turn driven by customer satisfaction and value (Rust & Oliver, 1994), delivering quality service and customer satisfaction have been important goals and pursuit for Air Liquide Ghana Ltd.

Statement of the problem

It makes good business sense for an organisation to know how customers feel about the product and services offered, know about customer needs that are not yet being met, know how a company compares with its competitors in the eyes of its customers, as customer satisfaction is tied directly to profitability. If customers are happy, they tend to be loyal. And if they are loyal they not only buy more, they refer other customers to the enterprise concerned. Well-established research by Bain & Company, (2003) found that, for many companies, an increase of 5% in customer retention can increase profits by 25% to 95%. The same study found that it would cost six to

seven times more to gain a new customer than to keep an existing one. Moreover, one bad experience can outweigh a whole lot of good experiences. Because of e-mail and instant messaging, bad experience can quickly be broadcast to dozens, hundreds, or thousands of other customers, and thus magnifying its impact. So if a business is doing something that frustrates customers, it needs to know right away. It is critical to give customers the opportunity to provide feedback about their overall satisfaction level and specific likes and dislikes. It is equally important to consistently measure and monitor that input. Without an effective customer satisfaction research programme in place, a company will be losing business, missing opportunities, and putting itself at a competitive disadvantage.

The empirical problem for this study is propelled by the need to adequately assess customer satisfaction with product quality and service delivery of Air Liquide Ghana Ltd. The state of customer satisfaction with the company's product quality and service delivery is not clear as there is scanty documentation of the issue. However, the declining trend in patronage of the product from Air Liquide Ghana Ltd does not provide empirical support for the claim that customers are satisfied. The question of prime concern then is, with the deregulation of the gas industry, how does a hitherto monopolistic firm like Air Liquide, which had hitherto been in total control of the entire gas industry cope with the sudden emergence of competition? How would its marketing strategy ensure that it becomes a competitive player in the industry and also be able to maintain or increase its market share?

In view of the above, the main problem of this study is: whether customers are satisfied with the products and service quality delivered by Air

Liquide Ghana Ltd. From this starting point, the main purpose of the study is to determine customer assessment of the product and services of Air Liquide Ghana Limited in the light of its present position of being in a competitive market.

Objectives of the study

The general focus of the study is to find out how customers objectively perceive the products and services of Air Liquide Ghana Limited.

The Specific objectives of the study are thus to:

- identify how customers perceive the products and services of Air Liquide;

- find out if the company is meeting the expectations of its customers;

- examine the level of customer satisfaction that is in Air Liquide;

- elicit from the clients recommendations necessary for the improvement of customer satisfaction in the company, and

- make policy recommendation based on the findings from the study.

Research questions

The study seeks to answer the following specific research questions:

1. How do customers perceive the product and services offered by Air Liquide?

2. Which dimensions of product and service quality are customers satisfied or dissatisfied with at Air Liquide Limited?

3. What are the levels of customer satisfaction with Air Liquide product and service?

4. What are the switching intentions of customers of Air Liquide?

5. What are the recommendations from clients necessary for the improvement of customer satisfaction in the company?

Significance of the study

The study is immensely significant in diverse ways. To the management of Air Liquide Ghana Ltd, the findings that are reported in this study will provide a more reliable scientific measure and perspective for describing and evaluating the level of customer satisfaction with the product and services they deliver. It will also serve as an invaluable source of information that brings to light the intentions of current customers. The study essentially uncovers the dimensions of product and service quality that customers consider as important as well as their future intentions. This should provide empirical support for strategic decisions of management in several critical areas of their operation. In addition it should provide a justifiably valid and reliable guide to designing workable product and service delivery improvement strategies for creating and delivering customer value, achieving customer satisfaction and loyalty, and building long-term mutually beneficial relationship with profitable customers.

Delimitation of the study

The study was confined to only customers of Air Liquide Ghana Ltd who currently patronise their services and particularly those from the Takoradi Metropolis and Tarkwa Municipality of the Western Region, and the Cape Coast Metropolis in the Central Region of Ghana.

With exception of fabrication and Artisans which had selected samples from all the areas within this two regions, the rest of customers such as Mining industries, Lumber and Construction, Manufacturing and Other companies such as Transport & Logistics, Oil & gas companies were all used in considering overall customer satisfaction with product and service of Air Liquide Ghana Ltd. Finally, the sample for the study is delimited to a sizeable one thousand and one hundred respondent or customers.

Limitation of the study

The main limitation of this study was the researcher's inability to get access to every customer (respondents) to fill questionnaire. This study was also constrained by time. It was conducted within very limited academic time frame, approximately four months instead of the proposed eight months. Unfortunately that did not also allow the use of a large sample which is pre-requisite for reliability of surveys that aim at generalizing findings and making inferences from a sample about the populations of study.

Structure of dissertation

The study is organized into five chapters. Chapter One is the introductory chapter that covers the Background to the Study, Statement of the Problem, Research Questions, Objective and Significance of the Study , Limitations of the Study, and Structure of Dissertation. Chapter Two is review of relevant literature. Chapter Three is the Methodology section, which focuses on the research perspectives, study location, population, sample, research instruments, and data collection. Chapter Four is presentation of data

and analysis of results and findings and Chapter Five covers the summary, conclusions and recommendations made to aid policy making by the study organisation, that is, Air Liquide Ghana Limited.

CHAPTER TWO

LITERATURE REVIEW

Introduction

In this chapter, the theoretical and empirical literature dealing with organizational performance measurement and its relationship to customer perception and to achieving customer satisfaction are reviewed. The review first looks at the concepts and theoretical framework on customers, service and product quality and customer satisfaction, perception and retention. Other related review of empirical literature on customer satisfaction, perception and retention forms the rest of this chapter.

Concepts and Theoretical Framework

Defining customers

The term 'customer' is commonly used to refer to the end-user of a product. Hayes (1997, p.16) opines that 'customer' is a generic term referring to anybody who receives a service or product from some other person or group of people. Broadly, according to Hayes (1997), there are internal and external customers. Whereas the term "internal customers" refers to the staff or employees of an organisation, "external customers" refers to stakeholders of an organization. Within the external customer group there are several customer categories: clients, compliers, consumers, and constituents. It is thus important to identify the types of customers surveyed when reporting customer satisfaction results. In this study the customers of concern are the individual

consumers/users who patronize the products and services of Air Liquide Ghana Ltd.

Customer purchasing process

Researchers suggest that customers go through a five-stage-decision-making process in most purchase situations, namely: need recognition and problem awareness, information search, evaluation of alternatives, purchase and post-purchase evaluation (Kotler & Keller, 2006; Lovelock & Wirtz, 2007). On the other hand, Lovelock and Wirtz (2007) proposed a three-stage model of service consumption. They conveniently grouped the decision making process of service consumption into three: pre-purchase service, encounter stage and post-enter stage.

Lovelock and Wirtz (2007) further explained that the pre-purchase stage has three main components and includes the awareness of need, information search in which needs are clarified, solutions explored and suppliers and alternative service products are identified by consumers, and finally an evaluation of alternative solutions and suppliers for a decision on service purchase. At this stage consumers search for certain service attributes, and the perceived risk and expectation of consumers regarding desired service, predicted service, adequate service levels as well as the tolerance zone. The service-encounter stage involves a request from chosen supplier or an initiate self-service of which payment may be upfront or billed later. It also includes service delivery by personnel or self-service and this represents the moment of truth as the service is encountered through a service delivery system of an organization. The third which is the post-encounter stage involves an

evaluation of the performance of the service encountered and its effect on future intentions. It is at this stage that satisfaction and dissatisfaction occur and decisions to remain loyal are taken by customers.

Concepts of customer satisfaction

Customer satisfaction is a term that has received much attention and interest among scholars and practitioners perhaps because of its importance as a key element of business strategy and goal for all business activities, especially in today's competitive market (Anderson, 1994). It is therefore important to understand this terminology in detail as applied in this study.

According to the World Trade Organization (1985), customer satisfaction is a psychological concept that involves the feeling of well-being and pleasures that results from obtaining what one hopes for and expects from an appealing product and/or service. Youjae Yi (as cited in Lovelock & Wirtz, 2007), also defines customer satisfaction as an attitude-like judgement following a purchase act or a series of consumer product interactions. Oliver (1992) described customer satisfaction as a consumer's post-purchase evaluation and affective response to the overall product or service experience while to Besterfield (1994) satisfaction is merely the result of things not going wrong, that is satisfying the needs and desires of consumers.

In another instance, Bruhn (2003) asserted that customer satisfaction is an experience-based assessment made by the customer of how far his own expectations about the individual characteristics or the overall functionality of the services obtained from the provider have been fulfilled. Also, Kotler and Keller (2006, p.144) defined customer satisfaction "as a person's feeling of

pleasure or disappointment resulting from comparing a product's performance (outcome) in relation to his or her expectation". It is therefore important for organizations to make customer satisfaction a prime of its key indicators in the face of competition.

From the above review an operational definition of customer satisfaction as conceptualized for this study may be stated as, a customer's overall subjective evaluation of the product/service quality and performance as juxtaposed his/her expectation or desires for a given time period.

Customer loyalty and satisfaction

Horstmann (1998), states that there is a strong relationship between customer satisfaction and loyalty. Customer satisfaction influences loyalty but how much depends on the level of customer satisfaction. With higher customer satisfaction, the level of loyalty increases. A customer that is "very satisfied" is six times more likely to repurchase a product than a customer that is "satisfied" (Matzler & Hinterhuber, 1998; Hart & Johnson (as cited in Gronroos, 2000). However, it is important not to exceed the satisfaction level too much; if this is done, the customers' expectations will be even higher the next time. It is important to understand that this will result in an up-going spiral where the risk of service failure increases. Therefore, it is important that the satisfaction level is increased by small steps to avoid the risk of dissatisfied customers in the future.

Satisfaction may be influenced by a number of other things, but the focus in this dissertation is on the relationship between loyalty and product/service quality. Quality is whatever the customer perceives it to be

(Gronroos, 2000). Therefore, product/service quality is the result of comparisons consumers make between their expectations and their perception of the actual product/service performance (Lewis, 1989 as cited in Bahia & Nantel, 2000). Relationship quality is thus the result from comparisons consumers make between their expectations and their perceptions of the actual relationship.

As most researches in the field of customer satisfaction are based on investigations performed on private persons rather than on organisations, one needs to keep this in mind. However, organisations are run by people and those are the ones that are in contact with companies and therefore the theories can be applicable to organisations and customers as well. It is important to know that the relationship between satisfied customers and loyal customers is a curve-like relationship contrary to what one first may believe. Hart and Johnson (as cited in Gronroos 2000) discuss this through what they call the zone of indifference (Figure 1).
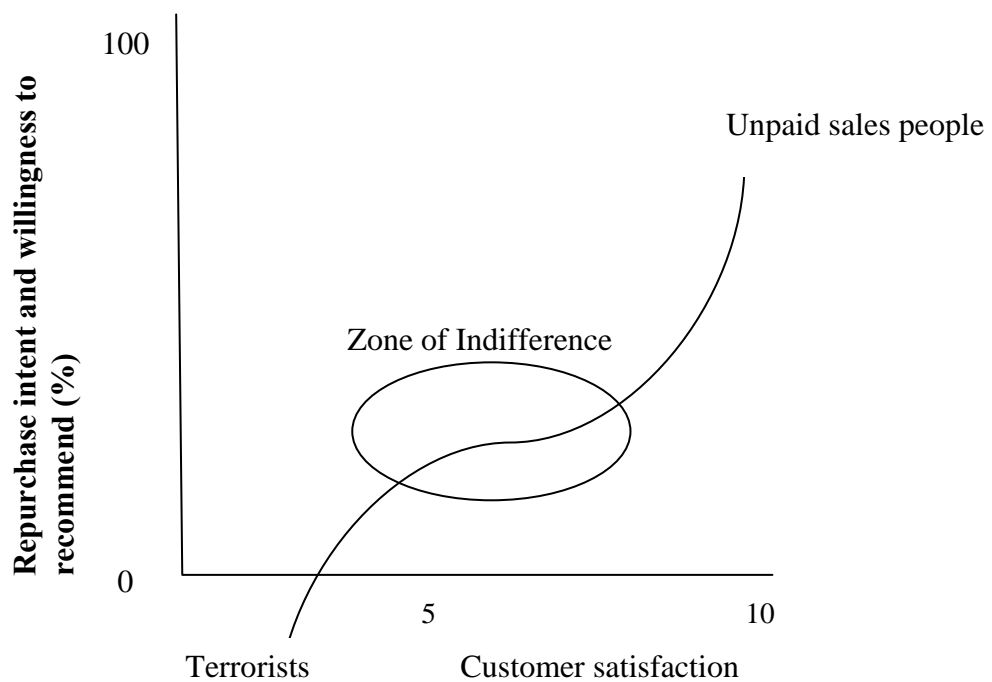
Figure 1:
Zone of Indifference (Gronroos, 2000)

The curve in Figure 1 shows what the relationship looks like ranging from completely dissatisfied customers to very satisfied customers. The large, slowly up-going slope is known as the zone of indifference where customers are merely "satisfied" and do not tend to be loyal customers with a high retention rate. This is in fact where most of a company's customers belong. It is important to strive for leaving this zone and make customers loyal through driving them towards being "very satisfied" by offering superior product/service and value-added activities. Not only does a customer then become loyal through repurchase but customers in this area are also known as "unpaid salespeople" because of their willingness to spread positive word-of-mouth about the company, whereas dissatisfied customers are called "terrorists" because of their will to try scaring away potential new customers by bad-mouthing the company (Gronroos, 2000).

Relationship quality and events

How customers perceive a company is very much impacted by how they are approached and treated by front-line, and support-employees at different encounters with the organisation. The same can be applied to the gas industry. Ivarsson (2005) has found that a personal relationship with a bank is the factor of most importance for clients at an abstract level; he states furthermore that on a more concrete level the need for personal relationship increases proportionally with the complexity of a situation. According to Bazan (1998) there are specific events in the relationship where negative experiences often tend to occur and empathy is further developed.

- *Employee attitudes*: a negative attitude may signal an employee to be

not only indifferent but also rude and lack respect for the customer.

- *Employee ability*: not providing proper training or education to the employees can lead to inadequate central knowledge and inability to help a customer in need of assistance.

- *Lack of empathy*: employees may be reluctant to see the customer's point of view in case of dissatisfaction or bad service and simply not take complaints and customers seriously.

- *Rules and policies*: this is a major source of dissatisfaction as a result of operating procedures not functioning well. Having sales clerks state that they would like to help but cannot is a typical example of rules and policies not functioning.

- *Perceptions of dishonesty*: not many are dishonest by intention: however, excessive optimistic claims and promises about products and reluctance to providing a customer with negative news is seen as dishonesty as well.

In addition, Bazan (1998) outlined that actions to take against the negative factors stated above do exist but, as stated earlier, the employees must focus on fulfilling these actions in every instance of the company and focus on having 100% satisfied customers. It is only after implementing these in a correct manner that the company might be able to gain competitive advantage in customer relationship quality against other businesses. Examples of actions to take are given below.

- *Goals*: the primary thing is to set proper goals and objectives to achieve customer satisfaction. Gaining competitive advantage means 100 per cent customer; satisfaction focus all the time. Often it is not

enough merely to satisfy a customer; the business must exceed the expectations of a customer.

- *Aggressive problem solving*: a company cannot take baby steps towards improving customer satisfaction. The loss attached to each customer lost can be tremendously high and therefore focus on aggressive problem solving is crucial.

- *Leadership:* leaders must set an example and be role models when communicating the importance of service and satisfaction to everyone in the company.

- *Empowerment:* one way towards a healthy service recovery is by enabling employees on the floor to make decisions in order to immediately make a customer fully satisfied after a service failure.

- *Problem-solving teams*: a company might form a group to regularly meet and discuss problems existing in the organisation.

- *Assessment:* an organisation must fully understand its strengths and weaknesses in order to know where the problems in the company might occur and how to solve them.

- *Listening*: first and foremost, a company must encourage customers to complain if a service failure occurs. Then, when employees receive a complaint they must avoid taking a defensive position and instead listen to what the customer is saying and find out exactly what the problem is in order to recover from the service failure correctly. Of course, the company must make the customer completely satisfied immediately and show empathy and understanding.

- *Surveys*: a company may make a survey about service quality and

satisfaction in order to find out the attitudes of customers.

Service and its attributes

The service concept has gained much attention from scholars and practitioners since the first three service marketing articles were published by Regan (1963). Rathemell (1966) and Berry (1980) broadly defined Services as acts, deeds, performance, or efforts that have different characteristics from goods – defined as articles, devices, materials, objects or things. Services according to Lovelock and Wirtz (2007, p.15) refer to "economic activities offered by one party to another, most commonly employing time-based performances to bring about desired results in recipients themselves or in objects or other assets for which purchasers have responsibility". Hill (1977) on the other hand, defined services as changes in the condition of a person or something in the possession of the customer. Vargo and Lusch (2004 p.2,) also viewed service as "The application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself" while Gronroos (2001) asserted that service is a process that leads to an outcome during partly simultaneous production and consumption processes.

Many scholars such as Gronroos (2000), Kotler and Keller (2006) and Lovelock and Wirtz (2007) agreed on four attributes that characterize services: inseparability, heterogeneity, intangibility and perishability. One significant characteristic which Lovelock and Wirtz, (2007 p. 15) identified is benefit without ownership. They posited that while customers expect to obtain value from their services purchased in exchange for their money, time, and effort,

this value comes from access to a variety of value-creating elements rather than from transfer of ownership. They further maintained that services involve a form of rental, and that service customers obtain benefits by renting the right to use a physical object, to hire the labour and expertise of personnel, or to pay for access to facilities and networks. In this way, customers benefits without owning the property.

However, Edvardsson (2005, pp, 115, 117) maintained that the description of the attributes of a service is not useful because "they do not portray the essence of value creation through service in a meaningful way, and therefore they should be avoided; they do not capture the process and interactive nature of services. These characteristics, however, may be useful in some special situation. The service concept may be replaced by the service perspective on value creation, focusing on value-in use for the customer".

Product and its attribute

Assessment of product quality and purchase value is a central issue, not only in consumer decision-making and the outcome of his/her overall satisfaction, but also in the producer decision-making and marketing strategy. The notions of quality and value take a particularly special emphasis when they are juxtaposed against the price that a consumer is able to pay, and which a producer is willing to accept. Product quality, as perceived by a consumer may not be equal or similar to the quality that is perceived by a producer, and both of these perceptions may not be similar or close to the real quality that can be objectively measured and critically verified. In fact, empirical research has shown that there has been some correlation between consumers'

perceptions of product quality and the objective quality of the same product (Lichtenstein & Burton, 1989).

According to Dawar (1999), it is the type of the product that more likely determines the discrepancies in the context and extent of the correlation between the two concepts of quality. Dawar clearly distinguished between degrees of correlations depending on the nature of the products. For example, search products are those for which the quality can be determined such as the case of clothing and personal care. Experience products are those for which the quality is only discernible through consumption such as the case of movies and restaurants, and credence products are those for which the quality is not discernible even after consumption, such as the case of automobile repair or surgery. When assessing product quality, general consumers are more likely to depend on extrinsic cues, especially in the light of their inability or unwillingness to address or examine the intrinsic cues.

Thus, considering a marketing perspective, quality denotes a product's ability to satisfy a customer's requirements. Consumers use product specific intrinsic cues to evaluate product quality. Intrinsic cues like flavour or colour are an inseparable and highly integral part of the product. Simultaneously, consumers also trust the relevant extrinsic product cues such as price, brand name and store name as indicators of product quality. In other words, cues associated with, but not belonging to, the actual physical product can also be used as signals to imply overall product quality (Didier 2003).

Dimensions of quality

Few transactions can be identified as purely product (no service involved) or purely service (no physical product involved). Rather, most transactions provide a combination of product with accompanying service or service with some product. Goods composed of a combination of both product and service require an evaluation of both product and service quality dimensions. It, therefore, seems reasonable to merge the lists of quality dimensions from product- and service-based research.

Garvin (1987) suggested that product quality is not a single recognizable characteristic; rather, it is a multifaceted characteristic that appears in many forms. Garvin observed eight dimensions of product quality: performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. The author also maintained that different users would require different mixes (combinations of varied amounts) of the quality dimensions. In other words, quality is in the eye of the beholder. Garvin further explained the dimensions of quality as presented in the sub-sections that follows:

Performance: - product's primary operating characteristics: Using an automobile as an example, these would include such things as acceleration, braking distance, steering and handling.

Features: - the "bells and whistles" of a product: A car may have power options, a tape or a CD deck, antilock brakes and reclining seats.

Reliability: - the probability of a product's operating over a specific period of time under stated conditions of use: A car's ability to start on cold days and frequency of failures are reliability factors.

Conformance: - the degree to which physical and performance characteristics of a product match pre-established standards: A car's fit and finish and freedom from noises and squeaks reflect this dimension.

Durability: - the amount of use one gets from a product before it physically deteriorates or until replacement is preferable or desired: For a car it might include corrosion resistance or the wearing rate of upholstery fabric.

Serviceability: - the speed, courtesy and competence of repair work: An automobile owner might be concerned with access to spare parts, the number of miles between major maintenance services and the expense of service.

Aesthetics: - how a product looks, feels, sounds, tastes or smells: A car's colour, instrument panel design, control placement and "feel of the road," for example, may make it aesthetically pleasing.

Parasuraman, Zeithaml and Berry (1988) identified five quality dimensions for service industries: tangibles, reliability, responsiveness, assurance, and empathy. The authors explain them as presented below:

Reliability: - the ability to provide what was promised, dependably and accurately: Examples include customer service representatives responding in the promised time; following customer instructions; providing error-free invoices and statements and making repairs correctly the first time.

Assurance :- the knowledge and courtesy of employees, and their ability to convey trust and confidence: Examples include the ability to answer questions, having the capabilities to do the necessary work, monitoring credit card transactions to avoid possible fraud, and being polite and pleasant during customer transactions

Tangibles: - the physical facilities and equipment, and the appearance of personnel: Tangibles include attractive facilities, appropriately dressed employees and well-designed forms that are easy to read and interpret.

Empathy: - the degree of caring and individual attention provided to customers: Some examples might be willingness to schedule deliveries at the customer's convenience, explaining technical jargon in layperson's language and recognizing regular customers by name.

Responsiveness: - the willingness to help customers and provide prompt service: Examples include acting quickly to resolve problems, promptly crediting returned merchandise and rapidly replacing defective products.

From the above review one can also divide the five dimensions into two main categories considering which part of the service they are more involved in process and outcome. While the reliability dimension is mainly concerned with the service outcome, other dimensions of service are more concerned with the service process. We then can demonstrate the whole dimension of service again here following the two categories discussed above;

Service Outcome: Reliability

Service Process: Tangibles, Responsiveness, Assurance and Empathy

The reliability, which includes the accuracy and dependability determinants of service, can be judged after the service is delivered to customers, but the other dimensions must be judged when the service is being delivered. Parasuraman (1991) stated that although reliability is the most important dimension in meeting customer expectations, the process dimensions (especially assurance, responsiveness, and empathy) are most important in exceeding customer expectations. In general companies are supposed to be accurate and

dependable and provide the service they promise to provide; in other words, meeting the reliability dimension. However, to go beyond what is expected and provide the excellence of service to customers, the providers need to "surprise customers with uncommon swiftness, grace, courtesy, competence, commitment, or understanding" (Parasuraman, 1991, p.41-42). In other words, meeting of the tangibles, responsiveness, assurance and empathy dimensions of the product.

Importance and drivers of service quality

Delivering excellent service quality can be a critical business requirement. Many authors agree that in today's dynamic marketplace and market space, the organization no longer compete on only cost but more importantly on service/product quality in a competitive marketplace where business compete for customers, delivering quality service is a key differentiator and has increasingly become a key element of business strategy (Heskett 1997; Kotler & Keller, 2006).

On the drivers of service quality, the most widely used model is the service-profit chain (SPC), first proposed by Heskett (1994). Service Profit Chain provides one of the most powerful and widely supported perspectives on this issue. Overall, the SPC sees organizational internal features as driver of employee satisfaction, which drives service quality that is also identified as an antecedent of customer satisfaction which in turn drives customer loyalty and retention that eventually leads to profitability and growth.

Customer satisfaction measurement models

Kano's model

Kano, with colleagues, developed a model in the 1980's with the different groups of requirements that influence customer satisfaction (Matzler & Hinterhuber, 1998). The requirements are presented below.

The first of the three is called *"must-be" requirements*. These criteria need to be fulfilled or else the customer will be dissatisfied. The requirements are basic needs that the customer takes for granted and hence if they are present no additional satisfaction will come from it (Matzler & Hinterbuber, 1998).

Secondly, there are *one – dimensional requirements* which concern the proportion of customer satisfaction to the level of fulfillment. That is, the higher the level of fulfillment, the higher the customer satisfaction. (Matzler and Hinterbuber, 1998)

The third group of requirements is *attractive requirements* which are the important requirements. According to the model, if these requirements are not met it will not lead to dissatisfaction among the customers; however if they are met they may exceed the customers expectations and therefore may lead to high levels of satisfaction. According to Matzler & Hinterbuber (1998), and Bazan (1998) completely satisfied customers are approximately 40 per cent more likely to be loyal customers than customers that are merely satisfied. One way to exceed the expectations is to have good insight in the client's company and the company may even exceed customers' expectation by providing solutions and making things easier or more effective to routines that the company might not even know are inefficient . Exceeding customers' expectations is a fundamental element in gaining strong relationships and receiving more satisfied customers who are more likely to stay with the

company. Companies can however, be somewhat reluctant to strengthen the relationship since it is rather time – consuming and demands many resources (Eriksson, 2006).

According to Matzler and Hinterbuber (1998 p.37) one needs to "*fulfill all must – be requirements, be competitive with regard to one – dimensional requirements and stand out regarding attractive requirements*" in order to receive " very satisfied " customers.

Perceived service quality and total perceived service quality

Quality is known as being one of the key factors of success in organizations. By understanding the subjective evaluation criteria from customers in these processes, the company can begin to change its service quality in a positive direction. Gronroos (2000) presented two models for managers to understand quality through consumer behaviour and the effects from comparing expectations about a good with experience of it and later evaluating it. These models are known as the *perceived service quality model* and the *model of total perceived service quality*.

The perceived service quality model focuses on how customers experience the service quality provided by a company (see Figure 2). Experience is a standpoint shaped from the accumulated prior experiences of the client which can be split into two different dimensions: On the one hand, there is the *technical* (outcome) dimension and on the other hand the *functional* (process – related) dimension. These two can be explained as being the "what and how" of experienced quality. The "what" is what customers actually receive in the interaction with the provider of the service and the

product or service that they are left with when this interaction is over. The "What" is the objective dimension of the two and the "how" is the manner in which the product or service is delivered to the consumer. This includes, for example, how consumers are met by representatives from the service providing company and how easy they could get in touch with them if they need assistance. The functional quality of the process is subjective since it is based on encounters with the service provider, (Gronroos, 2000). (Figure 2)
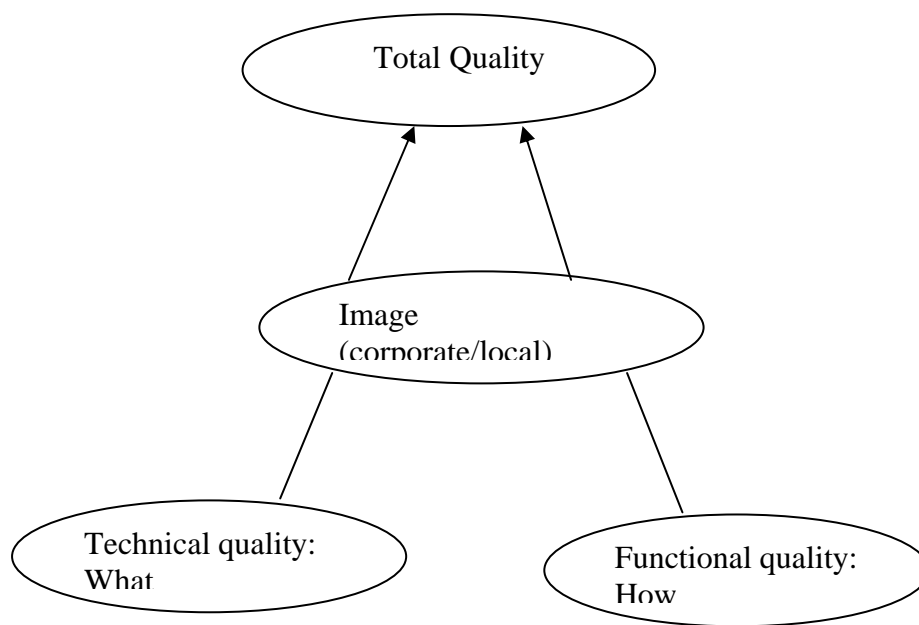
Figure 2:

Perceived service quality model (Gronroos, 2000)

From Figure 2, the firm can choose to focus on a technical dimension – or function dimension strategy .The former is suitable in situations where a company is able to find a technical solution to problems that competitors are not able to match. It is dangerous to focus merely on one strategy and forget the other dimension. Functional dimensions cannot be splendid but technical dimensions forgotten or vice versa, would still decrease perceived quality.

Thus there must be a balance between the two dimensions as one cannot exclude the other; however it is most common to have slightly more focus on functional quality, (Gronroos, 2000).

The next step in this model is the corporate and / or local image. This is the way customers will see the company and its methods of operation, and it is a major element of quality perception. If the company has a good image, minor mistakes will not change customers' perception of the company; however if a company has a bad image, mistakenly it will cause customers to perceive quality as bad (Gronroos, 2000).

The model of total perceived service quality (see Figure 3) is an extension of the former model. Perceived service quality in itself is too narrow to focus on since it is not just how customers experience the company that matters but how they perceive it in relation to their prior expectations and this is what the model of total perceived service quality is all about.

Not only do experiences determine if quality is perceived as being good or bad, but also it is important to implement the total perceive quality as well. Total perceived quality is the relationship between the experienced quality and expected quality. Expected quality in turn is a result of the different elements; marketing, image, sales, word – of – month and needs/values. Total perceived quality may be influenced if a company in commercials exaggerates the quality of goods and service and customers then not experience what has been promised, (Gronroos, 2000). The image that evolves from this total perceived quality leads to a new perception of the company.
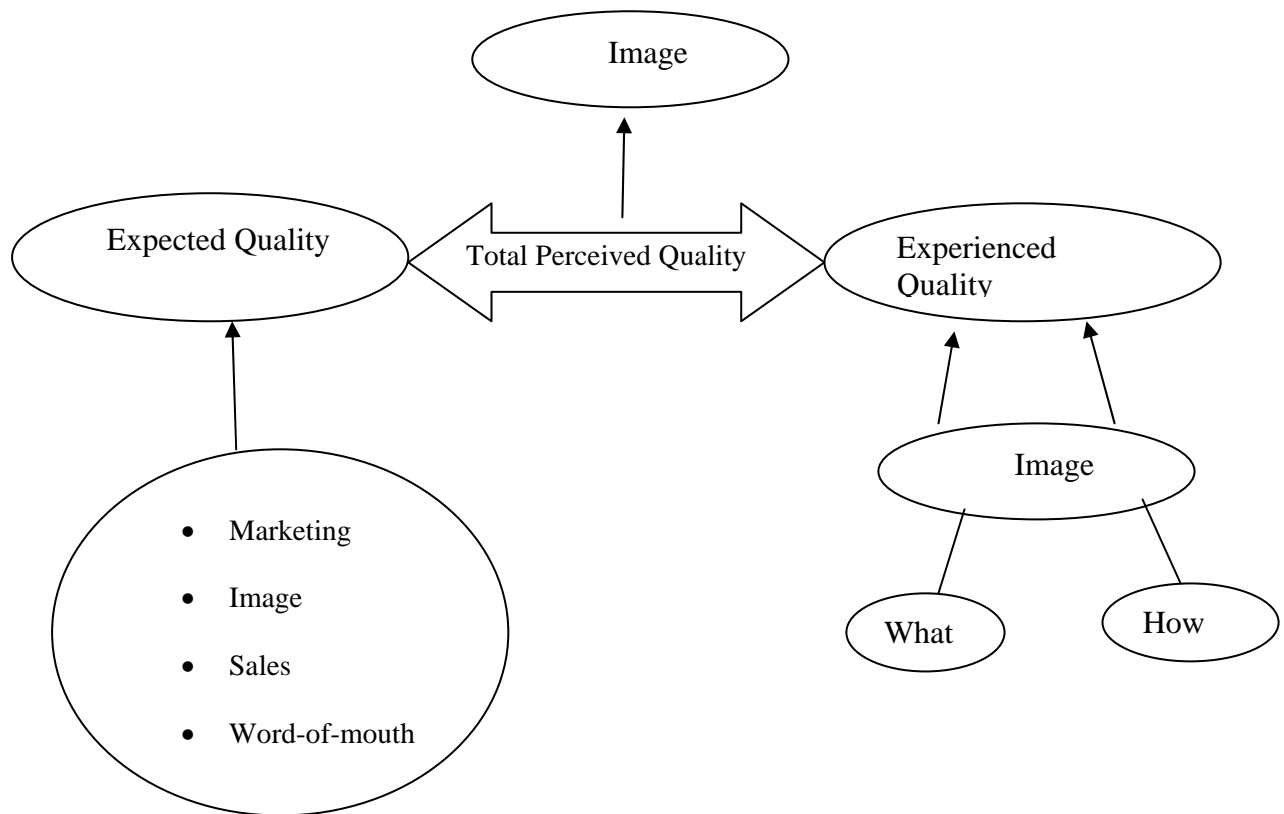
Figure 3:

Model of total perceived service quality (Gronroos, 2000)

Different views of measuring service quality

Service quality is not a static concept that can only be looked at from one point of view. Measuring service quality by looking at expected and experienced service quality (Gronroos, 2000; Parasuraman et al, 1988) is therefore not the only viewpoint, even though this is the one put forward in this study. Cronin and Taylor (1992), for example, stated that service quality should be measured as an attitude.

Parasuraman, Zeithaml and Berry (1988) suggested a measurement–method which they term as SERVQUAL. Here there are five determinants driving the perception of service quality: tangibles, reliability, responsiveness,

assurance and empathy. The measurement is based on a quantitative method that makes a comparison between service quality expectations and experiences from posting ones opinion on each of the two on a seven – point Likert scale. SERVQUAL is at its best when measured periodically to track trends in service quality. However, it should not be the only measure.

However, SERVQUAL has been criticised as being too static (Gronroos, 2000). The five determinants are not necessarily the most important ones in all industries and branches; therefore it should be used carefully and after being revised to what is measured. Critiques have evolved from, for example Liljander (as cited in Gronroos 2000, p. 78) who suggested that measurement between expectations and experiences are unnecessary. The author further argued that one should simply measure experience of different attribute, such as the North American measurement method known as SERVPERF (Service Performance) to determine service quality. A study made by Berger and Brodd (2001) concluded that the use of SERVQUAL in retail banking was not optimal due to low response rate. SERVQUAL has been found not to be an optimal measure for this study because it has been qualitatively performed and other determinant and attribute have been investigated to find customers perception of service, and relationship - quality.

Yet another way to measure the perception of the quality of a service is using critical incidents. The customers with experience of a service and company are asked to explain in-depth the situations of the service process which sometimes deviate from the normal, both in a positive and a negative way as precisely as possible. After collecting this information the researcher is able to find what sort of problems and opportunities exist and why they occur.

This measure provides the researcher with a clear understanding of the strengths of the company as well as in what parts improvement is needed. This can be used as a base for further research concerning what needs to be done in order to increase the perception of service quality, (Gronroos, 2000).

Teas (1993) stated some problems with the gap presented in Parasuraman et al's service quality model. He argues that the gap between the expected service and the perceived service consists of several problems. To start with, it is hard to define expectations, in the services quality model   the outcome of the gap is compared to a norm rather than representing the true difference between predicted and received service. In addition, Teas (1993) suggested that one cannot be sure that a service performance that exceeds the ideal result increases the service quality more than a performance that equals the ideal result.

Customer satisfaction measurement models

However important customer satisfaction is, it must be measurable in order to provide scientific bases for managerial decisions. Many measurement models have been developed and applied to measure customer satisfaction, though not all have been empirically validated. Oh and Parks, (1997) identified nine methods for measuring CS, which are: expectancy, disconfirmation, assimilation or cognitive dissonance, contrast, assimilation – contrast, equity, attribution, comparison – level , generalized negativity and value – precept. Also, Pizam & Taylor (1999, p. 327) commented that most of these customer satisfaction models are based on cognitive psychology, but recently, numerous researches have attempted to apply customer satisfaction

theories developed by behaviourist in several areas of customer satisfaction. However, out of the many theories in the literature the most widely used are the disconfirmation theories and customer satisfaction index.

Customer satisfaction indices

The growing importance of CS in determining profitability and customer behaviour which in turn determine industry and national productivity has necessitated the development of tools that can be used to measure and analyse its impact across firms, industries, sectors and nations, (Fornell, 1996). This has warranted the development and use of customer satisfaction indices in several countries like Sweden, the USA, Russia, Switzerland, Norway, Taiwan, Germany and Turkey. A national customer satisfaction index is a market-oriented performance measure. Its main purpose is to gain a deeper insight into the interaction between the customer and the supplier, in order to provide enough customer satisfaction information as referential data in planning better policy decision making, Te–King Chien (2003). It is used to complement traditional performance measures , such as return on investment , profits and market shares or Kaplan and Norton's balance score card approach. The Swedish Customer Satisfaction Barometer (SCSB) was the first national customer satisfaction index to be developed and applied for customer satisfaction and evaluation of the quality of products and services. It is based on annual survey data from customers of about 100 leading companies in some 30 industries (Fornel, 1992, p.6).

The National Quality Research Centre in the USA (NQRC) adapted the Swedish index in 1994 and developed the American Customer Satisfaction

Index (ACSI). The American Customer Satisfaction Index (figure 4) uses customer interviews as input to a multi-equation econometric model. It is a cause-effect model with indices for antecedents of satisfaction, satisfaction, and outcomes of satisfaction, (Fornell, 1996). It uses several questions of multivariable component measured by several questions having different industrial weight and reported on a 0 to 100 scale.
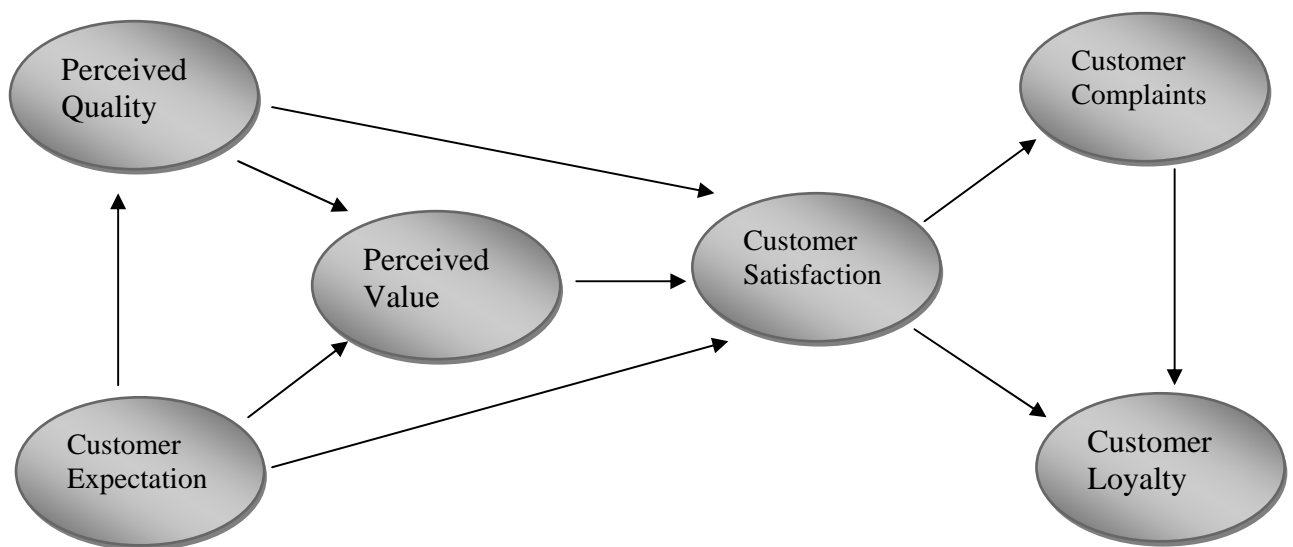
Figure 4:

Components of ACSI Model (Source:www.mcts.com/customer satisfaction.htm)

The European Customer Satisfaction Index (Figure 5) was developed by the European Organization for Quality (EOQ), European Foundation for Quality Management (EFQM), European Academic Network for Customer – Oriented Quality Analysis and the European Commission.
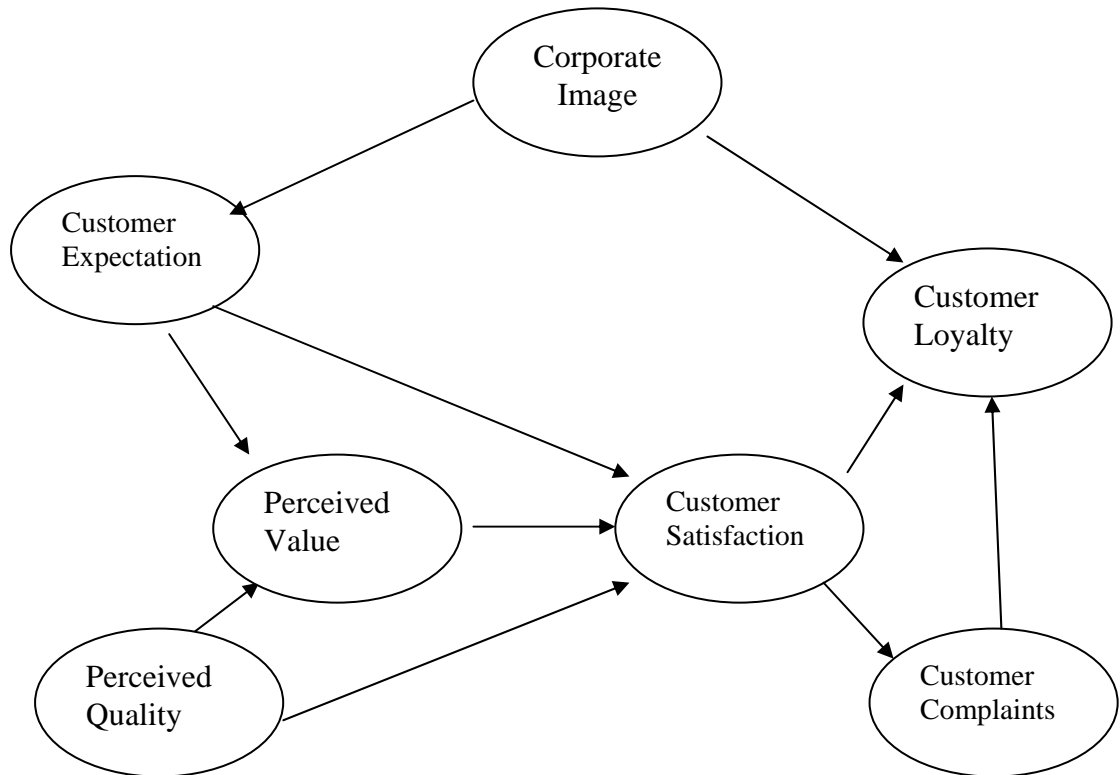
Figure 5:

Components of ECSI Model (Source:www.mcts.com/customer-

satisfaction.htm)

Customer satisfaction measurement scales

In measuring customer satisfaction, which type of measurement scale is appropriate and how many items should a scale have? According to Danaher & Haddrell (1996), there are three broad categories of measurement scales used in customer satisfaction measurement. They are performance scales, disconfirmation scales and satisfaction scales. Performance scales are those that use scales such as poor, fair, good and excellent; disconfirmation scales are those that use scales such as worse than expected to better than expected; and satisfaction scales are those that use scales such as very dissatisfied to

very satisfied.

Danaher & Haddrell (1996) have recommended the use of disconfirmation scales instead of the others for three reasons. "First in one disconfirmation–based single question, it captures succinctly Parasuraman et al's (1988) two stage SERVQUAL measurement, i.e. much worse than expected to much better than expected. Second, it is shown mathematically that comparison with expectations will correlate higher with customer retention than either a quality question or a satisfaction question (Rust & Oliver, 1994). Lastly, using disconfirmation scale is better because a customer rating service quality highly, for example as good or excellent, may not perceive it as 'better than expected'.

In an empirical study that compared several scales simultaneously on the same respondents, Danaher & Haddrell (1996) confirm that their results agree with the assertions by Rust & Oliver (1994) that the disconfirmation scale is a preferred method in measuring customer satisfaction. They further agree that a five–point disconfirmation scale would be an improvement over the three–point scale if high predictive validity is essential. However, they pointed out that one drawback of the five–point disconfirmation scale could be its use in telephone surveys, where respondents might have to be continually reminded of five rather than three scale points.

For the above reasons, in this study, our framework for measuring customer satisfaction with product and service quality uses disconfirmation scales. Again, since personal contact was to be used and high predictive validity was a major concern, the research appropriately adopted five – point disconfirmation scales: that is from much better than expected or desired to

much worse than expected or desired.

Empirical review

Determinants of customer satisfaction

A lot of factors that drive customer satisfaction (CS) need to be examined in order to reliably measure it. In the work of many scholars and practitioners, CS is found to be driven by the quality of service and the customer service experiences (Oliver, 1980; 1993; Parasuraman et al, 1991, 2001, Lovelock and Wirtz, 2007; Gronroos, 1994; Kotler & Keller, 2006). A service experience is defined as the service encounter and /or service process that creates the customer's cognitive, emotional and behaviour responses to the result in a mental mark, a memory (Gronroos, 2001). It is generally accepted by most scholars that service quality basically relates to what the customers perceive of the product/service performance.

Empirical studies have shown that customer satisfaction is not only driven by cognitive dimensions of customer perceptions of service quality but also by effective dimensions which have positive impact on post-purchase behaviour like repeated purchase, customers' loyalty, switching intention, and likelihood to recommend (Erevelles, 1998; Oliver, 1980; 1993) that have both cognitive and affective dimensions beyond just cognitive assessment of customers of the offering of service providers. These SERVQUAL proponents further maintained that perceived quality is formed by customers during their ongoing interactions with product/service providers. This is realized when customers are factored in as co-producers and involved in the process of production, delivery and consumption of service/products.

Another important determinant of customer satisfaction is customer

expectations. It has been found that expectation plays a major role in determining satisfaction. This view was heralded by Oliver (1980; 1993) and Parasuraman et al (1988). According to this theory, the customer is satisfied if the performance of product/service is equal to his/her expectations (positive disconfirmation) and he/she is dissatisfied if the product/service performance is perceived to be below his/her expectation (negative disconfirmation). If expectation exceeds perceived performance, the customer is highly satisfied. Another perspective of the disconfirmation is that customer satisfaction relates to a comparison of customer perceived quality with perceived performance, rather than comparing expectation with perceived performance (Gronroos, 2001).

Again, customer satisfaction is driven by perceived value. Though the concept of value is relative and has several dimensions to it, Zeithaml (1988) considers customers value as the overall assessment of the utility of a product based on perception of what is received and what is given. Dodds, Monroe & Grewal (1991), asserted that customers' perceptions of value represent a trade-off between the qualities or benefit customers receive in the product relative to the sacrifice customers perceive by paying the price. The perceived value process involves a trade-off between what the customer gives such as price/money, sacrifices, perceived risk, opportunity cost, and learning cost in exchange for what he/she gets such as quality, benefits, utilities (Zeithaml, 1988). Hume &Mort (2008) confirmed that value is a positive predictor of satisfaction. This is consistent with the findings of Rust & Oliver (1994) who suggested that value had a direct and encounter-specific input to satisfaction.

Conceptually, since what the customer gets for what he/she gives is

based on the performance of the product/service, what he/she gives becomes a standard for comparison. In this, a sort of disconfirmation occurs in that the customer becomes satisfied if the performance of product/service is equal to what he/she gives (positive disconfirmation); he/she is dissatisfied if the product/services performance is perceived to be below what he/she gives (negative disconfirmation). If what he/she gives exceeds perceived product/service performance, the customer is highly satisfied.

In conclusion, it is established empirically that customers overall cognitive or affective evaluation is based on the product/service quality, but the customer's perception of the performance of the product/service quality encounter is compared with some cognitive or affective standard like his/her expected quality, perceived quality or value quality.

The implications of the antecedents of customer satisfaction is that managers must take effective strategies to manage customer perceived quality, orientation customer expectations and customer perceived value in order to reap the full benefits of customer satisfaction measurement (Gronroos, 1990).

Significance of customer satisfaction and its measurement

Most researches have proven that customer satisfaction measurement is not an end in self; it is a useful means to achieving several objectives of business organizations (Parasuranman, Zeithaml & Berry, 1988; Kotler & Keller 2006). They asserted that customer satisfaction measurement is both a diagnostic and predictive tool summarised as follows:

- Customer satisfaction measurement enables organizations to evaluate their abilities and capacities to meet customers' expectation, desires and needs effectively.

- Customer satisfaction measurement process is one of the projective ways of getting into the minds of customers and obtaining certain hidden, but valuable continuous feedback from customers; this is a basic element in Total Quality Management (Zairi, 1994).

- Driver of behavior intentions: Increasing customer satisfaction and customer retention leads to improved profits, positive word-of-mouth, and lower marketing expenditures (Reichheld, 1996)

- Customer satisfaction measurement can be used by suppliers to demonstrate their customer-centric philosophy to win customers' attention and concerns so that customers talk favourably about the company and its products or services (Kotler & Keller, 2006).

- Many researches suggest that customer satisfaction is a key determinant of customer retention (Zeithaml et al, 1996). According to Reichheld (1996), satisfaction measures have accounted for up to 40 percent of the variance in models of customer retention. Customer retention is regarded as essential factor in Customer Relationship Management (Reichheld, 1996; Kotler & keller 2006).

- Customer loyalty and profitability: Customer satisfaction is regarded as a necessary antecedent of customer loyalty, which in turn is a driver of profitability and performance (Heskettet, 1997; Reichheld, 1996).

- Customer satisfaction survey can provide the following benefits: Improve customer, client or employee loyalty, react quickly to changes

in the market, identify and capitalize on opportunities, beat the competition, retain or gain market share, increase revenue, reduce costs (e.g., turnover or hiring), maximize investment in changes by knowing which has biggest payoff (SPSS White Paper, 1996).

- Managerial value: one of the benefits that management see in customer satisfaction surveys is in providing information on how best to proceed with a quality improvement programme (Rust & Oliver, 1994).

Behaviours and skills linked to service quality and customer retention

Schlesinger & Heskett (1991) cited the need for customer-contact personnel to take responsibility, think for themselves and respond well to pressures from customers. They further emphasized the importance of training and support in "communication, performance management, team building, coaching and empowerment" for front-line workers and their managers. Both Reichheld & Kenny (1990) and Schlesinger & Heskett (1991) found that companies that exhibited these policies and attitudes experienced not only higher customer retention and profits, but also an increase in employee loyalty and a reduction in job turnover.

Zeithaml, Parasuraman & Berry (1990) found that a "Service Performance Gap" occurred when employees were unable or unwilling to perform the service at the desired level. They found that this gap was common among the service businesses they studied due to problems related to: role ambiguity; role conflict; employee-job fit, technology-job fit, supervisory control systems; perceived control; and teamwork. They defined role ambiguity as a situation in which employees were: uncertain about what their

managers or supervisors expected from them and how to satisfy those expectations; lacked the training or skills to provide the service needed for customer satisfaction; and did not know how their performance would be evaluated and rewarded.

To achieve role clarity, Zeithaml, et. al. (1990) suggested the use of four tools: communication, feedback, confidence and competence. They emphasized that employees need accurate information about their roles; specific and frequent communication from managers about what they were expected to do; and complete and current information about products, services and customer expectations. They concluded that training and feedback in two areas, technical knowledge and interpersonal skills (which were related to their "SERVQUAL" dimensions of responsiveness, assurance and empathy), could increase employees' confidence and competence, and provide greater clarity regarding their roles.

Bitran & Hoech (1990) also noted the importance of providing feedback to employees on their interactive skills. They suggested that high-contact, high-communication service providers require skills in: diagnosing problems; gathering, checking and disseminating information; resolving conflicts; disseminating cost information; and managing waits. The first three of these tasks are shared by customer retention representatives.

Improving customer satisfaction and retention

The significance of customer retention was first quantified by Reichheld & Sasser (1990). They found that profits in service industries, including credit card companies, increased in direct proportion to the length of

a customer's relationship. They noted the experience of MBNA America, citing its "customer defection 'swat' team staffed by some of the company's best telemarketers," which achieved a 50% success rate in persuading customers to retain their credit cards. At MBNA, a 5% improvement in customer retention increased average customer value by 125%. Reichheld & Sasser (1990) concluded that cutting defections in half could more than double the growth rate of the average company.

Everett (1993) also noted that a dedicated customer retention unit developed by Patrick J. Swanick at the Society National Bank in Cleveland achieved a 57% success rate in persuading callers to remain with the bank. According to Everett (1993), these representatives first probed for causes, then tried to resolve the problem. He added that they followed-up on each call with a letter to the customer.

Chokaew, Abbas & Chutima (2008) investigated customer satisfaction towards TrueMove customer service provided at TrueMove Shops in Bangkok region, through the framework of SERVQUAL model and observed that customer service of TrueMove Shops in Bangkok regions has not met the expectation of its customers yet. This they meant that there was an obvious gap between the service expected and the actual service perceived. They concluded that customers are not assured with the trustworthy and dependability of the customer service provided at TrueMove shops.

Rodoula (2005) investigated the effect of various perceived quality levels on product involvement, overall satisfaction and purchase intentions in a research that involved a survey of 204 students at a Greek university. He concluded that perceived perceptions of product quality were significant;

however perceived quality explained more of the variance in overall satisfaction than in product involvement and purchase intentions.

Nimako & Azumah (2009) on customer satisfaction with service delivery of mobile telecommunication networks within Ghana using both qualitative and quantitative approaches observed that customer satisfaction is low; neither equal to nor better than desire and expectations of the customers. This they attributed to poor service delivery of the various mobile telecommunication networks operating in Ghana. They therefore, called for workable measures to propel and improve upon the service quality of mobile telecommunication networks to salvage the situation.

Chapter summary

The literature reveals significant relationships between customer retention and quality of product and service as perceived by customers and models for measuring customer satisfaction. Thus, how customers perceive a company is very much impacted by how they are approached and treated (satisfied) by front-line, and support-employees at different encounters with an organisation. The same can be applied to the gas industry and for that matter Air Liquide Ghana Ltd as it seeks to address the issue of customer satisfaction inherent in its mission statement.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study is to solicit customer assessment of the products and services of Air Liquide Ghana Limited in the light of its being in a competitive market. When it comes to determining the method one should use in a research like this, it is important to use the purpose as a starting point. The purpose of the report should determine what kind of approach to use (Trost, 2005). Thus this chapter considers the methodology used for the study: it describes the sampling technique, data collection procedure, ethical implications and data analysis and presentation.

Research design

The descriptive cross-sectional survey was used for this study. The study aimed at describing how customers perceive the products and services of Air Liquide Ghana. The descriptive method allows a flexible approach, thus, when important new issues and questions arise in the duration of the study, further investigation may be conducted (Robson, 2002 as cited in Saunders, Thornhill, & Lewis, 2007). This method is used to describe the nature of a situation, as it exists at the time of the study and to explore the causes of a particular phenomenon. With this research type, it is essential that the

researcher should have a clear view or picture of the phenomena being investigated before the data collection procedure is carried out.

The descriptive cross-sectional survey was employed in this study so as to obtain data from respondents in order to formulate rational and sound conclusions and recommendations. The descriptive method can use either qualitative or quantitative data or both, giving the researcher greater options in selecting the instrument for data-gathering. This method allows for the identification of the similarities and differences of the respondents' answers (Holme & Solvang, 1997; Trost, 2005; Saunders, Thornhill & Lewis, 2003).

A survey is a type of method associated with the deductive approach and is conducted usually in business and management research to collect data that seek a characteristic or the opinion of target population. It is most frequently conducted to answer research questions relating to 'who', 'what', 'how much and how many' involved in a problem of study (Saunders et al 2007; Cooper & Schindler, 2006). Also, it often uses structured questionnaire and interviews. In this study the survey strategy was chosen because it sought the opinion of a target population about their perception of products and services of Air Liquide and it combined the use of qualitative and quantitative techniques.

Study location

The research was conducted in the Western and Central Regions of Ghana which fall within the area of operational responsibility of the researcher in his company. The customers chosen as respondents for the study were from the Takoradi Metropolis and Tarkwa Municipality in the Western Region, and

Cape Coast Metropolis in the Central Region. These areas were selected because that is where Air Liquide Ghana has distribution agencies or offices.

Population

The population for this study comprised 1100 external customers of Air Liquide Ghana Limited within the Central and Western Regions of Ghana. There were 448 customers from the Central Region and 652 customers from the Western Region. The 1100 customers that formed the population were those operating as private businesses which included those from mining and mining support services, manufacturing, fabrication and ship-building, food and agro industries, construction, timber, and artisanship (car body works) and those in the public sector which also included hospitals. Household customers were not included. Customers that are currently not in business but had used products and services were not considered to be part of the population for the study.

Sample size determination and sampling procedure

A sample of 200 respondents was chosen from the 1100 customers in these areas of the regions. The 200 respondents were selected with an allowable margin of error of approximately 5 percent at 95 percent confidence level (Krejcie, Robert, Morgan & Daryle, 1970). To obtain relevant information, the sample inclusion criteria imposed was that all respondents be current customers of Air Liquide. This qualification ensured that the participants that would be chosen from the population understood the nature of

the customer perception questionnaire concerning Air Liquide Ghana Limited, thus making the survey questions easy for them to complete.

In selecting the sample of 200 respondents, the population was divided into strata based on the customer groups. All the 54 customers from the mining and mining support services, manufacturing, transport, oil and gas companies, food and agro-industries, lumbering and construction, and health services, were selected as part of the sample because of the small size of their respective stratum. The other 146 customers were chosen from the remaining 1046 customers who were fabricators and artisans that formed the majority of the population. In selecting these 146 customers, a systematic sampling technique was employed. A list of all the 1046 customers was obtained from the company's database as the sampling frame, and the sampling fraction of 1/7 (146/1046) was used. Thus, every seventh customer was selected from the sampling frame after a lottery sampling technique was employed to pick the first customer; the process was repeated until the sample size was reached.

Data collection instruments

According to some authorities, the main instruments used in survey are questionnaires or interviews, or a combination of both (Cooper & Schindler, 2006; Malhotra & Birks, 2007). The authorities further agree that it must have a good layout, be unambiguous regarding questions asked which must be complete, non-offensive but relevant, logical in arrangements of items, and the ability to elicit the required answers from respondents. The survey questionnaire was used as the main data-gathering instrument for the study (see Appendix A). The structured survey questionnaire consisted of 27 items.

Six items related to the profile of the respondents; 3 related to customers' assessment of the products and services; 14 related to product and service quality dimensions; 2 to switching intention; 1 to overall satisfaction; and 1 to recommendation necessary for improvement.

The profile contains the basic characteristics of the respondents such as customer group, the number of years they had been customers of the company as well as the product and service they patronise. The survey itself explored customer assessment of the products and services of Air Liquide Ghana Limited as a survival tool in a competitive market. The questions were structured using a five-point Likert scale. Five choices were provided for every statement presented to the respondents.

Concerning customers' assessment of the products and services, respondents were asked to rate their satisfaction with product/service quality in relation to desired and expected satisfaction on a five-point Likert-scale, ranging from "Much worse than desired" to "Much better than desired". Numerical values of one (1) for "Much worse than desired/expected" and five (5) for "Much better than desired/expected" were used. Customer satisfaction can be measured using overall satisfaction measures. Overall satisfaction refers to the customer's overall evaluation of the product/services quality delivered by an organization. The indicator of this measure is one question that asked customers to rate their overall satisfaction of the service received. This was measured using a single question to which respondents were asked to rate their satisfaction on a five-point Likert-scale: "Very Dissatisfied", Dissatisfied", "Neutral, Satisfied", and "Very Satisfied". Their numerical

values ranged from one (1) for "Very Dissatisfied" to give five (5) for "Very Satisfied".

In this study switching intention refers to customer behaviour intention in which customer wants to switch to another service/product. A single question to which respondents were asked to rate their switching intention on a five-point Likert-scale was used as measurement: "Definitely yes", "a bit Yes", "Neutral", "a bit No" and "Definitely No". Numerical values ranged from (1) for "Definitely Yes" to (5) for "Definitely No". Respondents were also asked to give their recommendation necessary for improvement.

In order to improve the validity of the questionnaire used for the study, the researcher tested the questionnaire with respondents who were part of the population for the study but not part of the sample. The researcher asked the respondents for any suggestions or any necessary corrections to ensure further improvement and validity of the instrument. The researcher revised the survey questionnaire based on the suggestions of the respondents. The researcher then excluded irrelevant questions and changed vague or difficult terminologies into simpler ones in order to ensure comprehension.

Data collection procedure

According to Saunders et al. (2000) and Cooper and Schindler (2006), a questionnaire must have a good layout, unambiguous questions, complete items, non-offensive but relevant items, logical arrangements of items, and the ability to elicit willingness to answer in respondents. After the adjustments to the questionnaires were made the questionnaires were self-administered to the respondents by the researcher and 3 field assistants. These assistants were

briefed on the data collection procedures by the researcher in order to ensure consistency. The respondents were informed of the purpose of the study and assured anonymity and confidentiality of responses. A total of 200 questionnaires were distributed and as part of our strategy to directly explain the questions to the respondents, we appealed to respondents to fill and submit the questionnaires in our presence. The questions were read out to respondents who agreed to this appeal while taking care not to introduce any bias. The responses were entered on their behalf by the field assistants and the researcher. However, those who insisted on taking away the questionnaires were given time to fill and return them at a later day convenient for the respondent.

Also, in answering the questionnaires it was only the artisans and fabricators (who operate sole proprietorship type of business and are direct end-users) that the owner of the company answered the questionnaire alone. However, with the other customer groups the questionnaires were answered in parts by the respective department/agency of that company/institution as the end-users are different from the procurement agencies. The questionnaires were distributed from Monday to Friday of every week between the hours 9am and 3pm for thirty (30) days from May 10th to June 18th. In all, out of the 200 questionnaires collected, 185 were filled in our presence.

Ethical implications

As this study required the participation of human respondents, specifically valued customers of the company, certain ethical issues were addressed. The participants were ensured confidentiality. Air Liquide Ghana

Ltd or anyone else for that matter will not know the responses provided by particular participants. Thus, the questionnaire was designed such that the respondents were not to provide their company's name. Trost (2005), states that it is better not to present your findings than to break a vow of silence. Consequently, in order to ensure confidentiality for Air Liquide Ghana Ltd, the researcher signed a contract for professional secrecy to ensure that no clients could be identified as customers and that a threat to their integrity was inexistent.

In order to secure the consent of the selected participants, the researcher relayed all details of the study, including its aim and purpose to respondents. The respondents understood the importance of their role in the completion of the research. The respondents were also informed that they could withdraw from the study even during the process. They were not forced to participate in the research. Only relevant details that helped in answering the research questions were included.

Data analysis

After gathering all the completed questionnaires from the respondents each questionnaire was numbered and coded, and the responses entered in SPSS software. Total responses for each item were obtained and tabulated. The data were analyzed and presented based on how each response reflects the associated research question. The analysis and presentation were done using descriptive statistics: means, percentages and frequency distributions generated through SPSS.

The first three research questions were analyzed using both the disconfirmation and the satisfaction scales. Both research questions one and three were analyzed using the disconfirmation rating scale in which a rating of 3 or 4 or 5 indicated customer satisfaction and a rating of 1 or 2 indicated customer dissatisfaction with service and product quality. Thus, where customer's prior expectations were exactly met, satisfactory quality was achieved. Ideal quality was achieved where perceived quality was higher than customer's expectations and where perceived quality was lower than customer's expectations, the quality was said to be unacceptable (Speller & Jones, 1994, p.50). The satisfaction scale was used to analyze Research Question 2. A rating of 4 or 5 indicated customer satisfaction while a rating of 1 or 2 or 3 indicated satisfaction below the required level or dissatisfaction. With research questions four and five, the frequencies of the responses were compared.

Limitation of chosen method

One of the weaknesses of the survey research used in the study was nonresponsive bias as some of the questions were not answered completely by respondents. The individual interviews were also time consuming. Instead of conducting the research using questionnaires, focus group interviews could have been used where the researcher would have travelled and arranged a meeting including all participants. According to Saunders et al. (2003) this could lead to a productive discussion and reveal important data that could have been useful in the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter is divided into two sections: results and discussion. The results/findings section is devoted to the analysis of the data collected from the field survey. Each set of data was juxtaposed with the specific research question it sought to answer for analysis. The chapter covers data on respondents' characteristics, customer satisfaction measurement, and satisfaction with service, product quality dimensions, and switching intentions. The discussion section considers the interpretation of the findings by making comparisons and necessary speculations to fill information gaps where necessary.

Respondent characteristics

All the 200 questionnaires sent out, constituting 100 percent response rate were retrieved. Out of this, there were 146 customer artisans and fabricators, 16 from mining and mining support services, 9 from lumber and construction, 5 from the manufacturing industry and 24 others (hospitals, food and agro industry, oil and gas company and transport services). The customer groups of respondents are depicted in Figure 6. Most of the respondents, representing 63 percent, were Artisans and Fabricators while only 5 percent

were in the manufacturing industry and the remaining 32 percent were from mining, lumber and construction, transport, oil and gas.

As many as 183 respondents, constituting 91.5 percent of the sample population bought oxygen while 56 respondents representing 28 percent used acetylene. This high demand for oxygen was expected as it is the major product used by artisans and fabricators. Medical oxygen and other products (argon, electrodes, helium and carbon dioxide) each had 7.5 percent of the total respondent. The product with the least patronage was nitrogen as only 5.5 percent of the respondents used it. These suggest that the product used most was oxygen. The sum of the percentage exceeds 100 percent as some respondents used more than one product. With the exception of nitrogen and medical oxygen the products of Air Liquide were predominantly purchased by the artisans and fabricators.

In terms of the services offered by the company, the artisans and fabricators again dominated in all the categories while the most patronised service was the supply of gas and equipment. A total of 169 respondents (of which 118 were artisans and fabricators) representing 84.5 percent patronised the supply of gases and equipment while 32 and 31 respondents, representing 16 and 15.5 percent used safety training, maintenance and repair of equipment services respectively. This is shown in Figure 6. There was only one respondent who patronised survey and installation service, signifying the least service patronised.
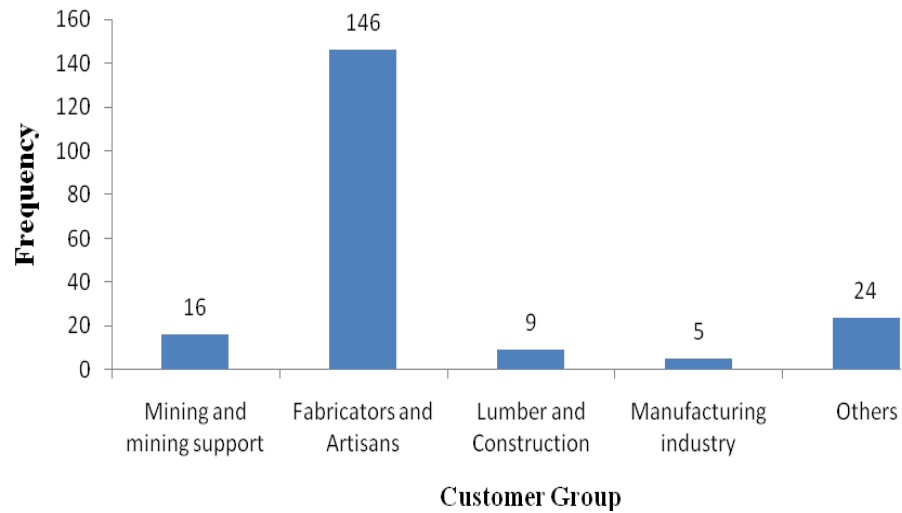
Figure 6:

Customer groups of respondents

Customers' perception of the products and services of Air Liquide

Figure 7 depicts customers' perception of the products and services received from Air Liquide as compared with the ideal or desired set of products and services using the disconfirmation scales. It indicates that using the desired disconfirmation measure, while a total of 127 representing 63.5 percent of the respondents rated their satisfaction as equal to desired, 0.5 percent each (a total of 1 percent) rated their satisfaction as "Much worse than desired" and "Worse than desired".
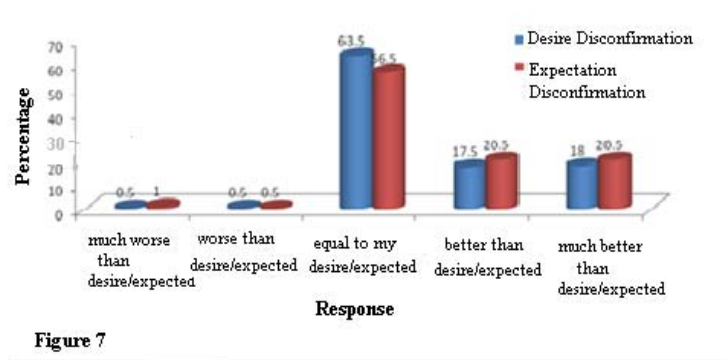
Figure 7

Customer's perception of the Products and Services of Air Liquide

Also, 18 percent rated their satisfaction as "much better than desired" while 17.5 percent maintained that the products and services received from Air Liquide were "better than desired". However, using the expectation disconfirmation measure, 56.5 percent of the respondents rated their satisfaction as "equal to expectation" and 1 percent and 0.5 percent rated their satisfaction as "much worse than expected" and "worse than expected" respectively. The respondents who rated their satisfaction as "better than expected" and as "much better than expected" were 41 percent of the respondent.

Levels of customer satisfaction or dissatisfaction with the product/service quality

The result of the levels of customer satisfaction or dissatisfaction with the product/service quality of Air Liquide is displayed in Table 1. Most of the respondents representing 94.5 percent were satisfied with the company's

products and services while 0.5 percent was dissatisfied. Only 5 percent were neutral.

Table 1:

Customer satisfaction or dissatisfaction with the product/service quality

Response	Frequency	Percent
Very Dissatisfied	1	0.5
Dissatisfied	0	0
Neither	10	5.0
Satisfied	121	60.5
Very Satisfied	68	34.0
Total	200	100

Source: Field Survey, 2010

**Switching intentions to use a product/service from another company**

Respondents' switching intention is shown in Table 2. Of the 200 respondents, 32, representing 16 percent, were willing to switch to use product/service from another company. One hundred and thirty six (136) respondents, constituting 68 percent, however had no switching intention. Of the 136 respondents, 114 representing, 57 percent, had no intention to switch at all while 16 percent were neutral.

Regarding the reasons behind the switching intentions, 72 percent of the 32 respondents who were willing to switch cited higher prices while 22 percent and 6 percent attributed it to untimely delivery and lack of sympathy from staff respectively. Reasons behind switching are displayed in the Pie Chart in Figure 8.

Table 2:

Respondents' switching intentions

Response	Frequency	Percent
Definitely yes	15	7.5
A bit Yes	17	8.5
Neutral	32	16.0
A bit No	22	11.0
Definitely No	114	57.0
Total	200	100

Source: Field Survey, 2010
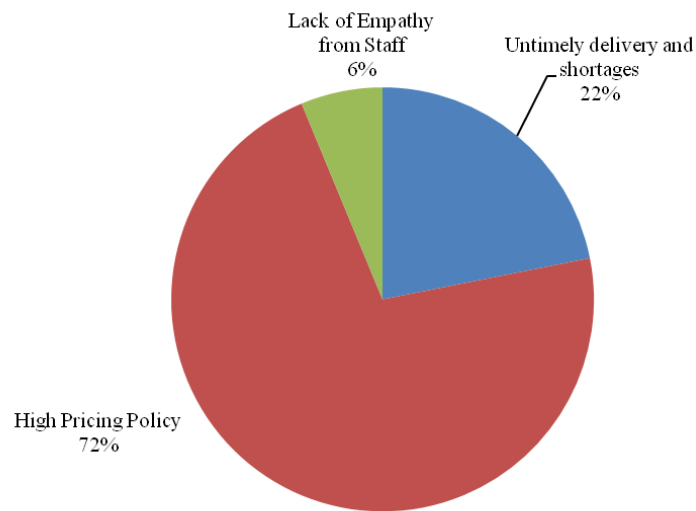
Figure 8:

Reasons behind switching intentions

Dimensions of service quality

The results of customers' perceptions with regard to the five dimensions of service quality are presented in this section. The 'tangible'

(appealing nature of physical environment) dimension of service quality is shown in Table 3.

Table 3:

Tangibles (The appealing nature of physical environment)

Response	Frequency	Percent
Much worse than expected	20	10.0
Worse than expected	27	13.5
Equal to expectation	81	40.5
Better than expected	39	19.5
Much better than expected	33	16.5
Total	200	100.0

Source: Field Survey, 2010

As many as 40.5 percent of the respondents were of the view that the physical environment of Air Liquide matched their expectation while a total of 36 percent rated the 'tangibles' aspect as "Better than expected" (19.5 percent) and "Much better than expected" (16.5 percent). However, 23.5 percent described the nature of the physical environment as below their expectation.

Table 4, shows that 11.5 percent of the respondents had problems with the assurances from Air Liquide as they described it as less than their expectation while 41.5 percent described the assurances from Air Liquide as above their expectation. Majority of the respondents representing 47 percent described the 'assurance' dimension as equal to their expectation.

Table 4:

Assurance (Assurance of security, efficiency and variety of services)

Response	Frequency	Percent
Much worse than expected	3	1.5
Worse than expected	20	10.0
Equal to expectation	94	47.0
Better than expected	58	29.0
Much better than expected	25	12.5
Total	200	100.0

Source: Field Survey, 2010

The result of the company's willingness to help customers and provide them with prompt service (responsiveness) is depicted in Table 5. Sixteen percent of the respondents classified the responsiveness of the company as unsatisfactory while 39.5 percent claimed it was much better than expected and better than expected. A total of 89 respondent representing 44.5 percent however, described it as equal to expectation.

Table 5:

Responsive (Attending to customers' needs and complaints   promptly any time)

Response	Frequency	Percent
Much worse than expected	6	3.0
Worse than expected	26	13.0
Equal to expectation	89	44.5
Better than expected	53	26.5
Much better than expected	26	13.0
Total	200	100.0

Source: Field Survey, 2010

The respondents' perceptions of the company's empathy (showing of respect, care and understanding customers' needs) are displayed in Table 6 which indicates that while 39 percent of the respondents rated the company's 'empathy' as equal to their expectation, 53.5 percent rated it as acceptable above their expectations. A relatively small group (7.5 percent) described their satisfaction in terms of the company's show of empathy as unacceptable.

Table 6:

Empathy (Showing of respect, care and understanding to customers' needs)

Response	Frequency	Percent
Much worse than expected	4	2.0
Worse than expected	11	5.5
Equal to expectation	78	39.0
Better than expected	47	23.5
Much better than expected	60	30.0
Total	200	100.0

Source: Field Survey, 2010

In terms of the company's competence to give timely and reliable services and be truthful to promises (reliability), 27.5 percent expressed dissatisfaction as they described it as much worse than expected and worse than expected compared to the relatively less respondents representing 22.5 percent who expressed satisfaction while describing it as much better than expected and better than expected. Half of the respondents representing 50

percent described it as "equal to expectation". These results are shown in Table 7.

Table 7:

Reliable (Competence to give timely, reliable services and truthful to promises)

Response	Frequency	Percent
Much worse than expected	33	16.5
Worse than expected	22	11.0
Equal to expectation	100	50.0
Better than expected	28	14.0
Much better than expected	17	8.5
Total	200	100.0

Source: Field Survey, 2010

Dimensions of product quality

The results of customers' perception with the dimensions of product quality are presented in this section. The primary characteristics of Air Liquide's products are depicted in Table 8.

Table 8:

Performance (Product's primary operating characteristics)

Response	Frequency	Percent
Much worse than expected	3	1.5
Worse than expected	4	2.0
Equal to expectation	71	35.5
Better than expected	68	34.0
Much better than expected	54	27.0
Total	200	100.0

Source: Field Survey, 2010

Majority of the respondents were satisfied as 3.5 percent of the respondents rated their satisfaction as unacceptable while 61 percent (34% and 27%) rated the primary characteristics of the products as ideal. Also, 35.5 percent described it as equal to their expectation.

The results of the 'features' (the "bells and whistles" of a product) dimension is depicted Table 9. While 41 percent described the company's product features as satisfactory (equal to expectation), 52.5 percent described it as ideal (above their expectation). Only 6.5 percent insisted that the features were not acceptable (below their expectation).

Table 9:

Features (The "bells and whistles" of a product)

Response	Frequency	Percent
Much worse than expected	0	0
Worse than expected	13	6.5
Equal to expectation	82	41.0
Better than expected	64	32.0
Much better than expected	41	20.5
Total	200	100.0

Source: Field Survey, 2010

As shown in Table 10, 51 percent of the respondents were of the view that the reliability of products bought from Air Liquide was above their expectation while 42 percent rated it as equal to expectation. Also, 7 percent rated it as below their expectation.

Table 10:

Reliability (Product operating over a period of time under stated conditions of use)

Response	Frequency	Percent
Much worse than expected	0	0
Worse than expected	14	7.0
Equal to expectation	84	42.0
Better than expected	76	38.0
Much better than expected	26	13.0
Total	200	100.0

Source: Field Survey, 2010

Table 11 reveals 51.5 percent of the respondents believed Air Liquide products' conformance to be equal to their expectation while 39 percent rated it as above their expectation. Also, 9.5 percent rated it as below their expectation.

Table 11:

Conformance (Products' performance compared with pre-established standards)

Response	Frequency	Percent
Much worse than expected	0	0
Worse than expected	19	9.5
Equal to expectation	103	51.5
Better than expected	49	24.5
Much better than expected	29	14.5
Total	200	100.0

Source: Field Survey, 2010

The results of product durability are displayed in Table 12. The results show that while 47 percent described the company's product durability as equal to their expectation, 32.5 percent and 15.5 percent described it as better than expected and as much better than expected respectively. Five percent rated the product's durability as below their expectation.

Table 12:

Durability (The amount of use one gets from a product before it physically deteriorates)

Response	Frequency	Percent
Much worse than Expected	0	0
Worse than expected	10	5.0
Equal to expectation	94	47.0
Better than expected	65	32.5
Much better than expected	31	15.5
Total	200	100.0

Source: Field Survey, 2010

Table 13 reveals that 44.5 percent of the respondents were of the view that the speed, courtesy and competence rendered by Air Liquide was significantly equal to their expectation while a total of 49.5 percent rated it as better than expected (27 percent) and much better than expected (22.5 percent). Six percent described it as below their acceptable limit

Table 13:

Serviceability (The speed, courtesy and competence of services)

Response	Frequency	Percent
Much worse than expected	2	1.0
Worse than expected	10	5.0
Equal to expectation	89	44.5
Better than expected	54	27.0
Much better than expected	45	22.5
Total	200	100.0

Source: Field Survey, 2010

Regarding Air Liquide products' aesthetics, depicted in Table 14, majority of the respondents were satisfied as 49.5 percent (27.5 percent and 22 percent) rated their satisfaction as above expectation while 11.5 percent of the respondents rated their satisfaction as below their expectation and 39 percent described it as equal to expectation. See Table 14.

Table 14:

Aesthetics (How a product looks, feels or smells)

Response	Frequency	Percent
Much worse than expected	1	0.5
Worse than expected	22	11.0
Equal to expectation	78	39.0
Better than expected	55	27.5
Much better than expected	44	22.0
Total	200	100.0

Source: Field Survey, 2010

The results of the recommendations given by respondents as shown in Figure 9 indicate that 20.5 percent of the respondents advocated a reduction in prices while 21 percent and 21.5 percent recommended to the company to establish more depots at different areas where there were none and to improve upon customer care respectively. Two percent called for a review of the registration deposit policy while 12.5 percent were satisfied with the company's performance and did not give any recommendation. Also, 3.5 percent called for advertisement of products and services.
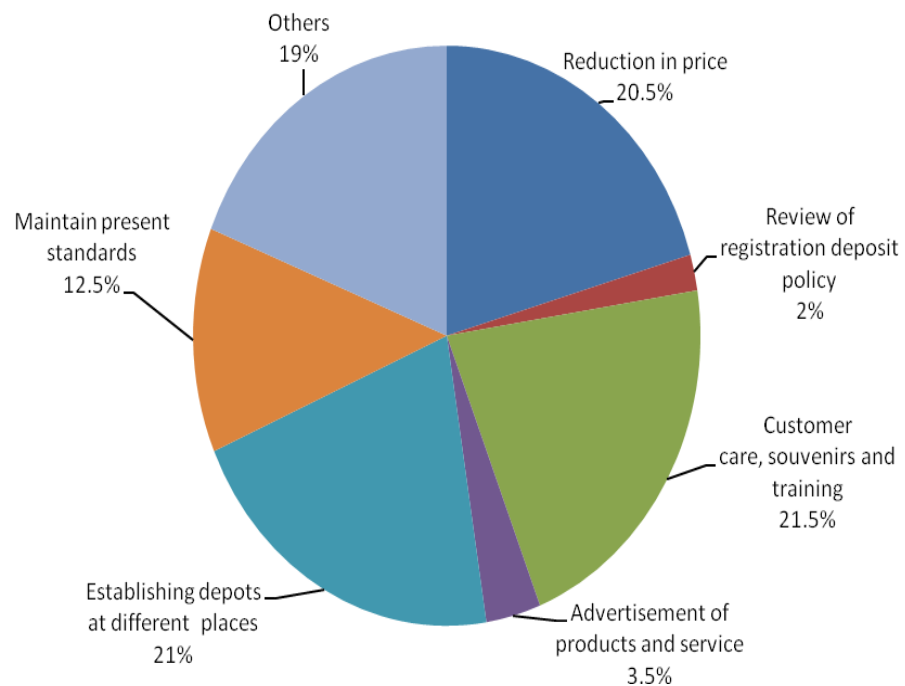

Figure 9:

Recommendations from respondents

Figure 10 depicts the number of years that a respondent has been a customer and his/her perception of the product and services of Air Liquide. It reveals that 51 respondents of which 59 percent and 41 percent perceived the

products and services to be satisfactory and ideal respectively were less than 5 years.
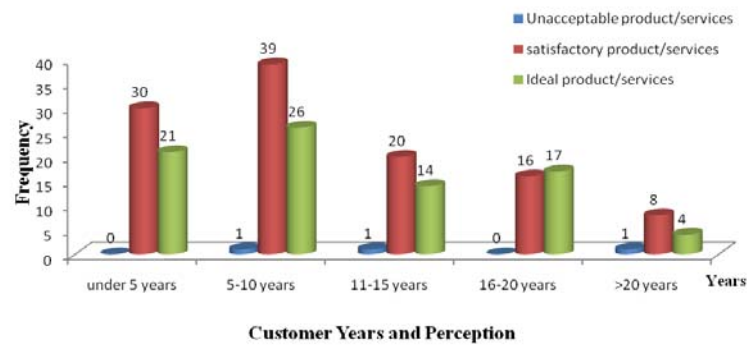

Figure 10:

Customer Years and Perception

Of the 66 respondents who were customers for 5 to 10 years, 59 percent perceived the products and services quality as satisfactory while 39 described it as ideal. Approximately 2 percent rated it as unacceptable. Also, out of the 35 respondents who have been customers for 11 to 15 years, 57 percent described it as satisfactory while 40 percent saw the quality of the products and services as ideal. Nearly 2 percent rated it as below the acceptable quality. Forty-eight percent and 52 percent of the respondents who have been customers for 16 to 20 years perceived the quality of the products and services by Air Liquide as satisfactory and ideal. Regarding the 13 respondents that constitute the "more than 20 years" group, 93 percent described the quality of the products and services as acceptable while 7 percent rated it as unacceptable.

Figure 11 depicts the satisfaction level between the customers from the mining and mining support service, manufacturing, transport, oil and gas

companies, food and agro industries, lumber and construction and hospitals and the customers who were fabricators and artisans. Regarding the fabricators and artisans, 140 respondents representing 99 percent were satisfied with the products and services while only 1 percent were dissatisfied. Also, majority from the "other" group representing 91 percent were satisfied while 9 percent were neutral. Thus, satisfaction level was high among the two groups.
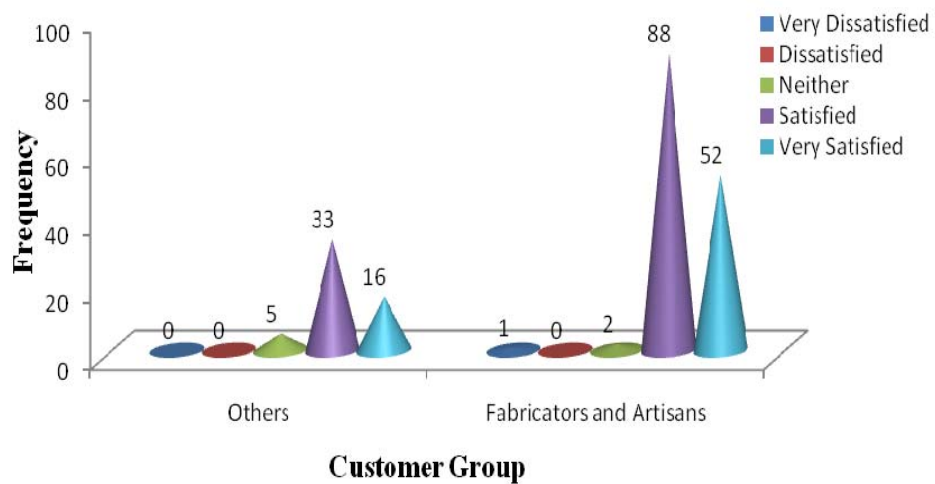

Figure 11:

Customer group and satisfaction level

Figure 12 shows respondents recommendations between fabricators and artisans and the "other" (mining and mining support service, manufacturing, transport, oil and gas companies, food and agro industries, lumber and construction and hospital).
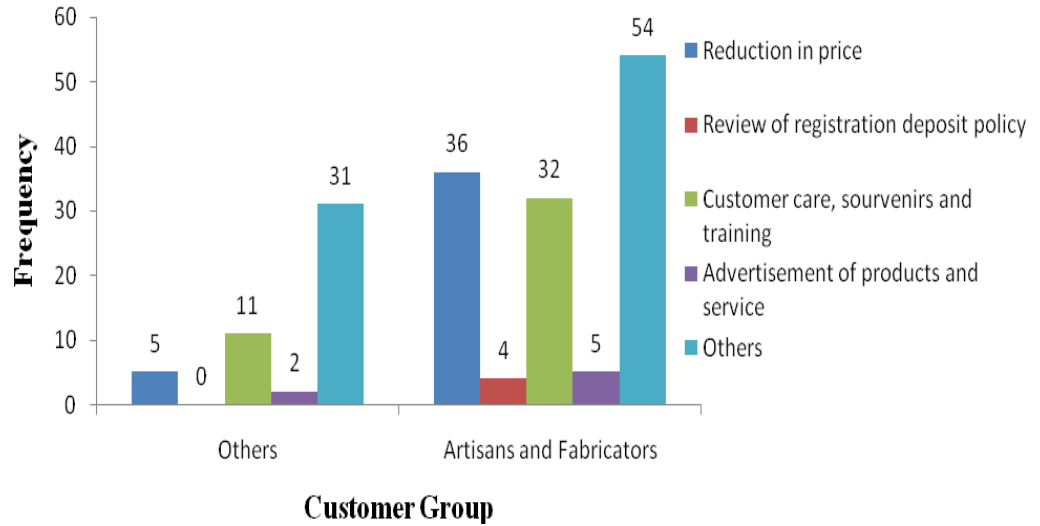
Figure 12:

Customer group respondents' recommendations

Figure 12 indicates that majority of the respondents from both the "other" and the fabricators and artisans groups representing 63 percent and 41 percent respectively advocated improvements in the physical environment, timely delivery or introduction of small and light weight cylinders. Twenty-seven percent of the fabricators and artisans group and 10 percent of the "other" group called for a reduction in prices while 24 percent and 22 percent respectively wanted an improvement upon customer care from the company. Seven percent of the fabricators and artisans and 4 percent of the "other" group recommended a review of the registration deposit policy and for advertisement of products and services.

Discussion of results

Research Question One: *How do customers perceive the product and services offered by Air Liquide?*

A customer is satisfied if the performance of products/services is equal to his/her expectations/desire (positive disconfirmation) and he/she is dissatisfied if the performance of products/services is perceived to be below his/her expectations/desire (negative disconfirmation). If expectation exceeds perceived performance, the customer is highly satisfied (Oliver, 1980). The result of both the desire and expectation disconfirmation measures in Figure 7 show that more than 50 percent of the respondents perceived the products and services offered by Air Liquide to be satisfactory. Thus, it can be concluded from the disconfirmation measures that customers perceive the products and services of Air Liquide to be satisfactory.

From Figure 11 the percentage/proportion of respondents that perceived the quality of the products and services of Air Liquide as satisfactory is high among all the customer groups, ranging between 93 percent and 100 percent. This is an indication that customers are satisfied. Thus, it can be concluded that the high retention rate among customers of Air Liquide stems from the fact that they are satisfied. This supports the assertion made by Hart and Johnson (as cited in Gronroos, 2000) that a satisfied customer does not only become loyal through repurchase, but are also "unpaid salespeople" because of their willingness to spread positive word-of mouth information about the company.

Research Question Two: *What are the levels of customer satisfaction with Air Liquide product and service?*

The overall satisfaction measure (Table 1) portrayed that as many as 94.5 percent of the respondents were satisfied or very satisfied while 5 percent were neutral and dissatisfied customers constituted 0.5 percent. This shows that only few customers were in the zone of indifference where customers are merely "satisfied" and do not tend to be loyal customers with a high retention rate. Dissatisfied customers called "terrorists" because of their willingness to try and scare away potential new customers by bad-mouthing the company are insignificant (0.5 percent) (Hart & Johnson as cited in Gronroos, 2000). It is also an indication that the levels of customer satisfaction with products and services of Air Liquide are high.

The high satisfaction level among customers could be explained in terms of the perceived satisfactory product and service quality among customers. This is consistent with the works of Gronroos (2001) and Edvardsson (2005) who postulated that perceived product/service quality is an important determinant of customer satisfaction. It also supports Oliver (1980; 1993) and Parasuraman et al (1988) conclusion that expectation plays a major role in determining satisfaction.

Research Question Three: *Which dimensions of product and service quality are customers satisfied or dissatisfied with at Air Liquide Limited?*

From the expected disconfirmation measures of service quality (Tables 3,4,5,6 and 7), customers perceived all the five service quality dimensions as satisfactory. This indicates that the company is doing well in both the service process and service outcome. However, the reliability dimension, which

includes the accuracy and dependability determinants of service needs to be improved a bit as that is the only service quality dimension whose unacceptable quality (much worse than expected and worse than expected) exceeded satisfactory quality (much better than expected and better than expected) though positive disconfirmation exceeded negative disconfirmation.

Also, though with the 'tangibles' (appealing nature of physical environment), unacceptable quality is less than satisfactory quality, the negative disconfirmation is above 20 percent. There is therefore the need to keep the environment tidy. This is supported by Parasuraman's (1991) generalisation that companies should be accurate and dependable and provide the service they promised to provide as well as surprising customers with uncommon swiftness or courtesy, in other words, meeting the reliability and tangible dimensions.

All the product quality dimensions (Tables 8, 9, 10, 11, 12, 13 and14) were described by respondents as satisfactory. This is supported by the fact that majority of the respondents in each of the cases rated their responses as equal to expectation, much better than expected or better than expected. This also suggests that, although the company has been performing well in both the service and product quality dimensions, the company performs relatively better in the product quality dimensions. This confirms Rodoula (2005) conclusion that perceived perceptions of product quality were significant; however perceived quality explained more of the variance in overall satisfaction than in product involvement and purchase intentions.

Research Question Four: *What are the switching intentions of customers of Air Liquide?*

The switching intention statistics in Table 2 revealed that 136 respondents constituting the majority of 68 percent had no switching intentions to use product/service from another company. Thus, it can be concluded that customers are satisfied and have no switching intentions to use product/service from another company. Only a small proportion of 16 percent were willing to switch.

Notwithstanding the fact that customers are satisfied and have no switching intentions to use product/service from another company, the company will have to review its pricing policy in particular as 72 percent of the 32 respondents who were willing to switch cited higher prices as their intention to switch. This is necessary as consumers also trust the relevant extrinsic product /service cues such as price indicators of product/service quality. In other words, cues associated with, but not belonging to, the actual physical product are used as signals to imply overall product/service quality (Didier 2003).

Research Question Five: *What are the recommendations from clients necessary for the improvement of customer satisfaction in the company?*

Though respondents expressed satisfaction with the performance of Air Liquide Ghana Limited, majority of them believed that customer satisfaction can be improved through reduction in prices, improvements in customer care which includes distribution of souvenirs and customer training as well establishment of more depots. Most of these recommendations given tend to reinforce the affordability and the reliability points that were raised above. Thus it can be seen that implementing these recommendations would help improve customer satisfaction and develop customer loyalty. This buttresses

Matzler and Hinterbuber, (1998) and Bazan (1998) assertion that completely satisfied customers are approximately 40 per cent more likely to be loyal customers than customers that are merely satisfied.

Chapter Summary

In all majority of customers constituting over 70 percent perceived product and services of Air liquide to be quality and customer care satisfactory to their desire which is an indication of high retention rate. However Air Liquide need to improve on certain things such as pricing, Cylinder deposit issues, Customer care, Physical environment and timely delivery in other to have total customer satisfaction and retention rate.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter summarizes the major findings from the study. It includes conclusions drawn from the study in general and recommendations derived from analysis of the available data. The chapter also outlines the limitations of the study.

The problem of this study was propelled by the need to empirically assess customer satisfaction with product quality and service delivery of Air Liquide Ghana Ltd as the state of customer satisfaction with product quality and service delivery was not clear with the scanty documentation of the issue. With the deregulation of the gas industry, a hitherto monopolist firm like Air Liquide which had been in total control of the entire gas industry needed to restructure its marketing strategies to cope with the sudden emergence of competition. As a result the study set out to investigate customer's assessment of the products and services of Air Liquide Ghana Limited in the light of its present position of being in a competitive market.

In order to achieve the purpose of the study, research questions that sought to examine customers' perception of the product and services, levels of customer satisfaction of product and service, customers' satisfaction or dissatisfaction with the dimensions of product and service quality, the switching intentions of customers and the recommendations necessary for the

improvement of customer satisfaction at Air Liquide were developed. A cross-sectional survey was conducted to collect data from customers. A sample of 200 respondents was chosen from the 1100 customers in the area of study. In selecting the sample of 200 respondents, the population was divided into strata based on the customer groups. All the 54 customers other than the fabricators and artisans were selected as part of the sample size because of the small size of their respective stratum. The other 146 customers were chosen from the remaining 1046 customers who were fabricators and artisans. In selecting these 146 customers, a systematic sampling technique was employed. A sampling fraction of 1/7 was used in which every seventh customer was selected from the sampling frame after a lottery sampling technique was employed to pick the first customer. Two hundred questionnaires were distributed to these respondents by mail and through personal contact. Total responses for each item on the questionnaire were obtained and tabulated using the SPSS software.

The research questions for the study were:

1. How do customers perceive the product and services offered by Air Liquide?

2. What are the levels of customer satisfaction with Air Liquide product and service?

3. Which dimensions of product and service quality are customers satisfied or dissatisfied with, at Air Liquide Limited?

4. What are the switching intentions of customers of Air Liquide?

5. What are the recommendations from clients necessary for the improvement of customer satisfaction in the company?

Data collected to answer the first three research questions were analyzed using both the disconfirmation and the satisfaction scales. Both Research Questions One and Three were analyzed using the disconfirmation rating scale in which a rating of 3, 4 or 5 indicated customer satisfaction and a rating of 1 or 2 indicated customer dissatisfaction with service and product quality. The satisfaction scale was used to analyze Research Question 2 where a rating of 4 or 5 indicated customer satisfaction while a rating of 1, 2 or 3 indicated satisfaction below the required level or dissatisfaction. With Research Questions Four and Five, the frequencies of the responses were compared and conclusion drawn. The analysis and presentation were done using descriptive statistics: percentages and Frequency distributions generated through SPSS.

Summary

The findings from the study highlight several points of importance:

1. In terms of the products and services offered by the company, the artisans and fabricators dominated in its usage as they formed the majority of the customer base within the study area. Thus, oxygen, a product used by the artisans and fabricators was the product used the most.

2. For Research Question One, both the desired and expectation disconfirmation measures showed that respondents perceived the products and services offered by Air Liquide to be satisfactory. Among all the age groups, the percentage of respondents that perceived the quality of the products and services of Air Liquide as satisfactory was high.

3. Regarding Research Question Two, the overall satisfaction measure portrayed that majority of the respondents were satisfied. The high satisfaction level was also seen among all the customer groups and this was explained in terms of the perceived satisfactory product and service quality among customers.

4. From the expected disconfirmation measures of product and service quality for Research Question Three, it was observed that customers perceived all the product and service quality dimensions as satisfactory. However, with the reliability dimension, which includes the accuracy and dependability determinants, the unacceptable quality exceeded satisfactory quality though positive disconfirmation exceeded negative disconfirmation.

5. Regarding the switching intentions of customers, it was observed that customers were satisfied and have no switching intentions to use product or service of other companies. Nonetheless, a small proportion was willing to switch citing higher prices as the main reason behind it.

6. Though customers were satisfied with the performance of Air Liquide Ghana Limited, majority of them believed that customer satisfaction could be improved through a reduction in prices, improvements in customer care which includes distribution of souvenirs and customer training services as well as the establishment of more depots. Others also recommended that the company could improve satisfaction by keeping their business premises cleaned as well as doing away with initial deposit.

Conclusions

Both the desire and expectation disconfirmation measures showed that customers perceive the products and services of Air Liquide to be satisfactory. This is an indication that customers are satisfied and that the high retention rate among customers of Air Liquide stems from the fact that they are satisfied. This is consistent with the assertion made by Hart and Johnson (as cited in Grönroos 2000) that a satisfied customer does not only become loyal through repurchase, but also "unpaid salespeople" because of their willingness to spread positive word-of mouth about the company.

The overall satisfaction measure portrayed that few customers belong to the zone of indifference where customers are merely "satisfied" and do not tend to be loyal customers with a high retention rate. Dissatisfied customers called "terrorists" because of their willingness to try and scare away potential new customers by bad-mouthing the company were also insignificant indicating that the levels of customer satisfaction with products and services of Air Liquide are high. The high satisfaction level among customers is explained in terms of the perceived satisfactory product and service quality among customers. It does suggest that perceived product/service quality is an important determinant of customer satisfaction and that expectation plays a major role in determining satisfaction.

The expected disconfirmation measures of product and service quality suggests that, although the company has been performing well in both the service and product quality dimensions, the company performs relatively better in the product quality dimensions than in the service quality dimension. There is therefore the need to improve the service quality dimensions.

Notwithstanding the fact that customers are satisfied and have no switching intentions to use product/service from another company, the company will have to review its pricing policy in particular as majority of the respondents who were willing to switch cited higher prices as their reason for the intended switch. This is necessary as consumers also trust the relevant extrinsic product/service cues such as price indicators of product/service quality. This supports Didier (2003) conclusion that cues associated with, but not belonging to, the actual physical product are used as signals to imply overall product/service quality

Also, although customers are satisfied with the performance of Air Liquide Ghana Limited in general, reduction in prices, improvements in customer care, which includes distribution of souvenirs and customer training as well as establishment of more depots, could help improve customer satisfaction which could ultimately lead to customer loyalty.

Recommendations

It has been established from the study that satisfaction with product and service quality of Air Liquide Ghana Limited is high. However, some improvements need to be made given the competitive nature of the gas industry.

1. It can be seen in the analysis that the company is doing well in both the service process and service outcome. However, the reliability dimension which includes the accuracy and dependability determinants of service, needs to be improved. The company can achieve this through timely delivery of product at depots, rendering prompt and

quality services and fulfilling its promises to customers. This would require a total transformation in operational efficiency of the company. It should also endeavour to explain and apologise to customers in the event of contingencies or inconveniences caused to customers.

2. Also, there is the need for the company to keep the environment tidy as well as appearance, as the negative disconfirmation was high. It is noted that one of the basic ingredients, in marketing is appearance. Therefore, given the international reputation of Air Liquide, their environment and appearance should be up to the standard that matches such reputation.

3. Again, it is recommended that the company should review its pricing policy as majority of the customers with switching intentions cited high prices of goods and services as their reasons. A reduction in price of products and services could help the company dominate the gas industry given the elastic nature of products and services and competition in the industry. The reduction in price could be done through the sourcing of equally quality products from relatively cheaper source such as Air Liquide China rather than from Air Liquide parent company in France which sells product at a relatively higher price.

4. It was also observed in the questionnaire administration that customers' knowledge on the company's peculiar products benefits and international safety standard was not up to the required level. It is therefore, recommended that efforts should be made by the company to

Suggestions for further research

The study assessed customer satisfaction with product quality and service delivery of Air Liquide Ghana Ltd. It is recommended that future research should examine customer assessment of specific product and service across competitive companies within the gas industry. This will help the company assess its product and service quality as well as its performance in the light of competitive companies. Also, the study was a questionnaire-based survey and used descriptive statistics in the analysis. It is therefore, recommended that different models and methodology should be used for similar study and the result compared.

The final conclusion from the study is that, generally, customers are satisfied with the product and service quality of Air Liquide Ghana Limited. However, it should be noted that the customers used for the study are mainly customers who, irrespective of the proliferations of competitors, have not yet switched. It is, therefore, imperative for the company to respect and implement the recommendations from these customers in order to improve upon the satisfaction level of customers given the competitive nature of the gas industry.

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APPENDIX

QUESTIONNAIRE FOR CUSTOMER ASSESSMENT OF PRODUCT AND SERVICES OF AIR LIQUIDE GHANA LIMITED

Dear valued customer, my name is **William Amofah Appiah**, an MBA student at the University of Cape Coast, I would be very grateful if you could spare a few minutes to complete this Customer Satisfaction Questionnaire to help the company ensure that their standard of customer care exceeds expectations wherever possible. Your response will be treated as confidential and used for the purpose stated.

Please tick [√] the appropriate box for your responses.

1. Which of the following customer group do/does you/your company belong?

   [ ] Mining industry   [ ] Fabricators and Artisans   [ ] Lumber and Construction   [ ] Manufacturing industry   [ ] other, please specify.........................

2. Which product(s) of Air Liquide Ghana Limited do/does you/your company use the most? (Please tick as many options as applicable).

   [ ] Oxygen   [ ] Acetylene   [ ] Nitrogen (Liquide and gaseous)   [ ] Medical oxygen   [ ] other, please specify.......................

3. Which services of Air Liquide Ghana Limited do/does you/your company use the most? (Please tick as many options as applicable)

[   ] Supply of Gases/Equipment   [   ] Safety Training   [   ] Maintenance and repair of Equipment   [   ] Survey and Installation [   ] others, please specify

4. How often do/does you/your company buy products from Air Liquide Ghana Limited?   [   ] less than 1 time /month   [   ] 1-2 times / month   [   ] 3-4 times / month   [   ] 4-5 times / month [   ] other, please specify....................

5. How often do you/your company use the services of Air Liquide Ghana Limited?   [   ] less than 1 time /month   [   ] 1-2 times / month [   ] 3-4 times / month   [   ] 4-5 times / month   [   ] other, please specify....................

6. In total, how long have you been a customer of Air Liquide Ghana Ltd?   [   ] under 5 years   [   ] 5-10 years   [   ] 11-15 years   [   ] 16-20 years   [   ] other please specify...........

7. How well did the products/services you received from Air Liquide compare with the **ideal/desired** set of products/services?

[   ] Much worse than desired   [   ] Worse than desired   [   ] Equal to my desire   [   ] Better than desired   [   ] Much better than desired

8. To what extent have Air Liquide products/services met your **expectations**?

[1] Much worse than expected   [2] Worse than expected

[3] Equal to my expectation [4] Better than expected   [5]   Much better than expected

9. Do you have any intention of **switching** to use a product/service from another company?

[   ] Definitely yes   [   ] a bit Yes   [   ] Neutral   [   ] a bit No

[   ] Definitely No

10. If yes to **question 9**, what is your reason?   [   ] Low Quality of Product/Service [   ] Untimely Delivery [   ] Pricing Policy [   ] Lack of Empathy from Staff [   ] others Please Specify.........................

11. In your opinion, how does the quality of product and service of Air Liquide, meet your expectations in terms of the following dimensions? Please use the scale 1-5 to answer, where: **1- Much worse than expected   2- Worse than expected   3-Equal to expectation   4- Better than expected   5- Much better than expected**

	DIMENSIONS	Circle only one option:1-5				
TAN	The appealing nature of physical environment	1	2	3	4	5
ASS	Assurance of security, efficiency and variety of services	1	2	3	4	5
RES	Attending to customers' needs and complaints promptly any time	1	2	3	4	5
EMP	Showing of respect, care and understanding to customers' needs)	1	2	3	4	5
REL	Competence to give timely, reliable services and truthful to promises	1	2	3	4	5
ECO	Giving customer value for services received	1	2	3	4	5
IMG	Having a good reputation of company and brand name and logo identification	1	2	3	4	5
PER	Product's primary operating characteristics such as cutting well without breaks, no damage to materials/equipment	1	2	3	4	5
FEA	The "bells and whistles" of a product such as cylinders with caps, filling pressure and pressure gauges well labelled, and colour code for proper	1	2	3	4	5

	identification of gases and equipment, certified date embodied					
REL	The probability of a product's operating over a specific period of time under stated conditions of use	1	2	3	4	5
COM	The degree to which physical and performance characteristics of a product match pre-established standards such as international safety, purity and ISO standards	1	2	3	4	5
DUR	The amount of use one gets from a product before it physically deteriorates or until replacement is preferable or life span of product	1	2	3	4	5
SER	The speed, courtesy and competence of repair work, products and parts availability, duration and cost of servicing	1	2	3	4	5
AES	How a product looks, feels or smells such as packaging, labelling and material safety data sheet provision	1	2	3	4	5

12. In your opinion what recommendations are necessary for the improvement of customer satisfaction at Air Liquide?

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13. How do you perceive the attitude of employees/workers of Air Liquide? [ ] Respectful   [ ] Tolerating [ ] Caring [ ] Rude [ ] others, specify …………………………

14. **Overall,** tell how satisfied or dissatisfied you are with the product/service quality of Air Liquide.

[1] Very Dissatisfied   [2] Dissatisfied   [3] Neither   [4] Satisfied
[5] Very Satisfied

Thank you for taking time to complete this questionnaire!