**ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS ANDECONOMICSSCHOOL OF COMMERCE**
**MA IN MARKETING MANAGEMENT (DISTANCE)**

# The Effects of Marketing Information System on Pricing Decisions of Managers: Case Study of Ethiopian Airlines

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Advisor: Dr. Mulugeta G/Medhin

June, 2020
Addis Ababa

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The thesis is submitted to Marketing department. This Thesis is presented in Partial fulfillment of the Requirements Marketing Department for Master of Marketing Management

June, 2020

Addis Ababa

The effects of Marketing information system on Pricing decisions of Managers: The Case of Ethiopian Airlines

BY

Addis Kassa

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## Abstract

The main purpose of the study was to assess the effects of Marketing Information system on pricing decisions, case study of Ethiopian Airlines. Marketing information systems is a continuing and interacting structure of people equipment and procedure designed to gather, sort, analyze, evaluate and distribute pertinent timely and accurate information for use by marketing decision makers to improve their marketing planning execution and control. On the other hand, Price is the amount of money charged for a product or service. Price has been major factor affecting buyer choice. Smart managers treat pricing as a key strategic tool for creating and capturing customer value.

Nowadays marketing information system is vital for different decision of marketing managers. The business environment is so dynamic that uninformed or delayed decision by managers can cost profitability of a business. Globalizations has provided customers with ample information on prices and enable them to choose from competitors and go for cheaper prices.

To achieve the objective of the study, relevant literature was reviewed, and quantitative data were collected through questionnaire and filled by different group of staff under Ethiopian Airlines.

Dimensions of marketing information system, timeliness of data, accuracy of data, selective retrieval of information, Integration between subsystems, relationship between system designers and system users, awareness and cost effectiveness have positive and significant effect on pricing decision. Other dimensions of marketing information system i.e quality of data and management role has effect on pricing decisions but not significant.

By effective implementation of the dimensions of marketing information system Ethiopian Airlines can have better pricing decisions. Accordingly, all the dimensions of marketing information system namely quality of data, timeliness of data, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, awareness on MIS and cost effectiveness of marketing information system has to be continuously assessed and improved.

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# CHAPTER ONE

# INTRODUCTION

This chapter contains introductory part of the entire study. It provides highlights about the ground and the assumptions the study will be conducted. It states background of the study, statement of the problem, research questions, and objectives of the study, hypothesis, and significance of the study, scope of the study, organization of the study and definition of key terms.

## 1.1 Background of the Study

Marketing information systems is a continuing and interacting structure of people equipment and procedure designed to gather, sort, analyze, evaluate and distribute pertinent timely and accurate information for use by marketing decision makers to improve their marketing planning execution and control (Kotler and Armstog 2003). On the other hand Marketing information system is also a set of procedures and methods for the regular and planned collection, analysis and presentation of information in making marketing decisions ( K. Cox and K. Gonod hold). They can be simply sharing information by key departments but are more likely to be some form of integrated system based around information technology. Hence marketing managers need information at regular intervals of time in order to deal with recurring pricing decisions.

Nowadays marketing information system is vital for different decision of marketing managers. The business environment is so dynamic that uninformed or delayed decision by managers can cost profitability of a business. Globalizations has provided customers with ample information on prices and enable them to choose from competitors and go for cheaper prices.

Airline Industry: is the business of transporting paying passengers and freight by air along regularly scheduled routes typically by Airplanes but also by helicopters. The Airline Industry is dynamic complex and sensitive as passengers are exposed to different choices of airlines with different prices and products. Obviously, passengers are price sensitive and

look for airlines who offer cheaper prices. Accordingly, marketing managers to be competitive enough should be alert on their pricing decisions. They may be supported by marketing information system on their pricing decisions. Accordingly, airlines with the emerging globalization has to be alert and need to have marketing information system to have informed and timely pricing decisions.

Pricing decisions: are the choices businesses make when getting prices for their products or services. While passengers look for cheaper prices Airlines compete to win passengers through their pricing decisions. Moreover, Airlines also consider Price of fuel, flight distance, timing of purchase, timing of flight, passenger appetite, empty seat etc. on their pricing decisions.

Due to globalization and emerging upper hand of passengers due to easy access to any information, Airlines need to keep themselves alert on the current market condition. Accordingly, marketing information system is vital for informed as well as timely pricing decisions.

This study covers effects of marketing information system on the pricing decision of the airlines industry taking the case of the Ethiopian Airlines. Nowadays Ethiopian Airlines is facing fierce competitions and may need to make competitive pricing decisions. Pricing decisions need to be well informed and timely which calls for marketing information system

## 1.2 Background of the industry

Ethiopian Airlines (Ethiopian) is the flag carrier of Ethiopia. During the past seventy plus years, Ethiopian has become one of the continent's leading carriers, unrivalled in Africa for efficiency and operational success, turning profits for almost all the years of its existence. Operating at the forefront of technology, the airline has also become one of Ethiopia's major industries and a veritable institution in Africa. It commands a lion's share of the pan African network including the daily and double daily east-west flight across the continent. Ethiopian currently serves 127 international and 22 domestic destinations operating the newest and youngest fleet.

It was founded on December 21,1945 and is 100% owned by government of Ethiopia. (www.ethiopian Airlines.com Ethiopian Factsheet)

### 1.3 Statement of the Problem

Marketing information system is defined as an interacting structure of people equipment, methods, and controls, which is designed to create an information flow that is capable of providing an acceptable base for management decisions in marketing. (Conrad Bernson 1969).Though marketing information system is defined with different scholars, there is no organized scientific study regarding the effect of marketing information system on pricing decisions of the airline industry. Accordingly, the research will add to existing knowledge effects of marketing information system in general and specifically related to Airline Industry, Ethiopian Airlines. Moreover, Ethiopian Airlines, operating in a dynamic and competitive airline industry, delayed or not well-informed pricing decisions may cost the airline dearly by losing its market.

Airlines Industry is so complex that it operates in a competitive environment. An Airline to be competitive needs to make pricing decision, which in -turn needs to be informed and timely decisions.

Marketing information system being an interacting structure of people, equipment, methods, and controls, which is designed to create an information flow that is capable of providing an acceptable base for management decisions in marketing. All may not be integrated to form complete marketing information system which in turn affect decision making.

Ineffective marketing information systems that will not provide managers the right information in the right form at the right time will negatively affect managers to create customer value and stronger relationships.

A good marketing information system balances the information users would like to have against what they really need and what is feasible to offer.

In this case users may not define their need properly and if not defined properly quality and efficiency of marketing information system is compromised.

Many companies build extensive internal data bases electronic collections of consumer and marketing information obtained from data sources. Marketing managers can readily access and work with information in the data base to identify marketing opportunities and problems, plan programs and evaluate performance.

However, the quality of data from data sources under the marketing information system affects identification of marketing opportunities and problems, to plan programs and evaluate performance. i.e wrong data captured in the data base will twist the marketing information system and lead to incorrect decisions. (Garbage in Garbage out)

Price setters that are currently not revising prices often enough can use IST (information system technology) to assist in making more timely price changes, thus helping the firm to stay competitive. If prices are not varied enough, improving information on market-segment demand intensities, or improving feed- back on price structuring can permit price structuring which increase volume while hopefully avoiding competitor. (Cynthia Mathis Breath and Blake Ives 1986)

Pricing has become a key battleground in the deregulated airline industry and presents an opportunity for carriers to use information systems technology for competitive advantage.

If Pricing decisions is not supported by appropriate marketing information system, it will affect competitiveness of an industry which in turn affect profitability.

Airlines Industry is so complex that it operates in a competitive environment. An Airline to be competitive needs to make pricing decision, which in -turn needs to be informed and timely decisions.

Marketing information system has effect on pricing decisions of Airlines Industry which in our case Ethiopian Airlines. Ethiopian Airlines is facing fierce competition from other carrier unlike old days. While price of fuel, flight distance, timing of purchase, timing of flight,

passenger appetite empty seat may affect pricing decisions of the airline industry, it is important to have well established marketing information system on the aspects that affect pricing decisions to have informed and timely decisions.

### 1.4 Research Questions

The research questions that this study addressed are:

1. How does Quality of data from data sources under the marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
2. How does Timeliness of data under marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
3. How does accurate information base under the marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
4. How does selective retrieval of information under the marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
5. How does active management role in the specification of needed information under marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
6. How does Effective integration between subsystems along the marketing information system under Ethiopian Airlines affect pricing decision of marketing managers under Ethiopian Airlines.
7. How does **c**lose relationship between the system designers and systems users under marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.
8. How does sufficient awareness of marketing managers about mechanics of marketing information affect the pricing decision of marketing managers under Ethiopian Airlines.
9. How does cost effective Marketing information system affect pricing decision of marketing managers under Ethiopian Airlines.

## 1.5 Objective of the Study

### 1.5.1 **General Objectives**

Objective of the Study is to assess the effects of marketing information system on the pricing decisions of the airline Industry.

### 1.5.2 **Specific Objectives**

The specific objectives of this study are: -

1. To assess effects of quality of data from data sources under the marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
2. To analyze the effect of timeliness of data under marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
3. To examine effects of accurate information base under the marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
4. To evaluate effects of selective retrieval of information/refined information under the marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
5. To examine effects of active management role in the specification of needed information under marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
6. To analyze role of effective integration between subsystems along the marketing information system under Ethiopian Airlines on pricing decision of marketing managers under Ethiopian Airlines.
7. To examine effects of **c**lose relationship between the system designers and systems users under marketing information system on pricing decision of marketing managers under Ethiopian Airlines.
8. To evaluate effects of sufficient awareness of marketing managers about mechanics of marketing information on pricing decision of marketing managers under Ethiopian Airlines.
9. To analyze effects of cost-effective Marketing information system on pricing decision of marketing managers under Ethiopian Airlines.

## 1.6 Hypothesis of the study

**$H_1$**: Quality of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_2$**: Timeliness of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_3$**: Accuracy of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_4$**: Selective retrieval of information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_5$**: Active management role in the specification of needed information under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_6$**: Effective integration between subsystems along the marketing information system under Ethiopian Airlines has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_7$**: Close relationship between the system designers and systems users under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_8$**: Sufficient awareness of marketing managers about mechanics of marketing information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**$H_9$**: Cost effective marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

## 1.7 Significance of the Study

Marketing information system is vital on the pricing decision of the Airline Industry. Airlines Industry is so dynamic and competitive that pricing decisions can impact its profitability. Pricing decisions on the other hand has to be supported with well-established marketing information system. Airline Industry is capital intensive which

has very small profit margin hence its pricing decision has impact on its profitability as well as its existence.

Accordingly, the study is useful in the following aspects.

- It will assist to identify the importance of pricing decisions on profitability of the airline Industry by the use of effective marketing information system.

- This study will also investigate marketing information system and its effect on pricing decisions under Ethiopian airlines. The findings and conclusion from this study may be used by the Airline to use effective marketing information system on pricing decisions so as to maximize its profit.

- The research will add to existing knowledge about effective marketing information system in general and specifically related to Airline Industry. Findings of this study will go on to assist future researchers and academicians as an input to go onboard upon similar researches in the future to broaden their insight regarding the issue.

- Customers may benefit from improved service while Airline Industries use efficient marketing information system.

- Employees of Ethiopian Airlines may get satisfied when their job is equipped with efficient marketing information system.

## 1.8 Scope and Limitation of the Study

### 1.8.1 Scope of the Study

**Content/Subjective Scope/Theoretical scope**

The study it is concerned with effects of marketing information system in pricing decisions of the airline Industry. Accordingly, though marketing information system may assist in almost all marketing decisions, the study is limited to pricing decisions.

It will also look in to only pricing decisions of the airline Industry.

The research is bound to variables such as marketing information system, pricing decisions, components of marketing information system, Quality of data from data sources under the marketing information system which are relevant to the study and relationship is built among them.

**Geographical Scope**

Due to easy access to information and geographic proximity the study is limited to marketing information system of the Airline Industry, Ethiopian Airlines which is found in Ethiopia.

**Methodological Scope**

This research focused on cross sectional survey/explanatory research design.

**Time Scope**

This research focused on cross sectional survey research design. Because the study is cross sectional survey which will include distribution collection and analysis of questionnaires it may take up-to three months.

### 1.8.2 Limitation of the Study

Though it is expected the study will contribute on the existing knowledge, it has limitations that it will only focus on pricing decisions of Airline Industry specifically Ethiopian Airlines. It would also better if practice of other airlines is also studied.

## 1.9 Organization of the Study

The research report is composed of five chapters. Chapter one consists of introduction that includes background of the study, statement of the problem, research questions, objectives of the study, hypothesis, significance of the study, scope and limitation of the study, organization of the study, and definition of key terms, Chapter two consists of review of

related literature, and Chapter three includes research approach, research design, sampling method and sample size, research instrument and data collection method, method of data analysis, validity and reliability, and research ethics. Chapter four consists of data analysis and interpretation, and Chapter five consists of summary of the major findings, conclusions and recommendations drawn based on the conclusions of the study.

## 1.10 Definition of Key Terms

**Marketing information system**

Consists of people and procedures for assessing informational needs, developing the needed information and helping decision managers to use the information to generate and validate actionable customer and market insights. (Philip Kotler & Gary Armstrong 2010)

**Airline Industry**

is the business of transporting paying passengers and freight by air along regularly scheduled routes typically by Airplanes but also by helicopters.
(https//www.infoplease.com)

**Pricing Decisions**

Price is the amount of money charged for a product or service. Price has been major factor affecting buyer choice. Smart managers treat pricing as a key strategic tool for creating and capturing customer value. (Philip Kotler & Gary Armstrong 2010)

# CHAPTER TWO
# REVIEW OF RELATED LITERATURE

This chapter presents review of literature that forms the basis of this study. Moreover, it discusses different dimensions of marketing information system under the topic study that impact pricing decisions. The chapter builds on theoretical definitions and empirical reviews of past studies that have been done, which help to construct the conceptual framework.

## 2.1 Theoretical Review

**2.1.1Marketing information system (MIS)** consists of people and procedures for assessing informational needs, developing the needed information and helping decision managers to use the information to generate and validate actionable customer and market insights. (Philip Kotler & Gary Armstrong 2010) Thus, a marketing information system involves "an organized system of direction, collection, analysis, and dissemination of intelligence to operating units of a business enterprise" (Pinkerton 1969a, p. 51).It is also defined as an interacting structure of people, equipment, methods, and controls, which is designed to create an information flow that is capable of providing an acceptable base for management decisions in marketing. (Journal of Marketing October 1969)

Finally, the MIS helps users to analyze and use the information to develop customer insights, make marketing decisions and manage customer relationships. Customer/consumer insight is a depth of understanding of consumers. More than that, it implies sensible use of this understanding to help consumers fulfil their needs. It is the result of different disciplines particularly market research and customer database analysis being combined and used to manage consumers, and to allow consumers to manage themselves because the insight has been used to develop ways to allow them to do it. Merlin S Alison B & Bryan F. (2004). Different scholars indicate Components of marketing information system as below.

**Assessing Marketing information needs.**

A good marketing information system balances the information users would like to have against what they really need and what is feasible to offer. The company begins by interviewing managers to find out what information they would like.

Identifying what data are needed for the customer-focused environment should begin with business drivers. ( Olivia Parr Rud 2001)

**Developing Marketing information**

Marketers can obtain the needed information from internal data, marketing intelligence, and marketing research. It is difficult to generalize about the individual needs of an organization. However, information is collected from internal and external sources that include customer, market and competitor information. (Geoff L. and Lester M. 2011)

Many companies build extensive internal data bases electronic collections of consumer and marketing information obtained from data sources. Marketing managers can readily access and work with information in the data base to identify marketing opportunities and problems, plan programs and evaluate performance.

**Competitive marketing intelligence**

Is the systematic collection and analysis of publicly available information about consumers, competitors and developments in the market place. The goal of competitive marketing intelligence is to improve strategic decision making by understanding the consumer environment assessing and tracking competitors' actions and providing early warnings of opportunities and threats.

Marketing research: In addition to marketing intelligence information about general consumer competitor and marketplace happenings marketers often need formal studies that provide customer and market insights for specific marketing situations and decisions. Marketing research is the systematic design collection analysis and reporting data relevant to specific marketing situation facing an organization. It can be the process by which we gain insight into how markets work, a function in an organization, or it can refer to the

outcomes of research, such as a database of customer purchases or a report including recommendations.( Erik M. &Marko S. 2011)

**Analyzing and using marketing information**

Information gathered in internal database through competitive marketing intelligence and marketing research usually requires additional analysis. Once information has been processed and analyzed it must be made available to the right decision makers at the right time

Customer relationship management CRM is managing detailed information about individual customers and carefully managing customer touch points to maximize customer loyalty. CRM consists of sophisticated software and analytical tools that integrate customer information from all sources analyze in depth and apply the results to build stronger customer relationship. CRM on the other hand is Customer-oriented management approach that with the aid of customer-oriented information systems enables collection, presentation and use of customer knowledge. It also applies a comprehensive orientation of all corporate activities towards customer processes, thus pursing initiation, control and monitoring of individualized and long-term profitable customer relationships. (Michael K & Wulff P 2011)

Increasing digitalization and cross-linkage of all internal and business processes and those occurring between companies (in regard to E-business/E-commerce (Gersch 2010); in regard to diffusion rates (Infratest 2009) is possible only with better connectivity, cross-linkage and integration of the most varied operational information systems (Mertens 2009).

**Pricing decisions**

Price is the amount of money charged for a product or service. Price has been major factor affecting buyer choice. Smart managers treat pricing as a key strategic tool for creating and capturing customer value. Major considerations in setting price are customer perceptions of value, other internal and external considerations and product costs. (Philip Kotler & Gary Armstrong 2010)

**Pricing decisions in the Airline Industry**

Airlines offer a wide variety of different fares for travel on the same flight and same day. The available evidence indicates that airlines offer tickets for sale in conceptual series of bins or bucket where a bucket is defined by a series of ticket characteristics including class of travel refund ability advance purchase requirements travel & stay restrictions such as minimum and maximum stays and or Saturday stayover (American Economic Journal economic policy 2014).

Pricing decisions represent a rich set of opportunities to apply Information technology (IST) competitively. Ross 1984 contends that, "In most industrial companies major pricing opportunities are waiting to be realized, and that some of today's most profitable firms have turned pricing into a potent competitive weapon

Kotler 1984 notes that the most common mistakes made in pricing are:

1. Pricing that is too cost oriented.
2. Pricing that is not revised often enough to capitalize on market changes.
3. Pricing that is set independently of the rest of the marketing mix rather than as an intrinsic element of market-positioning strategy; and
4. Pricing that is not varied enough for different product items and market segments. As the earlier examples demonstrate, IST has potential for reducing these pricing problems, particularly in the areas noted above:

All-in-all, the questions of pricing response and pricing initiatives illustrate the enormous changes which have come about in the skills required to manage pricing in the airline industry. Today, it is a question of judging, quickly, the pricing decisions which need to be made, in the ever-present knowledge that mistakes will result in large financial losses. Successful Airlines Appreciate that the old days of regulated pricing have passed and will not return and accept that the central skills now required of pricing management are those related to pricing in price competitive markets. Develop and apply consistent guidelines about when a response should be made to a competitor’s pricing initiatives, and when the airline should take pricing initiative. (Stephen Shaw 2007)

### 2.1.2 Dimensions of Marketing information system

#### 2.1.2.1 Quality of data under marketing information system

As Li (1995) suggested, the entire rationale for a firm adopting MKIS is that the system assists members of the marketing team to make improved decisions or enables them to make decisions faster and more efficiently. Ramaswamy and Namakumari (2002) states about characteristics of good marketing information as reliability which describes the information marketing managers get should be trusted to do what is expected or has been promised. The quality of marketing management decision is linked with the quality, quantity, adequacy and speedy availability of data (Delone and Mclean, 1992).

MKIS design is important since the quality of marketing information system has been shown to affect the effectiveness of decision- making (Jobber and Fahy, 2006).

#### 2.1.2.2 Timeliness of data under marketing information system

Kumar (2004) states the characteristics that adds value to the quality of information: as Promptness in availability and updating: Decision is to be taken within a time frame and therefore. information must be available within the desired time frame. It is well said that 'information delayed is information denied'. Ramaswamy and Namakumari (2002) out lined Characteristics of good marketing information as timeliness which is receiving information quickly and on time.

#### 2.1.2.3 Accuracy of data under the marketing information system

Ramaswamy and Namakumari (2002) also out lined characteristics of good marketing information as accuracy which is the correctness or truthfulness of the information for their intended use.
Kumar (2004) outlined accuracy as characteristics that adds value to the quality of information as the degree of the absence of error in the process of generation of information.

#### 2.1.2.4 Selective retrieval of information under the marketing information system.

Fletcher (1995) indicated that. in today's global marketplace. the success of a company depends on how well it can gather. manage. and utilize pertinent information and integrate it into the marketing managers' decision. Information gathering (collecting) is concerned with locating information that is needed by or is relevant to the tasks of marketing management (Kotler and Armstrong. 2004). Marketing information collected in the above

way should be stored effectively in such a way that it is possible to retrieve back data. Marketing information has no value unless managers use it to make better marketing decisions. Too much information sometimes results in dumping if important information in the heap of details that may not be required at a particular point of time. Excessive detail of information results in information overload causing what is now being termed as information fatigue syndrome. (Kumar 2004)

#### 2.1.2.5 Active management role in the specification of needed information under MIS

Companies must study their manager's information needs and design marketing information system to meet these needs (Kotler, 1999).Kotler, P., (1988) also states Managers act as the nerve center for the organization, receiving the latest, most concrete, most up-to-date information and redistributing it to those who need to know.

As Li (1995) suggested, to be able compete today, business organizations must have MKIS. The entire rationale for a firm adopting MKIS is that the system assists members of the marketing team to make improved decisions or enables them to make decisions faster and more efficiently.

#### 2.1.2.6 Effective integration between subsystems along the marketing information System

Kelley and Gummesson (1999) in Gounaries et al. (2007) clearly put the significance of marketing information system as through the integration of pertinent and timely information, MKIS allows marketing executives to build a well-defined picture of customer's needs, which in turn allows them to perform better and meet their job requirements, particularly when it comes to such tasks as sales and customer service.

MKIS benefit the firm more when there is cooperation and willingness to share information between the departments of the organization. In the work of Brien and Stanform (1988), the need of cooperation for successful MKIS is well explained as it requires the coordinated effort of many departments and individuals including: top management, marketing management and sales management, new product development, marketing research group, system analysts and designers.

#### 2.1.2.7 Close relationship between the system designers and systems users under marketing information system

Philip Kotler & Gary Armstrong 2010) states, thus Companies must design effective marketing information systems that give managers the right information in the right form at the right time and help them to use this information to create customer value and stronger relationships. Marketing information system (MIS) begins and ends with information users marketing managers internal and external partners and others who need marketing information. First it interacts with these information users to assess information needs. Next it interacts with the marketing environment to develop needed information through internal company data bases, marketing intelligence activities and marketing research.

A good marketing information system balances the information users would like to have against what they really need and what is feasible to offer. The company begins by interviewing managers to find out what information they would like.

Identifying what data are needed for the customer-focused environment should begin with business drivers. (Olivia Parr Rud 2001)

#### 2.1.2.8 Sufficient awareness of marketing managers about mechanics of marketing information

Philip Kotler& Gary Armstrong (2010) states many companies build extensive internal data bases electronic collections of consumer and marketing information obtained from data sources. Marketing managers can readily access and work with information in the data base to identify marketing opportunities and problems, plan programs and evaluate performance.

#### 2.1.2.9 Cost of effective Marketing information system

(Kotler and Armstrong, 2008) states a good marketing information system balances the information users would like to have against what they really need and what is feasible to offer.

According to Murdick and Ross,(1977)Cost is limiting factor for obtaining information. A small non-scientific sample for determining market potential costs for less than a probability sample survey. Even internal information from company accounting records may be

extremely costly but to gather, store, process and retrieve it is essential. The marketing manager must constantly trade off the value of information against its cost. Manager must evaluate the possible gain from the information or the possible loss from it absence.

**Pricing decisions**

According to Bolt (2002). marketers should get information while select competitive price policies among cost plus, average pricing, marginal pricing. premium pricing. skimming market segment pricing and penetrating pricing. Evans and Berman (2003) also described that before a price is set for the product, business firms should get information whether customers are price shoppers, brand-loyal customers feature shoppers and convenient shoppers.

## 2.2 Empirical review

Several studies over the past years covered effects of marketing information system on pricing decisions of marketing managers. To formulate the problem scientifically, and to point out the importance of undertaking this study, it is essential to mention researches undertaken in this area. Although the review involved a large number of studies, only a few studies which has direct and indirect bearing in the present study has been summarized.

Several researchers relate the use of marketing information system in decision making of managers as follows.

Marketing information system is a conceptual system. This conceptual system can be viewed in a variety of ways. Kotler [1966], Montgomery and Urban [1977), and Crissy and Mossman [1977] recognized its decision-support capabilities, whereas King and Cleland [1974] saw it as a way to engage in strategic planning. Brein and Stafford described how it could be used in developing marketing programs [1968]. All of these descriptions envisioned the Marketing information system (MKIS) as an information processor, gathering data and information from the marketing environment, processing those data and information, and providing the results to marketing managers in the form of management information. The managers would act on the information and make decisions that affect the environment as well as the firm's operations (McLeod 1990). The MKIS is therefore a

closed-loop system with the information processor and marketing managers serving as the control mechanism.

The Need and development for Marketing Information Systems is also covered by different researchers and scholars as below.

* It is not at all surprising that at this time there is a good deal of discussion and development of marketing information systems. Long-term trends, both in marketing and in business in general, are intersecting in the present time to crystallize the systems activity which is presently taking place. Some of these trends are outlined below:
* The increased complexity of business calls for more data and for better performance. Markets are no longer local but are national in scope. The organization that previously may have had firm control of its business in a limited area, now finds itself on uncertain grounds when competing with similar enterprises in the Midwest, on the West coast, and in the South.
* Product life cycles have become far shorter- thus requiring more skillful management in order to extract a profit during the reduced time available.
* The marketing concept, in which the various marketing functions of the enterprise are organized under one individual the marketing manager, Since one manager now more than ever before has the responsibility for integrating a far-ranging variety of marketing activities, he needs a good information so that this can be done effectively.( D. Maynard Phelps and J. Howard Westing, Marketing Management (Homewood, Illinois: Richard D. Irwin, Inc., 1968).

Marketing decision makers are confronted with increasing amounts of information as a result of what has been called the "Marketing Information Revolution" (Blattberg et al. 1994). Decision makers should benefit from the availability of more and better data by incorporating the information derived from these data into their decision process (Blattberg and Hoch 1990).
Moreover, scholars have also pointed out the use of marketing information system while setting prices as stated below.
Price setters that are presently too cost oriented, by using IST to improve the attributes of demand data, may adopt a more proactive pricing strategy (Ross 1984) or improve the

precision of prices. Price setters that are currently not revising prices often enough can use IST to assist in making more timely price changes, thus helping the firm to stay competitive. If prices are not varied enough, improving information on market-segment demand intensities, or improving feed- back on price structuring can permit price structuring which increase volume while hopefully avoiding competitor. (Cynthia Mathis Breath and Blake Ives 1986).

Moreover, pricing decisions instead of product decisions are taking the lead in using the MKIS services today. Marketers have been taking advantage of developments in technology and methodology to increase the level of decision support since the 1960s. However, there is a lack of satisfaction with the MKIS among marketers today. Many firms are not linking their marketing plans with their companywide information system plans to create competitive advantages. Under today's intense global competition, these situations must be rectified as soon as possible. Otherwise, they will definitely create pressures that could either increase the role of the marketing information system in these firms or eliminate it entirely. (Journal of management information system (1993)

When we come to the Airline Industry the unique need of marketing information system in decision making/pricing decision of the airline Industry has been covered as follows. Airlines offer a wide variety of different fares for travel on the same flight and same day. The available evidence indicates that airlines offer tickets for sale in conceptual series of bins or bucket where a bucket is defined by a series of ticket characteristics including class of travel refund ability advance purchase requirements travel & stay restrictions such as minimum and maximum stays and or Saturday stayover(American Economic Journal economic policy 2014)

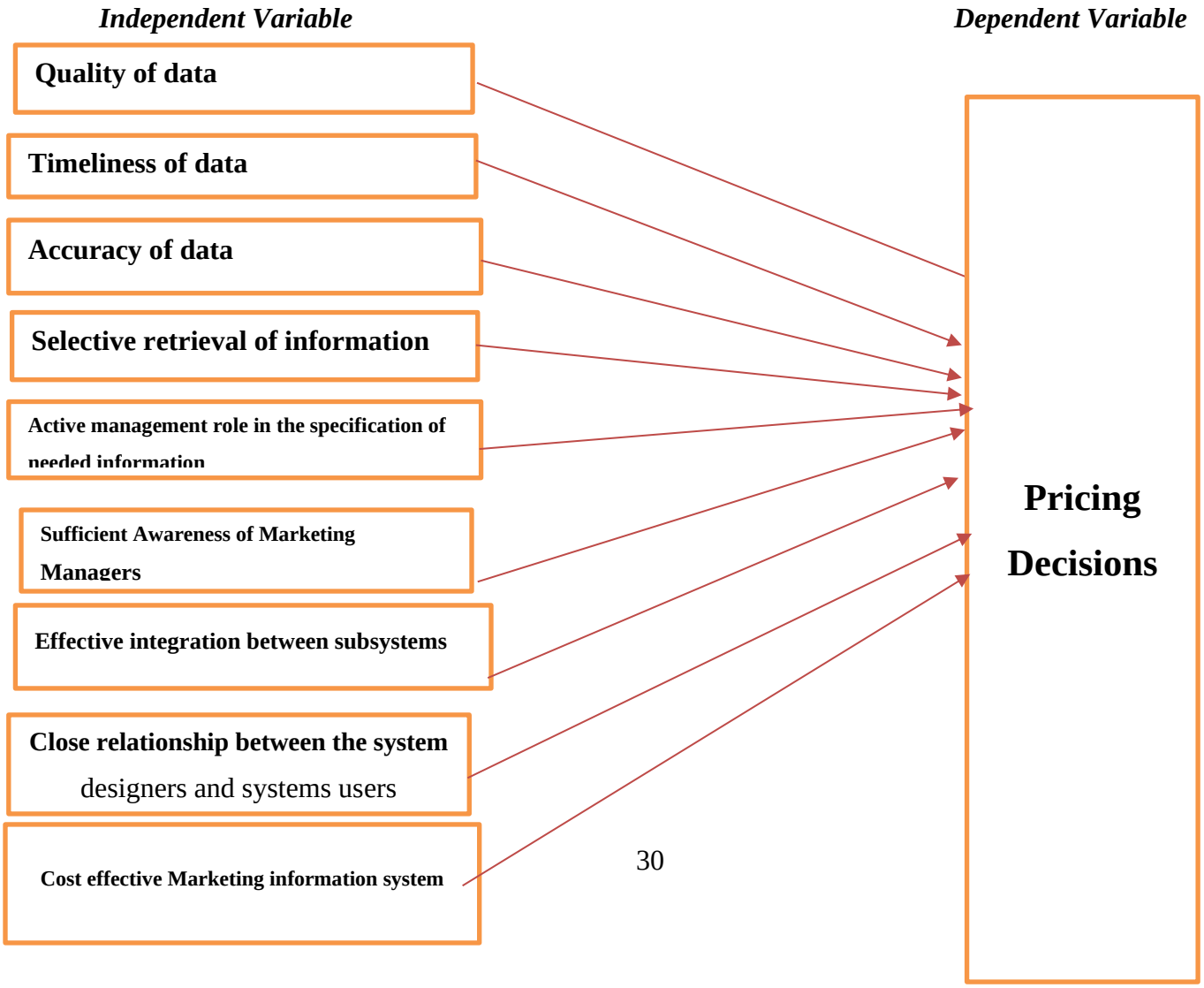
In considering the broader issue of communications within the airline industry, it is important to begin by reviewing unique characteristics of the airline industry that distinguish it many other industries. First, airlines sell other airlines' tickets. Although less common than it used to be, airlines still offer to sell their competitors' product - a seat on a particular flight - typically to complete a round-at a convenient time or to provide a connection to a city the first does not serve. This means airlines must have access to each other's schedules,

fares, and availability on a current basis. Thus, the airline industry has a practice that is highly unusual - competitors selling each other's products.

Second, airlines sell the majority of their tickets who serve as the agents of all airlines. That means have access to the schedules, fares, and availability current basis. As a result, computerized information to the airline industry, the Airline Tariff Publishing serves as a central clearing house to collect, organize, airline fares electronically. More than 170,000 fare daily through ATP for air travel on over 50,000 on its absence, airlines would have no way to distribute information efficiently (Antitrust Law Journal, Vol. 61, No. 2 (Winter 1993)

### 2.3 Conceptual Framework

The review of the literature has also facilitated the development of the conceptual framework for the study as shown below:



**Quality of data under marketing information system**

- The Quality of data affects marketing information system. If data quality is compromised overall actions taken will be affected as garbage in garbage out.

**$H_1$**: Quality of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Timeliness of data /up-to-date data under marketing information system**

- In today's dynamic marketing environment immediate marketing decision may be needed to be competitive. Hence up-to date and timely data is vital for the correct and timely decision.

**H2:** Timeliness of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Accurate /more certain information base under the marketing information system**

- The more accurate information base is found under the marketing information system the more precise decision can be made

**H3** Accuracy of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Selective retrieval of information/refined information under the marketing information system.**

- Marketing information system may provide us with load of information. If marketing managers under Ethiopian Airlines couldn't make use of or provided with only refined/ selective information marketing information system may not add value

**H4**Selective retrieval of information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Active management role in the specification of needed information under MIS**

- As the information from marketing information system is used by Ethiopian Airlines management for decision making, management should clearly specify its need of information.

**H5** Active management role in the specification of needed information under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Effective integration between subsystems along the marketing information system**

- Ethiopian Airlines may have different information from different systems. This has to be integrated with the marketing information system to get the desired comprehensive information for decision making.

**H6** Effective integration between subsystems along the marketing information system under Ethiopian Airlines has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Close relationship between the system designers and systems users under marketing information system**

- Ethiopian Airlines has acquired different systems and also has in-house built systems which are useful for decision making. Hence system designs should closely work with system users to get the desired system.

**H7**Close relationship between the system designers and systems users under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Sufficient awareness of marketing managers about mechanics of marketing information**

- Marketing managers under the Ethiopian Airlines should be aware of the basic practices of marketing information system for better use of the system on their decision making.

**H8**Sufficient awareness of marketing managers about mechanics of marketing information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

**Cost of effective Marketing information system**

Benefits gained from marketing information system should out way the costs incurred.

**H9**: cost effective marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.

# CHAPTER THREE

## RESEARCH DESGIN AND METHODOLOGY

The purpose of this section is to highlight the overall methodological considerations of the thesis. The study aims to meet two objectives, to examine how marketing information system affects pricing decisions of the Airline Industry i.e taking instance of Ethiopian Airlines. To review impacts of pricing decisions on the Airline Industry

### 3.1 Research Approach

The research approach is Quantitative one.

Mixed methods research is an approach to an inquiry that combines or associates both quantitative and qualitative forms. It involves philosophical assumptions the use of qualitative and quantitative approaches and the mixing of both approaches in the study (Creswall& Plano Clark 2007)

Quantitative research approach is a means of testing objective theories by examining the relationship among variables. These variables is turn can be measured typically on instruments so that numbered data can be analyzed using statistical procedures. (Creswell 2008). Hence as the research has different variables to be tested through qualifies the quantitative research approach.

Qualitative research on the other hand is a means of exploring and understanding the meaning individuals or groups ascribe to social or human problem. The process of research involves emerging questions and procedures data typically collected in the participants setting, data analysis inductively building from particulars to general themes and the researcher making interpretation of the meaning of data (Cresswell 2007).Accordingly, as the research also uses collecting data from individuals through survey it qualifies for the research approach qualitative research.

### 3.2 Research Design

Research design is a plan for a study that provides specification of procedures to be followed by the researcher in order to achieve the research objective, as well as, to test the hypothesis. (McDaniel and Gates (1999). Similarly, many researchers (e.g., Churchill and Iacabucci, 2005) call it a blueprint for a research to be followed in order to successfully implement the research. The core purpose of a research design is to ensure that it clearly answers the research objectives from the generated data in a confident and convincing manner (De Vaus, 2001).

The research design is mainly explanatory type of study. It elaborates and enriches a theory's explanations regarding effects of marketing information system on pricing decisions. It is also explanatory because it builds and elaborates a theory's predictions or principle. Theory about marketing information system and it's importance in pricing decisions is tested by reviewing actual implementation of marketing information system in the Airline Industry.

The study will assess effects of marketing information system on pricing decisions of the Airline Industry. Accordingly, the study will use primary data, survey /questionnaire to collect information and test the hypothesis as well. The research may also collect information regarding different marketing information systems used in the Airline Industry by using company systems. The research will use Airline staff and collect information from them by distributing questionnaire.

### 3.3 Target Population, Sampling Technique, and Sample size

Target population will be staff in an airline (Ethiopian Airlines) who are involved as well as affected by pricing decisions.

### Sampling technique

Sampling refers to the process of selecting a group (sample) from a defined population with the intent that the sample will accurately represent that population (Gall et al 1996).

In the selection of the sample, a simple random sampling technique will be used as the population is well defined and specified.

**Sample size**

The sample size for this study is determined with the use of Topman formula as presented below (Daniel WW, 1999). This formula is used when the given population is large.

$$n = \frac{Z^2 . P. Q}{(E)^2}$$

Where:

**n** = The sample size/ required sample size

**Z** = Degree of confidence (i.e. 1.96)

**e**= The level of precision (Sampling error that can be tolerated which is-5%).

P=Probability of positive response (0.5)

Q=Probability of negative response (0.5)

$n = (1.96)^2 x 0.5 x 0.5 / (0.05)^2$

n= 3.8416x0.5x 0.50.0025

n= 384.16 ≈384 respondents

Therefore, a total of 384 respondents were selected to gather relevant data to complete the research work.

Respondents may be from Managers of pricing department, Area managers in outstation Area offices of Ethiopian Airlines. Staff from pricing and revenue management and digital sales may also involve as sample respondents.

### 3.4 Research Instrument and Data Collection Method

The field work will start with a set of questions through questionnaire/survey designed based on the requirement of the research. The questions will be based on a review of the literature and basic pricing concepts of Airline Industry. The questionnaire will have four parts. The initial part of the questionnaire requests respondents to provide their background information. The second part respondents will be requested about applicability/existence of marketing information system. In the third section respondents will also be requested about pricing decisions in the airline Industry. The fourth section will demand respondents about

effects of marketing information system in pricing decisions of the airline Industry. The fifth section requests respondents about marketing information system integration.

The following method will be followed to collect information through questionnaire:

First, the researcher will contact the selected respondents in person /by email and ask them to participate in the survey.
Finally, willing respondents will fill the questionnaire in Ethiopian Airlines enterprise.

### 3.5 Method of Data Analysis

Qualitative Interview questions and responses are typically tape recorded and then transcribed verbatim before analysis is begun. Qualitative researchers often categorize data into patterns as the primary basis for organizing and reporting results. Due to the large amount of data that can be generated in qualitative research, a data reduction process must be used to aid analysis. This procedure includes organizing the data, identifying emerging themes, categories, and patterns, and testing hypotheses against the data.

Quantitative: - Statistical methods are used to analyze quantitative data. We will apply both descriptive and inferential statistics. Statistical analysis involves both descriptive and inferential analysis. For inferential statistics, we will use statistical techniques such as t-test, correlation analysis, regression analysis, Chi-square, factor analysis, ANOVA, cluster analysis, discriminate analysis etc.

## 3.6 Reliability and Validity

### 3.6.1Reliability

As we use data base related with the Airline Industry & Ethiopian airlines staff themselves the measuring instrument truly measures what it was intended to measure or how truthful the research results are. To measure the validity of results, we consider the theory and the measure

to ensure reliability and validity, this study will use methods such as self-administration questionnaire. Then the questionnaire will be pre-tested based on pilot study, to guarantee a common understating of questions among respondents.

### 3.6.2 Validity

Refers to the extent to which the concept one wishes to measure is actually being measured by a particular scale or index. According to Kothari (2004), validity aims at establishing the results which are linked with the condition. It is concerned with the extent that the scale accurately represents the construct of interest. In order to assure the validity of the measurement instrument of the study will be conducted based on the literally accepted conceptual framework that clearly indicate the theoretical construct and associated with the measurements valid to show effects of marketing information system (independent variables) on pricing decisions (dependent variable).

## 3.7 Research Ethics

All participants are notified that their names would not be required, and the data collected will be kept confidential to get better quality data. They will also be informed the information they provide is only used for the study purpose. Moreover, only relevant responses will be used in the study.

# CHAPTER FOUR

# DATA ANALYSIS AND DISCUSSION OF RESULTS

This chapter covers data analysis presentation and interpretation of data collected through primary data. The analysis will also include related literature covered on the topic using proper tools and models

Questionnaire was distributed to 384 staff members of Ethiopian airlines both management and non-management, which are users of marketing information system and/or involved on pricing decisions, through email. Staff member under study includes staff of pricing department, Digital sales and Sales office in Addis Ababa and outstation office (both management and non-management). From the total distributed questionnaires 310 questionnaires were managed to be collected while 26 were not properly filled. Accordingly, 284 questionnaires were used for the analysis.

This chapter also presents reliability analysis, discussion of results, descriptive analysis, regression analysis, correlation analysis between the variables of the topic under study and test of hypothesis.

## 2.3 Reliability Analysis

Reliability is the degree to which what we measure is free from random error and therefore relates to situation where Xr is zero (Eric M. &Marco S. 2011). Reliability refers to the confidence we can place on the measuring instrument to give us the same numeric value when the measurement is repeated on the same object (Gaur & Gaur, 2009). In-order to examine internal consistency exhibited by each construct in the model, analysis of Cronbach's alpha is conducted. Alpha value greater than 0.65 is acceptable to indicate reliability of construct (Nunally 1978)

As indicated below Cronbacha's Alpha value is greater than 0.65 which is acceptable to indicate reliability

**Table 4.1 Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .845 | 10 |

| | Cronbach's Alpha |
|---|---|
| AwarenessMIS3 | .904 |
| Pricing decision2 | .804 |
| Cost Effectivesness1 | .755 |
| Quality data2 | .856 |
| Timeliness4 | .852 |
| Accuracy1 | .864 |
| Selective retrieval1 | .834 |
| Mgmt role2 | .876 |
| Integ Sys4 | .854 |
| Relationship sysdes3 | .851 |

Source: Own Survey 2020

## 2.4 Descriptive Analysis of Survey outcome

### 2.4.1 Sample size and Respondents profile

Questionnaire was distributed to 384 staff member of Ethiopian airlines both management and non-management, which are users of marketing information system and/or involved on pricing decisions, through email. Staff member under study includes staff of pricing department, Digital sales and Sales office in Addis Ababa and outstation office (both management and non-management). From the total distributed questionnaires 310 questionnaires were managed to be collected while 26 were not properly filled. Accordingly, 284 questionnaires were used for the analysis.

Out of the total 284 respondents 158 or 56% are male while 126 or 44% are female.

**Table 4.2 Gender**

| | | Frequency | Percent |
|---|---|---|---|
| Valid | **Male** | 158 | 55.6 |
| | **Female** | 126 | 44.4 |
| | **Total** | 284 | 100.0 |

**Source:** Own Survey 2020

When we come to age category out the total 284 respondents, 42% are aged between 25-30 years, 30% are aged between 31-40, while 17% are between the age of 41-50 and 11% account for 51-60 age group. This shows that respondents constitute active age group who can actively involve in current developments of marketing information system.

**Table 4.3 Age**

| | | Frequency | Percent |
|---|---|---|---|
| Valid | 25-30 | 120 | 42.3 |
| | 31-40 | 85 | 29.9 |
| | 41-50 | 49 | 17.3 |
| | 51-60 | 30 | 10.6 |
| | Total | 284 | 100.0 |

**Source**: Own Survey 2020

When we see category of Occupational position in the company, out of the total 284 respondents 66% are with non-managerial position while 34% are with managerial position. Though decision making is made by managerial position most of the time, non-managerial position staff also plays great role in the use marketing information system and execute their own decisions. Reply from staff with managerial position sufficiently represents decision making questions.

**Table 4.4 Position**

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Managerial | 96 | 33.8 |
| | Non-Managerial | 188 | 66.2 |
| | Total | 284 | 100.0 |

**Source**: Own survey 2020

Regarding Education level of respondents, out of the total 284 respondents, 8% are diploma holders while 88% are BA holders and 4% are Post graduate. This implies most respondents are BA holders and post graduate which have sufficient knowledge to reply the survey.

**Table 4.5 Educational Background**

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Diploma | 23 | 8.1 |
| | BA Degree | 250 | 88.0 |
| | Post Graduate | 11 | 3.9 |
| | Total | 284 | 100.0 |

**Source**: Own survey 2020

When we come to type of occupation of respondents, out of the total 284 respondents, 28% are pricing staff, 40% are Digital staff and 32% are sales staff. All the occupation type has great role on the survey as they represent departments which largely use marketing information system.

**Table 4.6 Department**

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Pricing staff | 80 | 28.2 |
| | Digital Sales | 114 | 40.1 |
| | Sales Staff | 90 | 31.7 |
| | Total | 284 | 100.0 |

**Source**: Own survey 2020

### 2.4.2 Analysis of marketing information system on pricing decisions

#### 4.2.2.1 Quality of data under marketing information system

As indicated in the below table 75% of the respondents strongly agreed that quality of data provided by marketing information system has positive impact on pricing decisions while 21% also agreed quality of data has positive impact on pricing decisions. This variable has also mean value of 4.70 which shows that quality of data provided by marketing information system has significant effect on pricing decisions. Nevertheless, though 42% strongly agreed and 21% agree that quality of analysis of data and extent to which databases are linked is reliable, 22% strongly disagree on same. The variable has also mean value 3.57 which shows that though majority agreed on the analysis of data and extent to which data bases are linked there is still gap.

**Table 4.7 Summary of survey result on Quality of data**

| | **Variables to evaluate** | **Rating results in percentage** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QD** | **Quality of data provided by the marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Stddev** |
| QD1 | Quality of analysis of data and extent to which databases are linked is reliable. | 42% | 21% | 11% | 4% | 22% | 3.57 | 1.583 |
| QD2 | Quality of data provided by the marketing information system has positive impact on pricing decisions | 75% | 21% | 4% | | | 4.70 | 0.542 |

**Source**: Own Survey 2020

#### 4.2.2.2 Timeliness of data by marketing information system

As indicated below majority of the respondents strongly agree that data is timely generated from marketing information system and there is faster and easier access to marketing information system. The variables have mean value 4.03 and 4.61respectively which supports overall timeliness and accessibility of data under MIS..

Moreover, some respondents disagree that analyzed data is found from marketing information system timely. The variable has mean value of 3.47 which shows absence of analyzed data which affect timeliness of data under marketing information system which in turn affect pricing decision.

Nevertheless, there are some respondents with mean value of 2.69 who disagree that the frequency of information for different area varies according to operational need.

Majority of respondents with mean value of 4.69, replied timeliness of data by marketing information system has positive impact on pricing decisions. Hence, it can be concluded that management can better use marketing information system on pricing decisions by improving its timeliness and varying frequency of information for various needs.

**Table 4.8 Summary of survey result on Timeliness of data**

| | **Variables to Evaluate** | **Rating results in percentage** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **TD** | **Timeliness of data by marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| **TD1** | Data is timely generated from marketing information system for pricing decisions | 56% | 18% | 11% | 4% | 12% | 4.03 | 1.369 |
| **TD2** | Analyzed data is found from marketing information system timely | 37% | **28%** | | **16%** | **19%** | 3.47 | 1.571 |
| **TD3** | There is faster and easier access to marketing information system | **67%** | **28%** | **5%** | | | 4.61 | .587 |
| **TD4** | The frequency of information for different areas varies according to operational need. | **24%** | **10%** | **13%** | **18%** | **35%** | 2.70 | 1.599 |
| **TD5** | Timeliness of data by marketing information system has positively impacted my pricing decisions. | 75% | 19% | 6% | | | 4.69 | .586 |

**Source**: Own Survey 2020

#### 4.2.2.3 Accuracy of data under marketing information system

As indicated below, some respondents disagree that data from marketing information system is free from error. The variable has mean value of 2.82

Nevertheless, majority of respondents, with mean value 4.3, agree that data under marketing information system is free from bias. Majority of respondents, with mean value of 4.77, also agreed that accuracy of data under marketing information system has positive impact on pricing decisions. Hence, if data under marketing information system is free from error it can improve pricing decisions.

**Table 4.9 Summary of survey result on Accuracy of data**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AD** | **Accuracy of data by marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Total** | **StdDev** |
| AD1 | Accuracy of data by marketing information system has positive impact on my pricing decisions. | 79% | **20%** | **2%** | | | 4.77 | .463 |
| AD2 | Data from marketing information system is free from error. | 20% | **18%** | **8%** | **29%** | **24%** | 2.82 | 1.491 |
| AD3 | Data under the marketing information system is free from bias | **86%** | **12%** | **2%** | | | 4.83 | .425 |

**Source**: Own survey 2020

#### 4.2.2.4 Selective retrieval of information from marketing information system

As tabulated below, majority of the respondents, with mean value of 4.41, agreed that marketing information system presents relevant and wanted information for pricing decisions, while majority of respondents, with mean value of 4.02, has also agreed marketing data is processed, classified, edited, analyzed interpreted and presented in easily understandable form. Moreover, majority of the respondents, with mean value 4.86, has also agreed selective retrieval of information has significant effect on pricing decisions.

**Table 4.10 Summary of survey result on Selective retrieval of information from MIS**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SR | **Selective retrieval of information from marketing information system.** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std. Deviation** |
| SR1 | Marketing Information system presents relevant wanted information for pricing decisions | 69% | **13%** | **8%** | **10%** | | 4.41 | .993 |
| SR2 | Marketing data is processed classified, edited, analyzed interpreted and presented in easily understandable form | 52% | **26%** | | **13%** | **8%** | 4.02 | 1.328 |
| SR3 | Selective retrieval of information has significant impact on pricing decisions. | **90%** | **5%** | **4%** | | | 4.86 | .451 |

**Source**: Own Survey 2020

### 4.2.2.5Management role in the specification of needed information under MIS

Most respondents agreed that management has active role in the specification of needed information while majority of respondents also agreed MIS interacts with managers to assess their information needs. The variables have mean value 4.22 and 4.55 respectively which shows active management role on MIS fulfilling the needs of MIS user. Moreover, majority of respondents, with mean value of4.85, agreed that active management role in the specification of needed information under marketing information system has positive effect on pricing decisions. However, some respondents disagree that marketing information system begins and ends with marketing managers. This variable has the lowest mean value of 3.34. Hence, we can conclude that there should be effective application to ensure MIS begins and ends with marketing managers to get better use of marketing information system on pricing decisions.

**Table 4.11 Summary of survey result Management role under MIS**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MR** | **Management role in the specification of needed information under marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| MR1 | Management has active role in the specification of needed information under marketing information system | 69% | **5%** | **4%** | **21%** | | 4.22 | 1.245 |
| MR2 | Active management role in the specification of needed information under marketing information system has a positive effect on pricing decision. | 88% | **11%** | | **1%** | | 4.85 | .436 |
| MR3 | Marketing information system begins and ends with marketing managers. | **30%** | **24%** | | **42%** | **4%** | 3.34 | 1.381 |
| MR4 | Marketing information system interacts with managers to assess their information needs. | 59% | 31% | | 8% | 3% | 4.35 | 1.017 |

**Source**: Own Survey 2020

### 4.2.2.6Integration between subsystems along the marketing information system

Most respondents agree that marketing information system is integrated along other systems; data is being generated from formal information system and is measurable, which are variables with mean value 3.84 and 4.67. Nevertheless, some respondents disagree that marketing information system is comprehensive and has complete information. The variable is with lower mean value of 3.81 which shows that MIS has no complete information or is not comprehensive. Moreover, some respondents disagree that there is effective integration between subsystems along the marketing information system which positively affected pricing decisions. The variable has the lowest mean value of 2.96 which shows there is a gap on the effective integration between subsystems.

Hence, we can conclude that by improving marketing information system to be comprehensive, have complete information, and effective integration between subsystems, positive influence can be created on pricing decisions.

**Table 4.12Summary of Survey result on integration between subsystems**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **IS** | **Integration between subsystems along the marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| IS1 | There is effective integration between subsystems along the marketing information system which positively affected pricing decisions | 24% | **20%** | **4%** | **34%** | **19%** | 2.96 | 1.500 |
| IS2 | Marketing information system is integrated along other systems | 45% | **24%** | | **31%** | | 3.84 | 1.289 |
| IS3 | Marketing information system is comprehensive and has complete information. | **55%** | **18%** | | **8%** | **19%** | 3.81 | 1.602 |
| IS4 | Data is being generated from formal information system and is measurable | 70% | 27% | 3% | | | 4.67 | .528 |

**Source**: Own Survey 2020

### 4.2.2.7 Relationship between system designer and system users

Most respondents agreed that there is consultancy to end users before marketing information system is designed and implemented. The variable has highest mean value of 4.62 which shows existence of consultancy to end users before system implementation. However, some respondents disagree that there is close relationship between system designers and system users under MIS and careful appraisal and analysis on decision making requirement of marketing management. The variables have lower mean value of 2.77 and 2.40 respectively which shows a gap on relationship between system designers and system users as well as lack of careful appraisal on decision making requirement. Moreover, some respondents disagree that there is close relationship between system designers and system users positively affecting pricing decisions. The variable has also mean value of 2.69 which is lower. Hence, there should be close relationship between system designers and

system users, careful appraisal and analysis on decision making requirement of marketing management to get the best out of MIS on pricing decisions.

**Table 4.13 Summary of Survey result on Relationship system users and designers.**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **RS** | **Relationship between system designers and system users.** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| RS1 | There is close relationship between system designers and system users under marketing information system | 22% | **20%** | | **27%** | **30%** | 2.77 | 1.588 |
| RS2 | There is consultancy to end users before marketing information system is designed and implemented. | 80% | **11%** | | **9%** | | 4.62 | .888 |
| RS3 | There is careful appraisal and analysis on the decision-making requirement of marketing management. | **13%** | **19%** | | **31%** | **37%** | 2.40 | 1.471 |
| RS4 | Close relationship between system designers and system users positively affected pricing decisions. | 17% | 21% | | 39% | 23% | 2.69 | 1.452 |

**Source**: Own Survey 2020

### 4.2.2.8 Awareness about mechanics of MIS

Some respondents disagree that there is sufficient awareness about mechanics of marketing information system and managers/users can independently retrieve data analyze and interpret information to meet individual requirements. The variables have mean value of 3.11 and 3.13 respectively which shows some gap on awareness of marketing information system. Moreover, some respondents also disagree that there is enough user orientation about marketing information system. The variable has lowest mean value of 2.77 which shows absence of enough user orientation on marketing information system. However, most respondents agree that sufficient awareness about mechanics of marketing information system positively affect pricing decisions. The variable has the

highest mean value of 4.77. Hence, sufficient awareness on MIS has to be created to assist on better pricing decisions by use of MIS.

**Table 4.14 Summary of Survey result on Awareness about Mechanics of MIS**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AM** | **Awareness about mechanics of marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Total** | **StdDev** |
| AM1 | There is sufficient awareness about mechanics of marketing information system among users/managers | 27% | **24%** | | **31%** | **18%** | 3.11 | 1.539 |
| AM2 | Managers/Users can independently retrieve data analyze and interpret information to meet individual requirements | 29% | **22%** | **3%** | **26%** | **20%** | 3.13 | 1.562 |
| AM3 | Sufficient awareness about mechanics of marketing information system positively affect pricing decisions | **80%** | **18%** | **3%** | | | 4.77 | .485 |
| AM4 | There is enough user orientation about marketing information system | 31% | 8% | 4% | 15% | 42% | 2.70 | 1.752 |

**Source**: Own Survey 2020

### 4.2.2.9 Cost effectiveness of marketing information system

Some respondents disagree that under the marketing information system task of information is evaluated against its cost and possible gain from the information or the possible loss from its absence is evaluated. The variable has also mean value of 2.82 which shows cost benefit analysis is not being done exhaustively. Moreover, some respondents disagree that management constantly trade off the value of information against its cost. The variable has the lowest mean value of 2.66 which shows there is a gap on constantly assessing the value of information against its cost. Nevertheless, most respondents agree that there is cost effective marketing information system positively impacting pricing decisions. The variable has the highest mean value of 4.04 which

shows significant impact of MIS on pricing decisions. Hence, management should constantly trade of the value of information against its cost to get optimal use of MIS on pricing decisions.

**Table 4.15Summary of Survey result on Cost Effectiveness of MIS**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **CE** | **Cost effectiveness of marketing information system** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Total** | **Std Dev** |
| CE1 | Under the marketing information system, the possible gain from the information or the possible loss from its absence is evaluated | 24% | **20%** | | **25%** | **31%** | 2.82 | 1.620 |
| CE2 | There is cost effective marketing information system positively impacting pricing decisions | 43% | **39%** | **2%** | **9%** | **7%** | 4.04 | 1.187 |
| CE3 | Under the marketing information system, task of information is evaluated against its reliability cost | **20%** | **22%** | **3%** | **26%** | **29%** | 2.79 | 1.551 |
| CE4 | Management constantly trade off the value of information against its cost. | 17% | 23% | | 29% | 31% | 2.66 | 1.527 |

**Source**: Own Survey 2020

### 4.2.2.10 Pricing decisions

Most respondents agree that pricing is strategic tool for creating and capturing customer value and used as key battleground for competitive advantage. The variables have highest mean value of 4.57 and 4.58 respectively indicating the importance of pricing decision on business success. Most respondents have also agreed prices are revised often and price is also varied for different product items and marketing segment. The variables have also mean value of 4.18 and 4.54 which shows variety of pricing decisions. This shows that the importance and impact of pricing decision in the industry.

**Table 4.16 Summary of Survey result on Pricing decisions**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PD** | **Pricing decisions** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| PD1 | Pricing is key strategic tool for creating and capturing customer value | 82% | **10%** | **8%** | | | 4.57 | 1.124 |
| PD2 | Prices are revised often | 52% | **31%** | | **17%** | | 4.18 | 1.081 |
| PD3 | Price is varied enough for different product items and marketing segment | **70%** | **22%** | | **8%** | | 4.54 | .859 |
| PD4 | Pricing is used as key battleground for competitive advantage | 79% | 14% | 7% | | | 4.58 | 1.045 |

**Source**: Own Survey 2020

### 4.2.2.11 Marketing information system

Most respondents agree that MIS is used to develop customer insight marketing decision and manage customer relationship and it is developed based on users need. The variables have mean value of 4.65, 4.78 respectively indicating the importance of MIS on customer management. Most respondents have also agreed that MIS is used to identify marketing opportunities problems, plan programs, evaluate performance and it has competitive marketing intelligence to improve strategic decision making by understanding the consumer environment assessing and tracking competitor actions and providing early warning of opportunities and threats. The variables have mean value of4.62 and 4.72 respectively showing highest contribution of MIS on decision making.

**Table 4.17Summary of Survey result on MIS**

| No. | Variables to Evaluate | Rating results in percentage | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MS** | **Marketing information system General questions** | **Strongly agree** | **Agree** | **Unsure** | **Disagree** | **Strongly disagree** | **Mean** | **Std Dev** |
| MS1 | Marketing information system is used to develop customer insight marketing decision and manage customer relationship | 79% | **16%** | **5%** | | | 4.65 | .882 |
| MS2 | Marketing information system is developed based on users need | 82% | **14%** | **4%** | | | 4.78 | .501 |
| MS3 | MIS is used to identify marketing opportunities, problems, plan programs and evaluate performance | **76%** | **19%** | **5%** | | | 4.62 | .912 |
| MS4 | MIS has competitive marketing intelligence to improve strategic decision making by understanding the consumer environment assessing and tracking competitor actions and providing early warning of opportunities and threats. | 80% | 12% | 8% | | | 4.72 | .603 |

**Source**: Own Survey 2020

## 4.3 Test of statistical Assumptions

### 4.3.1 Normality of data test

According to Andy Field (2006), in order to undertake valid multiple linear regression, there are certain important assumptions that needs to be fulfilled. These which one of it is Normality of the distribution; We can check the normality of a distribution by using the skewness and kurtosis. If the skewness and kurtosis statistics for all variables is within the acceptable range (-1.96 to +1.96) then it is considered normal.

**Table 4.18Normality Test**

| Descriptive Statistics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Sum | Mean | Std. Deviation | Skewness | | Kurtosis | |
| | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Quality data2 | 284 | 1336 | 4.70 | .542 | -1.673 | .145 | 1.884 | .288 |
| Timeliness5 | 284 | 1331 | 4.69 | .586 | -1.717 | .145 | 1.857 | .288 |
| Accuracy2 | 284 | 802 | 2.82 | 1.491 | .240 | .145 | -1.433 | .288 |
| Selective retrieval1 | 284 | 1253 | 4.41 | .993 | -1.490 | .145 | .812 | .288 |
| Integ Sys1 | 284 | 841 | 2.96 | 1.500 | .161 | .145 | -1.529 | .288 |
| Mgmt role1 | 284 | 1198 | 4.22 | 1.245 | -1.096 | .145 | -.661 | .288 |
| Relationship sysdes4 | 284 | 765 | 2.69 | 1.452 | .427 | .145 | -1.333 | .288 |
| AwarenessMIS1 | 284 | 884 | 3.11 | 1.539 | -.038 | .145 | -1.617 | .288 |
| Cost Effectivesness2 | 284 | 1147 | 4.04 | 1.187 | -1.365 | .145 | .903 | .288 |
| Pricing decision2 | 284 | 1188 | 4.18 | 1.081 | -1.182 | .145 | .028 | .288 |
| Valid N (listwise) | 284 | | | | | | | |

**Source:** Own Survey 2020

### 4.3.2 Correlation test

A correlation analysis is used to measure the extent of the relationship between variables (x and y). The measurement used for this purpose is the correlation coefficient. This is a numerical value ranging-1 to +1 that measures the strength of the linear relationship between two quantitative variables.

Dancey and Reidy (2004), state that a correlation result which is 0 indicates zero correlation, a result which is between 0.1 and 0.3 indicates a weak correlation among variables, a result which is between 0.4 and 0.6 shows a moderate correlation, a result between 0.7 and 0.9 indicates a strong correlation among variables, while a result which is equal to 1 indicates perfect correlation.

To analyze the relationship that exists between them, Karl Pearson's Coefficient of Correlation (Pearson Product Moment Correlation Coefficient) was used. The study has

used Pearson correlation coefficient to test the preposition to check the existence of significant relationship among the dimensions of MIS such as on quality, Timeliness, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, Awareness and cost effectiveness against the pricing decisions.As depicted below in the finding related to each dimension, it can be inferred that all Marketing information system dimensions have a statistically significant positive relationship with Pricing decision.

**Table 4.19 Correlation test**

**Correlations[b]**

| | | QD | TD | AD | SR | MR | IS | RS | AM | CE | Pricing decision |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quality of data | Pearson Correlation | 1 | .964** | .902** | .895** | .706** | .632** | .607** | .889** | .826** | .819** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Timelines | Pearson Correlation | .964** | 1 | .896** | .914** | .732** | .627** | .600** | .883** | .858** | .887** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Accuracy | Pearson Correlation | .902** | .896** | 1 | .884** | .740** | .617** | .591** | .952** | .829** | .813** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Selective retrieval | Pearson Correlation | .895** | .914** | .884** | 1 | .765** | .690** | .633** | .888** | .908** | .839** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Mgmt role | Pearson Correlation | .706** | .732** | .740** | .765** | 1 | .452** | .403** | .765** | .765** | .791** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Integ b/n sub Systems | Pearson Correlation | .632** | .627** | .617** | .690** | .452** | 1 | .927** | .603** | .825** | .511** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| Relationship sys des | Pearson Correlation | .607** | .600** | .591** | .633** | .403** | .927** | 1 | .560** | .751** | .470** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| Awareness MIS | Pearson Correlation | .889** | .883** | .952** | .888** | .765** | .603** | .560** | 1 | .847** | .844** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| Cost Effectiveness | Pearson Correlation | .826** | .858** | .829** | .908** | .765** | .825** | .751** | .847** | 1 | .832** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| Pricing decision | Pearson Correlation | .819** | .887** | .813** | .839** | .791** | .511** | .470** | .844** | .832** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

b. Listwise N=283

**Source**: Own Survey 2020

### 4.3.3 Multi collinearity Test

One of the assumptions of classic linear regression model(CLRM) is that there is no exact linear relationship among regressors. If there are one or more such relationships among the regressors we call it multicollinearity or for short collinearity. At the outset we must distinguish between perfect collinearity. (Damodar Gujarati 2011,2012).The commonly used cut off points as Pallant (2005)mentioned for determining the existence of multicollinearity among independent variables are tolerance value and variance inflation factor (VIF)value. The rule is that when tolerance value is less than 0.2 and VIF exceeds 10 it is signal of multicolleniarity which could lead to misleading and or inaccurate results. Multicollinearity occurs when there are high inter-correlations among set of the predictor variables.

As it can be seen in the above tables the tolerance level of the independent variables are above 0.2 and the VIF value is below 5. Hence, we can infer that multicollinearity does not exist and is not a threat for this data set.

**Table 4.20Multicollinearity**

**Co-efficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -6.893 | .371 | | -18.592 | .000 | | |
| | Accuracy1 | .619 | .110 | .255 | 5.633 | .000 | .208 | 4.818 |
| | Selective retrieval3 | 1.658 | .100 | .666 | 16.630 | .000 | .265 | 3.770 |
| | Quality data2 | -.147 | .132 | -.071 | -1.111 | .267 | .105 | 9.526 |
| | Mgmt role2 | .310 | .098 | .120 | 3.145 | .002 | .291 | 3.432 |
| | Timeliness2 | .094 | .038 | .131 | 2.482 | .014 | .153 | 6.548 |
| | Integ Sys4 | -.161 | .113 | -.075 | -1.425 | .155 | .151 | 6.602 |
| | Relationship sysdes3 | -.077 | .044 | -.101 | -1.752 | .081 | .128 | 7.819 |
| | AwarenessMIS1 | .094 | .042 | .128 | 2.233 | .026 | .129 | 7.744 |
| | Cost Effectivesness4 | -.018 | .048 | -.024 | -.369 | .712 | .101 | 9.924 |

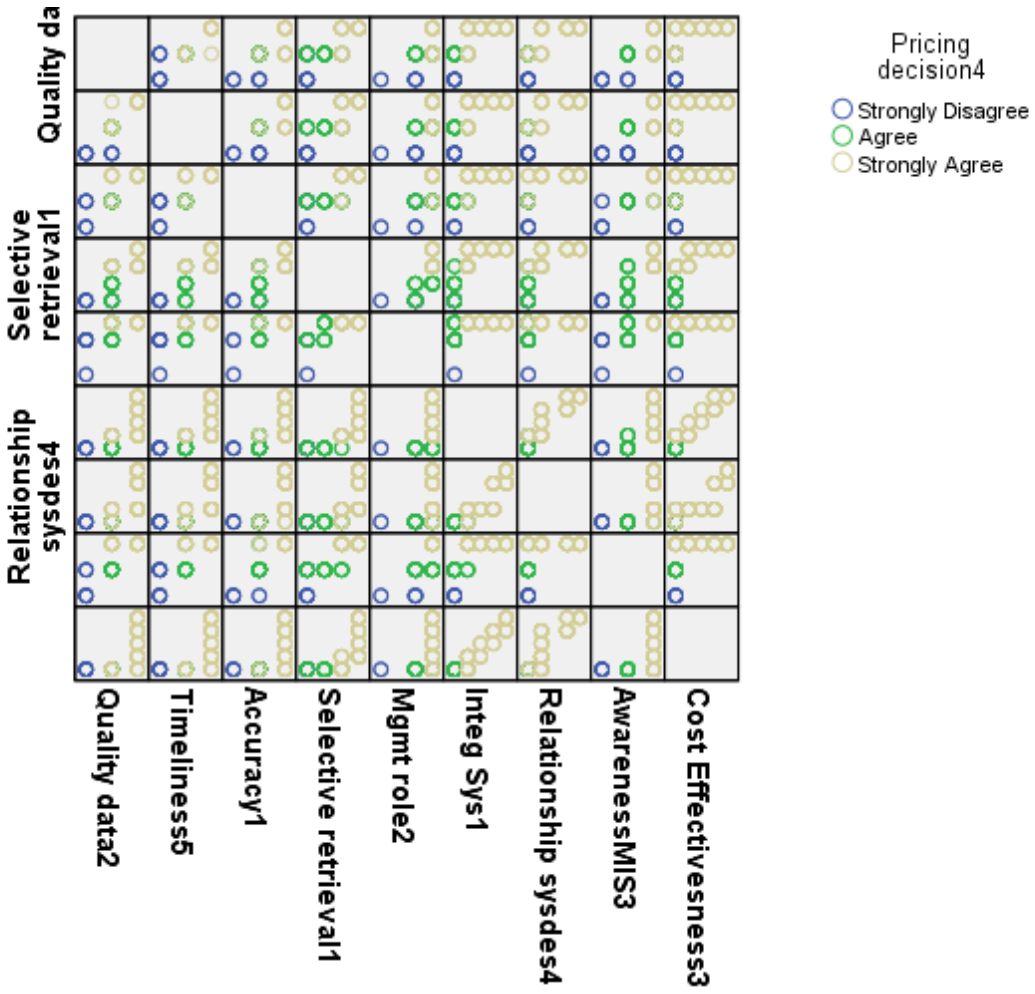
a. Dependent Variable: Pricing decision1

### 4.3.4Test of homoscedasticity

Homoscedasticity refers to whether residuals are equally distributed, or whether they tend to bench together at some values, and at other values spread apart. It checks to as equality of variance or homogeneity of variance. Homoscedasticity assumption is checked by plotting the predicted values and residuals on scatter plot. A given data is Homoscedasticity if it looks somewhat like shotgun blast of randomly distributed data.

As depicted in the scatter plot generated below it is evident that the residuals are distributed far enough to satisfy the assumption of Homoscedasticity**.**

**Figure 1 Scatter plot**

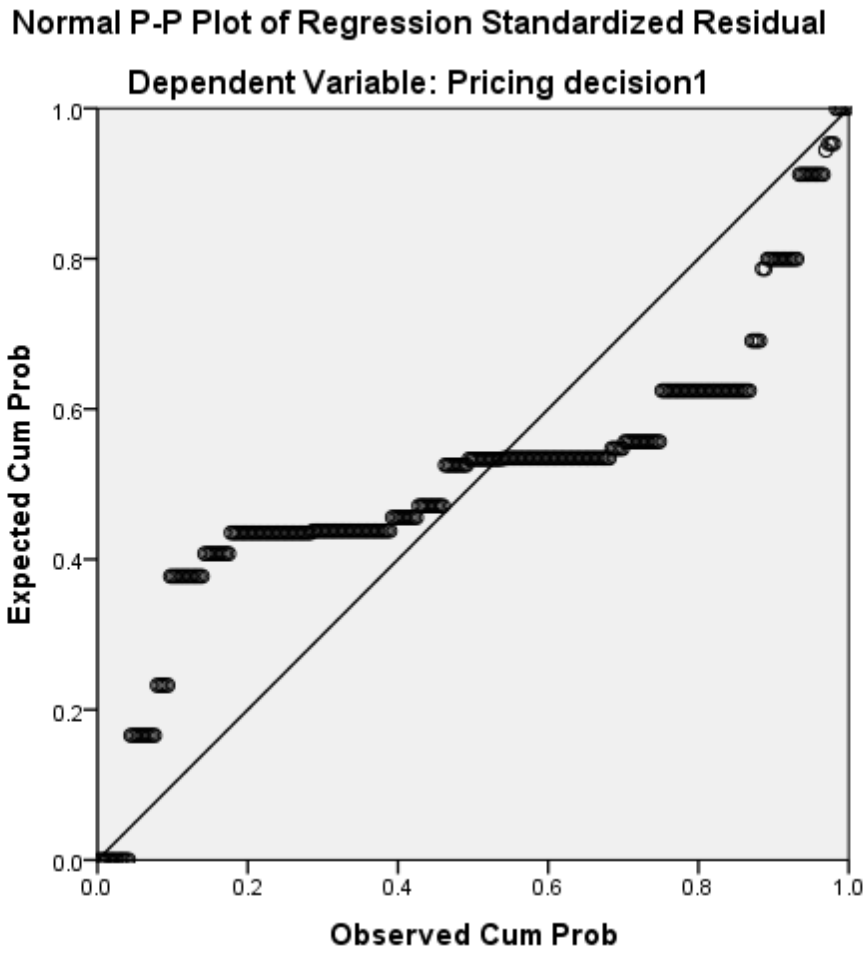



**Source: SPSS**

### 4.3.5 Test of Linearity

To check the linearity P-P plot was used and presented in the figure below. As indicted in the figure below the variables were found to have a linear relationship with each other. Hence, the variables met the linearity assumption.

**Figure 2 P.P plot for Variables of MIS against pricing decision.**




## 4.4 Hypothesis Testing

## 4.4.1 Multiple regressions

Multiple regression analysis is used to test hypothesis and to ensure the influence of integration between variables.

**Table 4.21 Multiple Regressions**

| Coefficients | | | | | |
|---|---|---|---|---|---|
| | Unstandardized Coefficients | | Standardized Coefficients | | |
| Model | B | Std. Error | Beta | t | Sig. |
| (Constant) | -2.779 | .331 | | -8.399 | .000 |
| Selective retrieval3 | .535 | .092 | .215 | 5.816 | .000 |
| AwarenessMIS1 | .006 | .041 | .008 | .136 | .892 |
| Accuracy4 | .084 | .111 | .032 | .756 | .451 |
| Timeliness1 | .076 | .056 | .092 | 1.351 | .178 |
| Integ Sys1 | .022 | .067 | .029 | .325 | .745 |
| Relationship sysdes2 | .947 | .064 | .747 | 14.823 | .000 |
| Cost Effectivesness1 | .004 | .056 | .006 | .072 | .943 |
| Quality data1 | -.099 | .042 | -.139 | -2.328 | .021 |
| Mgmt. role2 | -.017 | .087 | -.007 | -.193 | .847 |

a. Dependent Variable: Pricing decision1

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .887[a] | .787 | .781 | .527 |

a. Predictors: (Constant), Mgmt role1, Relationship sysdes3, AwarenessMIS3, Integ Sys4, Cost Effectivesness1, Timeliness5, Accuracy2, Quality data1

b. Dependent Variable: Pricing decision1

As indicated above the result shows that there is positive and significant influence by the dimensions of MIS namely quality, Timeliness, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, Awareness and cost effectiveness against the pricing decisions. The R was 0.887 while R2 was 0.787. This means (0.787) of dimensions of marketing information system has effect on pricing decisions. This also implies 78.7%of effects of MIS on pricing decision is explained by the model.

The established regression function is

PD=-2.779+-0.099QD+0.076TD+0.084AD+0.535SR+-.017MR+0.022IS+0.947RS+0.006AM+0.004CE

Where PD=Pricing decision

TD=Timeliness of data under MIS

AD=Accuracy of data under MIS

SR=Selective retrieval of information under MIS

MR=Management role under MIS

IS=Integration between subsystems

RS=Relationship between system designers and users under MIS

AM=Awareness on MIS

### 4.4.2 Test of Hypothesis

**$H_1$: Quality of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Quality of data under MIS has beta value of -0.139 and P value 0.021 which shows there is relationship but not significant.

**H2: Timeliness of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Timeliness of data under MIS has beta value of 0.092 and P value 0.178 which shows there is positive significant relationship between the two.

**H3 Accuracy of data has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Accuracy of data under MIS has a beta value of 0.032and P value of 0.892 which shows there is positive significant relationship between the two.

**H4 Selective retrieval of information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Selective retrieval of information under MIS against pricing decision has beta value of 0.215 and P value of 0.00 which shows there is strong and significant relationship.

**H5 Active management role in the specification of needed information under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Active Management role in the specification of needed information under MIS has beta value of -0.007 and P value of 0.00 which shows there is relationship between the two but not significant.

**H6 Effective integration between subsystems along the marketing information system under Ethiopian Airlines has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Effective integration between subsystems has beta value of 0.029 and with P value 0.745 which shows there is relationship but not significant.

**H7 Close relationship between the system designers and systems users under marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Close relationship between system designers and users has the highest beta value of 0.747 and with P value 0.00 which shows there is significant positive relationship between the two.

**H8 Sufficient awareness of marketing managers about mechanics of marketing information has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Sufficient awareness of marketing managers about mechanics of marketing information has beta value of 0.008 and with P value of 0.00 which shows there is positive significant relationship between the two.

**H9 : cost effective marketing information system has a positive and significant effect on pricing decision of marketing managers under Ethiopian Airlines.**

Cost effective marketing information system has s beta value of 0.006 and P value 0.943 which shows there is positive significant relationship between the two.

## ANOVA(Analysis of Variance)

ANOVA describes the overall variance accounted for the model. If the significance value ofF statistics is small (less than 0.05) then the independent variable does a good job explaining the variation in the

dependent variable. If the significant value F test is larger than 0.05 then the independent variable do not explain the variation in the dependent variable.

Accordingly, as indicted below significance value is less than 0.05 which shows that the independent variable suffices in explaining the variation in the dependent variable.

**Table 4.22 ANOVA**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
| 1 | Regression | 261.135 | 9 | 29.015 | 224.280 | .000[b] |
| | Residual | 35.318 | 273 | .129 | | |
| | Total | 296.452 | 282 | | | |

a. Dependent Variable: Pricing decision4

b. Predictors: (Constant), Cost Effectivesness2, Relationship sysdes4, Mgmt role2, Quality data2, Accuracy1, Selective retrieval1, Integ Sys1, AwarenessMIS3, Timeliness5

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION, AND RECOMENDATION

This chapter deals with summary of major findings, conclusions and recommendations. The main purpose of the study was to assess the effects of Marketing Information system on pricing decisions, case study of Ethiopian Airlines. To achieve the objective of the study, relevant literature was reviewed and quantitative data were collected through questionnaire and filled by different group of staff under Ethiopian Airlines. The data collected through questionnaire were presented, analyzed, interpreted and discussed using statistical package for social science (SPSS 24.0) version. Thus, based on the analysis the following findings were written, conclusions drawn, and recommendations forwarded for Ethiopian Airlines.

## 5.1 Summary of Findings

Primary data was gathered by using structured questionnaire. A total of 284 structured questionnaires were distributed to different staff group under Ethiopian Airlines through simple random sampling techniques. Quantitative descriptions were applied on the data gathered to analyze the information obtained. By undertaking a detailed analysis of the situation, the following findings were obtained:

- The regression result shows dimensions of the marketing information system, namely timeliness of data, accuracy of data, selective retrieval of information, Integration between subsystems, relationship between system designers and system users, awareness and cost effectiveness of marketing information system has significant effect on pricing decisions. Dimensions of marketing information system i.e relationship between system designers and system users and selective retrieval of information has the highest effect on pricing decisions with highest beta value of 0.747 and 0.215 respectively. On the other hand dimensions of marketing information system such quality of data and management role has relationship with pricing decisions but not significant.

- The correlation result shows direct and significant relationship between dimensions of marketing information system namely quality of data, timeliness of data, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, awareness and cost effectiveness against pricing decisions. There is highest significant positive relationship between Timeliness of data, Awareness on MIS against pricing decision with highest correlation coefficient of 0.887 and 0.844.

## 5.2 Conclusions

The main objective of this study was to assess the effect of marketing information system on pricing decisions. Following the findings of the study, several conclusions could be made.

Pricing decision is key strategic tool for creating and capturing customer value. It can also be used as key battleground for competitive advantage. In today's competitive Airline Industry smart pricing decision is decisive for airlines' profitability as well as existence.

Marketing information system on the other hand has competitive marketing intelligence to improve strategic decision making by understanding the consumer environment assessing and tracking competitor actions and providing early warning of opportunities and threats.

Accordingly, Ethiopian Airlines by effective implementation of marketing information system on its pricing decision can better manage market opportunities and threats and gain competitive advantage as well.

Hence, by improving and having effective implementation of the dimensions of marketing information system Ethiopian Airlines can have improved pricing decisions.

Correlation result shows direct and significant relationship between dimensions of marketing information system namely quality of data, timeliness of data, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, awareness and cost effectiveness against pricing decisions.

Regression result on the other hand shows dimensions of the marketing information system; timeliness of data, accuracy of data, selective retrieval of information, Integration between subsystems, relationship between system designers and system users, awareness and cost effectiveness of marketing information system has significant effect on pricing decisions. On the other hand dimensions of marketing information system such quality of data and management role has effect on pricing decisions but not significant.

Finally, we can conclude that dimensions of marketing information system have positive and significant effect on pricing decision. Other dimensions of marketing information system i.equality of data and management role has effect on pricing decisions but not significant.

## 5.3 Recommendations

By effective implementation of the dimensions of marketing information system Ethiopian Airlines can have better pricing decisions. Accordingly, all the dimensions of marketing information system namely quality of data, timeliness of data, accuracy of data, selective retrieval of information, management role, Integration between subsystems, relationship between system designers and system users, awareness on MIS and cost effectiveness of marketing information system has to be continuously assessed and improved as described below.

- In order to improve quality of data, Quality of analysis of data and extent to which databases are linked has to be reliable.

- To improve timeliness of data, data has to be timely generated from marketing information system and the frequency of information for different areas should vary according to operational need. Moreover, analyzed data has to be found from marketing information system timely and there should be easier and faster access to marketing information system as well.

- Regarding accuracy of data under marketing information system, Data from marketing information system need to be free from error or bias.

- As selective retrieval of information under MIS has significant effect on pricing decision, Marketing Information system should be able to provide relevant wanted information. Moreover, marketing data has to be processed classified, edited, analyzed interpreted and presented in easily understandable form.

- There should be active management role in the specification of needed information under marketing information system. Moreover, marketing information system should begin and end with marketing managers and interact with them as well to assess their information needs.

- Effective integration between subsystems along the marketing information system positively affected pricing decisions. Accordingly, marketing information system has to be well integrated along other systems and data has to be generated from formal information system and be measurable. Moreover, marketing information system has to be comprehensive and complete.

- Close relationship between system designers and system users positively affected pricing decisions. Accordingly, to maintain close relationship between system designers and system users, there should be careful appraisal and analysis on the decision-making requirement of marketing management. There should also be consultancy to end users before marketing information system is designed and implemented.

- Sufficient awareness about mechanics of marketing information system positively affect pricing decisions. Hence, there should be enough user orientation about marketing information system. Moreover, managers/users should be enabled to independently retrieve data, analyze and interpret information to meet individual requirements.

- Cost effective marketing information system positively impacted pricing decisions. Accordingly, to improve cost effectiveness of marketing information system, management has to constantly trade off the value of information against its cost. Moreover, under the marketing information system the possible gain from the information or the possible loss from its absence has to be evaluated. Furthermore, task of information has to be evaluated against its reliability cost.

## 5.4 Implications for Future Research

This research focused on effect of marketing information system on pricing decision taking the case of Ethiopian Airlines. As the study focused only on Ethiopian Airlines, it is recommended future researcher may study other airlines experience.

Moreover, as the research focused only on pricing decisions, which is only one part of marketing decision, other researchers have to do more study on effects of marketing information system on other decisions by marketing personnel/management.

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**Annex**

## I. Questionnaire

I am conducting a research on the Effects of Marketing Information System on Pricing Decisions: by taking Case Study of Ethiopian Airlines and it will be used for Master of Arts Degree (Marketing Management) Thesis.

Marketing information system is a set of procedures and methods for the regular and planned collection, analysis, and presentation of information in making marketing decisions.

I would appreciate it if you could please take few minutes of your valuable time to fill the below questionnaire about the use of marketing information system on your day to day pricing/ marketing decisions. All personal data will be kept confidential.

Please fill the appropriate box (es) with a mark 'X' according to your experience. There is no right or wrong answers.

**Part I**

1. **Gender:** Male ☐ Female ☐
2. **Age:** 25-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐
3. **Position:** Managerial Employee ☐ Non Managerial ☐
4. **Education:** Diploma ☐ BA Degree ☐ ☐ Post Graduate
5. **Occupation type**: Pricing staff ☐ Digital Sales staff ☐ Sales staff ☐
6. How often do you use marketing information system in your day to day decisions

Seldom ☐ Always ☐ Never ☐

7. Have you ever used marketing information system on your pricing decisions?

Yes ☐ No ☐

**Part II. Please use the following scale to answer the below questions.**

Thescaleisrangingfrom1 (s*trongly disagree*) to 5(s*trongly agree*). Please put the mark 'X'.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree (SDA) | Disagree (DA) | Unsure (US) | Agree (A) | Strongly Agree (SA) |

| No. | Questions | SA | A | US | DA | SDA |
|---|---|---|---|---|---|---|
| | | 5 | 4 | 3 | 2 | 1 |
| **I** | **Quality of data provided by the marketing information system** | | | | | |
| 1 | Quality of analysis of data and extent to which databases are linked is reliable. | | | | | |
| 2 | Quality of data provided by the marketing information system has positive impact on pricing decisions | | | | | |
| **II** | **Timeliness of data by marketing information** | | | | | |
| 1 | Data is timely generated from marketing information system for pricing decisions | | | | | |
| 2 | Analyzed data is found from marketing information system timely | | | | | |
| 3 | There is faster and easier access to marketing information system | | | | | |
| 4 | The frequency of information for different areas varies according to operational need. | | | | | |
| 5 | Timeliness of data by marketing information system has positively impacted my pricing decisions. | | | | | |
| **III** | **Accuracy of data by marketing information system** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Accuracy of data by marketing information system has positive impact on my pricing decisions. | | | | | |
| 2 | Data from marketing information system is free from error | | | | | |
| 3 | Data under the marketing information system is free from bias | | | | | |
| **IV** | **Selective retrieval of information from marketing information system.** | | | | | |
| 1 | Marketing Information system presents relevant wanted information for pricing decisions | | | | | |
| 2 | Marketing data is processed classified, edited, analyzed interpreted and presented in easily understandable form | | | | | |
| 3 | Selective retrieval of information has significant impact on pricing decisions. | | | | | |
| **V** | **Management role in the specification of needed information under marketing information system** | | | | | |
| 1 | Management has active role in the specification of needed information under marketing information system | | | | | |
| 2 | Active management role in the specification of needed information under marketing information system has a positive effect on pricing decision. | | | | | |
| 3 | Marketing information system begins and ends with marketing managers. | | | | | |
| 4 | Marketing information system interacts with managers to assess their information needs. | | | | | |
| VI | **Integration between subsystems along the marketing information system** | | | | | |
| 1 | There is effective integration between subsystems along the marketing information system which positively affected pricing decisions | | | | | |
| 2 | Marketing information system is integrated along other systems | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | Marketing information system is comprehensive and has complete information. | | | | | |
| 4 | Data is being generated from formal information system and is measurable | | | | | |
| **VII** | **Relationship between system designers and system users.** | | | | | |
| 1 | There is close relationship between system designers and system users under marketing information system. | | | | | |
| 2 | There is consultancy to end users before marketing information system is designed and implemented. | | | | | |
| 3 | There is careful appraisal and analysis on the decision making requirement of marketing management. | | | | | |
| 4 | Close relationship between system designers and system users positively affected pricing decisions. | | | | | |
| **VIII** | **Awareness about mechanics of marketing information system** | | | | | |
| 1 | There is sufficient awareness about mechanics of marketing information system among users/managers | | | | | |
| 2 | Managers/Users can independently retrieve data analyze and interpret information to meet individual requirements | | | | | |
| 3 | Sufficient awareness about mechanics of marketing information system positively affect pricing decisions | | | | | |
| 4 | There is enough user orientation about marketing information system | | | | | |
| **IX** | **Cost effectiveness of marketing information system** | | | | | |
| 1 | Under the marketing information system the possible gain from the information or the possible loss from its absence is evaluated | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | There is cost effective marketing information system positively impacting pricing decisions | | | | | |
| 3 | Under the marketing information system, task of information is evaluated against its reliability cost | | | | | |
| 4 | Management constantly trade off the value of information against its cost. | | | | | |
| **X** | **Pricing decisions** | | | | | |
| 1 | Pricing is key strategic tool for creating and capturing customer value | | | | | |
| 2 | Prices are revised often | | | | | |
| 3 | Price is varied enough for different product items and marketing segment | | | | | |
| 4 | Pricing is used as key battleground for competitive advantage | | | | | |
| **XI** | **Marketing information system General questions** | | | | | |
| 1 | Marketing information system is used to develop customer insight marketing decision and manage customer relationship | | | | | |
| 2 | MIS is developed based on users need | | | | | |
| 3 | MIS is used to identify marketing opportunities, problems, plan programs and evaluate performance | | | | | |
| 4 | MIS has competitive marketing intelligence to improve strategic decision making by understanding the consumer environment assessing and tracking competitor actions and providing early warning of opportunities and threats. | | | | | |