

The Factors Which Affect The Information System Needs
For Decision Making In The Hotel Industry
(A comparison Study Between The U.K. And Egypt)

A Thesis Submitted For the Degree of Doctor of Philosophy

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Preface

This report contains evidence to show that the information provided by computers in the hotel industry , for the management work & decision making , has not changed too much since 1970 .

In most industries , the successful computer applications are clearly noticed in the routine work (clerical jobs) more than the management work (strategic & tactical jobs) .

As for the hotel industry the use of computers still comes at the back of the list . The hospitality characteristic of hotel work is the main reason why people and not machines are used .

Small hotels are different from large luxury hotels in using computers , mainly for economic reasons . Top managers are different from lower managers in using computers , simply for technical reasons (lack of management computer programmes) .

The British hotels are different from Egyptian hotels in applying computers and information technology successfully for reasons related to the influence of the managerial environment in each country .

A comparison between hotels of the two countries shows the unsatisfaction of the hotel managers about the information they receive from their computer departments . The analysis of the management work , the identification of the decision making needs are still hard tasks for system analysts . The identification of both the managers' decisions & information needs is still not recognized , even by the managers themselves .

The decision making approach is used in this study to identify both the managers' decisions & information needs and to evaluate the information systems available in the hotels of the two countries . The managerial environment of the country greatly influences the managers'

decisions and system needs .

This report outlines the background literature & approaches used to research this area . Use is made of the results of previous study done about Egyptian hotel industry and the factors which affect the success of the information systems there . Investigational work for the influence of the managerial environment in Egypt , over the structure of the marketing decision making process in the hotel industry is carried out .

Areas for further ' field ' research studies are highlighted .

TO MY LATE MOTHER
AND
MY FAMILY IN EGYPT

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1.1 Research Idea Background

This thesis is divided into nine distinct chapters. Chapters one to three follow an investigational methodology in order that the reader can make reasoned progress through the procedures, the analysis and results to final conclusions. Recommendations for continued research areas are detailed.

Decision making is an old topic tackled by many writers in management literature. On the other hand, information systems are a more recent topic compared with decision making . Management information systems as a concept combines the two previous topics through some management science studies. Using computers in management is a direction indicator for some of these management science studies.

The use of computers in many manufacturing activities encouraged management scientists to take advantage of computers in management work. But they are stuck with the problem of identifying management system needs, which are more difficult than those of manufacturing systems. For example, the information needs of decision making process are different according to the activities of each organisation, the experiences of each manager, and the managerial environment of each country. So a thorough and detailed study should be done for identifying these needs, before the design of any information systems , or the introduction of computers to satisfy the decision maker needs. Revision of the information systems literature since the 1960's, shows that computerisation is more successful in manufacturing systems than management systems. Future expectations of literature indicate that computers will move towards management systems great deal. Most of the

issues discussed to arrange for this expected move are mainly concerned with what will be, not with what is already there, in terms of the management system needs. This is why some of these suggestions and expectations are supposed only to work in ideal systems, as described in many studies of "why management information systems fail".

The idea of this study arose from this point. Revision of the outcomes of studies about why MIS fail, have shown the lack of studies done about managerial decisions and their information needs in the real world of organisations. The reason behind this is that it is a hard task to do, because decisions and this information needs are changeable and different. How different are these needs in the same industry in different countries, what are the major factors which affect them?. Following the literature review of this topic the author's conclusion is that there are some differences between the western developed countries and undeveloped countries. This difference lies in the different matters of concern that are applied to their respective organisations.

Management problems, decision making process, manager's style of management, job satisfaction and control system over industries are some factors which influence management systems needs in the undeveloped countries. The country's managerial environment is a general title to describe these different matters of concern.

So various aspects of management information systems are studied in details through a comparative study between the British and Egyptian hotel industries. Jobs done by computers (or by other data processing machines), users' satisfaction about the information they receive, sources and skills practised for information communications by managers, decisions made, information needs required to make such decisions, are identified through a postal questionnaire and written interviews

directed to (or held with) hotels' managers in both British and Egyptian hotels. An interpretation and evaluation of managers' responses in terms of reasons and expectations of information systems literature are carried out. Finally a thorough and detailed study of the influence of managerial environment, in Egyptian hotel industry, on the structure of both information systems and decision making process is done. This highlights some key factors for success or failure of MIS in a different country environment.

1.2 Research Hypotheses

The investigational aspects of MIS mentioned above are based on some hypotheses claimed in the literature, and also arise through the author's personal observations about the managerial environment in Egypt. These hypotheses are as follows:

- 1- The use of computers in British hotels is more advanced than Egyptian hotels, the particularly so in large hotels than small hotels.
- 2- Computer applications in British hotels are in administrative jobs and in clerical jobs in Egyptian hotels.
- 3- Reasons for non-usage of computers mainly go back to economic justifications in the British hotels, against shortage in qualified computer staff in Egyptian hotels.
- 4- Future plans for extending computer applications, is to move to tactical and strategic jobs in the British hotels, but to administrative jobs in Egyptian hotels.
- 5- Computer applications in management jobs, in general, are more likely to be in lower management levels than top management levels.
- 6- In the hotel industry, hospitality characteristic is an important

reason (argument) against the adoption of hotel computerisation, which is not the same for manufacturing industry .

7- The main bulk of information received by hotel managers are more helpful for the process of decision making than for making the decisions themselves.

8- Hotel managers are more likely to rely on other information sources of supply to get their information needs, than the data processing (computer) departments.

9- In terms of information systems characteristics, the structure of the information provided (quantity and quality) are more likely to represent the main managers' complaints.

10- Customer and guest history information systems are more computerised and updated in British hotels than Egyptian.

11- A considerable percentage of hotel managers are not able to identify the decisions they make, information they need, special studies and topics they like to be kept informed with.

12- Areas of decisions and information needs topics are different in the British hotels from Egyptian hotels.

13- Future developments required to be added to present information systems are more likely to differ from the British hotels to Egyptian hotels, and in Egypt, from public sector hotels to private (foreign management) hotels.

14- Marketing information system in the hotel industry, is still done by sales and not by planning.

15- In Egypt, managerial environment shapes the decision areas and information needs of the hotel managers great deal, more than in the United Kingdom.

16- In Egypt, organisation maturity, and lack of planning in public

sector hotels and Tourism sector, influence the structure of the organisation and channels for communication information.

17- In Egypt, hotel management style affects hotel productivity and the process of marketing decision making.

18- It is more likely to find, in Egypt, that information systems success is determined by environmental factors, some of which are controllable and others are not.

19- The average of computers which might be used in Egyptian hotels are mainly of one or two models, and applied in commercial work.

20- In the main, Private companies use computers in Egyptian industries for commercial purposes.

21- In Egyptian industries, in general, wages (salaries) and financial accounts are the main computer application programs. The efficiency of using computers in each industry and each application, is more likely to be associated with how far computers are used. Private sector companies are likely to be more efficient in using computers than other sectors if the first use computers more than the second.

22- In Egypt, the unavailability of sufficient Egyptian computer qualified staff is one of the environmental problems in undeveloped countries. About 50 percent of the computer experts working in Egypt, are foreign staff.

Other hypotheses will be drawn and tested during the analyses and interpretation of the data collected.

1.3 Importance of The Study

The importance and contribution of this study are to achieve the following objectives:

1- To research the differences between British and Egyptian hotels, in terms of information systems issues . These issues are computer applications, user information satisfaction, and managers' skills practised for information communications.

2- To identify decisions and information needs of the hotel managers. Then to highlight the differences between the British and Egyptian hotel managers in terms of decisions , information regularly provided or currently unavailable, data analysis programs and systems of updating used, and finally suggested improvements and future demands to develop present information systems. This will highlight the distinctive characteristics of hotel systems needs in each country.

3- To contribute to the literature of "MIS", by studying the influence of managerial environment over information systems concepts, structure of decision making process, and the efficiency of computer applications in Egyptian industries. This might help to develop the present information systems theory to suit management needs of the undeveloped countries, through further future studies.

1.4 Contents of The Study

Chapters Two to Four describe views expressed in the literature of information systems since the 1960's, about the past, present and expected developments of computer applications in management work. Also future developments of computer usage for decision making are explained. A study for the special characteristics of hotel industry, and how do

these characteristics affect the applicability of computerisation, is carried out as well. This will be combined with results of some studies done in the 1970's and 1980's, which show how far literature expectations are true in the real world of the hotel industry. Investigation in this chapter is based on analysis of data and interpretation of results of previous studies in the literature, as a methodology. Some outcomes and propositions drawn out of this investigation will be a base for study in the following chapters. Hospitality characteristics and the slow nature of taking up technology are the main reasons behind late computerisation in hotel industry. Also the difficulty of both programming management work, identifying managers decisions and information needs are the main reasons behind the inadequate development of using computers in management jobs compared with manufacturing jobs.

Chapter Five conducts a longitudinal study in the British hotels. A comparison between the results of the 1970 study done by the EDC (economic development committee in U.K.) and the British managers responses through a survey questionnaire of this study (see a copy of this questionnaire in the appendix). This comparison will help to update the 1970 results and shows changes that have taken place in hotel computer applications since then. Using the 1985 data of this study, another comparison between both British and Egyptian hotels is conducted. In both the longitudinal study and the comparison study the chi-square statistical test is used to check changes which happened and the proposed association relationships. More than one classification factor is used for data analysis. Hotel size, management category, and hotel country are used to analyze the 1985 data. While changes in data are used to update the 1970 data with that of the 1985. Investigation

in this chapter is based on the hypotheses that small hotels use computers less than large, high management levels use computers less than lower management levels, and Egyptian hotels employ computers less than British hotels. Economic justifications, and lack of both technical experiences and computer qualified staff are the main expected reasons for this difference in application between the two countries. The investigation reveals some results in the direction expected, where changes took place in the hotel computer applications since 1970. Other results are in the unexpected direction, where differences between small hotels and large hotels, high management levels and lower management levels, British hotels and Egyptian hotels did not prove to be statistically significant, in terms of using computers, as well as in reasons against putting jobs on computers since 1970. Comparing these unexpected results with those presented in the literature review we find many of contradictions.

Chapter Six describes how users' attitudes towards the information they receive affect their usage of this information. Using the 1985 data, a comparison between the British and Egyptian hotels is held. Other questionnaire questions are directed to hotel managers about purposes of usage for the information they receive, how often they use it, and why?. Using two classification factors, hotel country and manager management category (manager levels), the analysis of the responses reveals some results in the direction expected, where information received is not mainly used for the purpose of decision making, but to help in the activities of decision making process. Also the dissatisfaction of managers about the structure of the information they receive, in terms of quality and quantity, does not encourage them to use this information often, or to rely mainly on computer departments

as sources of information supply. Other results are in the unexpected direction, where both information used for the purpose of decision making , and users' attitudes towards using the information they receive in Egyptian hotels are higher than in the British hotels. This contradicts the hypothesis of this study which is based on the fact that British hotels are ten years older, in employing information technology than Egyptian hotels, so British hotel managers must have more satisfactory attitudes and enjoy more usage of the information they receive than Egyptian hotel managers.

Chapter Seven is concerned with the description and identification of the skills of hotel managers, which they practise, and media sources for information communications they use to do their jobs. Using the 1985 data, a comparison between the British and Egyptian hotels is held, using two classification factors (hotel country and manager management category). The chi-square test results prove that there is a significant difference, in terms of numerate computational skills, abilities of planning, decision making, managerial supervision practised by managers, between the British and Egyptian hotels. While difference in communication abilities (verbal or written) does not prove to be statistically significant. The data reveals that Egyptian hotel managers are ahead in practising these abilities of the British hotel managers. One of the explanations for this is the influence of managerial environment of Egypt over the routine problems faced by the Egyptian manager more than the British one. For example, in Egyptian hotels, control and performance evaluation of the hotel staff represent a major part of the managerial supervision abilities. Also concerns about changes in both the money market and Tourism government policy require replanning, recalculation , personal contacts, according to the new

considerations. On the other hand test results for media sources of information communications, do not prove to be significant between the British and Egyptian hotels. For example, many foreign management hotels in Egypt are using the same communications systems used in other international hotels outside Egypt. Issues investigated in this chapter help to highlight some of the characteristics and needs of the hotel manager, of different levels and different country environment, in his day-to-day work.

Chapter Eight presents a guideline to the information systems for Decision making , in the hotel industry. Considering that there are differences between the British and Egyptian hotels in many issues (as mentioned before), the question jumps to the identification of both decisions and information needs of the managers which represent a challenge for system designers and a major obstacle (as described in literature) against MIS success. Interviews are held with some hotel managers in both the U.K and Egypt, using written questions (a copy of these questions is enclosed in the appendix) asking them to identify the decision they usually make and the information they receive , and finally suggested improvements they like to be added to their present information systems. The analysis and interpretation of the responses reveal that there are differences between the British and Egyptian hotels in terms of these issues. The investigation in this chapter is based on hypothesis that not all the managers can easily identify the decisions they make and information they need in their daily work, simply because they just make them or ask for it. Also the managerial environment of each country influences the systems needs, and consequently the decisions made and the information needs. The outcomes of these interviews show that a big percentage of the hotel managers in

both the U.K. and Egypt could not identify their decisions and information needs. For example, in the British hotels decisions and information identified are mainly concerning with the hotel functions and control systems. While in Egypt, in both foreign management and public sector hotels, hotel functions, hotel market, changes in money market, international Tourism movement and government Tourism policy, are the topics of managers decisions and information needs. The British hotel information systems are described as an administrative system, while Egyptian hotel information systems are described as a clerical and tactical system. In Egypt, the influence of managerial environment over public sector hotels is much clearer than that over foreign management hotels, because of the Bureaucratic governmental system of which public sector hotels are apart. This is expressed in the suggested improvements to their present information systems, where improving hotel facilities, and freedom from routine governmental procedures are the key demands of public sector hotels. In return, clear and more information about the money market, Tourism movements, economic and Tourism government policies, are the key demands of foreign management hotels. On the other hand, improving computer facilities (especially for management work) is the key demand of British hotels. The evaluation of hotel marketing information systems prove that marketing by sales not by planning is still the main core of both marketing decision making and customer information needs in both the British and Egyptian hotels, as explored from the interviews.

Chapter Nine illustrates in more detail the influence of the managerial environment over the hotel industry in Egypt. Some of the outcomes of previous chapters indicate the strong influence of the special characteristics of managerial environment over the computer

applications, managerial skills, and decision making processes in Egyptian hotels. Detailed investigation of these characteristics is conducted in this chapter. Issues of influence of Tourism control systems, structure of hotel industry, evaluation of the available important information, and finally the structure of the marketing decision process are explained. A study of the environmental variables which affect the success or failure of MIS and computerisation in Egyptian industries is included. Interviews with top managers in both the hotel industry and Tourism sector in Egypt, is one source of the data used in this investigation. results of previous studies done in Egyptian industries , are another source of data used. Investigation in this chapter is based on hypotheses, which describe motives, and different matters of concern behind the decision to adopt information technology and develop the information systems in Egyptian industries, which are different from those in the British industries. For example, lack of planning and co-ordination between departments affect the validity of the formal structure of organisations, and consequently formal channels of communications for information. Also differences in the management styles adopted by hotel management, affect the hotel productivity and decision making process. On the other hand foreign management hotels are more successful in the hotel market than public sector hotels which are more or less run according to governmental routine style of work. Commercial work is the main computer application in both the hotel industry and other industries. Private sector companies are the major in employing computers programs more efficiently than other sectors in Egypt. And finally still the shortage of the computer qualified staff available from the Egyptians is a real problem, where more than 40 percent of the computer experts employed in Egypt are

foreign staff. These are some of the outcomes of the investigation in this chapter, which highlight the characteristics of managerial environment of Egypt that is different from the British one.

Finally, chapter Ten represents the conclusions of this study and areas of potential investigations for future researchers. One of which can help to develop the present information systems theory to suit the environmental needs of organisations in the undeveloped countries.

CHAPTER 2 : BACKGROUND LITERATURE .

During the early 1960's, J. Dearden 1964 (ref. 1 pp. 128-129) raised the question of how far management information can be automated?. He mentions that during the past few years, system specialists have been developing an approach to management information systems which, if left unchecked, could cause serious problems to the companies that adopt it. J. Dearden's warning is about what these specialists said "that it is just the beginning, and in the near future information systems will be extended to provide top management with nearly instantaneous information on what is happening throughout the company". Dearden's argument is that this can happen, only to a limited extent, only for certain functions and only with caution, and that the characteristics of computers make it ideally adapted to solving many operational control problems, and that the higher levels of management activity have entirely different requirements, and it is a mistake to apply the same technique to solve operational control problems as management control problems. His advice is that information system is not necessarily a good one nor is a manual system a poor one, where many companies have installed the most advanced data processing equipment and yet employ accounting and budgeting techniques that were out of date 20 years ago. His conclusion about the possibility in the future to automate effectively the higher level management functions, is that it will require considerable improvements in both equipment and techniques, and so this field will remain in the domain of researchers.

How far have the above expectations been developed?. To find out, let us consider the paper published by J. Diebold 1965 (ref. 2 pp. 76-82).

He published the results of an intensive research program on behalf of over 80 of the largest U.S. and European businesses, about the present computer revolution, and any likely future patterns which the information technology may take. Diebold emphasized, in his article, the opposite view to Dearden's , the results of his research program indicate the following points (ref. 2 pp. 77-81):

1- Future information systems will be more versatile and will more nearly parallel the real flow of information within an organisation. This will highly help top management to utilize effectively the data available to it.

2- Information systems will tend increasingly to be "real time", that is, they will reflect important and routine events as they occur.

3- Systems flexibility for new applications will be vastly increased, and costs greatly reduced, through a broad range of new peripheral equipment development. New kinds of devices will be one of the advances achieved which will change drastically the relationship between man and machine system.

4- Information storage and retrieval of technical, management and general data will become an increasingly important aspect of information systems. Diebold mentions that the only obstacle to the widespread progress, is not related directly to equipment, but is concerned with how to structure the data so that the right information will be provided in response to any given question.

5- There will be significant improvements in the means of communicating with the system, the so called man-machine interface. Diebold explains, where an executive may ask system for a particular condition (inventory, cash, production, or some other aspects of operations) through keyboard input or voice input, he may actually

use a distant machine to solve a particular problem that requires computer time, and the response from the computer will be in the form of printed, displayed, or audio media.

6- Diebold's research program findings, about the trends of spending, indicate that by 1970 the U.S. market for information systems' equipments will exceed £ 7 billion per year, up from about £ 1.5 Billion in 1961. He concludes that this increased expenditures by the American business is not a paradox, because here it means that the impact of the information systems throughout the organisation will be greatly expanded. Diebold proves his conclusion by giving figures from his research program findings, which explain statistically these changes as follows:

Information processing equipment cost	1963	1973	New functions in 1973
1- Main frame and operating memory	53%	21%	
2- Digital files	21%	31%	
3- Input / output	12%	13%	
4- Modems and lines	7%	18%	
5- Switching	7%	13%	
			1- Private voice communic. 2- Image files 3- Displays 4- Graphic input /output

Figure (2.1) Anticipated shift in information-processing equipment cost for a typical manufacturing company during 1963-1973

Source : Exhibit (1) ref. 2 p. 77 (Diebold research program)

The writer's comments for these results and expectations of the above study can be summerised in two points, as follows:

1- Firstly, most of these expectations have been achieved in the 1970's and also now in the 1980's, so they are, so far, accurate

in terms of the developing of equipment.

2- Secondly, computer specialists and management scientists are still researching to reach a valid methodology to describe systems and identify their needs (management know how). The main obstacle from the writer's point of view is the individuality of the characteristics of each system. We might have a methodology which can be valid only for certain kind of systems, activities, or management decisions, but not for others.

The above study mentions the expected development of using the information technology for the management function as a whole. What about the decision making process at the top and middle management levels?. Specifically, what is the expected impact of using computers there?.

Two years later, Rodney H. Brady (ref. 3 p. 67) reports on a lengthy study of corporate practice, conducted to answer the question "has the computer changed the manner, form, or content of top management decision making?". Dr. Brady concludes that up to the present, the computer has not had much impact on top level decision making. Although it has affected top executives by giving them more time to make decisions, more alternatives to consider, and other indirect advantages, it has not materially affected the way decisions are made, or the kinds of decisions reached.

Looking ahead, Dr. Brady sees some great changes in the situation during the decade of the 1970's, and that by 1975, he predicts that the computer will have changed top management decision making in a number of important respects. Having a look at the findings of this lengthy study (which had been conducted through interviews of more than 100 top managers, and examined in detail the

decision making process of executives in more than a dozen large companies engaged in manufacturing and R and D activity) to clarify the direct use of computers by top management, Dr. Brady finds very rare cases, where the computer information was provided as a support for analysis or recommendations being presented to top management by lower line and staff managers. Brady concludes that the real impact of the computer has not been directly on top management, but on the management in which middle managers are contributing to top management decision making.

About the expected impact in the future, Brady (ref. 3 pp. 71-76) summarises the particular areas where the growing influence of computers will be felt as follows:

1- By 1970 we will be able to detect a number of changes in the picture, and during the 10 years after that, changes should become quite conspicuous. This impact will continue to be greater at the division level than at the corporate level, and in large companies than in smaller companies.

2- For top managers the impact will be greater on the content of information specially prepared in support of specific top management decisions than it will be on the content of information prepared on a regular periodic basis for top management.

3- About the relevance of information reaching top managers, Brady expects a considerable reduction in the amount of irrelevant detailed information, and also a substantial reduction in an incidence of human error and thereby an increase in accuracy of information, because of the increase in the variety of input devices used. Considering the time required to

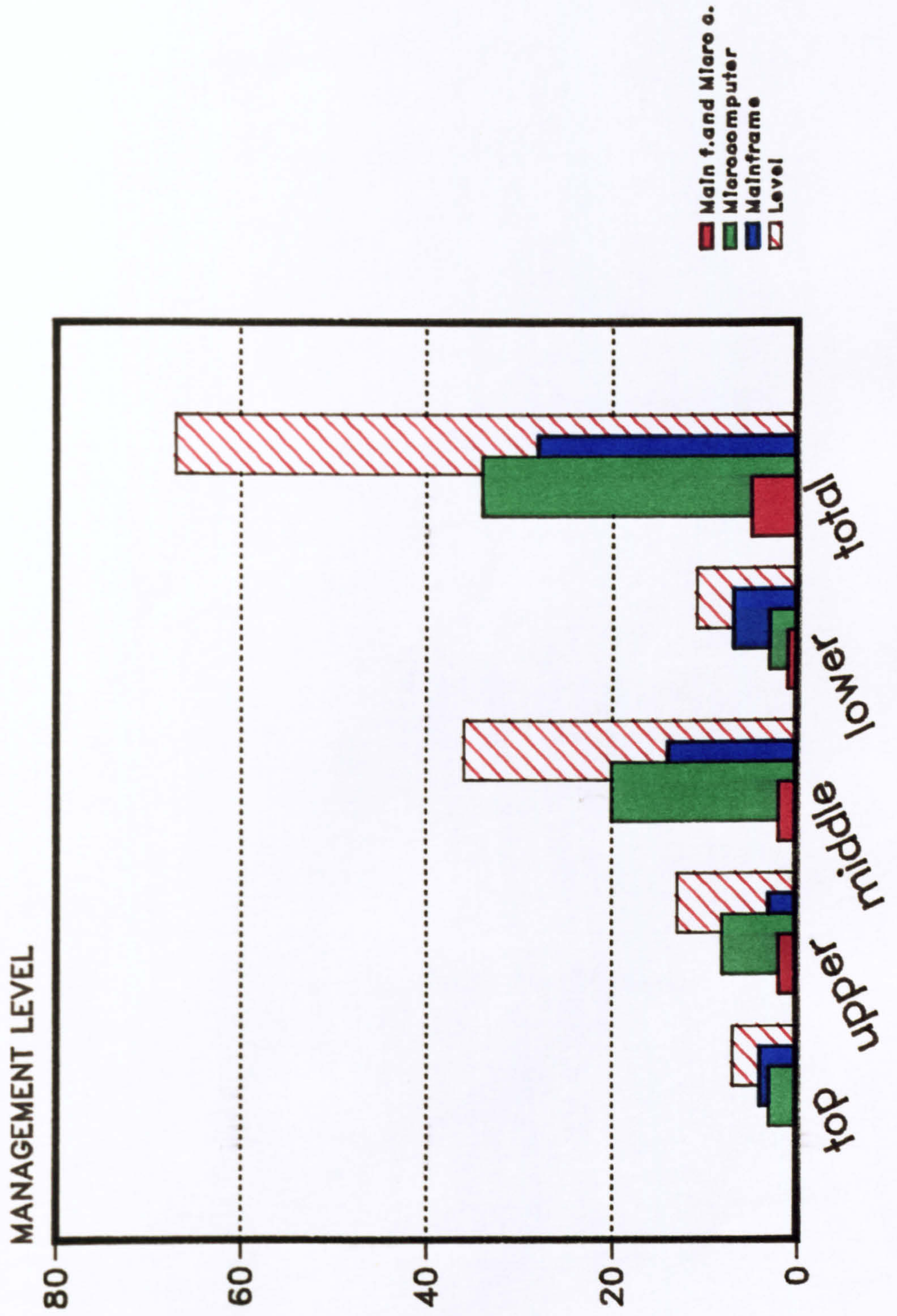
transmit information to top managers, Brady shares with Dearden his view that their (top managers) receipt of real-time information will be rare, largely because they rarely need information on a real time basis (ref. 4 p. 123).

4- The use of simulation models in exploring alternative courses of action will increase significantly, particularly in evaluating alternative long-range plans , product lines, and pricing decisions. Finally Brady, describes the direct communication between top managers and computers, as a difficulty because, although the computer and its memory will be directly accessible to many of them for decision making, interpretation of both commands and responses will have to be done mostly by middle management. But Brady is convinced that whatever the advances in computer and system technology are, managerial judgement will always play the dominant role in making major strategic decisions.

Trends of these expected changes, explored from Brady's study by the writer, are given in the following figure:

John Dearden (ref.5 p. 99) tries to study the effect of computers on divisional control. He concludes in an article, that there will not be any impact, and that he seriously doubts that the increasing use of computers and related information technology will affect top management's ability to control divisional operations, and in particular , it will bring about a trend in recentralisation. Dearden is arguing other opinions which say that one important reason for expecting fast changes in current practices is that information technology will make centralisation much easier, so consequently managers will probably revert to it. For J. Dearden's

FIGURE (2.2) THE USE OF COMPUTER FACILITY BY DIFFERENT MANAGEMENT LEVELS



argument (will the computer allow management to decrease significantly the degree of delegation ?) his investigation has led him to a different conclusion, where, it is not lack of information that has required delegation , it is two other deficiencies (lack of time to make all but the important decisions, and lack of being able to maintain expertise in all of the businesses in which the company is engaged. In other words it is the lack of knowledge to use the information most effectively). But on the other hand Dearden does not deny the possibility of having some minor impact, as in the case of inventory levels, which can be more closely controlled centrally, where it might be practical for top management to delegate certain operating decisions formerly made centrally, if information is available to check more closely on what is happening. As a general conclusion Dearden summarises his investigation into the effect of computers on the ability of top management to control divisional operations in these points:

- 1- Computers will reduce the cost of data processing,
- 2- They will make it possible to have performance evaluation earlier,
- 3- They will make it possible to have somewhat more accurate and complex variance analysis,
- 4- Finally, they will be of help in determining profit goals.

John Dearden (ref. 5 pp. 103-104) indicates that there are two pronounced trends in the industry, in that time, which will have their impact on the management and the ways managers do their tasks. These two trends (which are related to computer developments) are the centralisation of the data processing activity(for a purely

economic reason) and the centralisation of logistics systems, where the recent developments in time sharing, cheap random access equipment, and cheap and fast transmission have made the automation and centralisation of logistics systems economically feasible. The question that Dearden asks, is what are the main changes that are expected to occur from the automation and centralisation of logistics and the data processing on the tasks of the managers?. Dearden gives four expected changes (ref. 5 p. 104). He also gives his general conclusions about the impact on divisional management as follows:

- 1- These changes will have a limited impact on most managers at any level,
- 2- These changes will be confined to managers who are engaged primarily in supervising either decentralised data processing or logistics decisions,
- 3- Not all of these managers will be affected, logistics changes will only affect managers who are engaged in the type of activity that can be logically centralised,
- 4- In some situations, local conditions are so important that a centralisation of these decisions is not practical.

Following along this line (computerisation and the changing nature of the management work) Charles A. Myers (ref. 6 pp. 1-15) reports on the paper presented in a conference about "the impact of computers on management" held in August 1966. The main points of both discussions and presented papers under this topic are summarised as follows:

- 1- There was a general agreement that certain types of managerial work have already been substantially affected by computers. Various terms were used to describe these types of managerial jobs: logistics (by Dearden ref. 6 pp. 174-190), operations (by Beckett ref. 6 pp. 204-230), and structured, repetitive, or routine work (by other participants). Examples are given of these types of work, purchasing, production planning and control, inventory control, reordering, shipping and invoicing, accounting and preparation of payrolls, ...etc.
- 2- Managers who formerly supervised the above functions have fewer people reporting to them for the same volume of activity, and they have been freed of this responsibility to devote more of their time to other problems. Beckett's paper (ref.6 p. 174) contains a number of examples (purchasing, credit management, controllership, and operations management).
- 3- Forster (ref. 6 pp. 275-280) put the case of "today's unstructured jobs become structured", for managers versus computers more strongly. He says that although computers are taking over routine work from managers at all levels, there is still a big area of responsibility left in which a manager's skill, judgement, and ingenuity can be exercised. And this is the case not only for top managers but managers at all levels as well. James Mckenney (ref. 6 p. 12) comments on the impact of information technology on managerial work. He sees that the new technique being developed and pushed down to lower levels makes the manager more aware of the process of managing.
- 4- Many of the comments apply also to the higher levels of management, where tasks are likely to be more unstructured.

Man-machine interaction systems using real-time and time sharing computer technology may become applicable, as Whisler (ref. 6 pp. 16-45), says. Whisler thinks that these systems are evolving into a situation where managers can "tell" the computer what they want and the machine "tells" them what they must do to get it. Carroll (ref. 6 pp. 140-165) trying to develop this point further, suggests that these systems can be flexible, provide data at the moment of decision and offer the capability to answer "what if" questions about price policies, markets, products mixes, etc. Carroll suggests that it is more important to use man-machine co-operation, rather than trying heuristically to program the who decision.

5- Forester describes the character of top management decisions by saying that, about 90 percent of what matters to the success of a business lies outside the EDP system and that managers use primarily nonrecorded information to deal with these decisions. De Carlo, in the same discussion, adds that preoccupation with computers tends to miss the enormous amount of nonrecorded information that is transmitted among people, some of which is even nonverbal. Finally, most of the participants agreed that in the year 2000, managers in machine systems will still be dealing with ill-structured problems.

Having a quick look at the above previous studies mentioned in this chapter, we find the following indications:

1- These studies had all been done in the 1960's, the time when computers started to be used in businesses. This encouraged many writers to relate this new invention of technology with business

and to draw expectations about the future.

2- Most of the writers have devoted a big part of their descriptions to the impact of information technology on management work, and they mostly agreed that top level management work will be affected. But they disagreed with each other about the limit of the impact on the different management levels. They formed the 1960's view that lower level management were being affected by using computers at that time, and top level management will be affected in the future.

3- About the aspects of the impact of using computers, most writers agreed that more time will be available, more accurate information will be provided through computers for top managers and consequently more understanding of decision process and more accurate decisions would be made by them.

4- Some writers argued that nothing to worry about, as for top management ability to control divisional operations, but some changes will take place in the nature of managers' work as an outcome of the centralisation of both data processing and logistics systems. Managers at divisional levels will have parts of their work eliminated, and they will spend less time on processing data and in solving logistics problems. While they will have more time to interpret data and advise division managers.

5- One final conclusion is that unstructured problems will remain, as well as need for manager's judgement and experience after using computers.

While the above discussion refers to the 1960's, it is important to consider been realised during the 1970's and 80's.

In the last part of this chapter, we will show the results of studies which were done in the 1970's and 80's, on the same topic concerning use of the computers in management work.

A field study of end user computing, done by D. H. Benson (ref. 7) published in an article which reports on a series of interviews on end user computing, carried out in twenty locations in St. Louis in the U.S. The interviews took place between December 1982 and March 1983 on sixty-seven end users from all levels of management and nineteen information systems professionals, regarding the practice of interactive computing by non-DP professionals.

It is mentioned, at the beginning of this study (ref. 7 p. 35), that the growth of end user computing is one of the significant phenomena of the 1980's in the information management world. A recent study by the international data corporation predicted that Four out of Five administrative and professional workers will be using personal computing, to support their work and personal activities, by 1990 (ref. 8). It is reported also in this study (Benson ref. 7) that in another study published in 1981, Rockart and Flannery refer to estimates that while current end user computing consumed about ten percent of computer capacity in large corporations, such use would grow to consume Seventy percent of an expanded capacity by the end of the decade (ref. 9). Also Business Week, in November 1982, predicted that 26 million executives, professionals, and hobbyists would own microcomputers by 1985, and that the estimate of the training industry will capture £ 3 billion of the £ 14 billions spent on personal computers by 1986 (ref.10).

The question, which this study by Benson is trying to answer, is what is actually happening in the world of end user computing? will

it's growth be as explosive as is predictions?. The indications we are expecting to get will highlight the use of computers in businesses by different management levels in the 1980's. Some results from this study (ref. 7)are:

1- The study provides us with a table describing the management level and computing facilities used by those interviewed. The middle-level management comes first, and the lower-level management is the second for using computing facilities. The upper and top-level management come in the third and fourth. So, comparing with the 1960's studies, we can conclude that the predictions of their writers are still true, and that in the 1980's, the use of computers is wide in both middle and lower-level management and less in top-level management, as shown in the following figures:

Management level	Mainframe	Microcomputer	Both	Level
Top	4	3	0	7
Upper	3	8	2	13
Middle	14	20	2	36
Lower	7	3	1	11
Total	28	34	5	67

Figure (2.3) Management level and computing facility used
Source : ref. 7 p. 37

2- Looking at the distribution of users, all over the departments, who are using computer facility, we find a big percentage (40.2%) of the users in finance and accounting departments . Then comes the users in administration departments with (10.4%), then (8.9%)for the planning and forecasting departments . Only (0.01%) of users come from research and development departments. So it is obvious that clerical work users are the main users of computers in the 1970's, and still the non-clerical works like planning and forecasting, research and development do not have many computer users, as shown in the following figures:

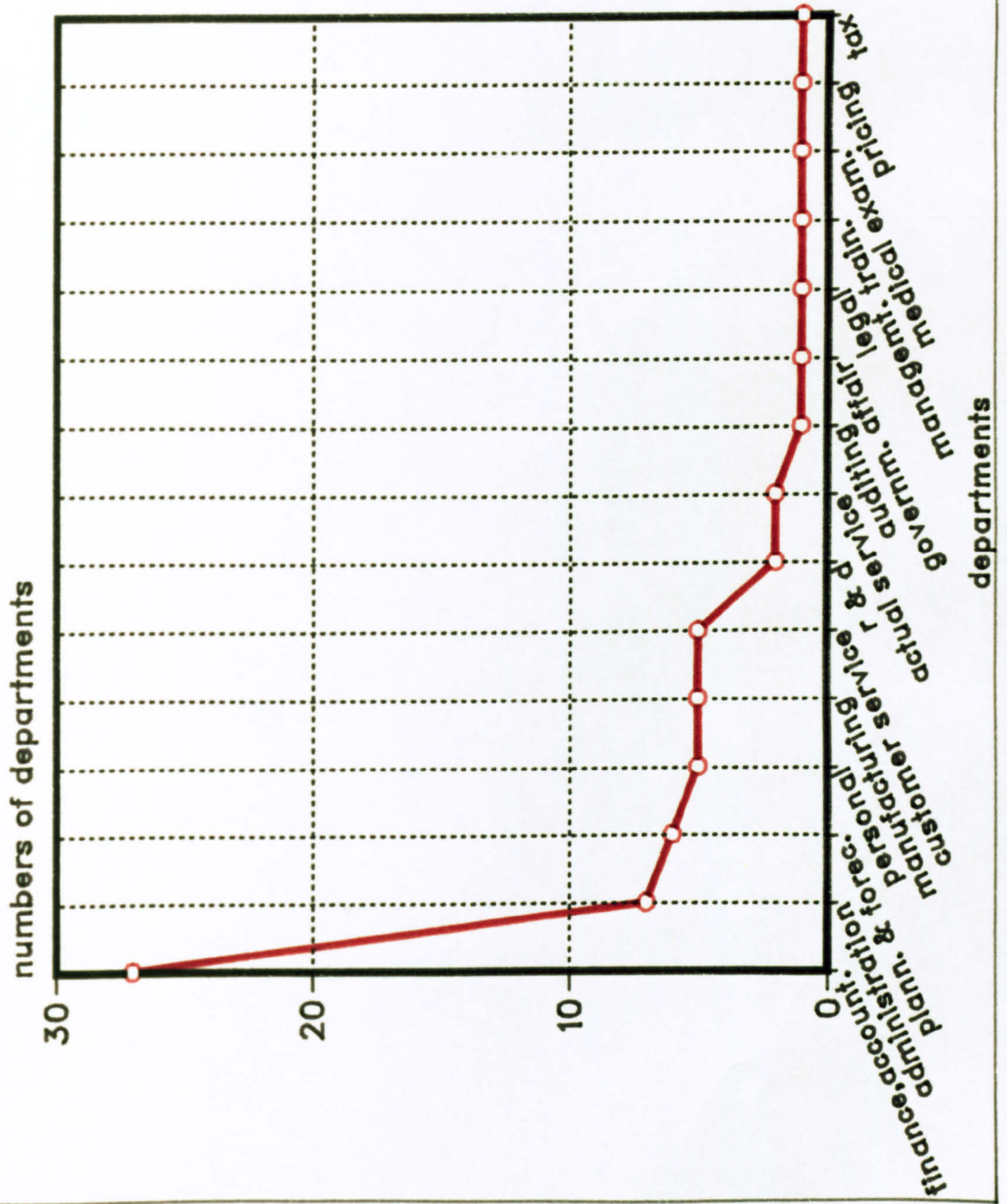
Department	Number	Department	Number
Finance and Accounting	27	Auditing	1
Administration	7	Government affairs	1
Planning and Forecasting	6	Legal	1
Personnel	5	Management training	1
Manufacturing	5	Medical Examiner	1
Customer service	5	Pricing	1
Research and Development	2	Tax	1
Actual service	2		

Figure (2.4) Departmental distribution of 67 End computing users
Source : ref. 7 p. 37

3- About the usage of computers (Mainframe and Microcomputer), Benson's study (ref.7 pp. 39-40) indicates that managers have become direct users of computer technology in one of two ways. One way has been based on their need to capture , inquire about, and retrieve specific kinds of information relating to their jobs. The second way has grown from a need to analyze data and develop projections, models, and various kinds of "what if" procedures. It is also indicated in Benson's study that demands for computer power to perform analytical tasks grew, especially from financial analysts and planning departments. The heavy proportion of end users in finance and accounting mentioned in the last table might explain , in part, the heavy emphasis on analytical use of computers technology. It may also indicate the area of business management which takes most easily to the use of that technology.

4- A figure for the initial application by percentage of total users is given by Benson (ref. 7 p. 39), which shows clearly that the introduction of microcomputers was triggered primarily by some application needs. It is obvious from this figure that a striking contrast was found between applications initially used

Figure (2.5) Departmental distribution of 67 end users



by microcomputer users compared to mainframe users. David Benson concludes that analytical applications drove the introduction of microcomputers, as shown in the following figures:

	Mainframe	Microcomputer
Data capture	60	29
Analysis	29	61
Word processing	2	1
Graphics	2	4
Electronic mail	5	0
Training	2	4

Figure (2.6) Initial applications by percentage of total
Source : ref. 7 p. 39

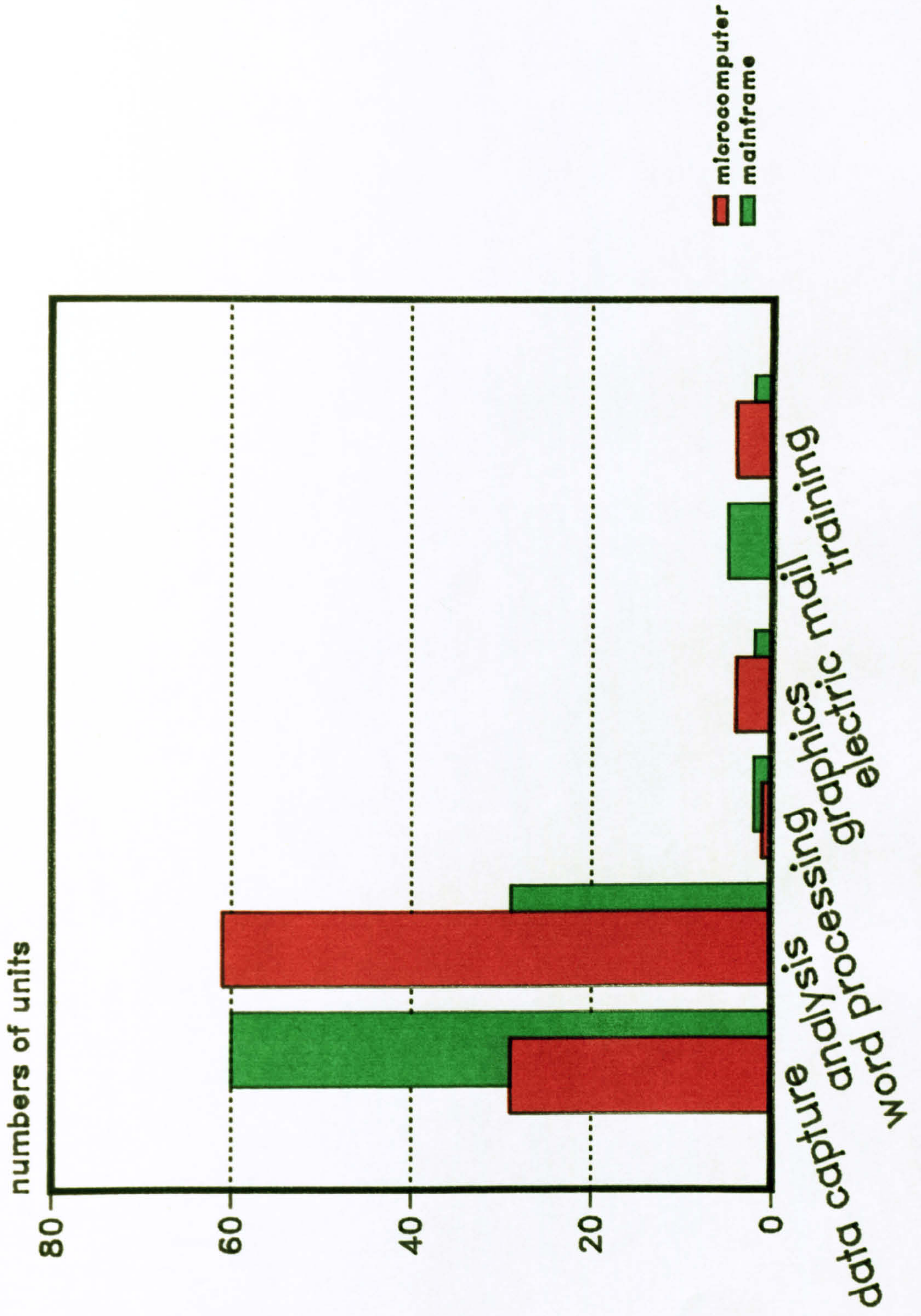
In a comparative study for the information technology development during the 1970's 1980's, Robert Benjamin (ref. 11) describes a scenario for information technology and its use within a major organisation in the year 1990. The scenario is based upon a model used at Xerox to portray the use of information systems internally within the corporation in the year 1990. Some results of this study are interesting for the writer, because they show how the predictions of the 1960's have been justified. They also give some further predictions for the year 1990 as follows:

1- Benjamin (ref. 11 pp. 18-19) describes the changes in the nature of applications that have occurred or can be reasonably anticipated for three decades:

a - During the early 70's, significant effort was put into cleaning up the basic operational systems for the subfunctions of the business such as invoicing, payroll, and general ledger accounting.

b - By the middle of the decade the emphasis had shifted in

Figure (2.6) initial application by percentages of total
 source : ref.7 p. 39



many organisations to the development of fully integrated systems. Benjamin gives an example of a set of fully integrated systems for functions such as payroll , personnel record keeping, and benefits management systems that comprise an integrated set of personnel systems.

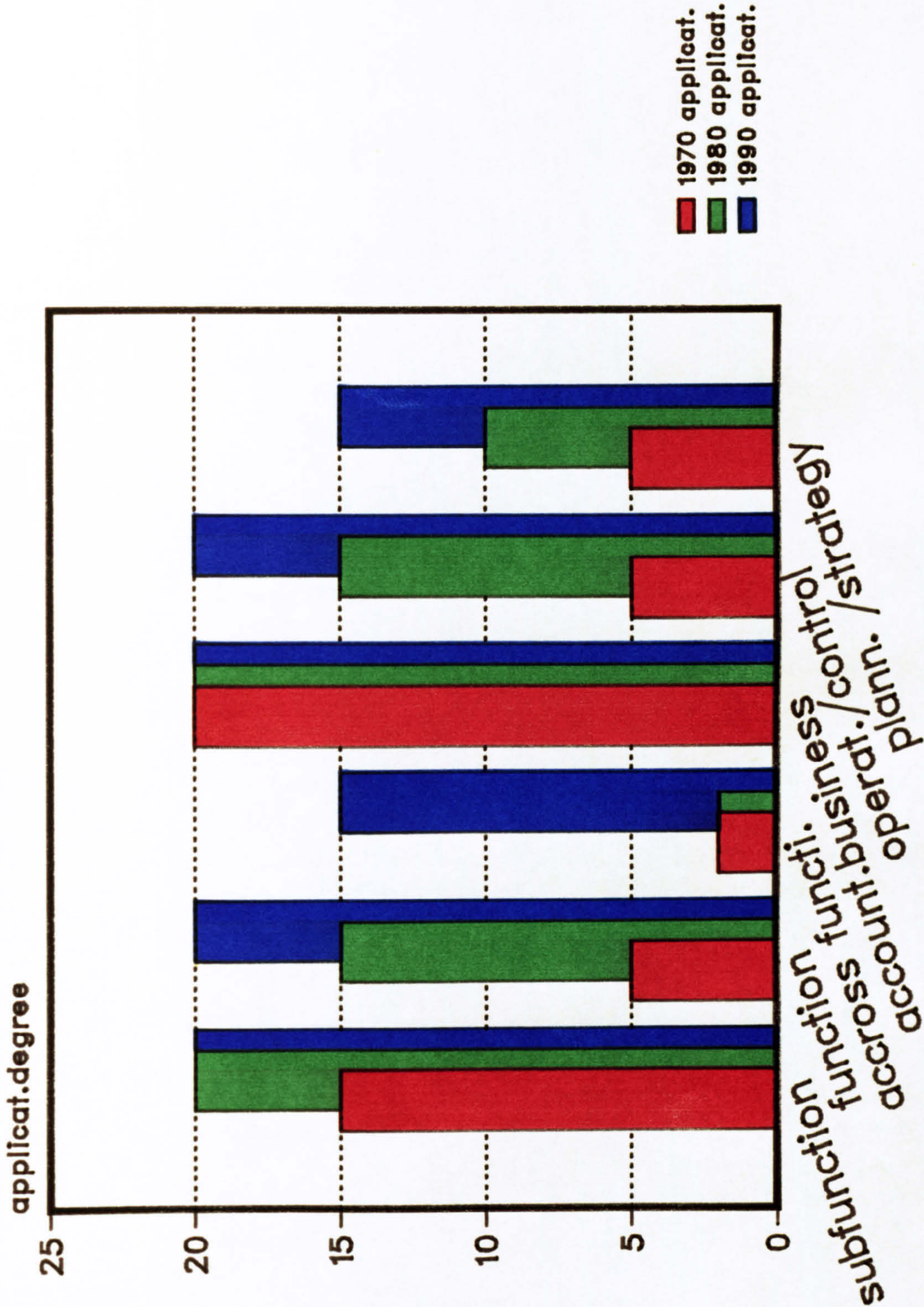
c - During the 80's, he predicts that the integration of the functional systems will generally be completed and emphasis will be turned to the integration of systems across functions.

2- Benjamin supports the early predictions of the 1960's, about the scope of applications of information technology. He says that this scope of applications has moved since the early days of computing from the most basic transaction systems to the complete set of operational systems to decision systems. Finally some emphasis is being given to strategic planning system reflecting the continued ability to deal with less structured problems over time. These explanations are shown in the following figures:

	1970	1980	1990
1-Data integration			
a-Subfunctions e.g. Billing	Medium	High	High
b-Function, e.g. Mfg. administration	Low	Medium	High
c-Across functions	—	—	Medium
2-Scope of applications			
a-Accounting business transaction	High	High	High
b-Operational/control	Low	Medium	High
C-Planning/strategy	Low	Low/Medium	Medium

Figure (2.8) Applications environment
Source : ref. 11 p. 19

figure (2.9) the applications environment expected until 1990
 source : ref. 11 p. 19



3- Benjamin reaches an opposite conclusion about the attitude of having a centralised data processing operation, to what had been predicted by the 1960's. He predicts that there will be a significant movement of processing, data base, and application development to distributed organisation levels, and that the rapid growth in the number of terminals illustrates this dynamic process. Finally Benjamin suggested that (ref.11 p.21)"to accommodate this without losing control there will have to be greater emphasis on centralised control of information system policy and standards, technical and functional architectures, network management", as shown in the following figure.

If this is the situation of using computers in the business industry, from 1960-1980, how about the situation in the hotel industry in the same period?. What is the effect of using computers there on the management work, and how far has this gone to help the decision makers in the hotel industry ? . This is what we are going to investigate in the next chapter.

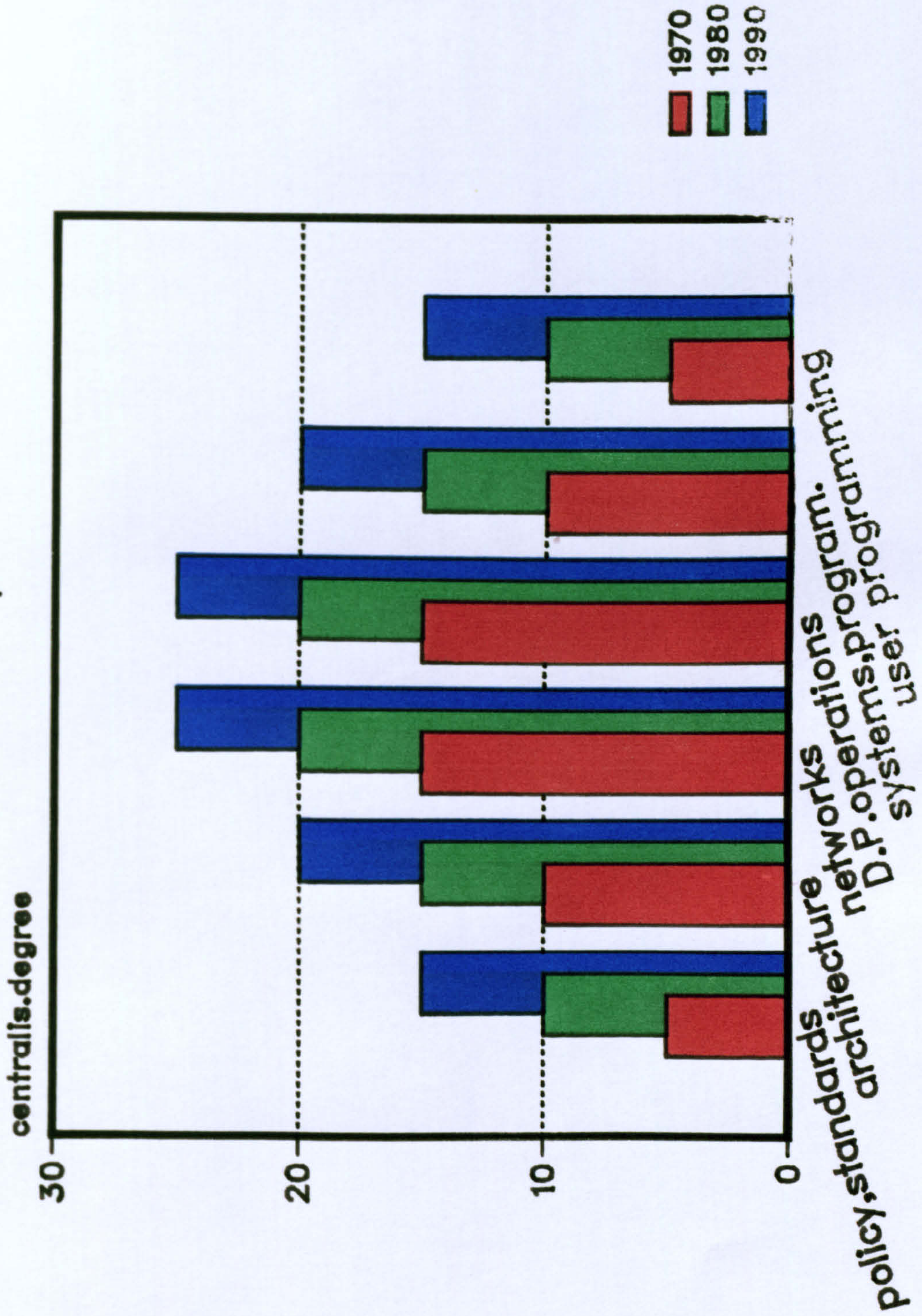
I suppose the following propositions to exist in the hotel industry:

1- The use of computers have started at a time later than in other business industries, like manufacturing industry.

2- the progress in using computer techniques is less quick than other business industries, because of the slow uptake of the hotel industry.

3- The applications of computers in the hotel industry are limited to the clerical work (general management work), but they might be more advanced in the technical work (like kitchen facilities, laundry, maintenance and reception).

Figure (2.10) the direction of the management systems towards the centralisation or the decentralisation of the information system policy between 1970-1990
 source : ref. 11 p. 23



4- The use of computers in the hotel industry should be justified economically. Large hotels will only use computers if they are economically profitable, and so the break-even point of using computers is likely to be in hotels of 400 bedrooms.

5- Because the main characteristic considered in running a hotel is the hospitality factor , much dependence on humans (working people not machines) is needed which will reduce the attitudes of using computers to automate hotel work.

6- For some personal reasons, the management of a hotel might decide to use computers if only to keep in touch with modern technology. So hotels of 300 bedrooms might also use computers even if not immediately economically justifiable.

7- The same reasons for not using computers in other business industry , and the main problems of operating them, will exist in the hotel industry too. It is unlikely that there will be much difference in satisfaction between the hotel industry and other industries concerning the use of computer systems and MIS.

8- Managers in hotels do not get much help from computers in making their decisions because little work has yet been done to identify or describe both management and decision making systems in the hotel industry (more details about "what are unit managers supposed to do in the hotel industry?", are explained by C P Hales in ref. 11a pp.3-11 and ref.11b pp.89-112).

9- There are other organisational and environmental factors which determine the use of computers in the undeveloped countries (like Egypt) which are different from these in the developed countries (like U.K.).

In the rest of this chapter we will shed light on the validity

of the 1960 and 1970 surveys, defining some expectations of the decision making theory and the importance of the cultural differences among countries which might affect the existing frameworks of the information systems.

Attempts to Describe the Nature of the Managerial Work

One early view of management was set forth in the 1900s by Fayol, who suggested five basic managerial functions: planning, organising, commanding, co-ordinating and controlling. This early normative view of management is not very helpful, since it presents the objective of managerial work; but it does not characterize the work itself or how to accomplish the objectives, Mintzberg (ref. 11c).

"The great manschool" is another attempt by Mintzberg to describe managerial work, through the stories of successful managers found in popular journals and newspapers, but there is little we can generalize from each case study.

H C Lucas (ref. 11d pp. 245-260) criticizes the economists and management scientists who have tried to describe how managers could act. He says that "these researchers unfortunately have to assume that managers are rational and profit-maximizing and that they should make certain mathematically specified choices". Lucas also criticizes the decision theorists who offer an approach to decision-making based on the identification of probability utility functions and the use of statistical procedures to recommend optimal decisions, saying that "these approaches are not really descriptive; instead they suggest how the rational manager should act given a certain decision problem". His argument against is that human beings

beings are very complex and that simple assumptions of many of these models are inadequate, concluding that this is why their writings do not help to understand how managers actually do act.

Mintzberg identifies 10 roles played by managers dividing them into three categories (Interpersonal Roles, Informational Roles, and Decisional Roles).

On the other hand Lucas thought that it is interesting to see how managers spend their time in the various activities constituting the roles described above, so he conducted a study to examine the most important decisions faced by a sample of top managers, mostly at the chairperson or president level. The managers observed appeared to favour verbal media, they spent much time in contact with people, scheduled meetings consumed the greatest percentage of managerial time, and external contacts, one-third to one-half of the time spent on interpersonal activities. He also could identify the decisions (problems) faced, grouping them into four categories (Marketing and Regulations, Organisational Structure, Personnel, and finance).

C P Hales (ref.11b p. 110) in his article provides a critical review of evidence about previous research on management work. He tried to answer the question about the extent to which those studies of management work disprove "classical" theories. He argues that:

"classical theories were not hypotheses about individual managers' behaviour, but theories of general managerial functions and responsibilities in the work process. A weakness of these theories was in assuming that it was possible to 'read off' specific behaviour from a knowledge of the managerial functions".

He concludes that:

"the classical theories have been neither adequately proven nor refuted by research studies of managerial work because these studies have not asked appropriate questions of the data".

Frameworks for Information Systems

Because there is no one theory of information systems, and also because there is no one clearly accepted framework for information systems due to the ill-structured nature of the field, Lucas (ref.11d) provides a review comparing and contrasting a number of frameworks for information systems, evaluating each of these frameworks and recommending one of them (Gorry-Scott Morton framework).

R. Antony (ref.11e) in suggesting a framework for information systems, discusses different types of information for various kinds of decisions. He proposes three types of decisions (Strategic planning decisions, Managerial control decisions, and Operational control decisions).

While Antony is concerned with the purpose of decision-making activities, H. Simon (ref.11f) is concerned with methods and techniques of problem solving. He proposes that there are two types of decisions (programmed decisions and non-programmed decisions). According to three decision-making stages proposed by Simon (Intelligence, Design, Choice) he explains that programmed decisions are routine and repetitive and they require little time spent in the design stage. On the other hand, nonprogrammed decisions are novel and unstructured, where they require much time to be spent in design.

Gorry and Scott Morton (ref.11g) have combined the work of both

Antony and Simon to develop another framework for information systems. The result is another classification for decision types (Structured and unstructured decisions). They feel that these last two terms are better terms than programmed and non-programmed. They identify the unstructured decisions as decisions for which all their three phases (Intelligence, Design, and Choice) are unstructured, and that any decision between structured and unstructured is semistructured. The goals and design techniques for unstructured decisions differ from those for structured ones. The goal of the information systems for the unstructured decisions is to improve the organisation and presentation of information inputs to the decision maker.

Expectations of Existing Information Systems

Churchill et al (ref.11h) performed an early study of the impact of computers on organisations from which they presented interesting findings that differ from popular literature. They conducted interviews with users, managers and computer department management in a number of companies. Based on that they concluded the present information systems literature presents a far more advanced picture than that which actually exists.

Out of those studies done about the existing information systems, we can draw our expectations about the validity of the 1960 and 1970 surveys, as follows:

- a- Computers have achieved much in clerical operations, but they have been used less frequently in other areas.
- b- There is a trend to delegate more decisions to computers.
- c- There is little or no impact of computers on higher levels of management.

Expectations of the Influence of the Cultural Differences

In a study about "cultural discontinuities and the transfer of management philosophies and practices" John Martyr (ref.11i pp. 22-24) points out that science and similar quantitative subjects can usually be transferred from one culture to another because cultural differences rarely matter.

Martyr explains that by distinguishing between two sides of management. The scientific or the quantitative side can be applied directly to improve efficiency and increase economic growth. The other side is the qualitative side which seeks to define and promote social development. Martyr's view is that in this qualitative area, management becomes an art which is sensitive to cultural circumstances. This qualitative (inductive) side of management is most likely to create problems and differences in the transfer of management concepts from one culture to another.

The belief of "Universal applicability" of management principles has been discussed and investigated by Mendoza (ref.11j). He started his investigation with the idea that what is regarded as a "principle" of management in one society may have less application in another. He pointed to the successful Japanese management system which is radically different from that of the American. He concluded that the Japanese have shown that there can be an alternative form of management which is as effective as the American.

A difference between U.S. and Japan (in terms of decision-making process) is clear in the example given by John Martyr (ref. 11i p.24 from ref. 11k), where the Americans are generally supporting the principle of delegation of responsibility from the top downwards, whereas the Japanese often use a consultative decision-making

process from bottom upwards which their culture will more accept.

From the above illustrations we can draw expectations about the influence of cultural differences over the existing frameworks of information systems used in different countries, as follows:

a- The management 'principles' and practices of one culture do not necessarily suit another.

b- Management skills (especially for higher levels) can be described as integrative, where they combine both quantitative and qualitative skills. Quantitative skills can usually be transferred and practised similarly in different cultures, but qualitative skills may be difficult to transfer and are most likely to be practised differently.

b- Apart from cultural differences, the influence of the state control over the work system and the structure of the decision making process in business organisations will affect the applicability of management theory and system needs between different countries. Inside one country the influence might differ according to the degree of this control from one sector to another.

Issues like computer applications, managers' skills practised for communication information, users' (managers) satisfaction about the information they receive, and managers' decisions and their information needs are some examples of these issues which will be examined to shed light on the influence of the cultural differences between the U.K. and Egypt.

These are propositions which will be now investigated in the next chapters.

CHAPTER 3 : THE SPECIAL CHARACTERISTICS OF THE HOTEL INDUSTRY (SOME KEY DECISIONS and MANAGEMENT CONSIDERATIONS)

3.1 Introduction

This chapter will describe some of the characteristics of the hotel industry, some of which are concerned with the service sector, and the kinds of research which have been carried out there. The special nature of the hotel industry and the surrounding environment will be discussed. Analysis of the decision making process criteria and consideration for evaluation, will be included, as well as some propositions about the influence of these characteristics on the possibility of computerising hotel activities.

3.2 The Nature of the Service Organisations

Robert S. Sullivan (ref. 12 pp. 211-212) in an article about the "challenges and imperatives for research in operations management in the service sector" distinguishes some fundamental difficulties that surround the study of service organisations, the most basic one, from his point of view, is in defining what constitutes a service. "Attempts at such definitions range from complete enumeration, to exclusion", he says. Sullivan identifies some distinctive characteristics of services that affect operation management (ref. 12 p. 212):

- 1- Service organisations are far more people-oriented than manufacturing organisation.
- 2- Customers generally participate in the service process, often with direct and uncensored interactions with employees and facilities.
- 3- In service organisations, the production function can not be

divorced from the marketing function. This is because production and consumption occur simultaneously, where services can not be inventoried.

4- Consequently, variations in demand create challenges establishing and utilizing capacity that may involve facilities design and layout, work design, workshift scheduling.

Sullivan suggests a table for the implications of these distinctive characteristics of service organisations over the service operations management. Some of these implications as follows (ref. 12 p. 212):

- 1- Customer is an input/resource.
- 2- Customer has immediate interactions with operations.
- 3- Services are not inventoried, and capacity to provide service must be available when demanded.
- 4- Forecasting demand, smoothing, and adjusting capacity have important implications for operations.
- 5- New technologies are difficult to implement, while maintaining a personalized atmosphere, where employee characteristics influence the value of the service package.
- 6- Units of output are difficult to measure, and the quality of control systems are difficult to establish.

Considering the above implications, and relating them to the hotel industry, we can build our expectations about the possibility to computerize the hotel's operations management. Hospitality practised by hotel's staff and the difficulty of defining and measuring the output of a hotel's services, will make computerisation less valuable in the hotel industry.

Buffa 1980 (ref. 13) and Chase 1980 (ref. 14), provide some perspectives on the evolution, orientation and emphasis of research in

operations management, which can be viewed in light of the unique characteristics of services. The main ideas they provide are that those who seek to study the system in a service organisation, or to describe an information system can be guided by the developed theories of service organisations.

"Consumer contact approach", is one of the leading theories in this respect. It allows for a grouping of service systems according to decreasing customer contact (ref. 12 p. 214). According to this theory, the customer is an important input into the service system because customer contact influences the service package. Chase 1981 (ref. 15 pp. 689- 706) gives an example, where with high contact service organisations, the implicit services, explicit services, and supporting facilities may determine the total volume of the service package. Consequently, customer perceptions about service are significantly influenced by such factors as employee attitude and appearance, aesthetics of the environment , customer waiting, as well as the "quality" of the explicit services.

Considering the above remarks, I suppose that the study of a service organisation should start by consideration of the effect of customer perceptions and the interfunctional perspective of marketing with other functional areas. From the writers's point of view, in order to design a new system or to introduce new information technology, more emphasis is given to equipment more than to functional areas and people. This is the prime reason behind the deffectiveness of these new systems. This will be more significant in the undeveloped countries than in the developed countries.

3.3 Common Characteristics of the Hotel Industry

Rogers and Phipps (ref. 16 pp. 3-9) tried to identify the common characteristics of the hotel industry. They believe that common sense tells that the behaviour of any firm must be heavily dependent on its particular line of business. But much of the conventional wisdom tends to regard all firms as being essentially similar. They criticize the approach of professor J. Johnston who proposes a new attitude to the problem of sectorisation (ref. 17) which does not accept the traditional breakdown of the Economy into primary (agriculture), secondary (manufacturing) tertiary (service) sectors. Johnston suggests that a more useful approach would be to identify "marketable" and "non-marketable" sectors. Rogers and Phipps' argument against generalizing this approach over the service sector, goes back to the wide spread of activities that it covers. Finance and insurance and entertainment, defence and justice, education and public administration, are some examples for this diversity of the service industries.

The industry's reason for existence is one way to identify the common characteristics for the hotel industry (ref. 16 pp. 4-8). The hotel and catering industry's reason for existence is to meet the needs of the community for meals and accommodation away from home. These needs arise for a number of reasons. In some cases, the industry's services are required because of the enforced absence from home caused by demands of work, education or health. In others, the demand for meals and accommodation is derived from the need or desire to travel. Finally, some of these services are desired for their own sake, for instance, eating out as a form of recreation and enjoyment.

The hotel and catering Economic Development Committee, suggests a comprehensive definition for the industry "the industry is a number of heterogeneous sectors , the nature of their activities and the economic conditions surrounding these different sectors are often quite disparate"(ref. 18).

What does this comprehensive definition and the above derived common characteristics imply over the decision making process and the success of the hotel and catering business ? . Rogers and Phipps (ref. 16) answer this question when they explain the special nature and attributes of a service, which differentiates it from a manufactured good, as follows:

- 1- Service product is more than just a service, it is a combination of facilities , location, price, and sales promotion. The Consumer, before buying, has many expectations which are based on intangible qualities such as atmosphere and image. The consumer faces a high degree of involvement and uncertainty about the product itself and his own role in the buying process, which imply some problems for the marketing decisions.

- 2- Most services are "perishable", where they can not be stockpiled . This implies some problems especially when demand fluctuates. Rogers and Phipps give an example , where in a hotel an unsold room in one night is wasted, whilst on the other hand, many hotels and catering units are frequently faced with the problem of satisfying unexpected and immediate pressures of demand.

- 3- Workforce is the main asset in the service industry, in order to generate revenue and repeat custom. The quality of both product and staff (their special skills) are needed to deal with guest/staff relationships.

4- Services are immobile, they can not be transported in the way goods can. Customers have to come to the hotel site, to purchase and enjoy the service. So location is of prime importance and has to be the source of demand.

5- The special feature of the direct involvement with the customer and the predominantly small-sized fragmented units in the industry, imply that in certain aspects management decision making is different, where many managers find themselves pressurised by the direct presence of customers and the fluctuating demand to implement existing decisions. They have little opportunity to sit back and appraise the situation or to be able to formulate new policies.

Much of the credibility of the hotel manager depends upon his ability to create and formulate strategies, according to the external and internal environment, then determine the success and profitability of a hotel business. So the question is, what are these internal and external aspects of the environment?. Another question is what is the impact of these environmental aspects on the hotel business and decision making institutions ? . Rogers and Phipps (ref. 16) tried to answer these questions by identifying the main decision-making units in the hotel business as the consumer, the firm, and the government. Out of their long explanations, it is possible to identify some remarks which might highlight these aspects and their impacts, as follows:

1- In the hotel and catering industry, there is no pure market system, and most of the countries accept a measure of governmental interference and control (ref. 16 p. 13).

2- In a mixed economy the firm plays a central role, where it allocates and co-ordinates the use of resources for production and service purposes. Thompson (ref. 19) identifies the key decisions

the firm has to make as what to produce, where to produce, and how to produce?. The outcome of these decisions affects the whole nature of the economy, but Thompson argues that in doing so it will help to build a number of guidelines and rules for decision making, which become unavailable when making decisions in the hotel and catering industry.

3- The hotel and catering industry is full of contrast. Small owner-managed firms control the major proportion of the industry's capacity, but large companies become increasingly important.

4- Company expansion has been achieved by internal growth, take over, merger and creation of consortia. Through expansion, firms are able to benefit from both technical and organisational economies.

5- Franchising in the hotel and catering industry is another aspect of development (ref. 20) . Franchising agreements may take various forms, but involves the marketing by the Franchisee of product or service that is designed and controlled for quality by the Franchisor.

6- Lundberg (ref. 21) explains how the fragmentary and diverse nature of the industry has caused a shortage of accurate and reliable information. He concludes that this has impeded the development of meaningful research activities in the hotel and catering industry.

7- The structure of industry results in certain important characteristics, which affect the nature of the decision making there (ref. 16 p. 22). Apart from profit, growth, and personal motives, other objectives have become important, for example to develop a public relations image, or a hedge against inflation. Because of the service provided by this industry is intangible, the

marketing philosophy of the hotel industry is different from the manufacturing firm. This implies that the provision of good information to the consumer concerning the product is crucial.

8- The life cycle of a product, as a concept, is very important. Rogers and Phipps (ref. 16 p. 94) suggest that the supplier has to assess the build up of demand and be ready to redesign the product once the peak level of demand is passed. The length of this life-cycle (of an accommodation or catering service) will depend upon the experience of consumer tastes and preferences.

9- The activities of the hotel and catering industry involve two kinds of investments: (1) investment in land and buildings, (2) investment in equipment. The interior production assets involve high levels of fixed investment and long pay-off periods. This structure is shown in the following figure.

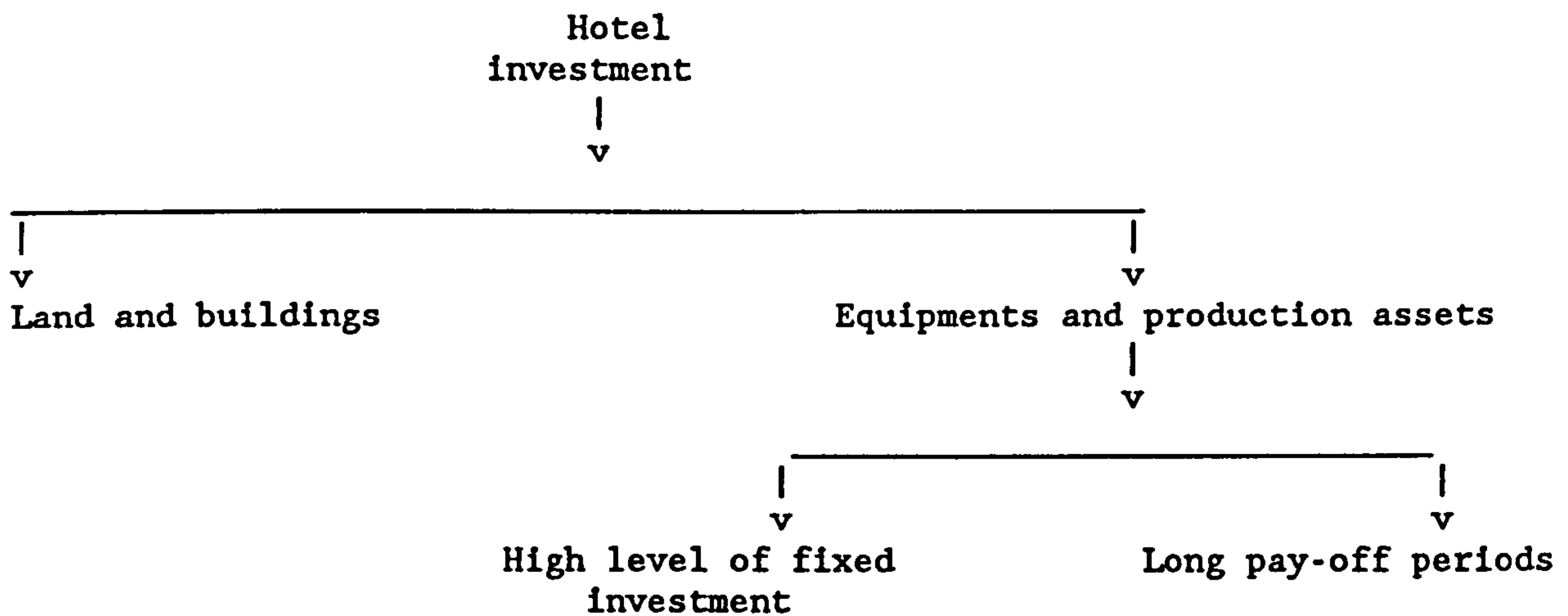


Figure (3.1) The structure of the hotel investments

10- The nature of operations in the hotel industry determines the variance of the extent to which Labour and Capital can be substituted for one another. But in any case, the least-cost combination of production factors will be effective by the relative prices of Labour and Capital.

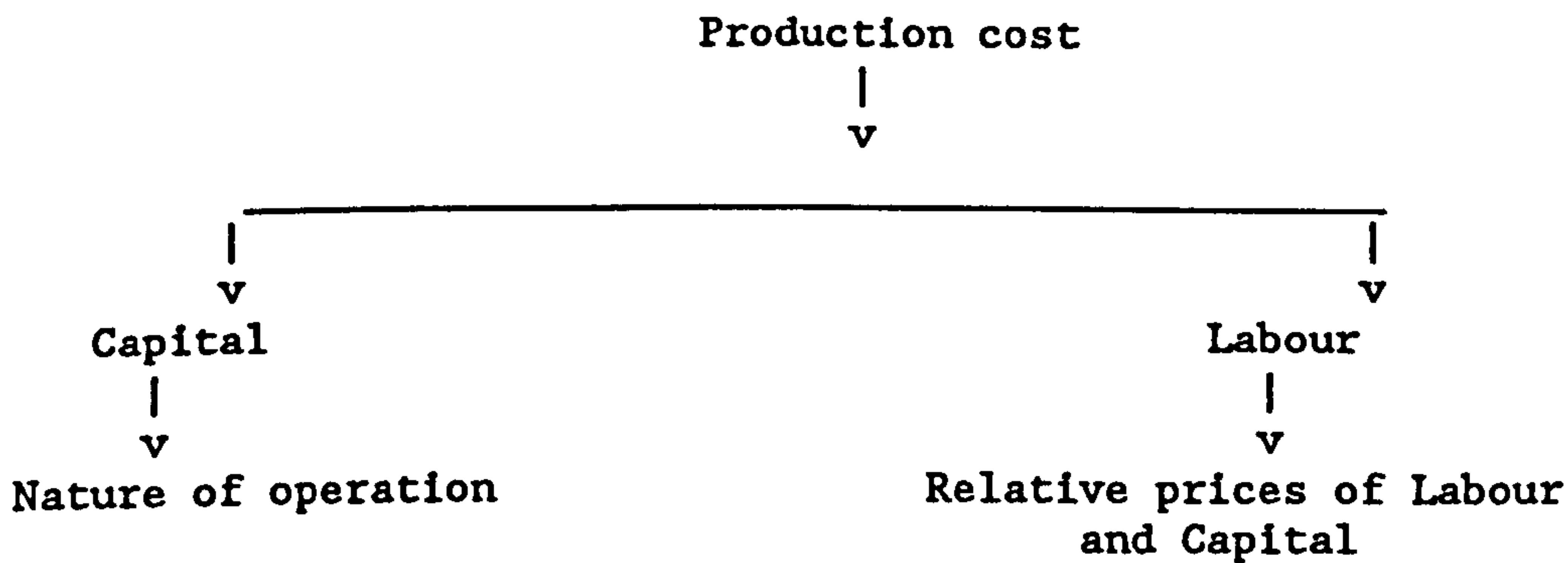


Figure (3.2) Production cost factors

11- The capacity of an accommodation unit will be a function of the number of bedrooms, and the length of opening season. For a catering unit, capacity will be a function of number of seats, of opening hours and the turnover of customers within a given time period. Any conclusion about the short-run and long-run behaviour of costs must be mainly based

on a hypothesis, as Pickering and others say (ref. 22 pp. 20-26)," there is little empirical evidence from which we can base any generalization about the rate of change of cost with output in the hotel and catering industry". But, on the other hand, they recognize a distinction between the hotel and catering in production costs (ref. 22), where in hotel operation, fixed costs represent a significantly higher proportion of costs than in catering, while the Labour costs will be determined according to the extent of service offered in both. This structure of the cost factors in both the hotel and catering industry is shown in the following figure.

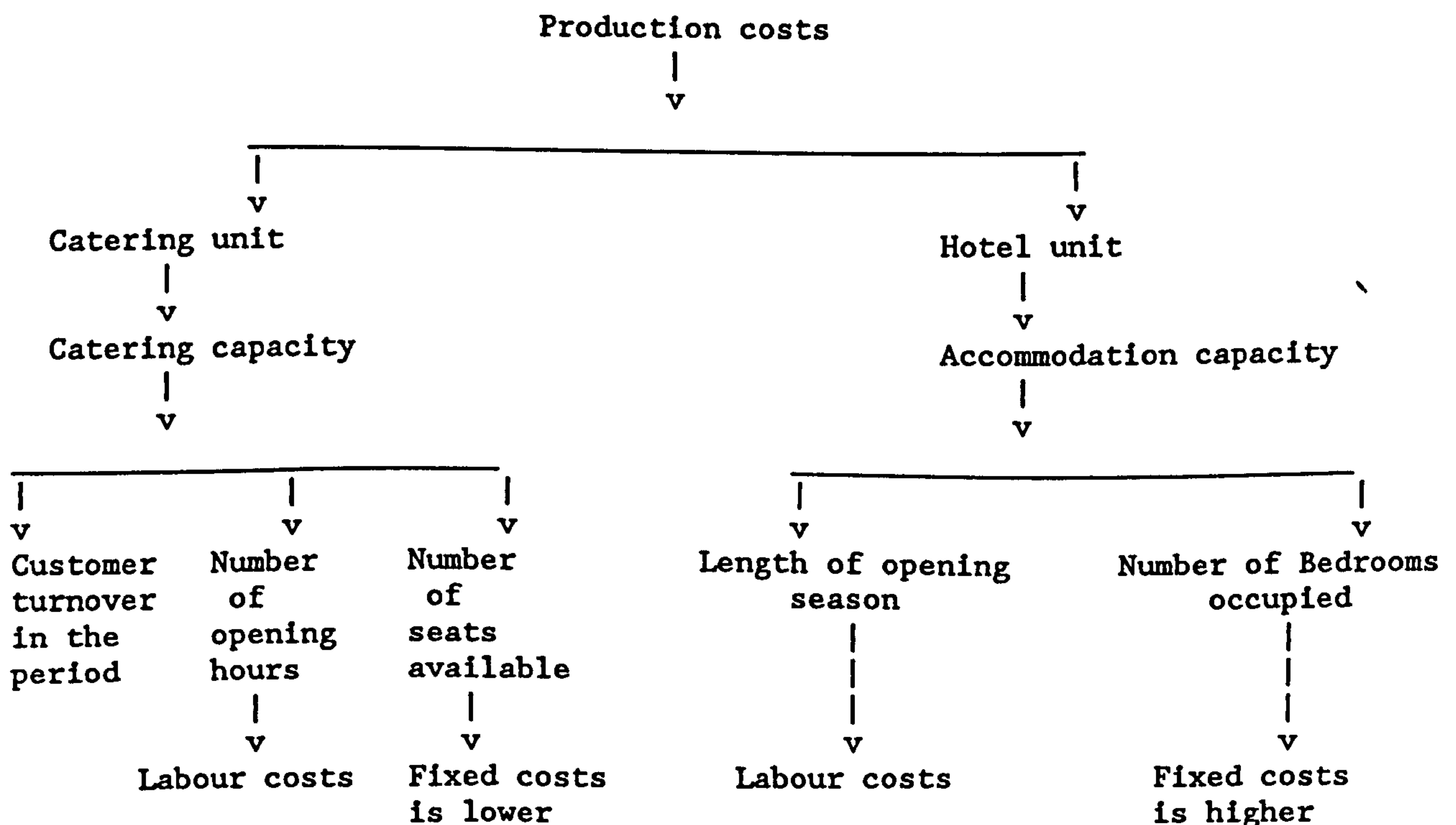


Figure (3.3) Hotel and catering cost factors

12- Decisions that can be taken to change the scale of organisation in this industry can take three ways (ref. 16 p. 95): (1) a decision to expand an existing unit is only possible if there are both the physical possibility and the existence of unsatisfied market demand, (2) a decision to set or buy more units for the firm to grow, (3) a decision

of better utilization of equipment and Labour through some technical procedures or economies.

In any of these cases, the changes of the scale of organisation will require a successful standardisation of the service, efficient management, and control of geographically spread and diverse units. These decisions to change the organisation scale are shown in the following figure.

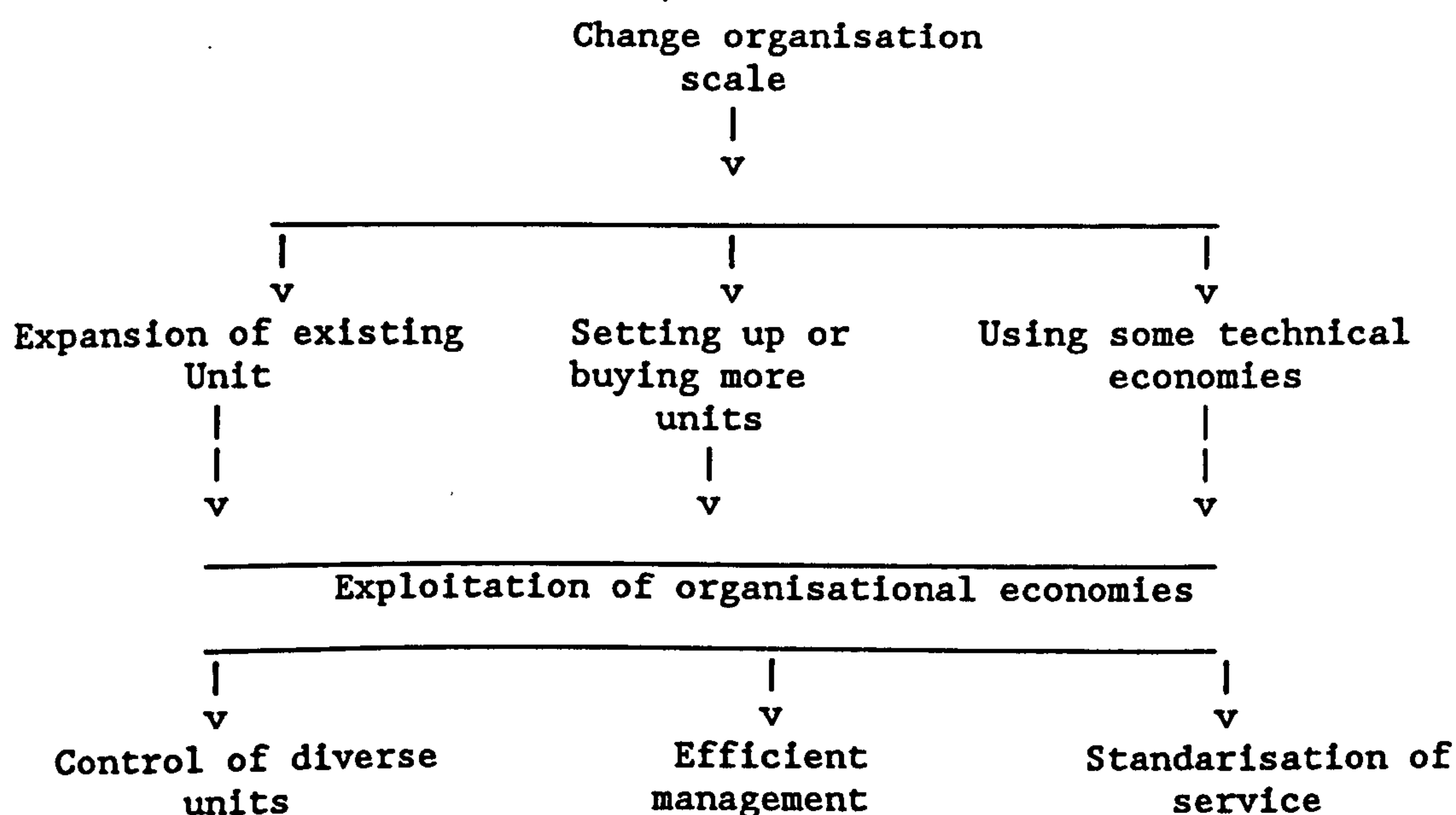


Figure (3.4) Decision keys to change the scale of organisation in hotel and catering industry

13- As for the manpower nature in the hotel and catering industry, the Labour intense nature of a service industry makes the availability of experienced and qualified personnel essential for success. But still, as Rogers and Phipps state, the Labour relations are poor, and consequently, split shifts, low wages and long hours make the industry relatively unattractive.

14- About the financial structure of the hotel and catering industry,

from the explanation of the environmental characteristics of the industry given in (ref. 16 p. 95), we could explore some considerations and rules which the financial decision makers must be aware of, as follows:

a - Finance required for this industry is essentially long term compared with manufacturing.

b - Working Capital in this industry, tied up in the form of partly or completed stocks,...etc, is unnecessary.

c - The potential lenders for Capital or finance, in this industry, are usually worried because of the specific nature of the activity and the sensitivity of the market, which result in a risk element. This feeling of uncertainty is reflected in relatively higher interest rates and strict security requirements, even if finance is made available.

d - The base for expansion and modernisation in this industry are functions of the available finance, where the availability of finance determines these changes. This risk-cycle finance is shown in the followin figure:

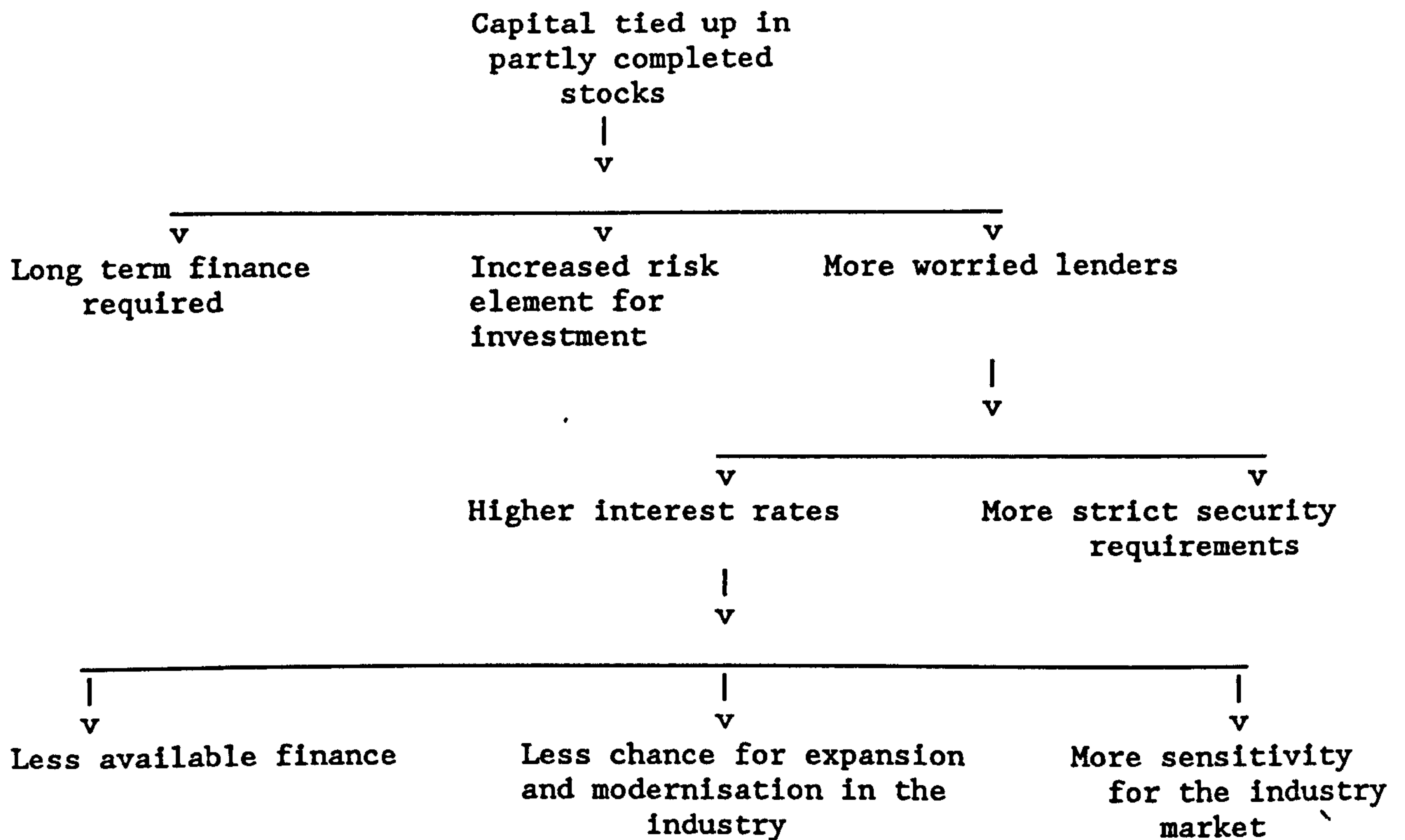


Figure (3.5) A model for the finance risk-cycle in the hotel industry

3.4 Conclusion and Suggested Propositions

We list some concluding points which describe the expected possibilities of using computer in the hotel industry, besides some guidance and required information for decision makers who are managing the hotel industry:

- 1- Full computerisation of the whole hotel's activities is not recommended. Technology can not replace the personal atmosphere and hospitality characteristics, which in return influence the value of the service package offered.
- 2- The output unit in the hotel industry (service) represents a dilemma to be handled by computers (in the form of control,

evaluation, and information feedback) because it is difficult to define and measure it.

3- Customer perceptions and employee attitudes in the hotel industry should have more emphasis in the design of any successful information systems, technological equipment and clerical functions have been given much more emphasis when deploying the use of computers in the industry.

4- In the design of information systems for hotel managers, it should be considered that much of the credibility of the hotel manager depends upon his ability to create and formulate strategies according to the internal and external environment, which determine the success and profitability of the hotel business. Computer facilities can help a great deal to provide, update, and feedback information but there are few uses of computers for these purposes (especially in marketing) in the real world of the hotels now.

5- The key decisions that any manufacturing firm has to make (for example, what to produce, where, and how) are not applicable to service firms (the hotel industry). There are other important decision areas to be made by the hotel manager like:

a - Expansion, either by internal growth, take over, merger, or integration and creation of consortia.

b - How to make the maximum of both technical and organisational economies, which can be done through better utilisation of equipment and Labour.

c - In large hotels, to undertake advertising and sales promotion, to establish a standardised service with a particular brand image.

d - The development of a public relations image, the development of a hedge against inflation, the proximity of managers, employees

and customers which can result in more satisfaction for the consumer. These decision areas depend mainly upon the judgement and experience of the manager and are therefore difficult to computerise.

6- In the hotel industry, I suggest that the information systems for decision making must guarantee the provision and feedback of the following required information for the following decision areas:

Decision area	Required information
1- Research and development activities	-> Accurate and reliable data about the fragmentary and diverse nature of the hotel industry .
2- Promotional activities to compete for consumer expenditure	-> Marketing techniques used by Tourism industries abroad and consumer industries at home .
3- Sales promotion and advertisements	-> Feedback about how good the information provided to the customer concerning the product .
4- The build up of the demand and the redesign of the product	-> The product life-cycle (i.e. accommodation), product peak level of demand, consumer tastes and preferences .
5- The least-cost combination of production factors (substitution variance of Labour and capital)	-> Relative prices of Labour and capital in the market of the industry .
6- Accommodation capacity in the hotel	-> Updating information about the numbers of rooms available for occupancy and the length of opening season .
7- The capacity of the catering unit	-> Updating information about : a-Number of seats available b-Opening hours c-Customer turnover in a given period .
8- Expansion of the existed unit	-> Data about the physical possibility and the existence of unsatisfied market demand .
9- Change the organisation scale	-> Data about the possibility of having : a-Standardisation of service . b-Efficient management and control of the wide spread and diverse units
10- Base of expansion and modernisation	-> Updating data about : a-Availability of finance b-Capital tied up in partly or completed functions (i.e.stocks) c-Relative higher interest rates d-Security requirements for finance .

Figure (3.6) A model for the hotel manager's growing decision areas and their information needs

In the last few pages we described some propositions, and we suggested a model for decision areas and information requirements of the hotel manager. In the next chapters we will investigate how this model and these propositions are applicable in the hotel industry.

CHAPTER 4 : THE POSSIBILITIES OF USING COMPUTERS IN HOTEL INDUSTRY

4.1 Introduction

There is no doubt that a growing interest, in the hotel and catering industry and in other industries as well, of using computers is taking place. Firms are different in their ways to use computers. Some of them have installed their own computers, others have made use of computer service bureaux. Because buying or leasing a computer is very expensive, so the decision is difficult for the management to make. Any error or misjudgement in the application of computers to hotel operations and procedures can be costly.

Over the last 5-10 years, computer installations have increased with lower cost equipment and with software developed specifically for smaller firms. Considering that small firms represent the majority, in terms of size, in the hotel and catering industry, the signs are that most firms should have encouraged the technology decisions in the last 5-10 years, or at least will in the coming few years.

In this chapter we will describe the 1970's computer applications within the British industry, and some problem areas, through the results of some surveys which had been done early in the 1970's (ref. 23). Updating these results of the 1970's, by other outcomes of a pilot study which had been done early in the 1980's (ref. 24) round this topic, we will be in a position to identify our expectations about the use of a computer in the hotel industry. Then we explain the research methodology of our study to investigate these expectations to update the results until 1985, to see how these expectations (model) are applicable. Survey by the writer had been done in 1985 in both the British and Egyptian

hotels to achieve these purposes.

4.2 The Hotel Industry Characteristics for and against Using Computers

The EDC (economic development committee) report has indicated a number of features which are significant in the context of planning a wider use of computers in the hotel industry (ref. 23 p. 3). We pick up some of the main arguments mentioned there against using computers, as follows:

1- There are technical limitations to the use of computers in the industry, where data volume are too small, arithmetical problems are rarely complex, and the multiplicity of hotel and catering activities inhibits the development of standard systems. It is argued that data preparation is always an expensive part of the computer system, and to cover the data preparation costs, there must be a sufficient use of the data. While in the hotel industry the data used tends to be required only once. It is also argued that standard systems can only be developed when there are common objectives and practices, but because the significance of particular activities to firms may vary greatly, management objectives, and basic procedures will differ in the hotel industry.

2- In a survey undertaken on behalf of the National Computing Centre in the U.K., Gallup Poll Ltd, for the purpose of using computers between hotel groups, brewers and merchandising, it is concluded that many firms have more than one activity, and that in some multi-activity firms, one activity clearly predominates. It is also indicated that many firms are engaged in activities outside the industry, as well as within it, where sometimes the size of their interest within, is small in relation to their total interests (ref.

23 p. 69).

3- Small firms predominate in the hotel industry. The 1970's EDC report, indicates that at the time of the study only a small number of firms operated one or more hotels with over 200 bedrooms, and only 26 firms controlled more than 1000 bedrooms.

On the other hand, some studies which had been done early in the 1960's argued for computerisation in the hotel industry. R. Mc Cartly (ref. 25 p. 63) indicates that at the time of his study most small units have little more than simple accounting machines, and some of the larger organisations are much more advanced in the respect of employing computers and other forms of mechanised management equipment. Mc Cartly also indicates that the development in this respect seems to have progressed further in the U.S.A. than in the U.K., and that the extensive use of automatic data processing enabled hotels to reduce payroll costs in the accounting and control functions, by assisting the better planning and scheduling of employee slack periods.

Another study by J. Birdsall Jr (ref. 25a p. 17) reports that the use of an NCR 390 computer to process payroll and financial statements for small units belonging to hotel chain, helped to improve the flow of managerial information available. Birdsall predicts that in the future this later development which would not usually be available to the small independent hotel, might open to consortia of such units, and some other time-sharing arrangements might be considered to achieve the same effect.

Talking about "computerisation" in the hotel industry got more attention after the 1970's (ref. 22 p.. 88-91). It had been found that only 24 firms in the industry use computers, of which 12 had computer on their own premises and 12 used computer bureaux. The situation inside

is described through the EDC report as "a range of work processed on the computers with no clear pattern of usage emerging, a general lack of agreement and clarity amongst users and potential users on possible computer application". Accordingly, the break-even point to justify the sole use of computers for a variety of management functions was estimated as 400 bedrooms. Because there were only 13 hotels of this size in the U.K. in 1970, the idea of developing a consortia of users emerged to overcome some of the limitations, in order to spread costs over a large number of users. Consequently it was estimated that the break-even point would fall to hotels with 200 bedrooms. On the other hand, the idea of using "Time-Sharing" by small firms was just recently introduced by the American experience. Gilbert (ref. 26) argues, in his article, that the possibility of developing a program which can be shared by small firms in the hotel industry, and based on the standardised system of accounting, ... etc, should not be underestimated and is worthy of further attention.

4.3 Management Problems in Adopting Computerisation

Here we will try to make a comparison between the arguments of both the 1970's and 1980's, about the adoption of information technology, to see how far the base of both arguments have changed over the last ten years within the hotel industry, to arrive at the main management problems which the computer can possibly help to resolve. Later in this chapter, when we summarise the main application of computers in the industry during the last ten years or more, we will be able to form our expectations (propositions) about the computer applications in 1985, in the hotel industry.

4.3.1 The Main Points of the 1970's Arguments (ref. 22 pp. 88-91):

1- Management problems which computers are asked to resolve should be clearly stated and technically assessed, before any firm recommendations made as to how computers can bring more benefits to the industry.

2- Benefits that computers can bring to firms take two forms, the first is partly direct benefits (for example, cutting costs, increasing profitability) and the second is partly indirect benefits (for example, to encourage a complete rethink of methods and objectives and to help managers to think in terms of modern techniques).

3- Three technical requirements for the success in using computers are: a large amount of data to be handled, complex arithmetic, a clearly defined decision making process.

4- Despite these limitations, some hotel groups are making use of computers. The argument is once a computer system is running, then it is worthwhile to widen its use to cover all hotels in the group. But the complaint is that in most cases the benefits are seen to be derived by the central administration rather than by individual hotel managers.

5- Spreading the cost of data preparation over a large number of users can help to overcome the volume of data limitations. This can be achieved when individual hotels combine to form consortia and use standard systems. But developing standard systems in the industry is inhibited because of the multiplicity of its activities.

4.3.2 The Main Points of the 1980's Arguments (ref.24 pp. 34-37):

- 1- Some factors which inhibit the use of information technology may be specific to the hotel and catering industry. Because it is in many cases a very old-fashioned industry, where it is difficult to reconcile the old with the new.
- 2- The natural resistance of the industry to the use of information technology is another factor. Some hotel managers are concerned about the effect that computerisation might have on the "luxury image" that hotels and restaurants like to offer.
- 3- It appears that the final barriers to technological diffusion are related to firm's size. The usefulness of the computer can not easily be demonstrated to the smaller business, unless there are plans for expansion.
- 4- The decision to computerise or not will always be part of a wider policy or strategy in the hotel industry, aimed at expansion or complete re-organisation. Considering the trading environment and the direction of company policy, some firms might find computerisation more "cost effective" than others.
- 5- If all firms can eventually computerise, cost effectiveness as a concept may become redundant, and there may come a time when economic constraints are barely relevant, and human and organisational factors may become the only factors which constrain computer applications.
- 6- Another concern is the degree of application. Where it has been reported (ref. 24 p. 37) that among firms which have been computerised, the greater number have concentrated over the "clerical computer" stage, which shows a tendency to adopt a simple replacement of manual systems. This also implies rigidity in management and organisational structures which are unable and unwilling for accommodate new routines. This proves

the need for major re-organisation in the hotel industry.

Comparing the two arguments of the 1970's and 1980's, we can reach some conclusions and propositions, as follows:

a - Both of the two arguments reflect reasons of concern for the management in the hotel industry about computerisation.

b - The size of the firm, and consequently volume of data needed to be processed by computers, are still the main factors against the wide adoption of information technology in the industry.

c - manual systems are simply replaced by the computer. The hotel industry has not moved far from the "clerical computer" stage since 1970.

d - A shift has taken place, in the concern of the management of hotels towards the natural resistance and hospitality characteristic of the industry which might prevent the wider use of computers.

f - Another shift has taken place in the domination of the constraints for adopting information technology. In the 1970's, the economic constraints represented the concept of effectiveness for using the technology itself, while in the 1980's human and organisational constraints represented the concept of effectiveness for using information manipulated by the technology (computers) for decision making.

4.4 The Computer Applications in the Hotel industry

Before we go through the main computer applications surveyed by the two studies done in the 1970's and 1980's (mentioned above), let us highlight the main profitable areas which need improvement and more management attention in the hotel industry. Our aim for this explanation is to evaluate the contribution of using computers, and to see how far

the use of computers have gone to the vital areas of hotel activities, which determine profits and success.

A survey done by the University of Surrey 1969 (ref. 27) highlights the particular significance in the diverse activities of the hotel industry as follows:

1- In the hotel industry, marginal costs of accommodation are low, so small improvements in sales occupancy can bring about great increase in profits. This point is emphasised by the EDC report (ref. 28), in which it is indicated that once the break-even point has been passed, and the fixed costs fully absorbed, additional revenue is largely pure profit. Also it is indicated by the report of the University of Surrey (1969) that accommodation sales represent on average, 28 percent of the total sales revenue. This highlights that occupancy improvement is a major area of the manager's attention.

2- Stock control is an important managerial function too. The same report (ref. 27) shows that the medium cost of goods sold represents 34 percent of sales revenue. As for goods and drink it is indicated that they represent different problems, where food has a high rate of turnover (40 time a year) and drink has a high stock value and slower rate of turnover (7 times in a year).

3- Other areas to which the manager must turn his attention include profit and loss accounting, costing and budgeting. It is reported (ref. 27) that over four-fifths of controllable expenses are represented by the cost of goods and wages. So, a relatively high degree of time and effort devoted to controlling these two areas appear to be recommended.

4- In the group of hotels, they are interested in having "Inter-hotel

comparison", particularly of accounts, as an important means of control of individual hotel managers. Also room availability statements, occupancy forecasts and hotel feasibility studies are also other additional managerial problems, which group hotels face.

5- In the 1970's, the EDC report indicated that there were two other areas of computer applications, which appeared to offer the prospect of substantial benefits in the hotel industry:

a - The first is the development of an economic model that would enable predictions to be made about the demand for accommodation and provide guidance on the market feasibility of selected locations for hotel development.

b - The second is the creation of a computerised real time reservation system for hotel accommodation.

6- An investigation of the future development of the hotel and catering industry, in the "Time" newspaper, Sir Alexander Glen (ref. 29) argues that the central reservation and schemes (like The International Reservations Ltd (IRL) which has been established and operated since May 1970 in the U.K.) are essential to the industry, They rely upon the facilities of small hotels. He described the reliance as likely to increase rather than decrease in the future. Whether it is necessary for schemes to be computerised is, he points out, open to doubt, but he suggests a series of regional reservations centres without heavy Capital commitment.

How far have these predictions and suggestions been achieved in the hotel industry since 1970?. To what extent could the development of computer techniques help to resolve managerial problems and satisfy manager's concerns in the hotel industry?. We will seek the answers through the following explanations of the computer applications during

the period 1970-1980.

4.4.1 Computer Applications in the British Hotel Industry in 1970

The current applications of computers in the hotel industry have been surveyed by the EDC (ref. 23 p. 1), where it was reported that computers were used for a wide variety of jobs, but no clear pattern of usage emerged in the 24 firms:

- 1- Half of the users obtained "statistical tabulations".
- 2- One-third carried out stock control.
- 3- A similar proportion (one-third) used a computer to obtain the data for accounting statements.

About the future or planned applications of computers, it was noticed that there was a lack of any well-established view that particular applications are essential:

- 1- A third of the companies which were planning future computer applications intended to perform stock control.
 - 2- A third planned accounting statements.
 - 3- One in five was going to perform bought ledger.
 - 4- one in twelve was going to do advance bookings.
 - 5- Non-users believed that the areas in which they needed advice were payroll and stock control. It had been found that these areas were not the most popular areas of existing usage.
 - 6- Forecasting, modeling and booking (reservation) are still at the bottom of the list of current and planned computer usage.
- Considering that these were the main suggested revolutionary activities the managers in hotels could use to make decisions, we can reach a conclusion that until the 1970's the main current and planned computer applications were concentrated on clerical jobs, not on managerial jobs which are the main access to profitability

and success. On the other hand, it proves the predictions of the management writers early in the 1960's, as explained, in details, in the enclosed figures.

But what happened in the 1980's, were there any major changes in the current and planned computer applications in the hotel industry?.

4.4.2 Computer Applications in the British Hotel Industry in the 1980's

In the 1980's, three important studies have been done about the use of computers in the hotel and catering industry ; two of them describe the current applications of computer, the scale of computer technology usage and the break-even point in the 1980's . The third study provides a frame for the future development and the expected evolution range of computer systems in both Groups and Chain hotels , branches, and independent firms in the hotel and catering industry.

4.4.2.1 Current Computer Applications and Break-even Point of Computer Usage

At first, we start by the study which provides the scale of the use of computers in the industry. Marian Whitaker in a pilot study in 1984 (ref. 24 p. 12), attempts to show the areas where the use of technology (computer) is concentrated, at the present time according to market segment. He explained that, at one end of the scale is the small, luxury hotel (typically less than 10 rooms) making very little use of technology, and at the other end, large transit hotels (which as he described, are usually airport sites) with 2000 rooms or more, making heavy use of computerised systems in all areas. Marian Whitaker describes the hotels between these two extremes as "some hotels which are opting for completely integrated front and back office systems, and others confining automation to back office and accounts". He explains

the varying degrees of usage in terms of location, volume and velocity of trade, image, guest facilities, and finally price. The following figures will explain the explored trends in percentages (estimated by the writer) of computer usage in hotels, based on Whitaker's study.

Secondly, we move to the current applications of the computer in the hotel and catering industry. M. Boella and D. Paskins, in a study about the computers as an aid to hotel and catering managers in 1983 (ref. 30) attempt to overview the 'state of art' in hotel and catering technology. They list the types of systems available, the range of applications, and they outline the typical configurations of the present applications. In their study, they concentrate only on the computerised information systems, not on any other form of technology already used to serve the industry.

Apart from general administration and accounting tasks, computer technology now covers a wide range of specialist applications in the hotel and catering industry, where they fall into the following categories:

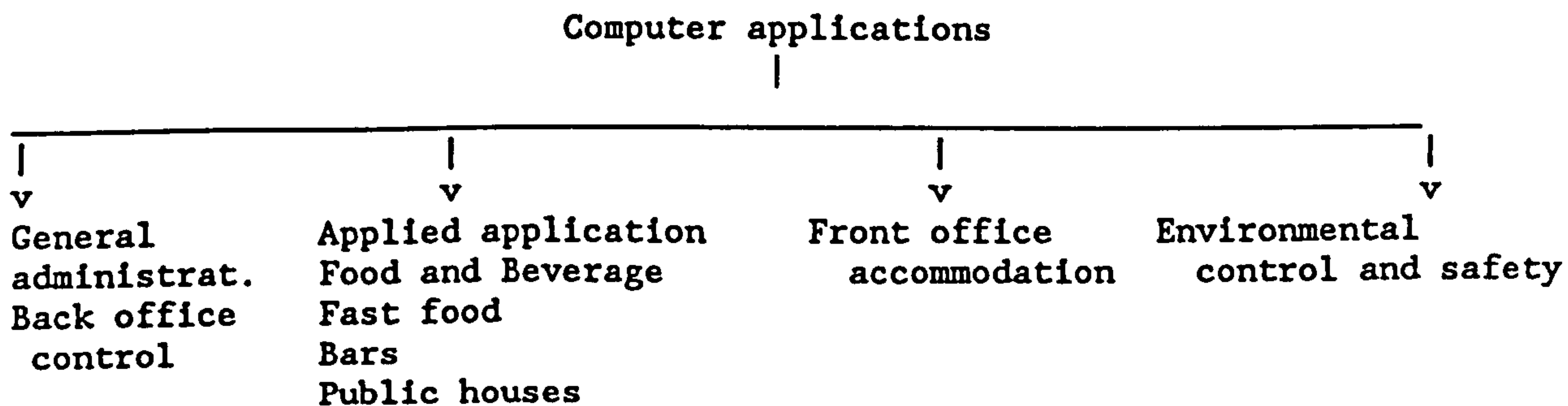
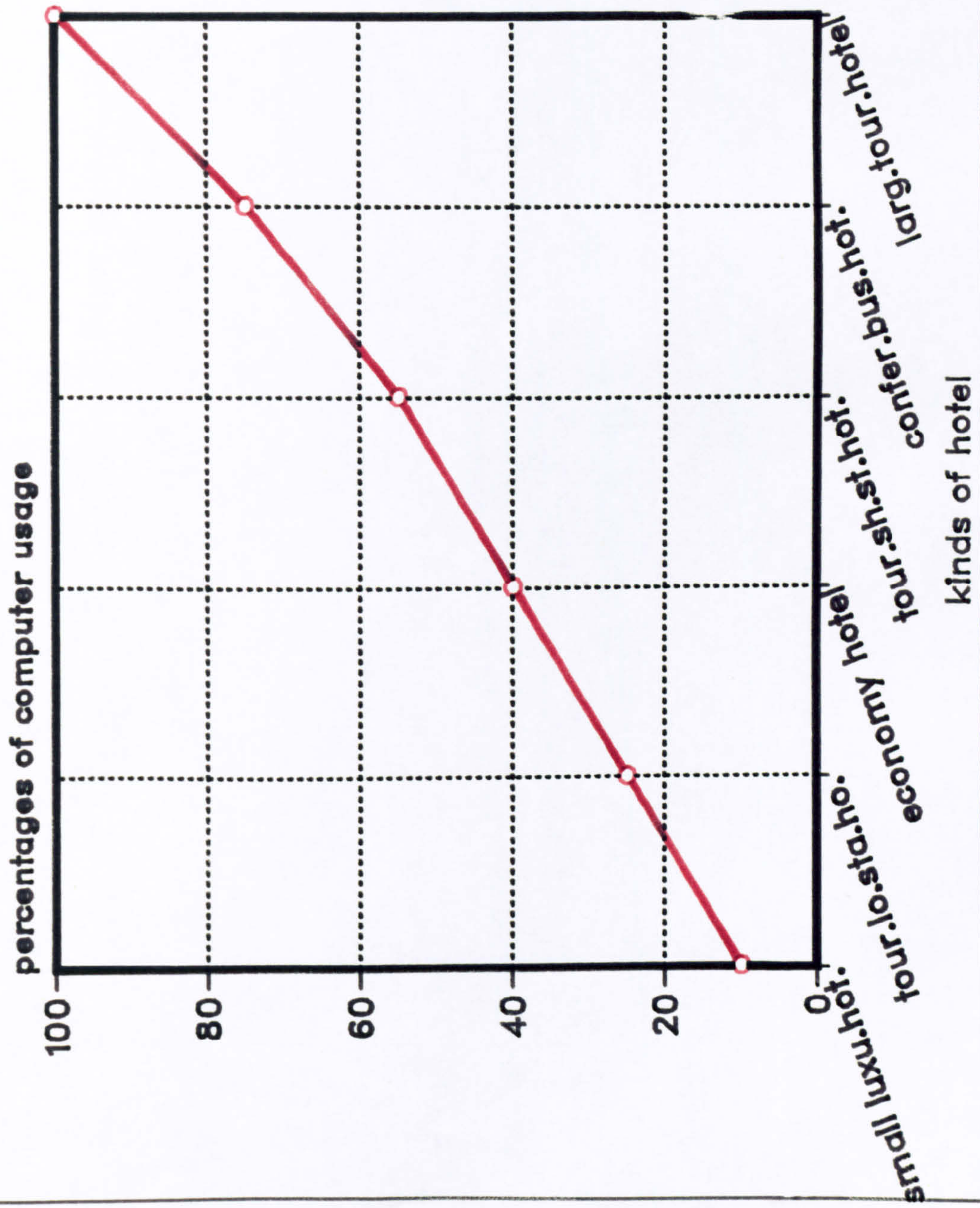


Figure (4.2) The present computer applications
Source : ref. 30

Figure (4.1) The increased usage of computers in large hotels
source : ref : 24 p. 18



About the present applications which belong only to the hotel industry, the computer applications in the hotel administration and back office, are as follows:

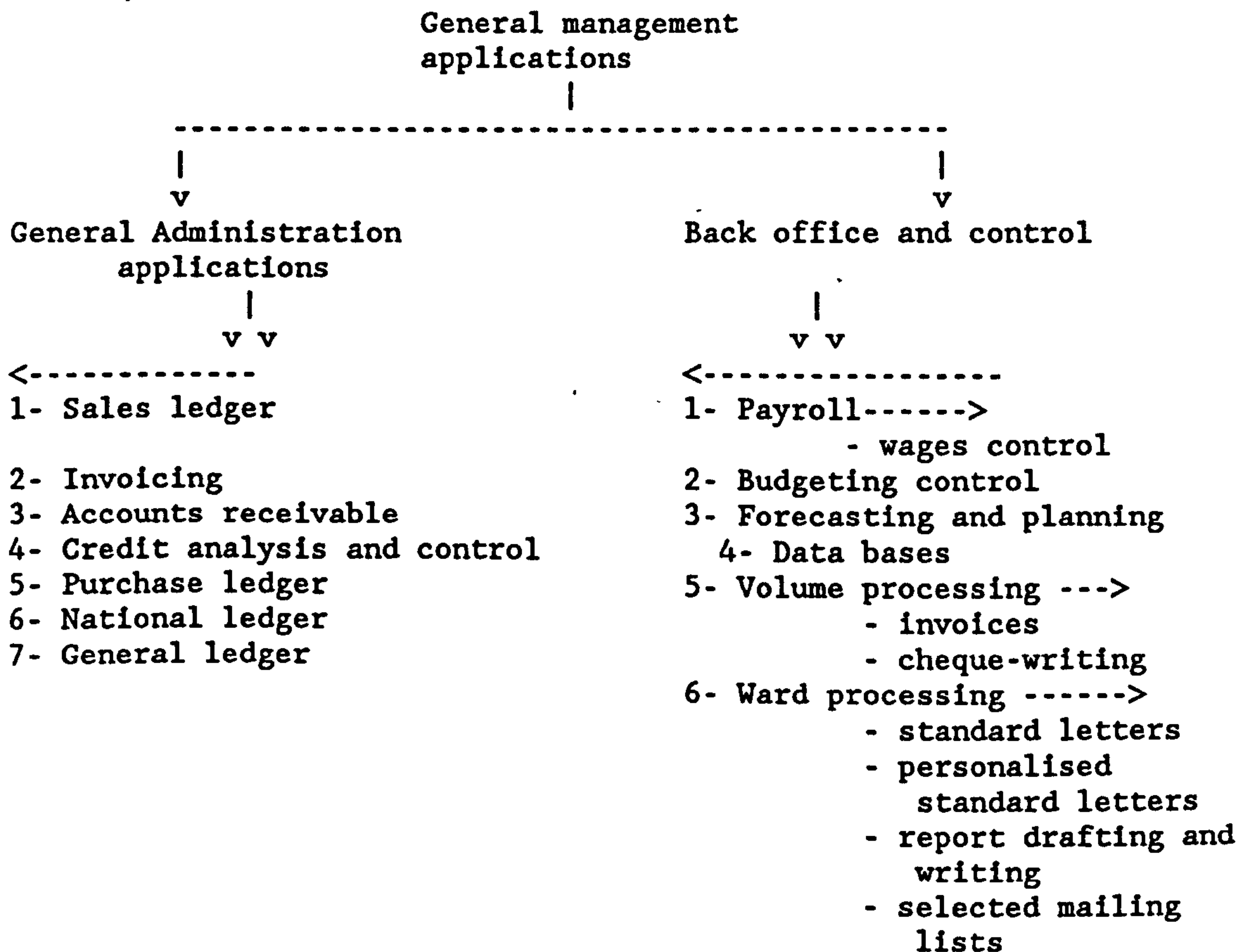


Figure (4.3) General management computer applications
 Source : ref. 30 and ref. 24 p. 11

From the computer applications in the hotel industry we identify some of the applications, which were explained by Boella and Paskins (ref. 30), as shown in the following figure:

Computer applied applications

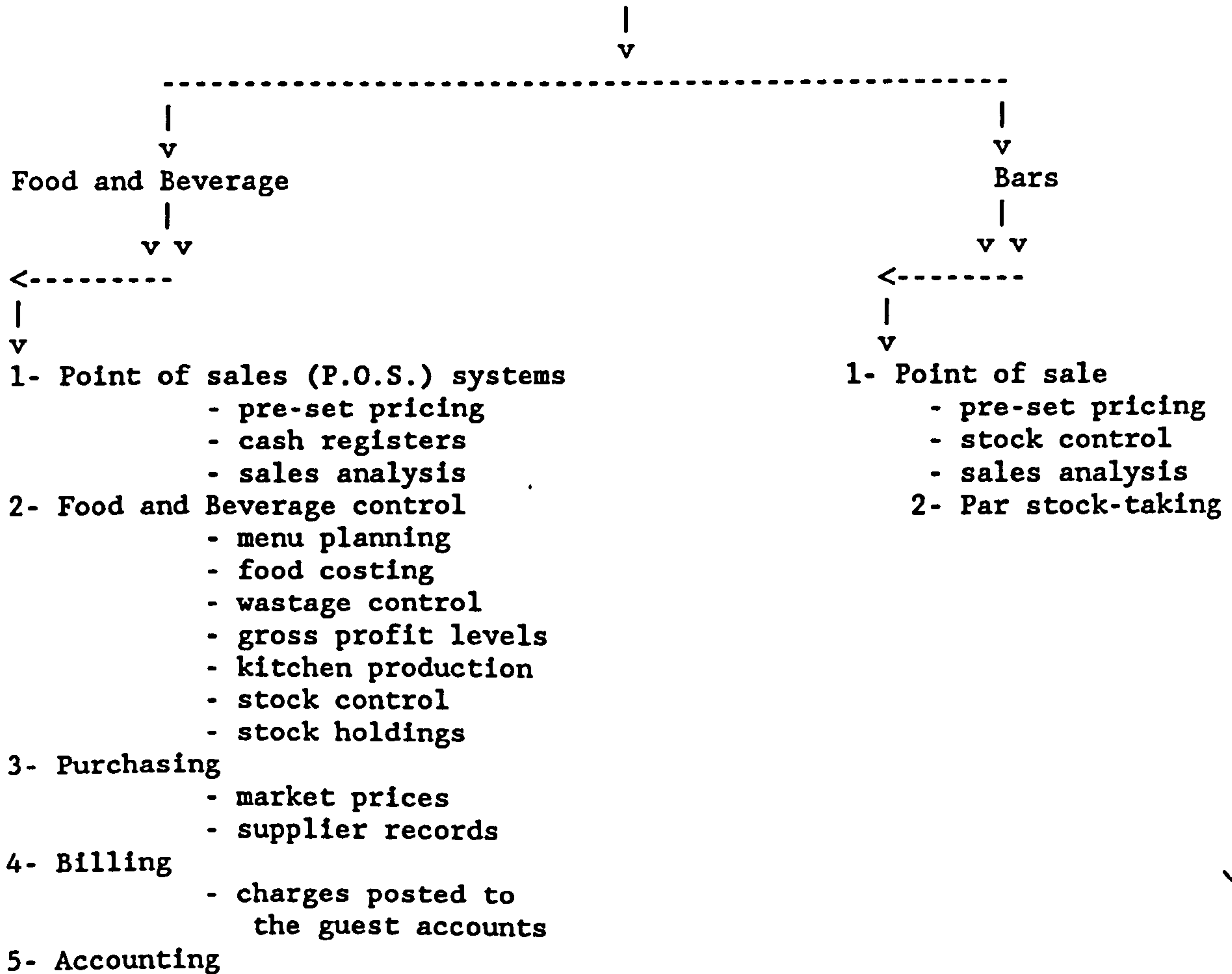


Figure (4.4) Food and Bars computer applications
(keys for decisions and information needs)

Source : ref. 30 and ref. 24 p. 12

Concerning the front office and the environment control, we identify the following present computer applications:

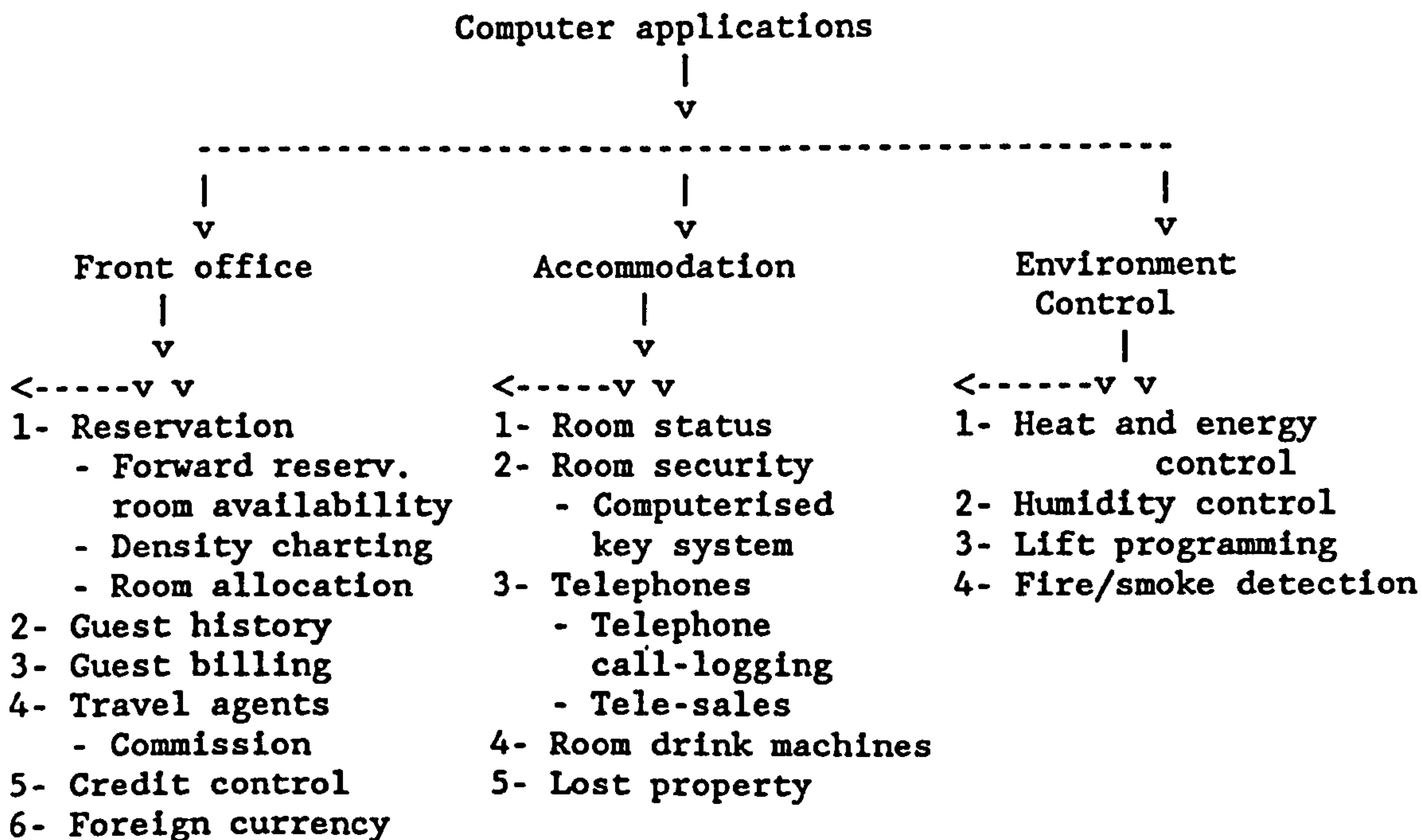


Figure (4.5) Front office and accommodation computer applications in hotels

Source : ref. 30 and ref. 24 p. 13

Looking at the present computer applications, mentioned above, we can conclude some facts about how these applications are applicable for all hotels, as surveyed by Whitaker's study (ref. 24 p. 13.). These facts demonstrate the present situation in the British hotel industry, as follows:

1- All these applications are already applied in large hotels specifically airport hotels. It is quite rare to find this model of applications in other kinds of large hotels.

2- Generally speaking, considering the hotels' preference in areas of using computers, hotels concentrate on back-office systems first, and they plan to add more usage in other areas later on.

3- About the fully computerised integrated systems, how available are they in hotels?. At the present time, they are available in large hotels, but it is quite usual for the front and back office systems to run as separate, stand alone devices, as shown in the

following figures.

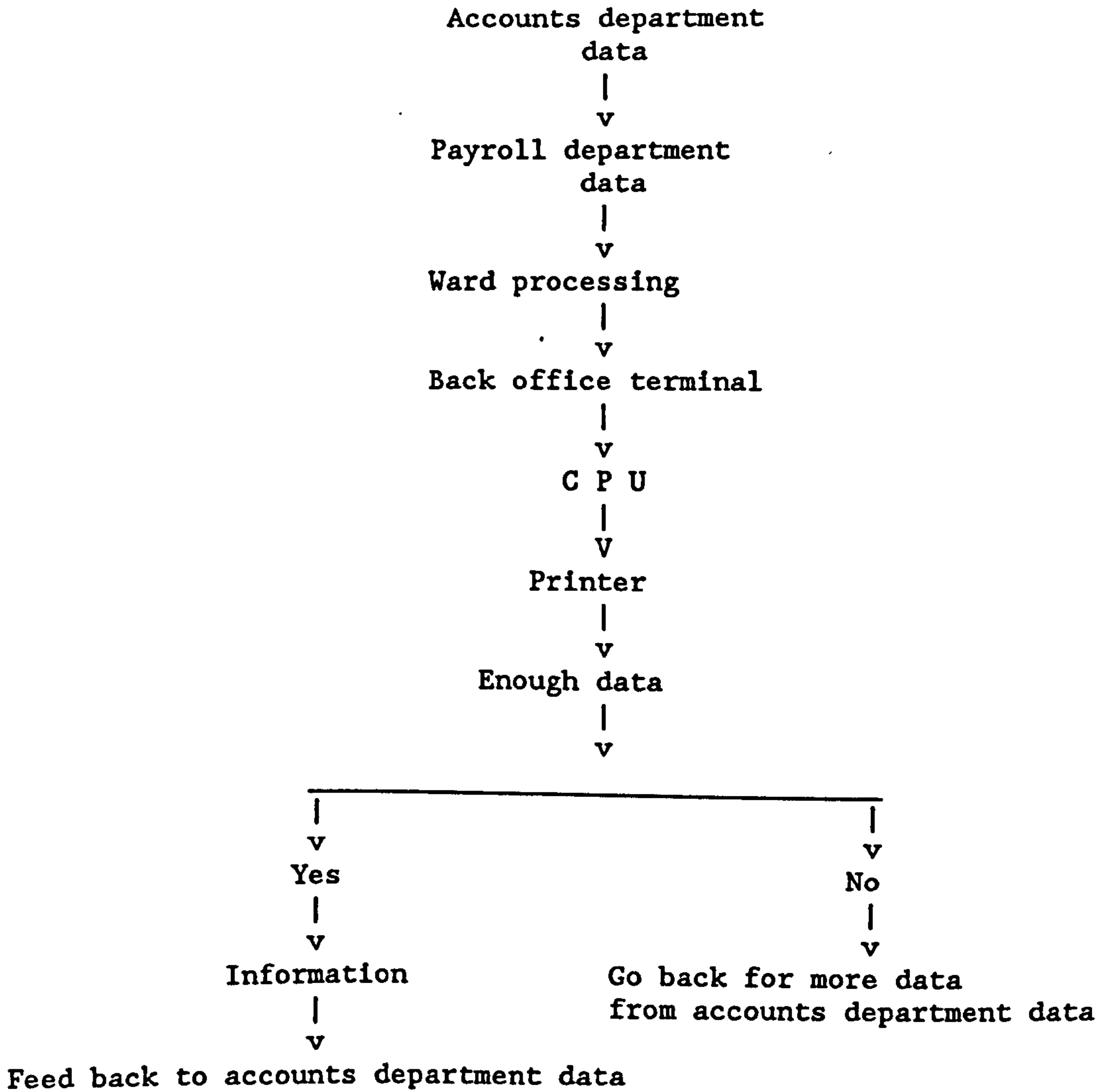


Figure (4.6) Stand alone back office systems
Source : ref. 24 p. 14

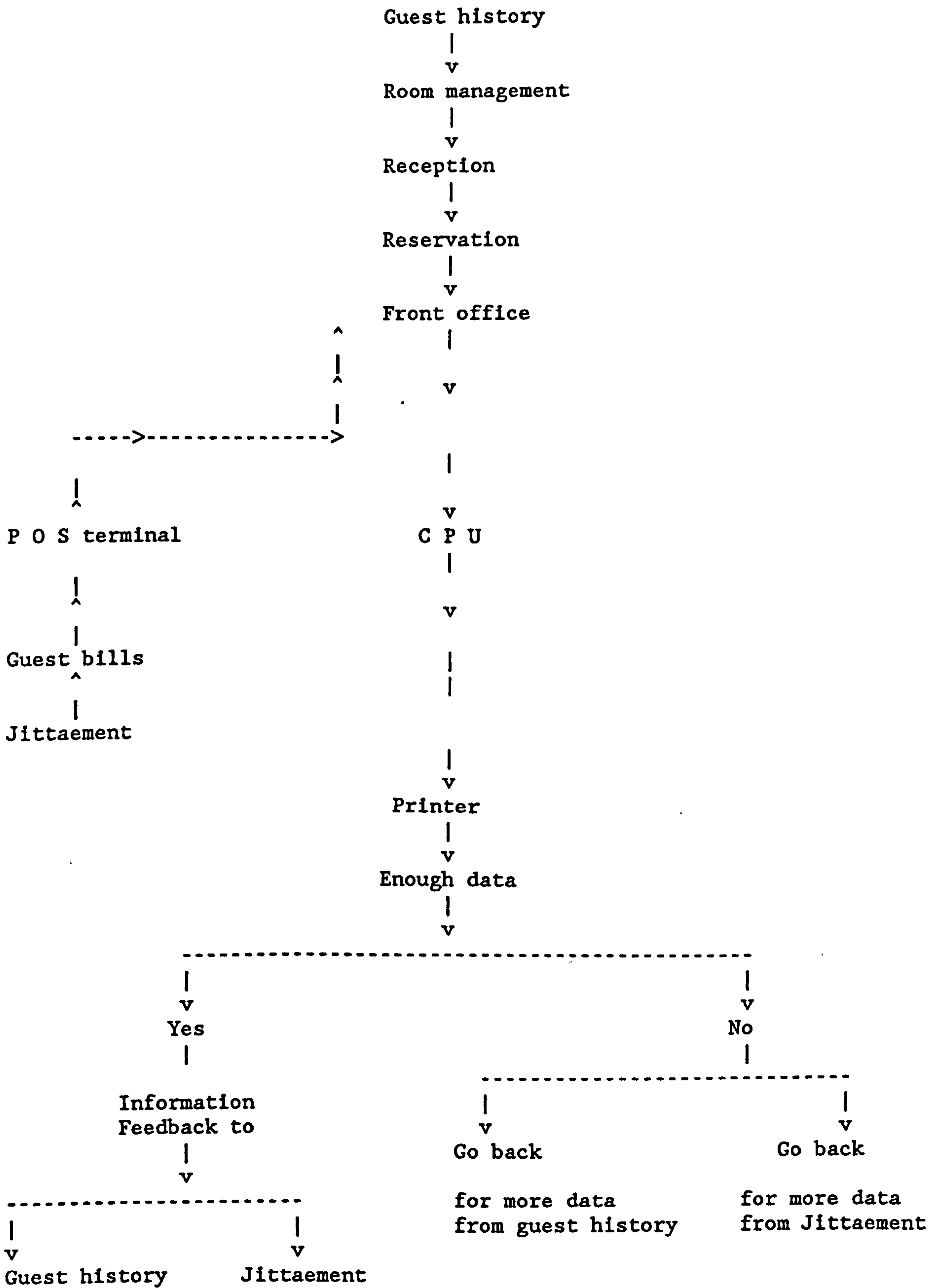


Figure (4.7) Stand alone front office system
 Source : ref. 24 p. 14

4.4.2.2 Future (planned) Computer applications of the British Hotel industry in the 1980's

P. Gamble 1984 (ref. 31 pp. 21-28) tries to predict future development in the hotel industry by suggesting some expected possibilities for computer applications. At first we pick up some of his expectations, and see how they will affect the information systems in hotels:

1- The integration of various functions within hotels becomes possible if they make use of computers. Among these hotels, the longer ones have, a greater chance of achieving better integrated systems.

2- The demand for information is expected to extend beyond the range of these integrated systems in the future. The hotel system is expected to go beyond ordinary business functions to allow access to external information on markets , consumer behaviour and so on.

3- The emphasis in the hotel operations, will shift to forecasting and strategic planning, even if these operations may become more or less automatic (computerised).

Gamble suggests that this evolution occurs in 3 stages; the clerical hotel computer, the administrative hotel computer, and the tactical hotel computer. Looking at the figures provided in Whitaker's study (ref. 24 pp. 15-16) which illustrate each stage, we try to anticipate the expected effect on the structure of the functions, decision making and information needs, and the degree of centralisation in making decisions. The following figures will exemplify two computer stages (clerical and tactical) and the computer systems expected to be used in both large hotels and small hotels.

Stage of computer development	Functions structure	Information source	Decision making level	Decision making degree
1-Clerical hotel computer	Main hotel functions : 1-Resrvat-ations 2-Stock control 3-Accounting 4-Payroll	Internal source : 1-Reservat-ion records 2-Accounting ledgers	clerical level (lower management)	Centralisation
2-Tactical hotel computer	Main manag-erial deprts 1-Financial management 2-Personnel management 3-Accommodation management 4-Material management 5-Food produ-ction mangt.	External sources : 1-Consumer information from government or commercial data Base 2-Tour operators 3- travel agents 4-Commodity markets 5-Money markets Conditions	Middle Management	Decentralisation

Figure (4.8) Clerical and Tactical stages of computer Applications and their expected effects on decision making
Source : ref. 24 pp. 15-16

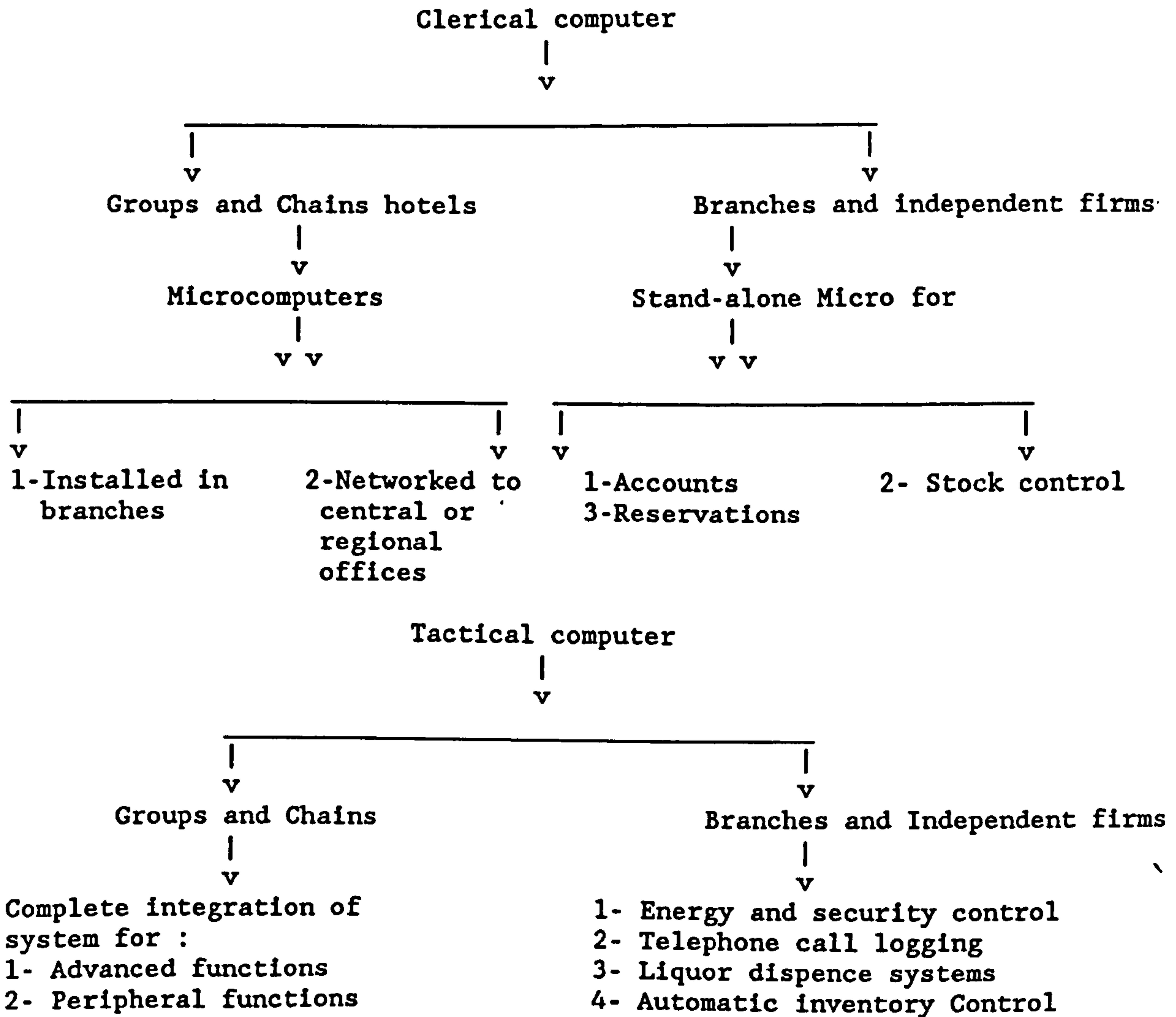


Figure (4.9) The expected scale of technological application for both large and small hotels
 Source : ref.24 p. 17

4.5 The 1985 Survey and the Formation of Expectations of Changes in Practices in the Hotel Industry in Both the U.K. and Egypt

4.5.1 The Formation of Expectations of Changes In the Hotel Practices

In the last pages of this chapter, we explained the literature which articulates a model of the practice of computer applications in the hotel industry. We could conclude some results and draw a general

picture for this model of computer practice, in the present and the future.

Because this practice, in hotels, is also expected to be influenced by some evidence from changes of conditions between 1970 and 1985, we discuss some of this evidence provided by previous studies, done in early years of 1980's.

However, it was considered that it was insufficient to base the formation of expectations of changes in practice, solely upon literature and results of previous studies'. It was accordingly decided to obtain the views of managers in hotels about the latest practices until 1985 (the time of implementing this study).

The method chosen to obtain the views of the hotels managers was a postal questionnaire. A critical factor in the design of the 1985 questionnaire to obtain views of managers was considered the questionnaire's length.

In one part of the questionnaire, the questions from which it was decided to obtain the managers' views were formulated with respect to the questionnaire of the 1970's Survey, about computer applications in British hotels. The other parts of the questionnaire were to describe the manager's job, manager's decisions, and the characteristics of the information systems provided in both the British and Egyptian hotels, and how satisfied managers are about their supply of information needs.

The final form of the questionnaire (four parts) includes 32 questions, some of them are multiple choice questions, others are open answer questions, and the rest are "Yes" or "No" questions. Out of the analysis of the questionnaire responses, some other issues arose, so other questions were used to conduct interviews with top managers in the hotel industry, about these issues. This structure of the questionnaire

is shown in the following figure:

The questions styles	Number
1- Multiple choice	21
2- Open Answer	6
3- Yes or No	8
4- Other written interview questions	10
Total	45

Figure (4.10) The structure of the questions of the 1985 Survey

The questionnaires, which totalled 200, were mailed during the first quarter of 1985 to cover large and medium British hotels with over 300 rooms. The same questionnaires, translated into Arabic, were sent, during the second quarter of 1985, to 100 medium and large Egyptian hotels with over 200 bedrooms. By the end of August, nearly 7-8 months later, we received responses from both the British and Egyptian hotels.

As for the first part of the Survey (questionnaire section A), the following figure explains the areas covered by the questions, and the anticipated answers (responses) of the hotel managers. These anticipated responses represent the expectations of changes in the hotel practices in using computers over the period of the study, based upon the planned literature and results of both Surveys done in the 1970's and early in the 1980's.

Areas of questions	Expectations of changes
1- Estimates of using computer to be incorporated with the increased development of information technology	-> To move forward from large and groups of hotels over 400 bedrooms to medium hotels of 200 bedrooms
2- Estimates of regular jobs Already done on computer at the present time to increase and move from clerical stage to administrative stage	-> Amove from clerical jobs which include reservations, payroll, Accounting and stock control, to administrative jobs which include a variety of more hotel functions, like automatic guest history, cash flow controls, planned maintenance procedures, dynamic inventory control, Food and Beverage control, and ward processing
3- Estimates of planned jobs to be done on computer on the future , to reach the tactical stage	-> Amove from administrative stage and fully integrated systems in large hotels to the tactical computer usage, which goes beyond ordinary hotel business functions, to allow access to external information about markets, consumer behaviour and so on . This stage includes a variety of management functions like financial, personnel , accommodation, materials, Food production, and Bidding strategy managements
4- Estimates of the reasons for not using computers now or in plan to use it in the future, to decrease according to the new economic criterion to justify computer usage and the cheap technology that will provided for small firms	-> Amove from not using computers because it is too expensive and unsufficiency of work (economic reasons) to technical reasons especially the availability of the qualified staff to operate and develop computer systems provided .

Figure (4.11) Areas of questions and expectations of changes in the practice of hotels computer usage

In the second part of the 1985 Survey (section B) the questions were directed at the managers' job descriptions in hotels. High responses were expected from both the U.K. and Egypt. Then responses will be used to indicate some guidelines for the determination of information system needs of the hotel managers.

The third and fourth parts of the 1985 Survey, evaluate the manager satisfaction in using computers, and the purpose and quality of data which is supplied. Few responses to these questions were expected because:

- 1- Some large hotels are still uncomputerised.
- 2- Some managers do not use computers to get their information needs although their hotels are fully or partly computerised.
- 3- The lack of knowledge or previous experiences of some managers may discourage them to use computers.
- 4- Some managers views are still not clear concerning the terms (terminology) of the new technology or the information systems. They might refuse to answer the questions because these questions might look too academic to them. They might claim that they can not put down on papers what they do or need, because they can not remember. They just do it.

The fifth and final part of the 1985 Survey is represented in the written questions used to conduct interviews with top managers. Very low responses are expected to answer questions about the types of decisions managers in hotels make, the information they need the information they currently, regularly or seasonally get. The reasons for these low responses may go back to:

- 1- Some managers can not identify the decisions they make in their work, or they might be unable to remember.

2- Some managers can identify their decisions, but they can not categorise them under some questions topics.

However, both the areas of response and non-response will indicate some results for this study. The following figures show the areas of response and non-response which might be expected in the 1985 Survey.

4.5.2 The Despatch and Response to the Questionnaire

Area of response	The degree of response to the 1985 Survey			
	High	Medium	Low	Non-response
1- The use of computers	*	*		-
2- The computer applications and MIS satisfaction		*	*	
3- Managers' job descriptions	*	*		-
4- Decision making and information needs, information getting			*	*
5- Suggestions for MIS development and improvements	*	*		

Figure (4.12) The degree of response expected in the 1985 Survey

The total number of copies mailed were 300 copies. The total number of responses received were 50 copies. The net response rate is 16.7 %.

In the British hotels, the number of responses received from hotel managers were 20 copies, while the rest (30 copies) were received from Egyptian hotel managers. The following figures explain the percentages of response and the characteristics of the hotels included in the Survey.

Responses by hotel country

Hotel country	Number	Percentage
The British hotel managers	20	6.7 %
Egyptian hotel managers	30	10 %
Total	50	16.7 %

Responses by hotel size

Hotel size	hotel country	Number	Percentage
Small hotels up to 300 bedrooms	U.K.	2	0.7 %
	Egypt	3	1 %
Medium sized hotels over 300-400 bedrooms	U.K	10	3.3 %
	Egypt	15	5 %
Large hotels over 400 bedrooms	U.K.	8	2.7 %
	Egypt	12	4 %
Total		50	16.7 %

Responses by management categories

Managers' management levels	Hotel country		Percentage	
	U.K	Egypt	U.K.	Egypt
Senior manager	3	17	15	56.6
Middle manager	3	6	15	20
Lower manager	3	5	15	16.6
Supervisor	9	2	45	6.6
Others	2	0	10	0.0
Total	20	30	100	100

The coding system for the first part of the 1985 Survey (questionnaire section A) are designed to classify the data in the same order and manner as the 1970 Survey (questionnaire), for the purpose of initial analysis and comparison. The writer, for the purpose of

maximizing the responses, had sent with each copy of the questionnaire a cover letter to explain its aims and the instructions for completion. Also after mailing the questionnaire, the writer telephoned and sent letters to remind the addressees and to follow them to motivate the responses. In his follow up interviews the writer offered the provision, to the addressees and interviewers, with the results of the Survey after finishing the study. These were some of the ways followed to persuade the addressees and interviewers to participate in the research.

Regarding the processing and analysis of the data, we will use the standard analytical package, which is called Statistical Package For Social Science (SPSS), building some programs written in Fortran computer language.

In the next chapter we will discuss the longitudinal analysis between the 1985 Survey results (questionnaire section A) and the 1970 Survey results , about the computer applications in the hotel industry in both the U.K. and Egypt.

5.1 The Basis of the Analysis

In this chapter, hotel practices in 1985 will be compared with those of 1970. If the expectations of change identified in chapter 4 are to be accepted, differences in the 1985 practices compared to 1970 will be present. Such differences, however, will not reveal, as C. Jones says (ref. 32), whether any change is statistically significant.

The writer will follow these procedures to examine the data and test each hypothesis using the chi-square statistical test:

- 1- If no changes in practice occur between 1970 and 1985, then the 1985 data will be identical with that of 1970.
- 2- This is equivalent to establishing a null hypothesis that there is no change between the 1970 and the 1985 data.
- 3- The alternative hypothesis would be that there is a change between the two sets of data.
- 4- The chi-square test of goodness of fit is an appropriate test of hypothesis for each of the practices analysed in this chapter. For each practice, the 1970 data will represent the expected frequencies, and the 1985 data the observed frequencies.
- 5- The null alternative hypothesis for each practice will be established, and the rejection of such hypothesis will be based upon the five percent level of significance.
- 6- The choice of the five percent level is simply, because as Freund and Williams say (ref. 33 p. 224) it is customary to use this level.
- 7- In order to get a better understanding of the direction of change for each practice, some cross-tabulations of the 1970 and 1985 data will be made as well as chi-square tests of association. This will

be based on using three classification factors, hotel size, hotel country, and management category of hotel managers. Both the 1970 and 1985 data will be used for comparison of changes in practice only in the British hotels. The 1985 data will be used for comparison of practices between the British hotels and Egyptian hotels. Hotel country factor is the major factor used for comparison, while both size factor and management category of the hotel managers will be used occasionally. This analysis will be explained in the following sections of this chapter.

5.1.1 Research Limitations

We list in the following some of the limitations faced while analyzing the data of this study. Some of these limitations go back to the limited facilities of analysis provided by the SPSS computer package, while the others concern the calculation of the chi-square tests and the base of the frequency distributions on different categories of responses in the total sample:

1- According to our expectations non-responses were expected from some questions concerning some management issues. We meant to consider the analysis of these questions because it provides some indications which explain the research expectations. Issues like decisions made, information needed, computer programs used for data analysis..etc., non-response of these issues can be interpreted according to the literature review and the research hypotheses.

2- The use of the SPSS computer package to analyze the responses received could only provide total frequencies of each variable. We could not get frequencies which belong to certain categories. Hotel size (small, medium, large), managers levels (senior manager, junior manager, lower manager, supervisor) are some examples of these

categories for which we relied on the total share of each category while distributing the frequencies and doing the calculations. Some of the frequencies which appeared in the tables might look unjustified as the result of that if we do not consider the base of distribution which is used.

2- The chi-square test of goodness of fit will be used for the analysis of the data (responses and non-responses) received. The calculations of the chi-square test will be based on the actual response received from each sample. Because the difference between the expected and observed frequencies is small, it will not affect the tests results. We used the actual numbers of the responses received in our calculation, provided with some tables and figures for the percentage of the frequencies to eliminate any unexpected bias.

4- The difference in the number of responses received from the British sample compared with the number of responses received from the Egyptian sample, might influence the accuracy of the outcomes of the comparison between U.K. and Egypt. For example more responses received from senior managers in Egypt against less responses in the U.K. from the same category. In return, less responses received from supervisors in Egypt against more responses from the U.K. Similar number of responses from each category are preferred to achieve the accuracy in the comparison between the two countries.

5- The acceptance and the rejection of the chi-square test results will be based upon the Five percent level of significance, some test results which are not significant at Five percent level might be significant at 1% level. The recalculation of chi-square test for the frequencies of some (not all) of the variables in the same table

(for example Egyptian responses only) might give different results of significance.

6- The result of the calculation of the chi-square of some variables might give Zero value because the expected frequency of the same variable is Zero too (due to non-usage answer), where the calculation of the chi-square values is done as follows: 'square observed frequencies subtracted from square expected frequencies divided by expected frequencies'.

7- The comparison in this chapter and next chapters will be based on the results of the chi-square tests. The use of the percentages instead can be enough to give the same results, but it can not show the significance of the results as the chi-square tests can do.

8- The total percentages presented in tables of this chapter and chapters 6 and 7 represent the mean of the percentages of both the British and Egyptian frequencies, while they represent the total of the percentages of the two countries added together in the enclosed figures drawn for the same tables.

8- Due to the style of question 'multiple choice' used in some parts of the questionnaire of this study, some numbers of the frequencies appearing in some tables in this chapter and the next two chapters might look unjustified because they exceed the total number of the responses received in each sample. This is because some managers marked more than one choice to answer one question.

10- Summary tables for principal results will be enclosed by the end of chapters 5, 6 and 7 to show the significance of the results according to the research expectations. The base used to conclude that the results are expected or unexpected will rely on the research hypotheses identified in chapter one and the research

expectations out of the literature review in chapter Two of this study.

5.2 The Use of Computer in Hotels

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the number of British hotels using computer systems between 1970 and 1985.

H_1 : There is a change in the number of British hotels using computer systems between 1970 and 1985.

Before we use the chi-square test of goodness of fit, we shall look at the structure of the British hotel industry, and of computer systems there in the present time. The following table provided by the C and H (ref. 34 p. 40) indicates that there is an association between the size of hotel and the use of computer systems there. Where most of the large luxury hotels have installed their computer systems to cope with the volume of business they have.

AA Classification	Percentage of hotels having computer systems	Number of beds	Percentage of hotels having computer systems
5 Star	100	150 and over	62
4 Star	57	100 - 149	35
3 Star	26	50 - 99	32
		Less than 50	14

Figure (5.1) The use of computer systems in the British hotels by size and market segment 1983.

Source : Ref. 34 p. 40

If we consider the English hotel industry in 1980, we find that the number of hotels which are over 100 bedrooms are 500 hotels, where they represented 3 percent of the total number of hotels, and 27 percent of the total number of beds available, as shown in the following figure.

Hotel size (Bedrooms)	Hotels number	Percent	Percentage of beds
1 - 10	8788	52	18
11 - 25	5106	30	25
26 - 100	2459	15	30
101 +	500	3	27

Figure (5.2) Structure of the English hotel industry

Source : Ref . 35

In 1970 there were 24 hotels using computers in the U.K., thirteen of them were large hotels with over 400 bedrooms. In this time (1970) the breakeven point to justify using computers economically was 400 bedrooms, and it was expected (the breakeven point) to fall to 200 bedrooms in chain hotels or consortia.

The last two figures show that, in 1983 (more than ten years later) the chance is still greater in larger hotels to use computers than others. Large hotels of 5 or 4 Stars and hotels over 150 bedrooms have

figure (5.3) structure of english hotel industry
source : ref. 35

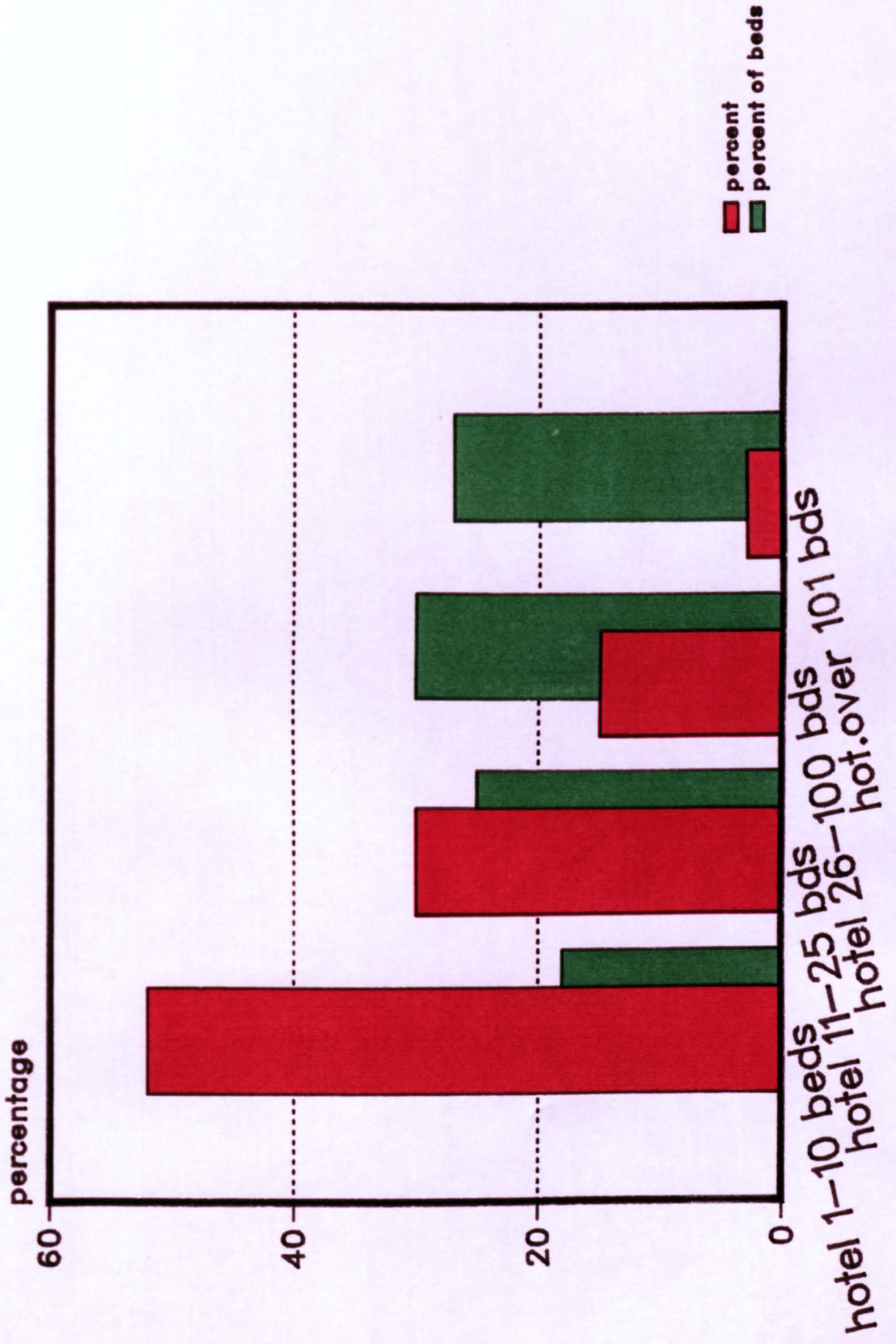
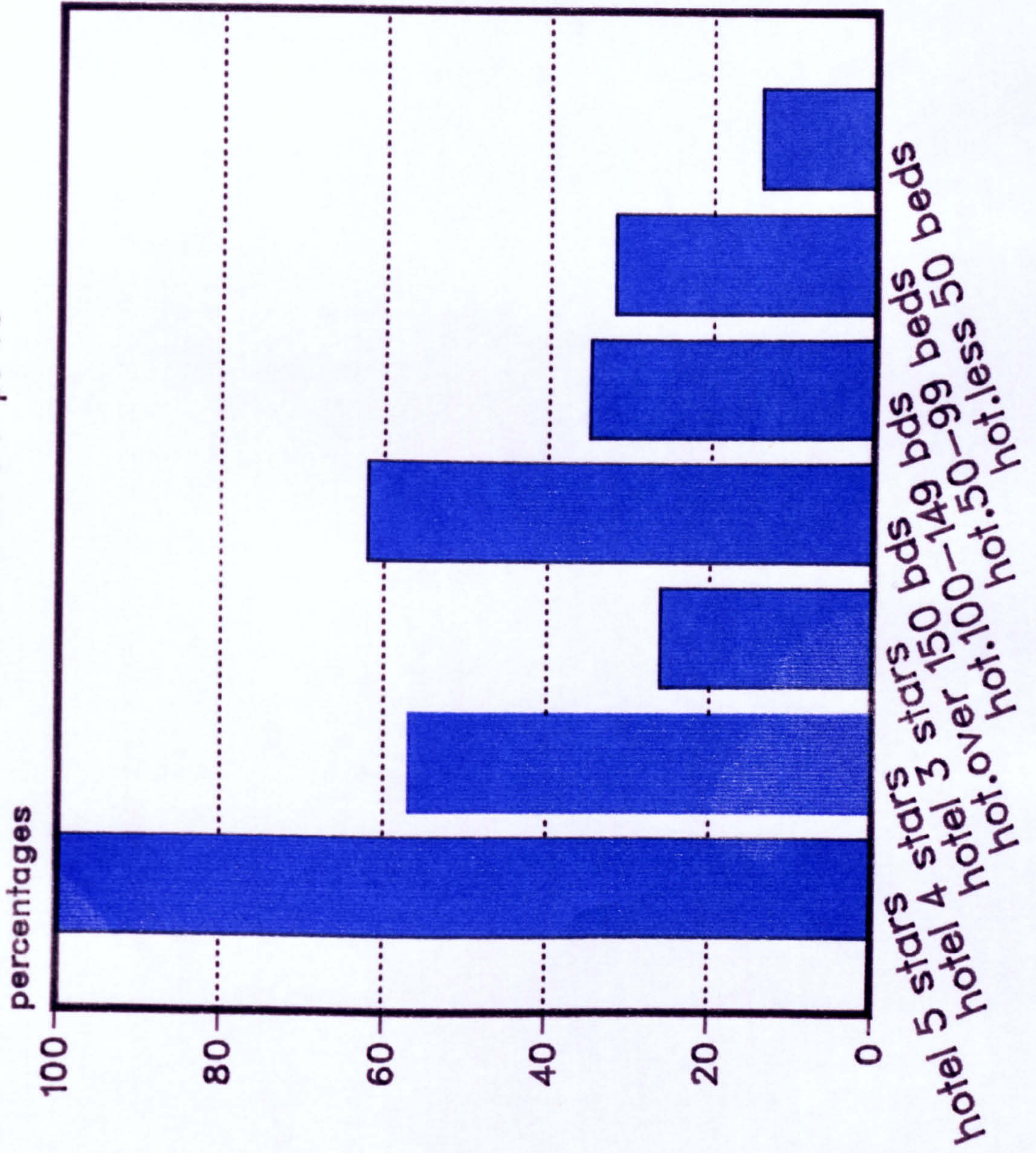


Figure (5.4) the use of computer systems in the U.K hotels by size and market segment 1983
 source :ref. 34 p. 40



higher percentage of using computers than others.

This does not mean that every large hotel should be computerised, where in the 1985 Survey 17 responses out of 20 from the British hotels, said that they use computers, and 3 responses said they do not. Some of these responses that do not use computers belong to large luxury hotels in U.K., while all the 17 responses that tell that they do use computers, indicate that they have a computer on their premises. So this might reveal that there is an association between the hotel size and the use of computers in the British hotel industry.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data for this practice.

	1970 (expected frequencies)	1985 (Observed frequencies)	Chi-square
Hotels using computers	24	17	2.04
Hotels do not use computers	0	3	0.0
No response for using computers	0	0	0.0
Hotels having their own computers	12	17	2.08
Hotels use computer Bureau	12	0	12.0
No response for having own computer premises	0	3	0.0
Total	48	40	16.12

Chi-square = 16.12

At 5 degree of freedom, the five percent point of chi-square distribution = 11.070

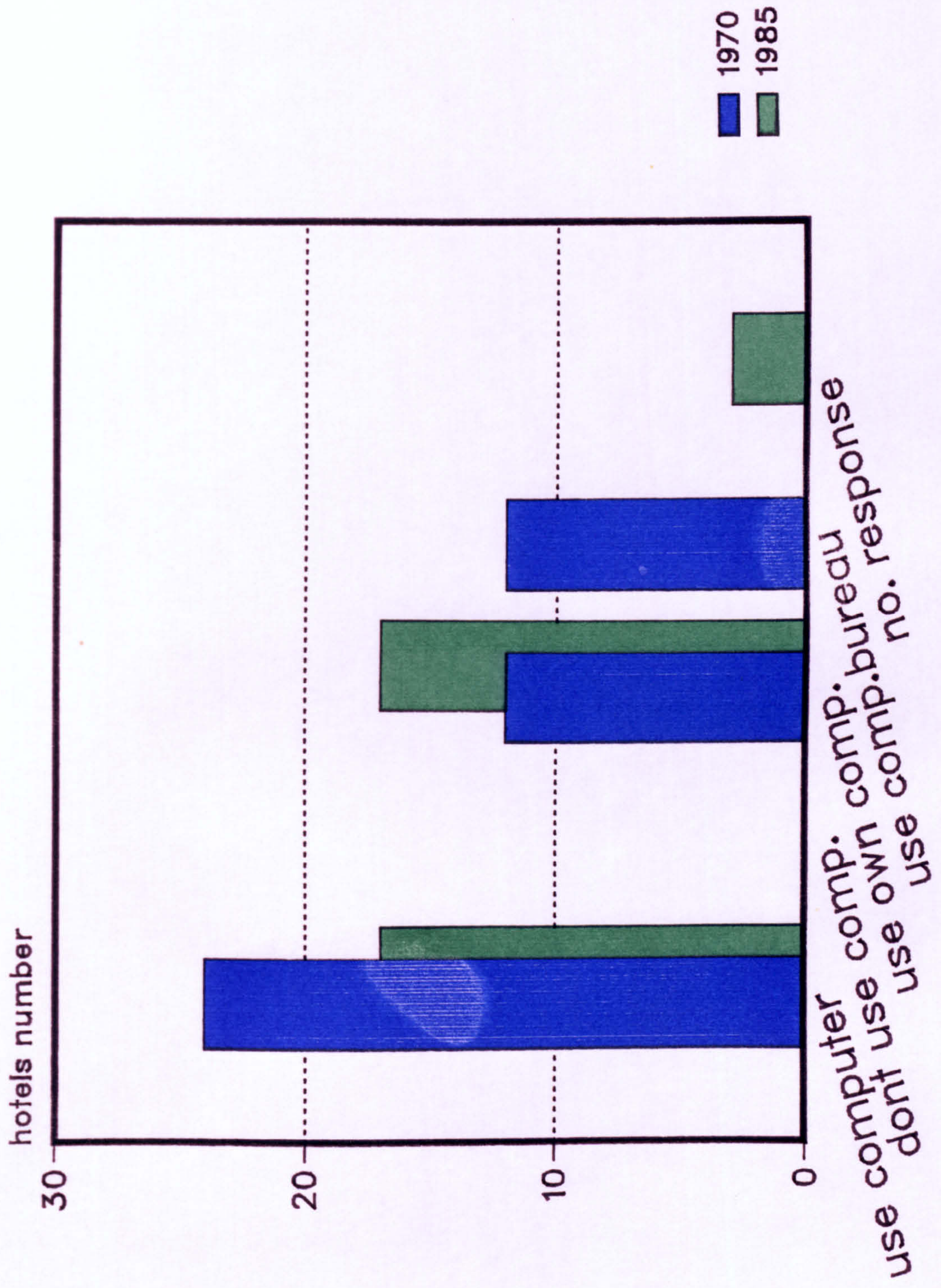
The chi-square test is significant at the five percent level. The null hypothesis, H_0 , that there is no change in the number of hotels using computers between 1970 and 1985, is accordingly rejected. The test result is also highly significant at the one percent level (3.841).

The test indicates that there is a change, and the data suggests a move towards more usage of computer systems, especially in large luxury hotels.

5.3 The Use of Computers in Hotels : Size Analysis

With regard to the 1985 data, chi-square tests of association were made for each of the classification factors. For each classification factor, a null hypothesis was established that there is no association between practice and the factor. The alternative hypothesis was that

Figure (5.5) changes in using computer in the u.k hotel between 1970-1985



there is an association between the practice and the factor. Thus, in respect of hotel size, the hypothesis is as follows:

H0 : There is no association between the use of computer systems and the hotel size.

H1 : There is an association between the use of computer systems and the hotel size.

In the following table, twenty British hotels and thirty Egyptian hotels, with size graded from small (up to 300 bedrooms) to large (over 400 bedrooms) are considered.

5.3.1 The Use of Computers in the British Hotels:
Size Analysis, Data 1985

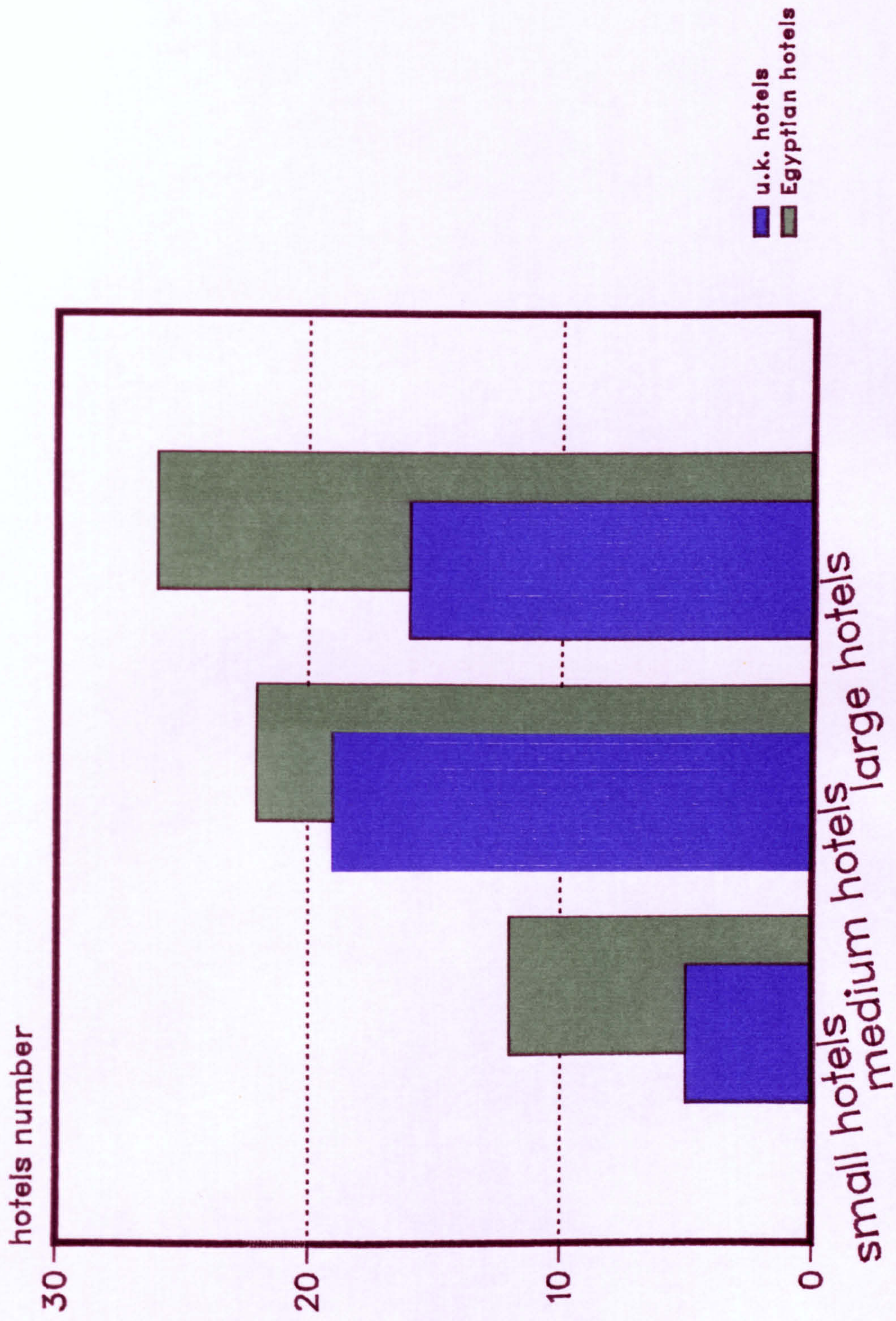
Size in total bedrooms	Use comp.	Do not use compu.	No resp-nse	Have own comp.	use no comp. Bure- aux	no resp- onse	Total
Small s. hotels up to 300 bedrooms	2	0	0	2	0	1	5
Medium s. hotels over 300-400 bedrooms	8	2	0	8	0	1	19
Large s. hotels over 400 bedrooms	7	1	0	7	0	1	16
	17	3	0	17	0	3	40

Chi-square = 1.01
Degree of freedom = 10

At 10 degrees of freedom the five percent point of the chi-square distribution = 18.307

At one degree of freedom the five percent point of the chi-square

Figure (5.6) the use of the computer in the hotel industry of both the u.k. & Egypt



distribution = 3.841

The chi-square test is not significant at five percent level. The test result is also not significant at one percent level. The null hypothesis, H_0 , is accordingly not rejected.

There is accordingly no evidence to suggest that there is an association between the use of computer systems in the British hotels and the hotel size.

The result of this chi-square test of goodness of fit contradicts the earlier predictions. The reason is likely to be the small number of responses received. In this test we only used 20 frequencies received from 20 large hotels in the U.K., while the statistics tell that there are over 500 large hotels in the U.K., so the sample of responses represents less than 10 percent of the total sample.

The situation is different when we apply the chi-square test on Egyptian hotels, where we received 30 responses from 12 large hotels, 15 medium hotels and 3 small hotels. The frequencies used represent almost 90 percent of the total sample of large hotels in Egypt, so the chi-square test might be more effective.

5.3.2 The Use of Computers in Egyptian Hotels:
Size Analysis, Data 1985

Hotel size	Use computer	Do not use com.	No- resp- onse	Hve own computer	Use compu. Bureaux	No- resp- onse	Total
Small s. hotels up to 300 bedrooms	2	1	0	0	2	4	12
Medium s. hotels over 300-400 bedrooms	8	7	0	6	2	3	22
Large s. hotels over 400 bedrooms	11	1	0	9	2	2	26
Total	21	9	0	15	6	9	60

Chi-square = 16.55
Degree of freedom = 10

At ten degrees of freedom the five percent point of the chi-square distribution = 18.307

The chi-square test is not significant at the five percent level. (although the test result is highly significant at the one percent level = 3.841). So the null hypothesis, H_0 , is accordingly not rejected. There is accordingly no evidence to suggest that there is an association between the use of computer systems and hotel size in the Egyptian hotels.

5.3.3 The Use of Computer Systems in Both
The British and Egyptian Hotels:
Hotel Country Analysis, Data 1985

The null hypothesis and the alternative hypothesis are as follows:
 H_0 : In the hotel industry, there is no association between the

country development of technology and the use of computer systems in hotels.

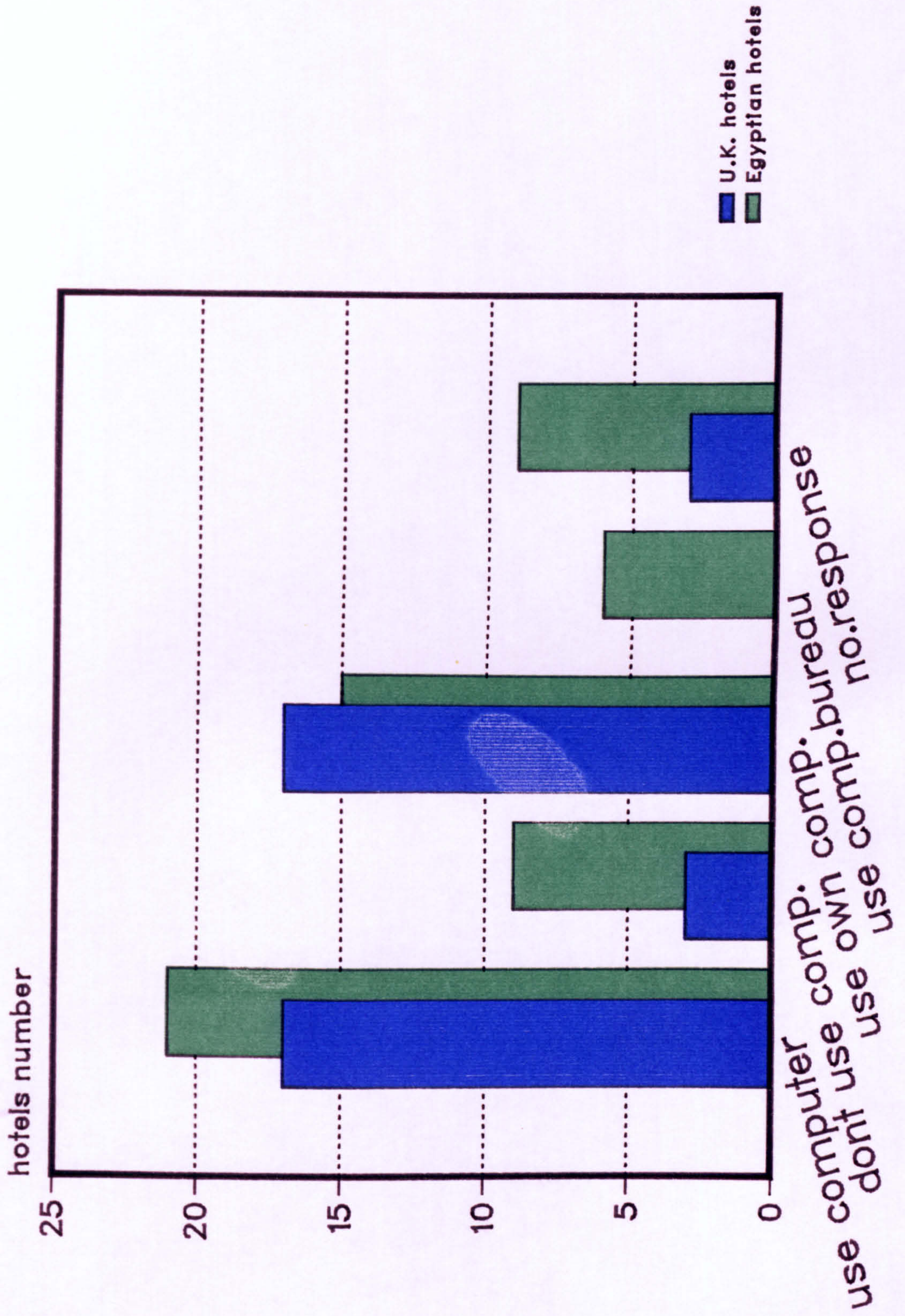
H1 : In the hotel industry, there is an association between the country development of technology and the use of computer systems in hotels.

The idea behind this hypothesis is that the information technology is still recent discovery, compared with other technologies, and it is still developing. It was mainly discovered in the developed countries. The production industries were pioneer in using and deploying it. The hotel industry was late in introducing the information technology. The undeveloped countries have just picked up information technology techniques, very recently. They started to deploy them in their industries. So the question is, does this difference, the country development, affect the use of information technology in the hotel industry in the country?. The expected answer to this question

is no. The writer's argument is based on the fact that, at the present time, most large hotels are branches in chain hotel companies spread all over the world. They are managed, updated and developed according to the policy of the company, so each hotel is provided with similar facilities. The other point of the argument is that the hotel industry is mainly dealing with tourists, and they have big competition in the hotel market. This implies that large hotels, in general, should update and develop their management techniques and facilities to cope with market competition.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data, for this practice.

Figure (5.8) the use of computer in the hotel industry of both the U.K. & Egypt



Hotel Country	Have Compu.	Do not have comp.	No- respon.	Use own computer	Use comp. Bureau	No- response	Total
British hotels	17	3	0	17	0	3	40
Egyptian hotels	21	9	0	15	6	9	60
Total	38	12	0	32	6	12	100

Chi-square = 7.71

Degree of freedom = 5

At 5 degrees of freedom, the five percent point of the chi-square distribution = 11.070

The chi-square test is not significant at the five percent level. The null hypothesis, H_0 , that there is no association between the use of computers and the hotel country is accordingly not rejected (although the test result is significant at the one percent level). There is accordingly no evidence to suggest that there is an association between the use of computer systems and the hotel country.

5.4 The Regular Jobs Done by Computers in the British Hotels Between (1970-1985)

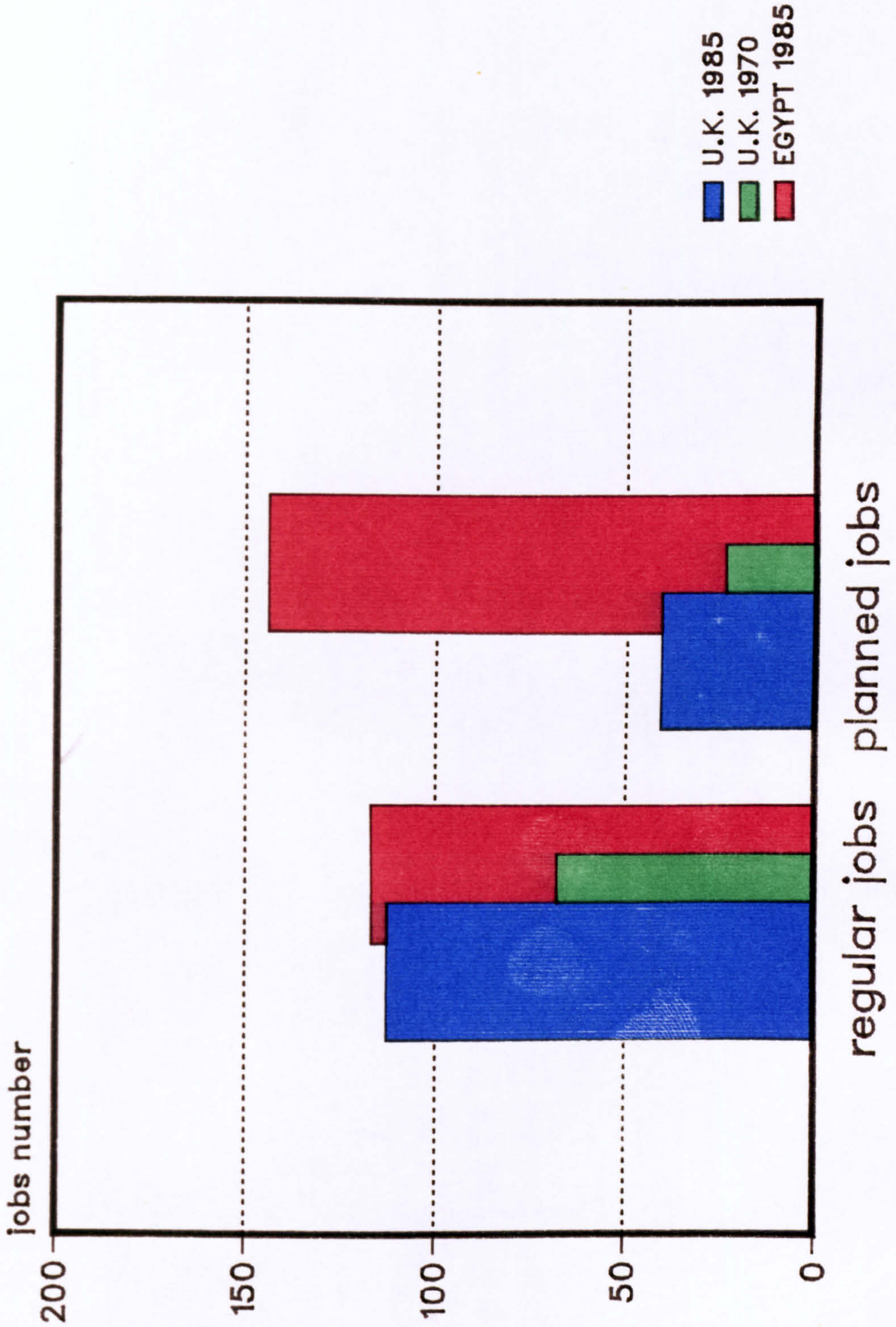
The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the regular jobs done by computers in British hotels between 1970 and 1985.

H_1 : There is a change in the regular jobs done by computers in British hotels between 1970 and 1985.

The following table, is a chi-square test of goodness of fit with regard to the 1970 and the 1985 data.

Figure (5.9) jobs done on computers in the hotel industry of both U.K.& EGYPT



Regular jobs	1970 (expected frequencies)	1985 (observed frequencies)	Chi-square
1-Statistical tabulations	12	12	0.0
2-Credit sales ledger	10	6	1.60
3-Inventory, stock control	8	12	2.00
4-Periodic statement of accounts/profit and loss accounts	8	12	2.00
5-Bought ledger	7	9	0.57
6-Payroll	5	15	20.00
7-Mailing adress list	4	17	42.25
8-Booking	3	9	12.00
9-Costing	2	6	8.00
10-Forecasting future planning , mathematical models	2	7	12.00
11-Others like	7	8	0.14
Total	68	113	92.56

Chi-square = 92.56

Degree of freedom = 10

At 10 degrees of freedom, the five percent point of the chi-square distribution = 18.307

The chi-square test is highly significant at the five percent level. The null hypothesis, H_0 , that there is no change in the regular jobs done by computers in large British hotels between 1970-1985, is accordingly rejected. The test result is also highly significant at the one percent level.

The test indicates that there is a change, and the data suggests a move forward to more usage of computers to do regular hotel jobs. The no-response frequencies are not considered in the above test because they are missing in the data of 1970.

5.4.1 The Planned Jobs Done by Computers in British Hotels (1970-1985)

The following table is a chi-square test of goodness of fit, with regard to the 1970 and the 1985 data.

The null hypothesis, H_0 , and the alternative hypothesis, H_1 are as follows:

H_0 : There is no change in the planned jobs to be done by computers in British hotels between 1970 and 1985 .

H_1 : There is a change in the planned jobs to be done by computers in British hotels between 1970 and 1985.

Planned jobs	1970 (Expected frequencies)	1985 (Observed frequencies)	Chi-square
1-Statistical tabulations	0	3	0.0
2-Credit sales ledger	2	9	25.0
3-Inventory, stock control	5	3	0.5
4-Periodic statement of accounts/profit and loss	2	3	0.5
5-Bought ledger	0	3	0.0
6-Payroll	3	0	0.0
7-Mailing address list	1	0	1.0
8-Booking	0	3	0.0
9-Costing	0	9	0.0
10-Forecasting : future planning , mathematical models	1	5	16.0
11-Others like	10	3	4.9
Total	24	41	47.7

Chi-square = 47.7

Deegree of freedom = 10

At 10 degrees of freedom, the five percent point of the chi-square distribution = 18.307

The chi-square test is highly significant at the five percent level.

The null hypothesis, H_0 , that there is no change in the planned jobs to

be done by computers between 1972 and 1985, is accordingly rejected and H1 accepted. The test result is also highly significant at the one percent level.

So the test result indicates that there is a change, and the data suggests a move forward to have more planned jobs to be done by computers, in British hotels.

5.5 Regular and Planned Jobs Done by Computers: Country Analysis, Data 1985

Both the literature and the results of the 1970's Survey, tell that the hotel industry in the U.K. had started using computers by 1970. On the other hand, the results of other previous studies in Egypt tell that the hotel industry there had started using computers by 1980. The question is, does this difference of time affect the kinds of jobs handled by computers in the two countries?.

5.5.1 Regular Jobs Done by Computers

In respect of hotel country, the hypothesis is as follows:

H0 : There is no association between the regular jobs done by computers and the hotel country.

H1 : There is an association between the regular jobs done by computers and the hotel country.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Regular jobs	1985 data		Total
	British hotels	Egyptian hotels	
1-Statistical tabulations	12	15	27
2-Credit sales ledger	6	15	21
3-Inventory control	12	16	28
4-Periodic statement	12	6	18
5-Bought ledger	9	21	30
6-Payroll	15	7	22
7-Mailing address	17	16	33
8-Booking	9	10	19
9-Costing	6	5	11
10-Forecasting	7	6	13
11-Others like	8	0	8
Total	113	117	232

Chi-square = 17.9

Degree of freedom = 10

At 10 degrees of freedom the five percent point of the chi-square distribution = 18.307

The chi-square test is not significant at the five percent level (and also it is not significant at the one percent level. The null hypothesis, H_0 , is accordingly not rejected. There is no evidence to suggest that there is an association between the regular jobs handled by computers and the hotel country.

The explanation of the above test result may go back to the fact that information technology can be transformed easily between countries in business. Companies anywhere can buy their information technology as long as they are able to pay the price, but difficulties might arise later in the efficiency of operation and maintenance of this technology.

5.5.2 Planned Jobs Done by Computers

In respect of hotel country, the hypothesis is as follows:

H0 : There is no association between the planned jobs done by computer and the hotel country.

H1 : There is an association between the planned jobs done by computer and the hotel country.

The following table is a chi-square test of goodness of fit with regard to the 1985 data.

Planned jobs	1985 data		
	The British hotels	Egyptian hotels	Total
1-Statistical tabulations	3	10	13
2- ...	9	9	18
3- ...	3	7	10
4- ...	3	18	21
5- ...	3	3	6
6- ...	0	16	16
7- ...	0	7	7
8- ...	3	14	17
9- ...	9	19	28
10-...	5	17	22
11-Others like	3	23	26
Total	41	144	184

Chi-square = 17.5

Degree of freedom = 10

At 10 degrees of freedom, the five percent point of the chi-square distribution = 18.307

The chi-square test is not significant at the five percent level . The null hypothesis, H0, is accordingly not rejected. There no evidence to suggest that there is an association between the planned jobs done by computer and the hotel country.

So in both kinds of jobs (regular and planned), test result

indicate no influence of the different starting times of using computers in both the U.K. and Egypt over the kinds of jobs handled by computers.

5.6 Jobs Done by Other Data Processing Machines

5.6.1 Total Changes of Practices in British Hotels Between 1970-1985

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the usage of data processing machines to do hotel jobs between 1970 and 1985.

H_1 : There is a change in the usage of data processing machines to do hotel jobs between 1970 and 1985.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data for this practice.

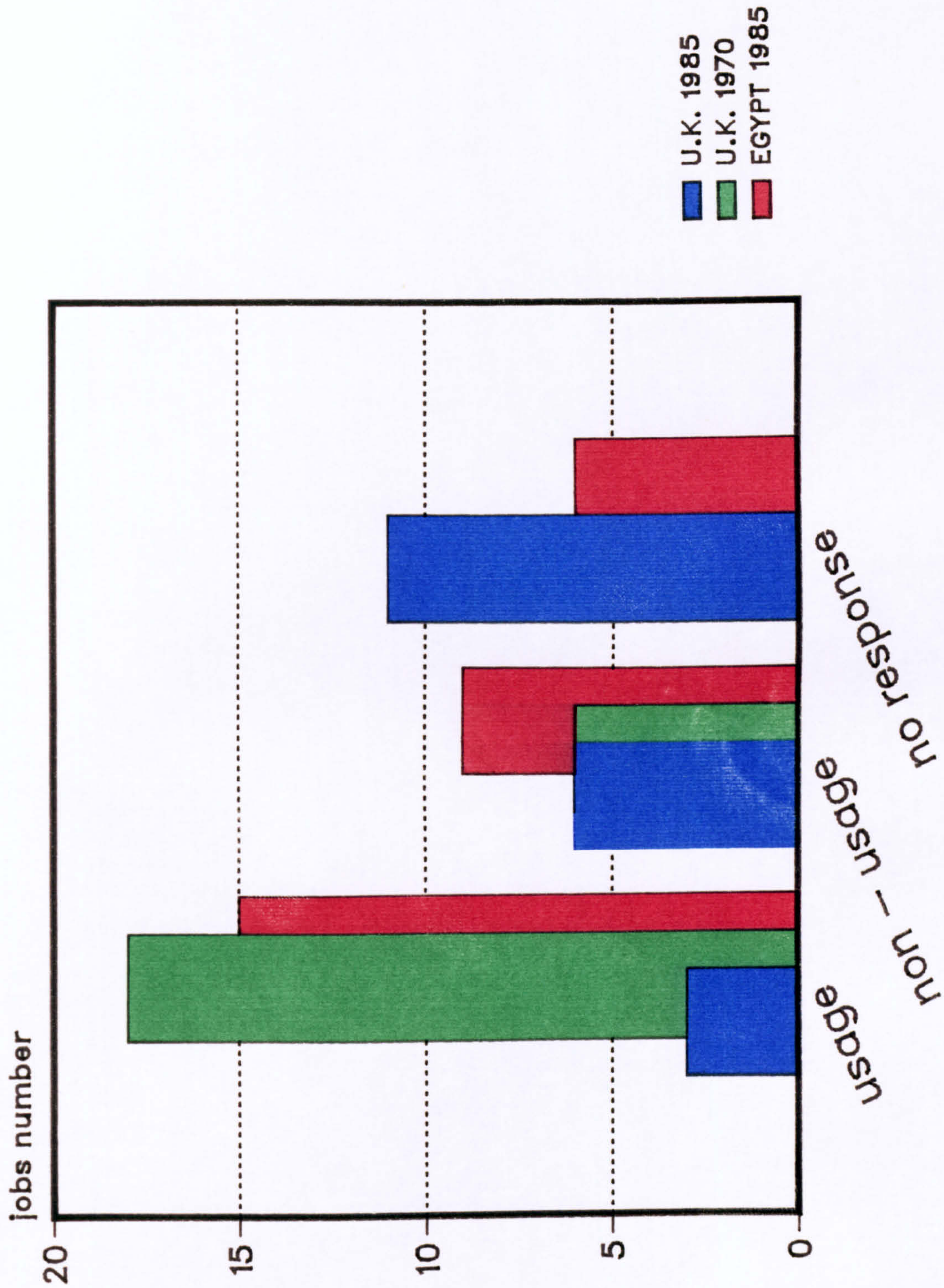
The use of other data processing machines	1970 (Expected total frequencies)	1985 (Observed total frequencies)	Chi-square
1- Used	18	3	12.5
2- Not used	6	6	0
3- No-response	0	11	0
Total	24	20	12.5

Chi-square = 12.92
Degree of freedom = 2

At 2 degrees of freedom, the five percent point of the chi-square distribution = 5.991

The chi-square test is significant at the five percent level. The null hypothesis, H_0 , that there is no change in the usage of other data processing machines (for example, punched cards machines) between 1970 and 1985, in the British hotels, is accordingly rejected. The test result is also highly significant at the one percent level.

Figure (5.11) the use of other data processing machines in the hotel industry of both the U.K. & EGYPT



The test result indicates that there is a change and the data suggests a move towards a decrease in using data processing machines to do hotel jobs in the British hotels by 1985.

5.6.2 The Use of Other Data Processing Machines :
Hotel Country Analysis, Data 1985

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no difference in the use of data processing machines to do hotel jobs between the British hotels and Egyptian hotels.

H_1 : There is a difference in the use of data processing machines to do hotel jobs between the British hotels and Egyptian hotels.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data for this practice.

Hotel country	1985 data			Total
	Used	Not used	No-response	
The British hotels	3	6	11	20
Egyptian hotels	15	9	6	30
Total	18	15	17	50

Chi-square = 8.41
Degree of freedom = 2

At 2 degrees of freedom, the five percent point of the chi-square distribution = 5.991

The chi-square test is significant at the five percent level. The null hypothesis, H_0 , that there is no difference in the use of data processing machines to do hotel jobs, between British hotels and Egyptian hotels, is accordingly rejected, and H_1 accepted. The test result indicates that there is a change, and the data suggests a move towards an increase for Egyptian hotels in using data processing

machines than the British hotels.

The possibility of bias due to non-response with regard to this question is considered. So a repeat of this test, eliminating those hotels that did not respond to this question, does not alter the result. At One degrees of freedom the chi-square value is 4.08 and the results remain significant.

5.6.3 The Usage of other Data Processing Machines:
Hotel Size Analysis, Data 1985

In respect of hotel size, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no association between hotel size and hotel country, in terms of using data processing machines to do hotel jobs.

H_1 : There is an association between hotel size and hotel country, in terms of using data processing machines to do hotel jobs.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data between the British and Egyptian hotels.

Hotel size	Hotel country						Total
	The British hotels		Egyptian hotels		No- response	No- resopnse	
	Used	Not used	Used	Not used			
Small sized hotels (up to 300 bedrooms)	0.3	0.4	1.1	1.5	0.9	0.6	5.00
Medium sized hotels (over 300-400 bedrooms)	15	3	5.5	7.5	4.5	3	38.5
Large sized hotels (over 400 bedrooms)	1.2	2.4	4.4	6	3.6	2.4	20
Total	16.5	6	9	15	9	6	63.5

Chi-square = 11.10
Degree of freedom = 5

At 5 degrees of freedom, the five percent point of the chi-square distribution = 11.070

The chi-square test is significant at the five percent level. The null hypothesis, H_0 , is accordingly rejected, and H_1 accepted. There is accordingly an association between the hotel size and the hotel country, in terms of using data processing machines. A calculation of the chi-square value for each cell (not shown in the contingency table), assists in interpreting the table. This reveals that usage of data processing machines is more in large hotels than in medium and small hotels, in both British and Egyptian hotels. As for the difference between British hotels and Egyptian hotels the data suggests an increase in British hotels than Egyptian hotels in using data processing machines.

Test results about using data processing machines to do hotel jobs conform with previous test result about using computers in hotels, this can be explained as follows:

- 1- There is a change in the use of computers and data processing machines to do hotel job in the U.K., between 1970 and 1985.
- 2- There is no significant difference between British hotels and Egyptian hotels in using computers, but the data suggests that Egyptian hotels are ahead.
- 3- There is a significant difference between British hotels and Egyptian hotels in using data processing machines and the data suggests that Egyptian hotels are also ahead.
- 4- There is no association between hotel size and the use of computers in hotels, while there is a difference between hotel size and the use of data processing machines, where large hotels are ahead, in hotels of both countries.

5.7 Details of Jobs Done by Other Data Processing Machines

5.7.1 Changes of Practices in the British Hotels Between 1970 And 1985

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the jobs done by data processing machines in the British hotels, between 1970 and 1985.

H_1 : There is a change in the jobs done by data processing machines in the British hotels, between 1970 and 1985.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data.

Jobs detail	1970 (Expected ferquencies)	1985 (Observed frequencies)	Chi-square
1- Sales analysis	1	5	16
2- Bought ledger	1	3	4
3- Stock control	1	3	4
4- Invoices and stocks	0	6	0
5- Analysis	1	8	49
6- Invoices, statistics, stocks, statements, payroll	1	5	16
7- Sales, invoices , purchasing, payroll, stocktaking	0	6	0
8- General management information, stock controlling , control of sales and purchasing	0	9	0
9- Other details not given	2	9	24.5
Total	7	54	113.5

Chi-square = 113.5

Degree of freedom = 8

At 8 degrees of freedom, the five percent point of the chi-square

distribution - 15.507

The chi-square test result is highly significant at the five percent level. The null hypothesis, H_0 , that there is no change in the jobs done by other data processing machines, in the British hotels, is accordingly rejected, and, H_1 accepted. The test result is also highly significant at the one percent level.

The test result indicates that there is a change, and the data suggests an increase between 1970 and 1985 in the use of data processing machines in British hotels.

The possibility of bias due to non-responses, with regard to this question, is eliminated, because we calculated the chi-square test excluding the non-response frequencies.

5.7.2 Details of Jobs Done by Other Data Processing Machines in Both British and Egyptian Hotels, Using the 1985 Data.

In respect of hotel country, the hypothesis is as follows :

H0 : There is no association between the hotel country and jobs done by data processing machines.

H1 : There is an association between the hotel country and jobs done by data processing machines.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Details of jobs	1985 data		
	British hotels	Egyptian hotels	Total
1- Sales analysis	5	17	22
2-	3	12	15
3-	3	16	19
4-	6	6	12
5-	8	14	22
6-	5	13	18
7-	6	8	14
8-	9	21	30
9-	9	11	20
Total	54	119	173

Chi-square = 7.90
Degree of freedom = 8

At 8 degrees of freedom the five percent point of the chi-square distribution = 15.507

The chi-square test is not significant at the five percent level (although the test result is only significant at the one percent level). The null hypothesis, H0, is accordingly not rejected. There is accordingly no evidence to suggest that there is an association between the hotel country and jobs done by data processing machines. A calculation of the chi-square value for each cell (not shown in the contingency table) reveals that jobs number 3 and 9 (stock control, and

other details not given) got higher results in hotels of both the two countries, The British hotels are more ahead.

5.8 Reasons Against Putting Jobs on Computers

5.8.1 Changes of Practices in the British Hotels Between 1970 And 1985

The null hypothesis, H₀, and the alternative hypothesis, H₁, are as follows:

H₀ : There is no change in the reasons against putting jobs on computer in the British hotels between 1970 and 1985.

H₁ : There is a change in the reasons against putting jobs on computer in the British hotels between 1970 and 1985.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data.

Reasons for not putting jobs on computers	1970 (Expected frequencies)	1985 (Observed frequencies)	Chi-square
1-Insufficient work (not worthwhile)	3	6	3
2-Too expensive	3	6	3
3-Do not have technical qualified staff	0	6	0
4-Intend to do no time yet	4	6	1
5-Other reasons	2	9	24.5
Total	12	33	31.5

Chi-square = 31.5
Degree of freedom = 4

At 4 degrees of freedom, the five percent point of the chi-square distribution = 9.488

The chi-square test is highly significant at the five percent level. The null hypothesis, H₀, that there is no change in number of managers

giving reasons against putting jobs on computer, using instead other data processing machines , between 1970 and 1985, is accordingly rejected, and H1 accepted. The test result is also highly significant at the one percent level. The possibility of bias due to non-response with regard to this question has been eliminated by avoiding the non-respons frequencies.

5.8.2 Managers'Reasons Against Putting Jobs on computer: Hotel Country Analysis, Data 1985

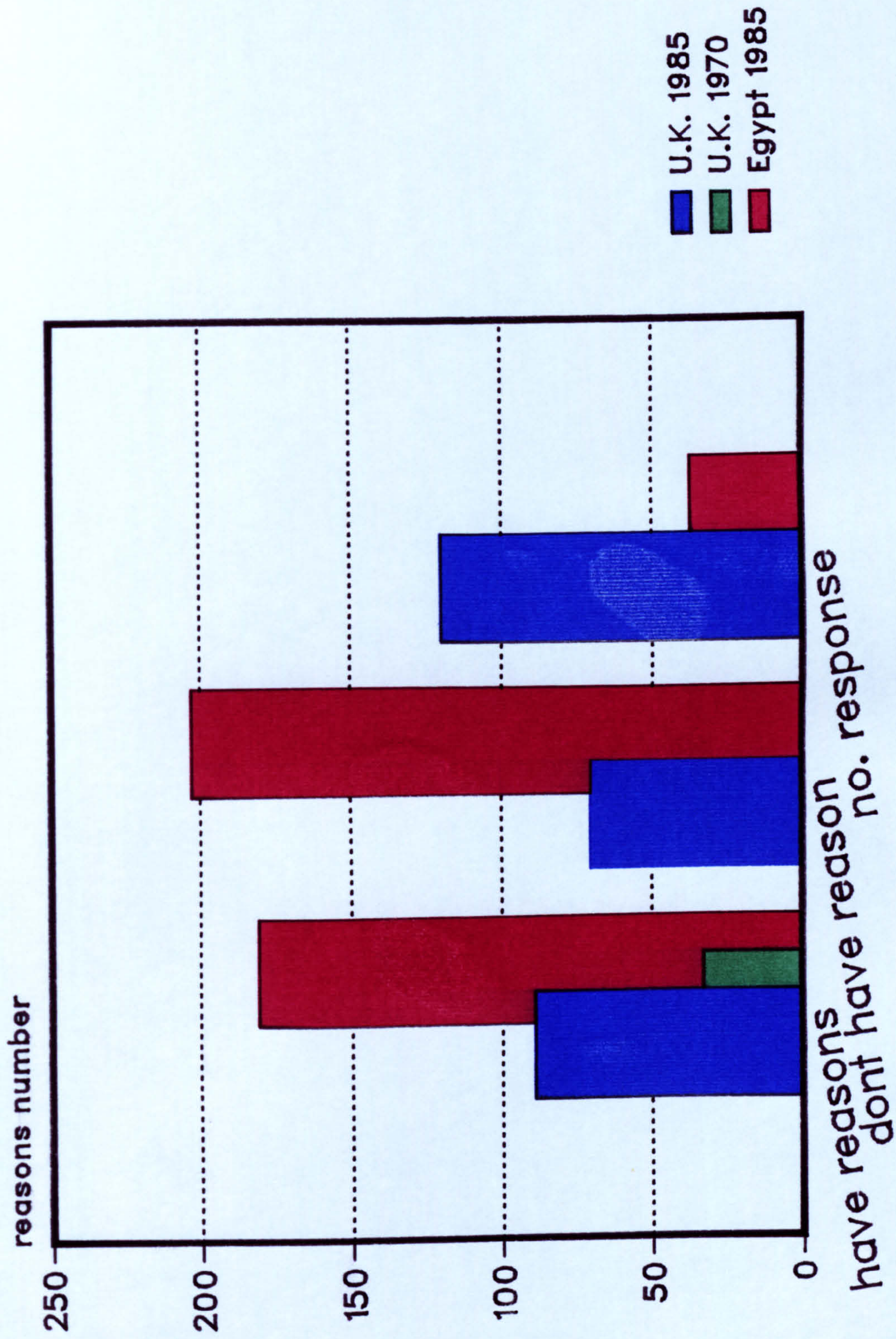
In respect of the hotel country, the hypothesis is as follows:

H0 : There is no difference between British hotels and Egyptian hotels , in terms of reasons against putting jobs on computers.

H1 : There is a difference between British hotels and Egyptian hotels , in terms of reasons against putting jobs on computers.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Figure (5.12) reasons against putting jobs on computers in the hotel industry of both the U.K. & Egypt



Reasons against using computers	Hotel country						Total
	Egyptian hotels			The British hotels			
	Yes	No	No- response	Yes	No	No- response	
1-Insufficient work	14	14	2	6	6	8	50
2-Too expensive	21	7	2	6	6	8	50
3-No qualified staff	22	6	2	6	6	8	50
4-Not time yet	22	6	2	6	6	8	50
5-Wait to have own computer	16	12	2	6	6	8	50
6-Firm not large enough	8	20	2	9	3	9	50
7-It takes too long	14	14	2	8	4	8	50
8-Will do so eventually	12	16	2	6	6	8	50
9-Prefer present arrangement	15	13	2	6	6	8	50
10-Firm being taken over	9	19	2	6	6	8	50
11-Will be considered in another year	11	15	4	6	6	8	50
12-Unable to find ideal computer	3	23	4	6	3	11	50
13-Either too big or too small	4	22	4	3	6	11	50
14-Others like	9	16	5	9	1	10	50
Total	181	203	37	89	70	120	700

Chi-square = 655.47

Degree of freedom = 39

At 39 degrees of freedom, the five percent point of the chi-square distribution = 60.692

The chi-square test is highly significant at the five percent level. The null hypothesis, H₀, that there is no association between the hotel

country and the reasons against putting jobs on computers, is accordingly rejected, and H1 accepted. The test result indicates that there is a difference between the hotels in the two countries, in terms of reasons (given by the hotel managers) against putting jobs on computers, and the data suggests an increase in difference between the British hotels and Egyptian hotels.

This test conforms with the previous test of the association between the hotel country and details of jobs done by other data processing machines.

5.8.3 Reasons Against Putting Jobs on Computer: Size Analysis, Data 1985

Because the computer program we used (SPSS) does not analyze data in terms of hotel size, but it only provides the total frequencies of each variable, so the total frequencies have been distributed according to the total share of each hotel size available in the data sample. So because we have 2 small hotels, 8 medium hotels, and 10 large hotels in the British hotel sample, and 3 small hotels, 15 medium hotels, and 12 large hotels in the Egyptian hotel sample, the distribution of the frequencies of each hotel country will be as follows : 20 (2:8:10) in the British hotels, and 30 (3:15:12) in the Egyptian hotels. This will be the base for calculating the test results of association in terms of hotel size.

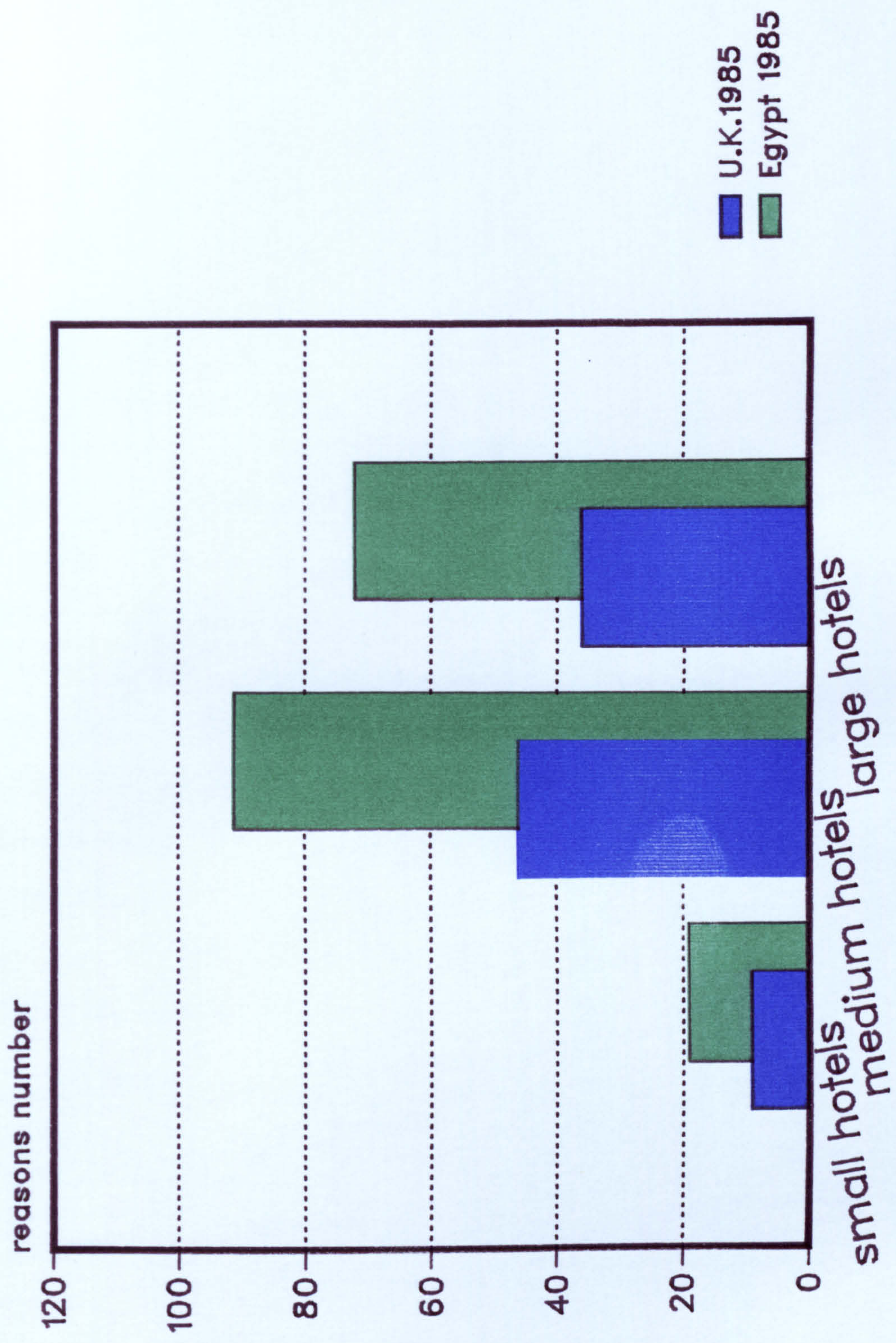
In respect of hotel size, the hypothesis is as follows:

H0 : There is no association between the hotel size and the hotel country , in terms of reasons against putting jobs on computer.

H1 : There is an association between the hotel size and the hotel country , in terms of reasons against putting jobs on computers.

The following table is a chi-square test of goodness of fit, with

Figure (5.13) reasons against putting jobs on computer in the hotel industry of both the U.K. & Egypt



regard to the 1985 data.

Hotel size	1985 data		Total
	The British hotels	Egyptian hotels	
Small sized hotels (up to 300 bedrooms)	8.9	18.1	27.0
Medium sized hotels (over 300 -400 bedrooms)	44.5	90.5	135.0
Large sized hotels (over 400 bedrooms)	35.6	72.4	107.0
Total	89	181	269

Chi-square = 0.006
Degree of freedom = 2

At 2 degrees of freedom the five point of the chi-square distribution = 5.991

The chi-square test is not significant at the five percent level (and the test result is also not significant at the one percent level). The null hypothesis, H_0 , is accordingly not rejected.

There is accordingly no evidence to suggest that there is an association between the hotel size and the hotel country, in terms of reasons against putting jobs on computers. This reveals that hotels of different sizes have the same reasons against using computers, as well as both the British and Egyptian hotels.

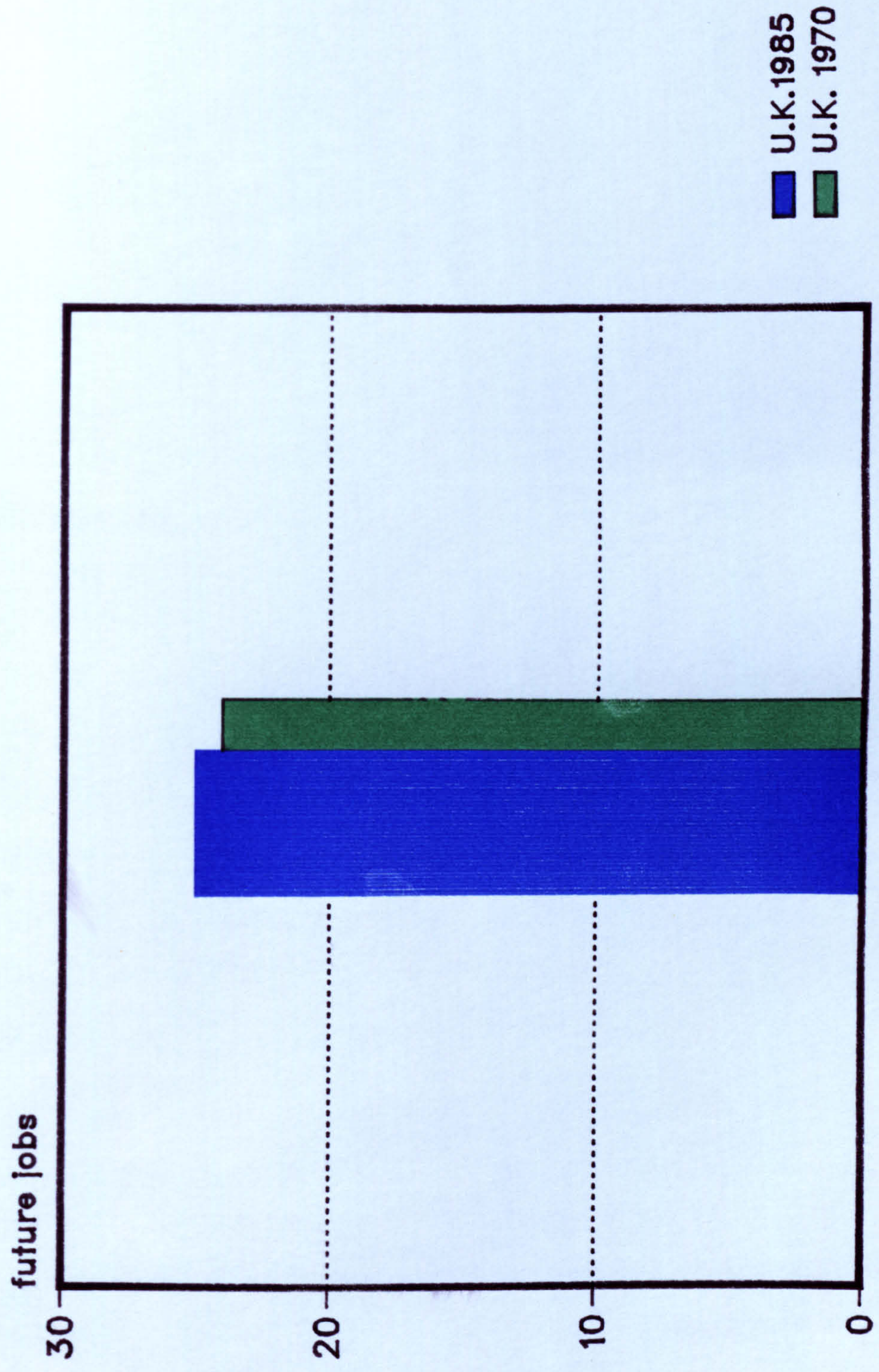
5.9 Future Plans for the Using or Extending the Use of Computers

5.9.1 Changes of Future Plans in the British Hotels Between 1970 And 1985

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the future plans of using or extending the

Figure (5.14) future plans for using or extending the use of computers in the hotel industry of the U.K.



Jobs to be removed

after 1985

use of computers in British hotels between 1970 and 1985.

H1 : There is a change in the future plans of using or extending the use of computers in British hotels between 1970 and 1985.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data.

Future plans	1970 (Expected frequencies)	1985 (Observed frequencies)	Chi-square
1- Considered	3	7	4
2- Will definitely follow up	15	56.7	
3- Will probably follow up	4	6	1
4- Do not know	2	7	12.2
Total	24	25	24.2

Chi-square = 24.2

Degree of freedom = 3

At 3 degrees of freedom, the five percent point of the chi-square distribution = 7.82

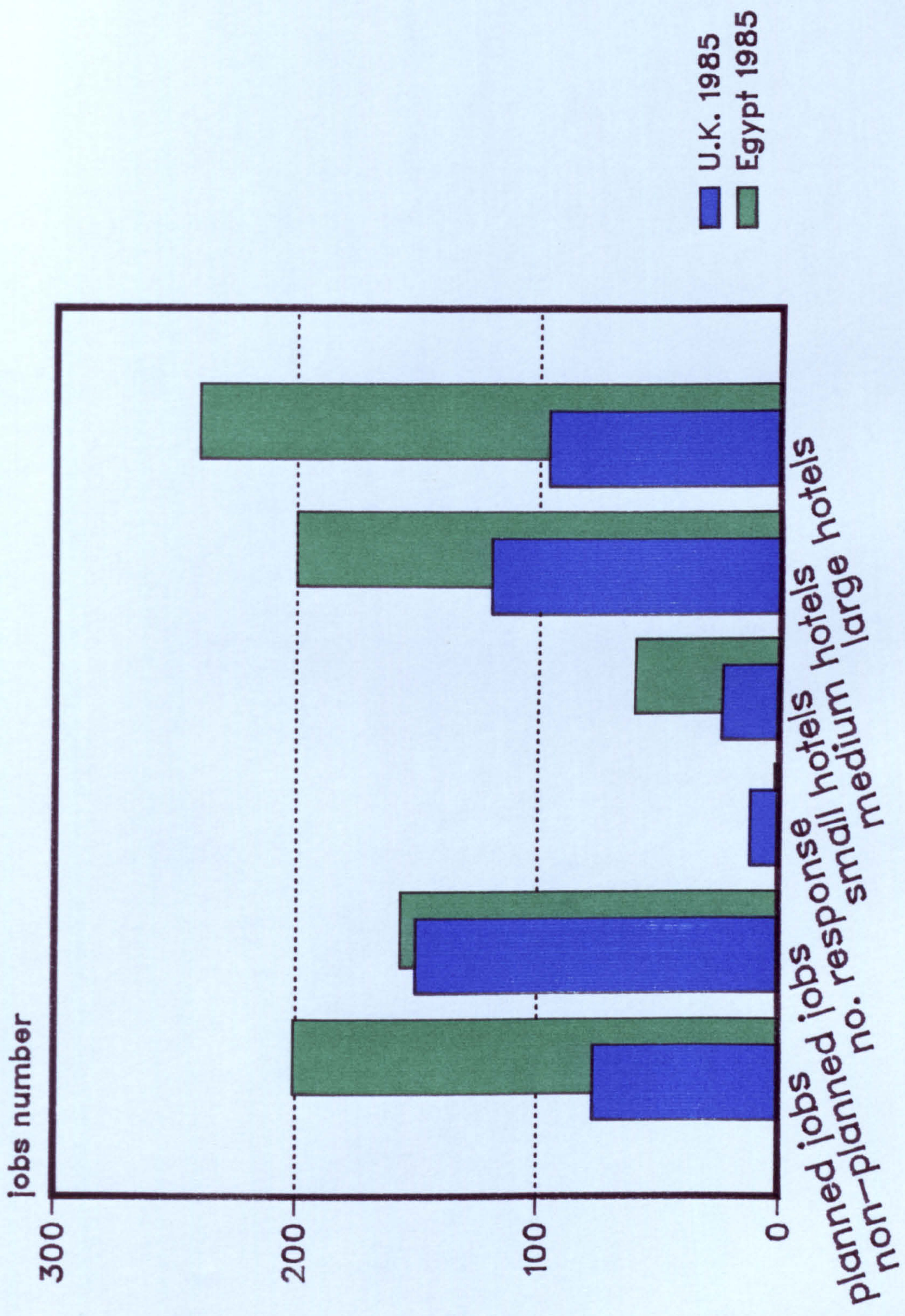
The chi-square test is highly significant at the five percent level. The null hypothesis, H0, that there is no change in the future plans of using or extending the use of computers in British hotels, between 1970 and 1985, is rejected. The test result is also highly significant at the one percent level. The test indicates that there is a change, and the data suggests an increase in the change in future plans between 1970 and 1985.

5.9.2 Future Plans: Hotel Country Analysis, Data 1985

In respect of the hotel country, the hypothesis is as follows:

H0 : There is no association between the hotel country and the future plans to use or extend using computers to do hotel jobs.

Figure (5.15) future jobs planned to use or extend using computer to them in the hotel industry of both the U.K. & Egypt 1985



H1 : There is an association between the hotel country and the future plans to use or extend using computers to do hotel jobs.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Future plans for using computers	1985 data						Total
	The British hotels			Egyptian hotels			
	Yes	No	No- response	Yes	No	No- response	
1-Considered	7	13	0	19	4	7	50
2-Definitely will follow up	5	12	3	8	20	2	50
3-Probably will follow up	6	11	3	14	14	2	50
4-Do not know	7	7	6	12	16	2	50
Total	25	43	12	53	54	13	200

Chi-square = 25.863

Degree of freedom = 15

At 15 degrees of freedom the five percent point of the chi-square distribution = 24.996

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H0, is accordingly rejected, and H1 accepted.

There is accordingly an association between the hotel country and the future plans for using or extending use of computers to do hotel jobs. A calculation of the chi-square value for each cell (not shown in the contingency table) assists in interpreting the table. This reveals that there is a difference in the future plans between British hotels and Egyptian hotels. The chi-square values of Egyptian hotels tend to increase more than the British hotels. The explanation for that may go

back to the recent time of establishing computer systems in Egyptian hotels (1980), which is different from that of the British hotels (1970).

5.10 Details of Future Plans for Using Computers:

5.10.1 Changes of Practices Between 1970 and 1985 in the British Hotels

The null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no change in the details of future plans to use computers to do hotel jobs in the British hotels between 1970 and 1985.

H_1 : There is a change in details of future plans to use computers to do hotel jobs, in the British hotels between 1970 and 1985.

The following table is a chi-square test of goodness of fit, with regard to the 1970 and 1985 data. Questions about future plans of using computers in the British hotels can shed light on changes that have taken place since 1970, what was considered future plans to extend using computers to some jobs in that time might not be the same in 1985. On the other hand, future plans to extend using computers in the Egyptian hotels compared with the British hotels in 1985, can show the difference of future plans between two countries of different technological experiences. Comparison using percentages instead of chi-square tests could be enough but it would not show the significance of the change.

Details of future plans for using computers	1970 (Expected frequencies)	1985 (observed frequencies)	Chi-square
1-Inventory /stock control	5	8	1.8
2-Periodic statement of accounts profit and loss accounts	5	8	1.8
3-Pay roll	3	5	1.3
4-Bought ledger	4	0	1.0
5-Statistical tabulations	3	8	8.3
6-Credit sales ledger	4	3	0.25
7-Forecasting, mathematical models	4	8	4.0
8-Costings	0	5	0.0
9-Mailing address list	0	8	0.0
10-Bookings	1	11	100
11-Others	8	9	0.13
12-Do not know which job	3	2	0.33
Total	40	151	117.61

Chi-square = 117.61

Degree of freedom = 11

At 11 degrees of freedom, the five percent point of the chi-square distribution = 11.675

The chi-square test is highly significant at the five percent level. The null hypothesis, H_0 , that there is no change in the details of future plans of British hotels between 1970 and 1985, is accordingly rejected, and H_1 accepted. The test result is also highly significant at the one percent level.

The test result indicates that there is a change, and the data suggests an increase in the change between 1985 and 1970. The possibility of bias due to non-response with regard to this question is

eliminated here, because we avoided the frequencies of non-response in our chi-square calculation.

5.10.2 Details of Future Plans:
 Hotel Country Analysis
 , Data 1985

In respect of the hotel country, the null hypothesis, H0, and the alternative hypothesis, H1, are as follows:

H0 : There is no association between the hotel country and the details of future plans to use computers to do hotel jobs.

H1 : There is an association between the hotel country and the details of future plans to use computers to do hotel jobs.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Details of future plans	Hotel country						Total
	The British hotels		Egyptian hotels		No-response		
	Yes	No	Yes	No	No-		
1-Inventory /stock control	8	11	1	19	11	0	50
2-.....	8	11	1	17	13	0	50
3-.....	5	14	1	19	11	0	50
4-.....	2	17	1	22	8	1	50
5-.....	8	11	1	20	10	0	50
6-.....	3	16	1	16	14	0	50
7-.....	8	11	1	20	10	0	50
8-.....	5	14	1	17	13	1	50
9-.....	8	11	1	17	13	0	50
10-.....	11	8	1	15	15	0	50
11-.....	9	10	1	8	22	0	50
12-Don't know	2	17	1	11	17	2	50
Total	77	151	12	201	157	2	600

Chi-square = 203.85
 Degree of freedom = 55

At 55 degrees of freedom the five percent point of the chi-square

distribution = 81.425

The chi-square test is highly significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H_0 , is accordingly rejected, and H_1 accepted.

There is accordingly an association between the hotel country and the details of future plans for using computers to do hotel jobs. A calculation of the chi-square value for each cell (not shown in the contingency table), assists in interpreting the table. This reveals that there is a difference between British hotels and Egyptian hotels in details of the future plans to use computers to do hotel jobs, and the chi-square values for Egyptian hotels tend to increase more than for the British hotels. At 22 degrees of freedom the calculation of the chi-square values for British hotels is 22.16, whilst it is 33.924 for Egyptian hotels at the same degrees of freedom.

5.10.3 Total Future Plans for Using or Extending Use of Computers in Hotels: Hotel Size Analysis, Data 1985

In respect of the hotel size, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no association between hotel size and the total future plans to the use or extend the use of computers to do hotel jobs.

H_1 : There is an association between hotel size and the total future plans to use or extend the use of computers to do hotel jobs.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Hotel size	1985 data						
	Total of future plans to use computers						
	The British hotels			Egyptian hotels			Total
	Yes	No	No- response	Yes	No	No- response	
1-Small sized hotels (up to 300 bedrooms)	7.7	15.1	1.2	20.1	15.7	0.2	60
2-Medium sized hotels (over 300- 400 bedrooms)	38.5	75.5	6.0	100.1	78.5	1.0	200
3-Large sized hotels (over 400- bedrooms)	30.8	60.4	4.8	80.4	62.8	0.8	240
Total	77	151	12	201	157	2	500

Chi-square = 24.93

Degree of freedom = 10

At 10 degrees of freedom, the five percent point of the chi-square distribution = 18.307

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H₀, is accordingly rejected, and the H₁ accepted.

There is accordingly an association between hotel size and the total future plans to use or extend the use of computers to do hotel jobs.

This reveals that large hotels have more future plans to extend using computers to their jobs than do small and medium hotels. A calculation of the chi-square value for each cell (not shown in the contingency table) reveals that Egyptian hotels (of all sizes) have more

future plans to extend the use of computers to do their jobs than do British hotels. The explanation for that may go back to the 10 years advance in introducing computers in British hotels (1970) over Egyptian hotels (1980).

5.11 Summary Table Of Principal Results

Keys :

- * Significant result at the 5 % level .
- *E Significant result at the 5 % level in the direction expected .
- *U Significant result at the 5 % level in an unexpected direction .
- N.S. Non-Significant result .

Hotel practices	Goodness of fit 1970 : 1985 in U.K.	Test of association			
		Time	1985 data		
			Country	Size	
				U.K.	Egypt
1- The use of computers in hotels :	*E		*U	N.S.	N.S.
a- Have own computer premises	N.S.	N.S.	*	N.S.	N.S.
b- Use a computer Bureau	N.S.	*	N.S.	N.S.	N.S.
2- Jobs done on computers (Total)	*E	*E	*E	*E	*E
a- Regular jobs	*E	*E			
a- Planned jobs	*E	*E			
3- Time of introducing computers					
a- Regular jobs			*U		
b- Planned jobs			*U		
4- The use of other data processing machines	*U	*U	*E	*U	*U
5- Jobs done by other data processing machines	*U	*U	N.S.	N.S.	N.S.
6- Reasons against putting jobs on computers	*U	*U	*e	N.S.	N.S.
7- Future plans for extending the use of computers	*E	*E	*U		
8- Details of future plans to use computers	*E	*E	*U	*U	*E

5.12 Conclusions

The longitudinal analysis in chapter 5 shows that there are a number of changes of practice in British hotels between 1970 and 1985. Some of these changes were in the direction expected, but the others were not. In this concluding part of chapter 5, we will explain their expected and unexpected directions as follows:

5.12.1 The Use of Computers in Hotels

1- The increase in the use of computers in British hotels, between 1970 and 1985, was expected because of the development of information technology and the increase of computer usage in other industries.

2- Differences between British hotels and Egyptian hotels, in terms of using computers were, expected in favour of British hotels, but the result was unexpected. The explanation for this may be because most Egyptian large hotels are branches belonging to international hotel companies. It may also go back to the management style practiced there.

3- Although the association between hotel size and the use of computers in hotels is indicated in the literature, but the results were unexpected

in both British and Egyptian hotels. The explanation for this may go back to the recent usage of information technology in the British hotel industry (1970) and the Egyptian hotel industry (1980).

5.12.2 Jobs Done on Computers

1- The increase in both regular and planned jobs to be done by computers was expected. Differences in computer applications in terms of the hotel country and hotel size were expected because of the development of information technology and the economic justification reason provided

for large hotels.

5.12.3 The Use of other Data Processing Machines

The increase in the usage of other data processing machines^{*} to do hotel jobs, was unexpected. The increase in using computers should be followed by a decrease in using other data processing machines . The explanation for this may go back to the increase in the volume of work in hotels, without a corresponding increase in the use of computers.

5.12.4 Reasons Against Putting Jobs on Computers

1- Changes in the reasons against putting jobs on computers, in British hotels, between 1970 and 1985, was in the unexpected direction. It was supposed that these reasons will decrease or vanish, after a long time of using computers there (15 years) . Experience, economic justification, and the lack of qualified staff mitigate the acceptance of computers by Egyptian hotels, which are very recent in using computers (5 years).

2- The insignificant results of reasons against putting jobs on computers , in terms of hotel size, were unexpected. Small hotels have different reasons to large hotels against putting jobs on computer because they are different in the provision of facilities and volume of work.

5.12.5 Future Plans for Using Computers

1- The development of information technology and new forms of computer usage and functions helped to change future plans of using computers in the hotel industry. The changes in the future plans of using computers in British hotels, between 1970 and 1985, was expected. Also

differences in these future plans, in terms of hotel size, were expected in both British and Egyptian hotels because hotels are different in their expectations since they are different in size (facilities volume of work). The increase in the future plans of Egyptian hotels in using or extending the use of computers over British hotels, was unexpected. The explanation may go back to the Egyptian hotels being willing to develop faster in information technology, which some of the British hotels already have.

6.1 Introduction

Very few studies have focused directly on the relationship between the manager's satisfaction and the use of the information provided by computers. In the 1960 a number of extensive field studies had been conducted by Churchill et al 1969 (ref.39) and Mc Kinsey and Co. 1968 (ref. 40), to explain the difficulties of making decisions and doing management activities. Van Horn 1973 (ref. 41), did a revision of many past field studies that have focused on the impact of the computer upon management and decision making within the organisations. A review of many factors, which were believed to influence management information systems (MIS) success, was undertaken by Zmud 1979 (ref. 42). The empirical literature included in Zmuds review and others, mentioned above, revealed that attitude towards usage of information was positively associated with the degree of usage.

In this chapter we will pick up this last conclusion, and try to investigate how valid it is in the hotel industries of both the U.K. and Egypt. Views of hotels managers, about the information they receive, will be tested with their degree of usage for such information.

In the previous chapter, we discussed the present and future applications of computers in hotels. Because having, or planning to have computers is not the important issue, but how helpful the use of computers is or will be. We will seek the users' (managers') views about their information system characteristics, and how far they are provided by information (in terms of quality and quantity) that suits their work purposes and needs. Considering that these users are hotel managers in different management categories (levels), so we expect some

differences and associations, which will be the hypotheses for testing in this chapter. Both the hotel country and managers management categories (levels) will be used as bases for analysis, using the 1985 data, in both the British and Egyptian hotels.

6.2 Usage and Non-usage of the Information Received

Lightfoot (ref. 36 p. 62) argues that a frequent complaint from users is that computer systems never seem able to provide exactly the information they require. Walter Wing (ref. 37 p. 21) agrees with Lightfoot, when he comments on the saying "when in doubt print out". He says that this seems to have been the philosophy adopted by computer system designers over the last 20 years. He concludes from his study that Lightfoot's view is true both in regular routine reports and for ad hoc information requested for special projects or investigations.

Along with that came Ackoff's comment (ref. 38 pp. 147-156) when he says that the effect that continued production of more and more irrelevant information would eventually impede development. Ackoff's comment might be as relevant to-day as when he made it. Finally W. Wing draws his conclusion that the use of computer systems by managers does not mean that the computer will provide them with the only information they require, consequently managers may discard all the information provided because they cannot cope with irrelevant information.

To obtain verification, questionnaires were distributed to both the British hotel managers and Egyptian hotel managers (see a copy of the questionnaire in the appendix). Analysis of the returns revealed the following results:

6.2.1 Purposes of Use of the Information Received :
Hotel Country Analysis, Data 1985

The null hypothesis, H₀, and the alternative hypothesis, H₁, are as follows:

H₀ : There is no difference in the purposes of use of the information received between British hotel managers and Egyptian hotel managers .

H₁ : There is a difference in the purposes of use of the information received between British hotel managers and Egyptian hotel managers.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Information purposes of use	1985 data						Total
	British hotel managers			Egyptian hotel managers			
	Yes	No	No- response	Yes	No	No- response	
1-Decision making / taking	15	5	0	12	11	7	50
2-Mandatory action	11	9	0	4	24	2	50
3-Search and action	9	11	0	12	11	7	50
4-Advice only	9	11	0	2	13	15	50
5-Information only	11	9	0	2	13	15	50
6-Others	11	9	0	5	9	16	50
Total	66	54	0	37	81	62	300

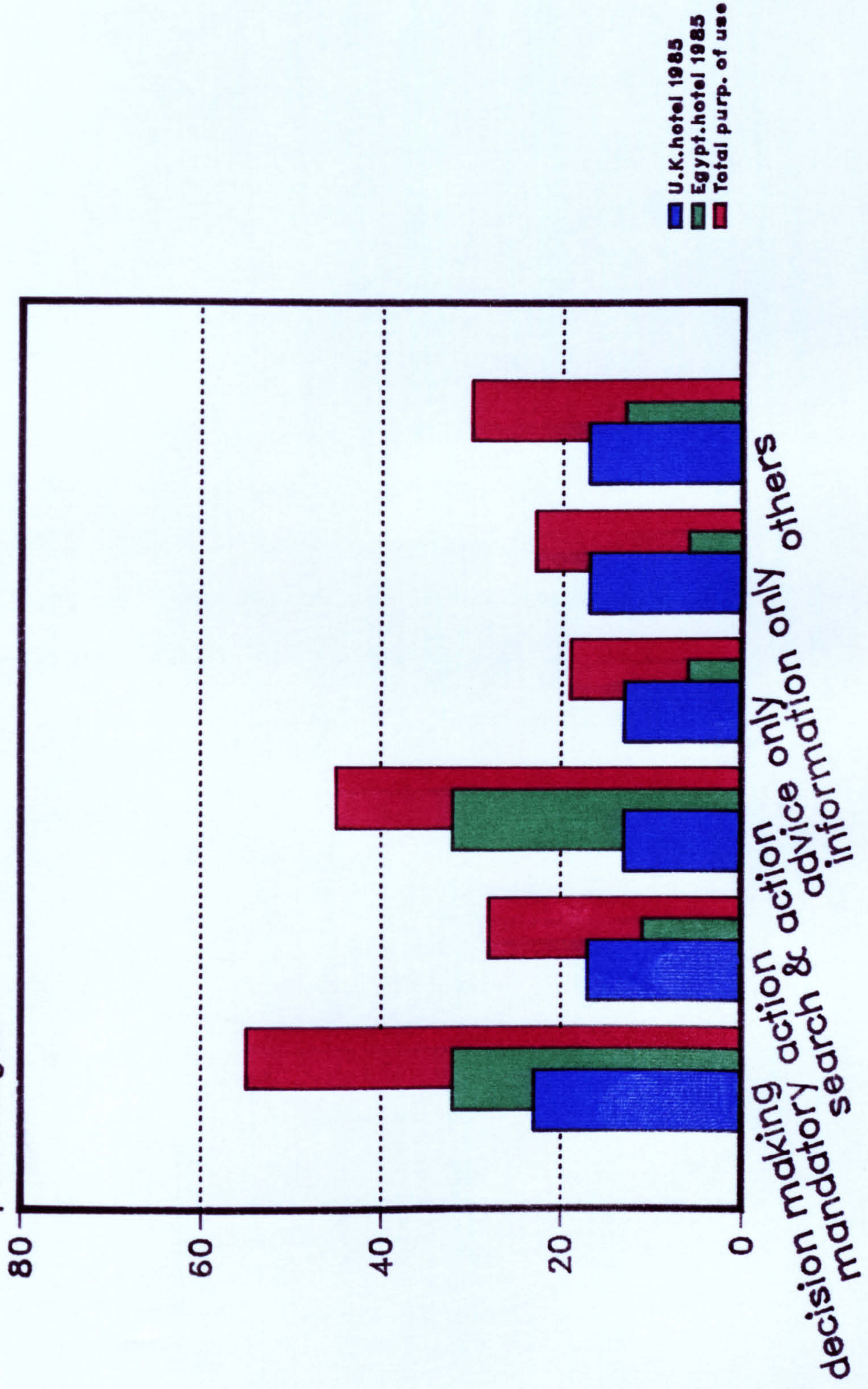
Chi-square = 49.34

Degree of freedom = 25

At 25 degrees of freedom, the five percent point of the chi-square distribution = 37.652

The chi-square test is significant at the five percent level. The null hypothesis, H₀, that there is no difference in the purposes of uses of the information received, between British hotel managers and Egyptian

Figure (6.1) the purposes of use for the information received by the managers in the hotel industry of both the U.K. & Egypt 1985 percentages



hotel managers, is accordingly rejected. The test result is also highly significant at the one percent level.

The test result indicates that there is a difference and the data suggests an increase in the uses of Egyptian hotel managers for the information received than the British hotel managers. The possibility of bias due to non-response with regard to this question is considered. A repeat of the test, eliminating the non-responses does not alter the result. The chi-square value at 15 degrees of freedom is 33.04, and the five percent point of the chi-square distribution is 24.996, so the test result is still significant at this level as well. The test result is also highly significant at the one percent level.

If there is a difference in the total uses of the information received between the British hotel managers and Egyptian hotel managers, how far is this difference for each purpose of use, and what does that imply?. The following table shows the percentage of each purpose of use, related to all responses of each hotel country. The total responses received are 50 (20 responses from the British hotels and 30 responses from Egyptian hotels).

Information purposes of use	1985 data				
	British hotel managers		Egyptian hotel managers		Total
	No.	%	No.	%	%
1-Decision making	15	23	12	32	27
2-Mandatory action	11	17	4	11	14
3-Search and action	9	13	12	32	23
4-Advice only	9	13	2	6	10
5-Information only	11	17	2	6	12
6-Others	11	17	5	13	15
Total	66	100	37	100	

The analysis of the data, in the above table, reveals the following:

- 1- In hotels of both the two countries (U.K. and Egypt) a total percentage of 27 of the managers use the information they receive for the decision making purpose. On the other hand this implies that a total percentage of 23 of the managers there rely upon other means of making decisions which are mainly influenced by their experiences, characteristics, judgement, and style of management. This tends to be greater in British hotels than in Egyptian hotels.
- 2- Considering that a total percentage of 27 of the hotel managers, in the two countries, are using the information they receive for decision making, but on the other hand, a total percentage of 14 and 12 of the same managers are receiving information for mandatory action and just as information only, this indicates that much of the data generated is not used. This tends to be more so in British hotels than Egyptian hotels.
- 3- Considering that managers before making decisions, seek advice, the data reveals that a total percentage of 45 (23+10+12) of hotel managers in both the two countries receive information for these purposes, which contribute to whole decision making process.
- 4- So we can come to the conclusion which describes the situation of purposes of use of the information received by the hotel managers in both the U.K. and Egypt, that a big proportion of the information received is for arranging to make decisions (which means the stage of studying the possible solutions and different alternatives). Then comes the information for making decision(without forgetting that quite a proportion of the information received are not used.

6.2.2 The Frequency of the Information Received:
Hotel Country Analysis, Data 1985

The null hypothesis, H₀, and the alternative hypothesis, H₁, are as follows:

H₀ : There is no difference in the frequency of information received by managers, between British hotels and Egyptian hotels.

H₁ : There is a difference in the frequency of information received by managers, between British hotels and Egyptian hotels.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Information frequency	1985 data						Total
	British hotels			Egyptian hotels			
	Yes	No.	No-response	Yes	No.	No-response	
1- Daily	13	7	0	12	3	15	50
2- Weekly	12	8	0	14	0	16	50
3- Monthly	9	11	0	6	9	15	50
4- Annually	6	14	0	12	5	13	50
5- Others	12	8	0	5	17	8	50
Total	52	48	0	49	34	67	250

Chi-square = 41.74

Degree of freedom = 20

At 20 degrees of freedom, the five percent point of the chi-square distribution = 31.410

The chi-square test is significant at the five percent level. The null hypothesis, H₀, that there is no difference between the British hotels and Egyptian hotels, in terms of the frequency of the information their managers receive, is accordingly rejected, and H₁ accepted. The test result is also highly significant at the one percent level.

The test result indicates that there is a difference, and the data suggests that Egyptian hotel managers are ahead of the British managers

in receiving a greater frequency of information. The possibility of bias due to non-response with regard to this question is considered, but we do not exclude the possibility that the non-response implies the 'No' answer, this why we considered it before. A repeat of the test, eliminating the non-responses, does not alter the result. At 4 degrees of freedom, the five percent point of the chi-square distribution is 9.488 and the chi-square value is 9.8, so the result is still significant at this level.

To interpret the frequency of the information received by the hotel managers, as for the different purposes of uses, the percentage of each frequency, related to each hotel country is shown in the following table:

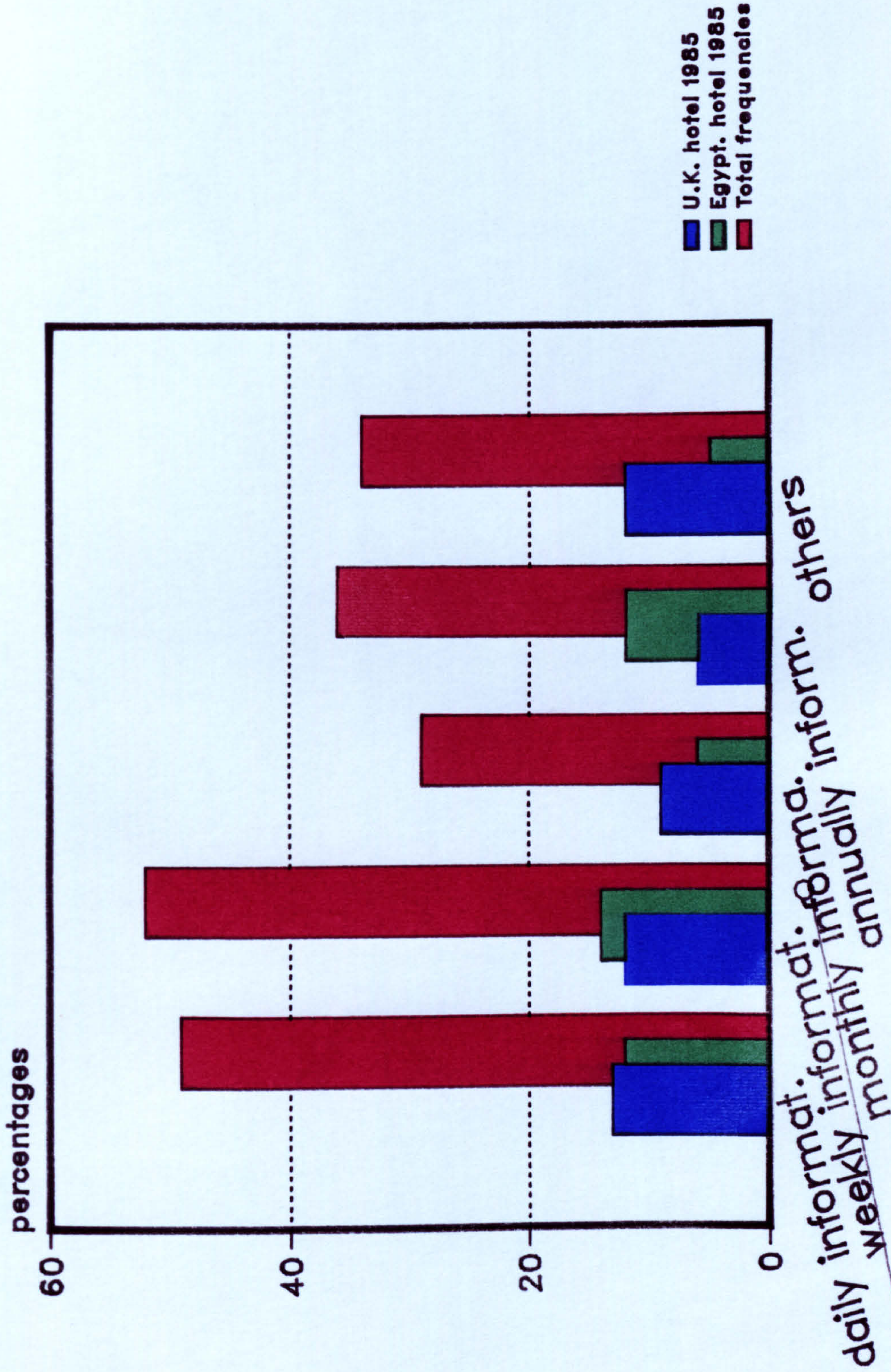
Information frequency	1985 Data				
	British hotels		Egyptian hotels		Total
	No.	%	No.	%	%
1- Daily	13	25	12	24	25
2- Weekly	12	23	14	29	26
3- Monthly	9	17	6	12	15
4- Annually	6	12	12	24	18
5- Others	12	23	5	11	17
Total	52	100	49	100	

The analysis of the data in the above data reveals the following:

1- Considering that for the manager's regular (routine) work, which usually takes the form of operational tasks, he needs daily and weekly information, while for the non-routine work (strategic and tactical tasks) he usually needs monthly and an annually frequency of information.

2- So, we can conclude that, a total percentage of 15 and 18 of the hotel managers in both the U.K. and Egypt are receiving monthly and

Figure (6.2) the frequency of the information received by the managers in the hotel industry of both the U.K. & Egypt 1985



annual information, which are usually used for the purpose of decision making. On the other hand, for the operational and day-to-day tasks, they are receiving a total percentage of 25 and 26 of daily and weekly information, which are usually used for routine work.

3- In all cases (mentioned above) the British hotel managers are ahead (receiving more information) of Egyptian hotel managers. And in hotels of both countries, managers are receiving more operational (daily, weekly) information than decision making (monthly, annual) information.

4- The above explanations for the situation in hotels of the two countries, about the information purposes of use and information frequency may indicate that, the hotel managers are either involved in more operational (routine) work, than decision making tasks. This is why they receive a bigger proportion of information for this aim and the available information systems, in the hotels are more capable of providing this sort of information.

6.2.3 The Frequency of the Information Received: Hotel Management Categories, Data 1985

In respect of hotel management category (manager's management level), the hypothesis is as follows:

H0 : There is no association between the managers' management levels and the frequency of the information they receive.

H1 : There is an association between the managers' management levels and the frequency of the information they receive.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data, for this practice.

Managers' levels	1985 data		
	British hotels	Egyptian hotels	Total
Senior manager	7.8	21.2	29
Middle manager	7.8	9.8	17.6
Lower (junior) manager	7.8	8.2	16
Supervisor	23.4	3.3	26.7
Total	52	49	89.3

The frequencies in the above table refer to the total frequencies of the information received for different purpose of uses by each hotel manager in both the U.K. and Egypt. The calculation is done by relating this total frequencies (responses) to the share of each category (managers' levels) in the whole sample. This is why some of the figures (numbers) in the above table might look unjustified. The same comment is implied for the next two tables.

Chi-square = 20.214
Degree of freedom = 3

At 3 degrees of freedom, the five percent of the chi-square distribution = 7.82

The chi-square test is significant at the five percent level. The null hypothesis, H_0 , that there is no association between the managers' management levels and the frequency of the information they receive, is accordingly rejected, and H_1 accepted. The test result is also highly significant at the one percent level.

A calculation of the chi-square value for each cell (not shown in the contingency table) reveals that managers of different levels are receiving different frequencies of information, and both senior managers and supervisors in both the British and Egyptian hotels are receiving more information than managers at other levels.

Considering that, according to information theory, senior managers (who are usually making decisions) are supposed to receive less detailed information than others, and supervisors (who are usually doing operational work) are supposed to receive more detailed information than

others, so the test result shows a contradiction with the structure of information theory. The following figure shows the structure of information in organisations, according to this information theory.

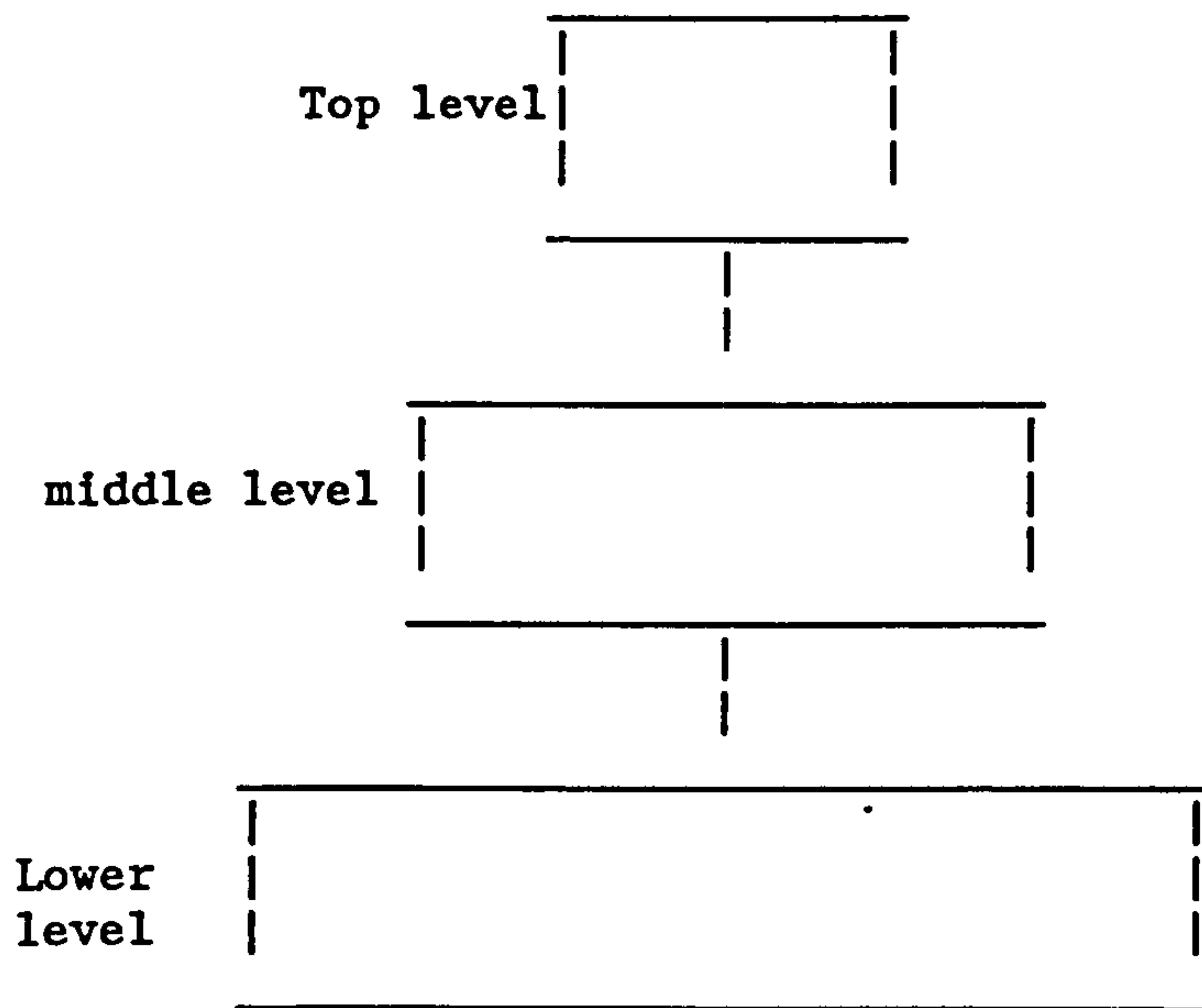


Figure (6.3) The information organisational structure

6.2.4 The Forms and Time of the Information Received: Hotel Country Analysis, Data 1985

With respect to the hotel country, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no difference between British hotel managers and Egyptian hotel managers, in terms of the forms and time of the information they receive.

H_1 : There is a difference between British hotel managers and Egyptian hotel managers, in terms of the forms and time of the information they receive.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Forms and time of information received	1985 data		
	British hotels	Egyptian hotels	Total
1-Information forms :			
a-Normal printout	8	12	20
b-Microfiche	5	16	21
c-Others	13	13	26
Total	26	41	67
2-Information time :			
a-On time	11	15	26
b-Too late for action	6	4	10
c-Too early and filed	11	12	23
Total	28	31	59

Chi-square (information forms) = 3.34
Chi-square (information time) = 0.942
Degree of freedom = 3

At 3 degrees of freedom, the five percent point of the chi-square distribution = 7.82

The chi-square test is not significant at the five percent level. The null hypothesis, H₀, that there is no difference between British hotel managers and Egyptian hotel managers, in terms of forms and time of information received, is accordingly not rejected. The result is also not significant at the one percent level. This indicates that there is no difference between hotel managers in both the two countries, in terms of the forms and time of information they receive.

6.2.5 Forms and Time of Information Received: Hotel Managers' Levels Analysis, 1985 Data

In respect of the hotel management category (managers' levels), the null hypothesis, H₀, and the alternative hypothesis, H₁, are as follows:

H₀ : There is no association between the hotel manager's management

level and the forms and time of information he receives.

H1 : There is an association between the hotel manager's management level and the forms and time of the information he receives.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Managers levels	1985 data						Total
	British hotels			Egyptian hotels			
	Normal print-out	Micro-fiche	Others	Normal print-out	Micro-fiche	Others	
Senior manager	1.2	0.75	1.95	6.8	9.1	7.4	27.2
Middle manager	1.2	0.75	1.95	2.4	3.2	2.6	12.1
Lower manager	1.2	0.75	1.95	2.0	2.7	2.2	10.8
Supervisor	3.6	2.25	5.85	0.8	1.1	0.9	14.5
Total	7.2	4.5	11.7	12	16.1	13.1	64.6

Chi-square = 19.45

Dgree of freedom = 15

At 15 degrees of freedom, the five percent point of the chi-square distribution = 24.996

The chi-square test is not significant at the five percent level (although the test result is highly significant at the one percent level). The null hypothesis, H0, that there is no association between the managers' levels and forms of information they receive, is accordingly not rejected.

There is accordingly no evidence to suggest that there is an association between the manager's levels and the forms of information they receive, in hotels of both U.K. and Egypt. This means that managers of all levels receive the same forms of information.

The chi-square test have also been done to test the association

between the hotel managers' levels and the time of the information they receive (on time, too late to take action, too early and filed). The test result proved to be not significant at 15 degrees of freedom, as well. This also means that managers of all management levels receive their information in similar time.

Considering the importance of information time for the value of information and the decision makers' needs, the following table shows how valuable and usable the information received is, in terms of information time.

Information time	1985 data				
	British hotels		Egyptian hotels		Total
	Frequencies	%	Frequencies	%	%
On time	11	39	15	48	44
Too late to take action	6	22	4	13	18
Too early and filed	11	39	12	39	37
Total	28	100	31	100	

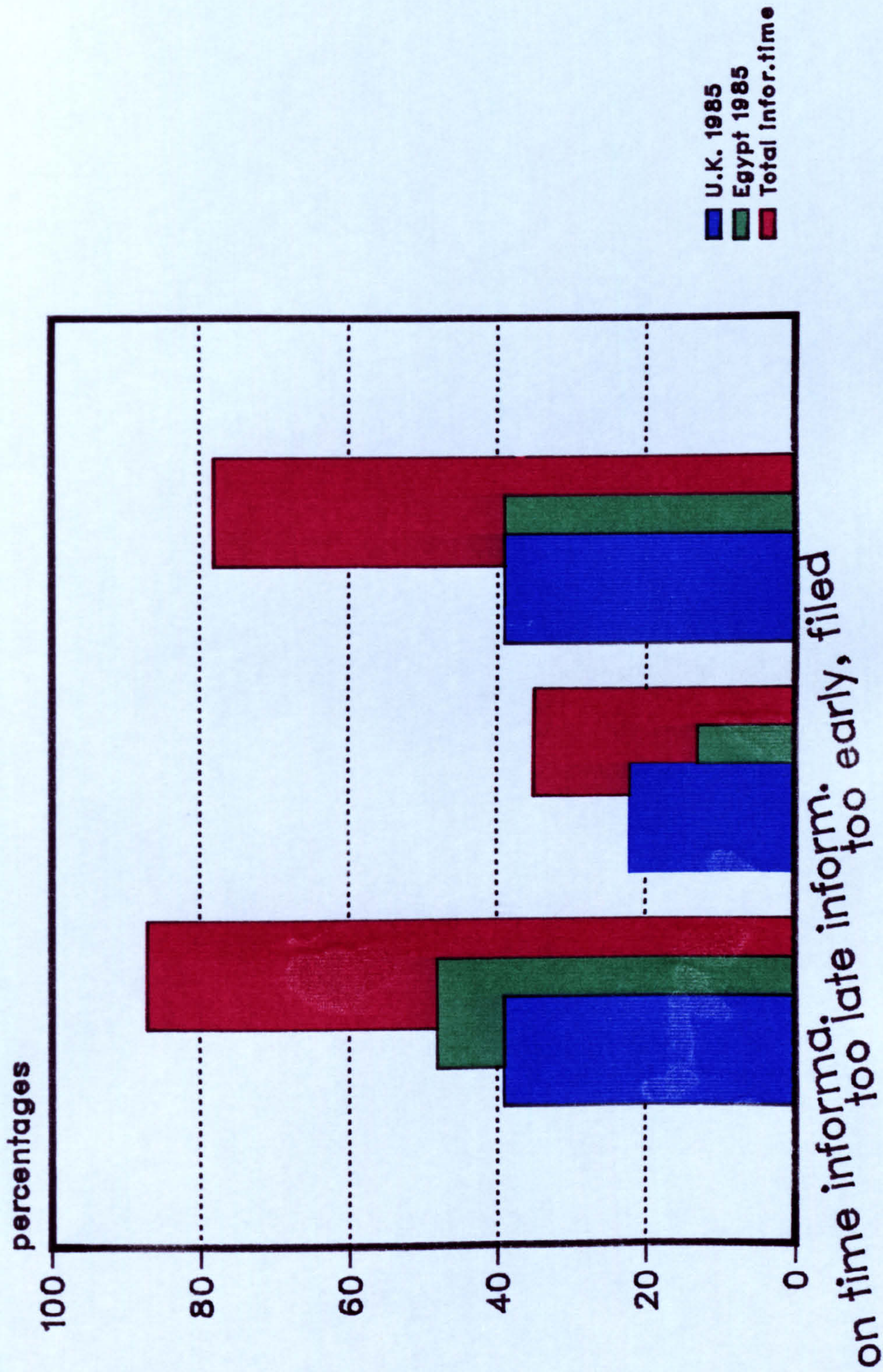
Some of the numbers of the frequencies referred in the above table might look unjustified because they exceed the total number of responses in each sample, but this goes back to the style of questions used 'multiple choice' where some managers marked more than one choice to answer one question. This comment is implied for all other tables which represent the frequencies of the multiple choice questions in this study.

The analysis of the data in the above table reveals the following:

1- Less than 50 percent of the information received in hotels of both countries are on time, and more than 10 (but less than 50) percent are too late to take action or too early to be used.

2- If we consider that decision makers mainly rely on "on time" information, this indicates that over 50 (18+37) percent of the information received, in the hotels of both countries, are not

Figure (6.4) the time of the information received by managers in the hotel industry of both the U.K. and Egypt 1985



helpful and devaluated. So managers, in making their decisions, should rely on other sources like experience and judgement, to fill this gap.

3- British hotels are ahead of Egyptian hotels in the total percentage of the information received "on time". This indicates higher efficiency in the British hotel information systems than in Egyptian hotel information systems. The use of computers in British hotels for 15 years, may be the reason for this efficiency.

6.2.6 The Usage of the Information Received: Hotel Country Analysis, 1985 data

How often is the information received used and why?. In this part of chapter 6 we ask the hotel managers in both the U.K. and Egypt about how usable the information is that they receive. This may highlight how far the present information systems satisfy them.

In respect of the hotel country, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no difference between British hotel managers and Egyptian hotel managers, in terms of the usage of the information they receive.

H_1 : There is a difference between British hotel managers and Egyptian hotel managers, in terms of the usage of the information they receive.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Information	1985 data		Total
	British hotel managers	Egyptian hotel managers	
usage			
Always	12	5	17
Seldom	5	10	15
Never	9	10	19
Total	26	25	51

chi-square = 4.704
Degree of freedom = 2

At 2 degrees of freedom, the five percent point of the chi-square distribution = 5.991

The chi-square test is not significant at the five percent level (although the test result is significant at the one percent level). The null hypothesis, H₀, that there is no difference between the British hotel managers and Egyptian hotel managers, in terms of the usage of the information they receive, is accordingly not rejected. So managers in hotels of both countries are using the information they receive in similar ways.

6.2.7 The Usage of the Information Received: Hotel Managers' Levels Analysis, 1985 Data

If there is no difference between managers in terms of using the information they receive, does this apply for managers at all levels?.

In respect of the managers' management levels, the null hypothesis, H₀, and the alternative hypothesis, H₁, are as follows:

H₀ : There is no association between the hotel manager's level and the usage of the information he receives, in both British and Egyptian hotels.

H₁ : There is an association between the hotel manager's level and the usage of the information he receives, in both British and Egyptian

hotels.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Managers		1985 data					
		The Frequency of Using the Inform. Received					
levels	British* hotels			Egyptian** hotels			Total
	Always	Seldom	Never	Always	Seldom	Never	
Senior manager	1.8	0.75	1.35	2.8	5.7	5.7	18.1
Middle manager	1.8	0.75	1.35	1	1	2	8.9
Lower manager	1.8	0.75	1.35	0.8	1.7	1.7	8.1
Supervisor	5.4	2.25	4.05	0.3	0.7	0.7	12.5
Total	10.8	3	8.1	4.9	10.1	10.1	46.99

* From the British hotels the sample includes (3 senior managers, 3 middle managers, 3 lower managers, 9 supervisors)

** From Egyptian hotels the sample includes (17 senior managers, 6 middle managers, 5 lower managers, 2 supervisors)

Chi-square = 24.805

Degree of freedom = 15

At 15 degrees of freedom the five percent point of the chi-square distribution = 24.996

The chi-square test is not significant at the five percent level (although the test result is highly significant at the one percent level). The null hypothesis, H_0 , that there is no association between the manager's management level and the usage of the information he receives, is accordingly not rejected.

The calculation of the chi-square values for each hotel country individually, proves that the chi-square test is significant for Egyptian hotels, but not for the British. This indicates that there is an association between the Egyptian hotel manager's level and his usage for the information he receives, and the data suggests an increase in "always" usage over the others.

What do these responses imply about the usability of the information

received?. The following table shows the percentages of the usage of the information received, related to each hotel country, which might highlight the effectiveness of the present hotel information systems.

Information usage	1985 data				
	The British hotels		Egyptian hotels		Total
	Frequencies	%	Frequencies	%	%
Always	12	46	5	20	33
Seldom	5	19	10	40	30
Never	9	35	10	40	37
Total	26	100	25	100	

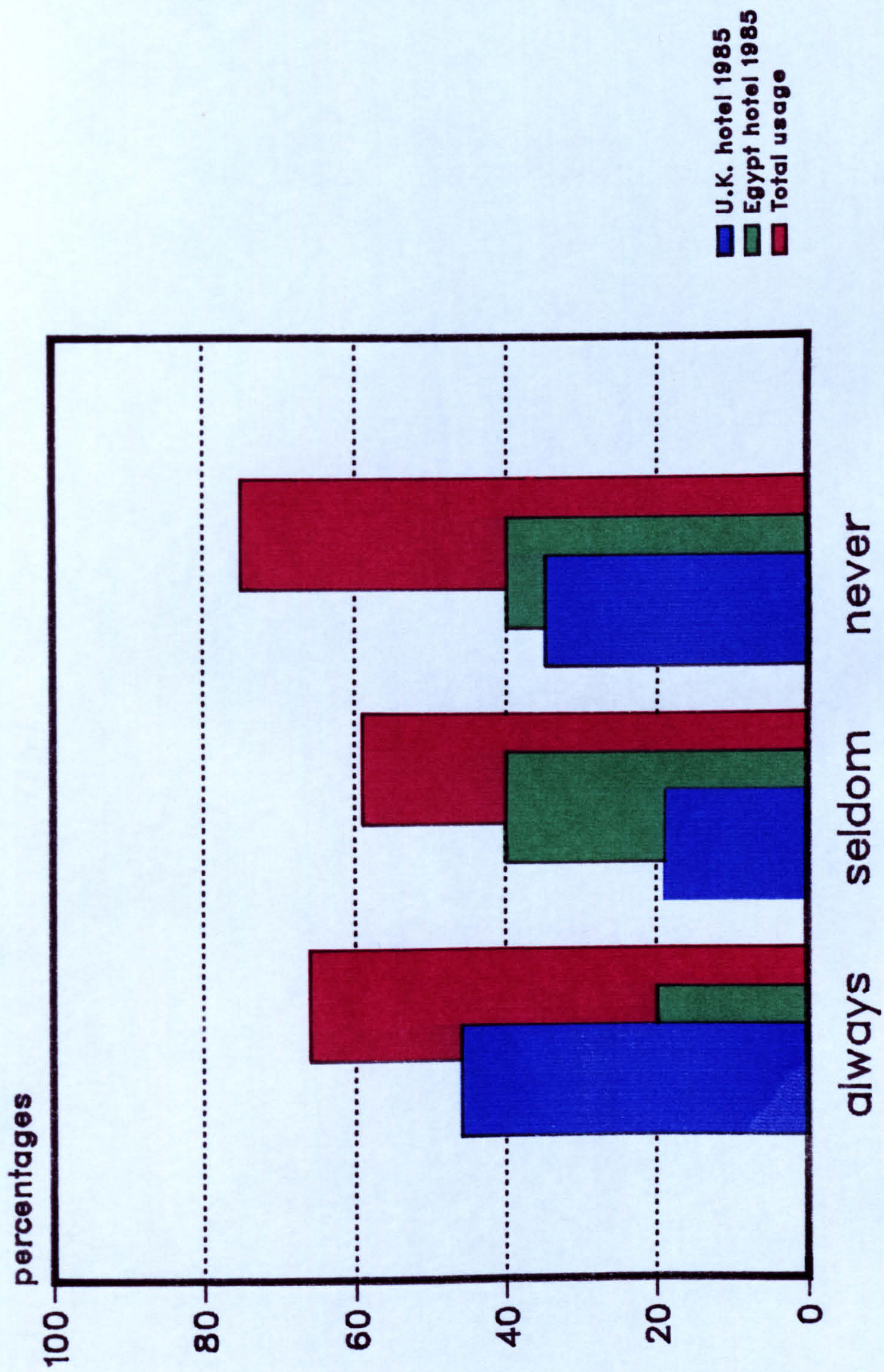
The analysis of the data in the above table reveals the following:

1- Total percentages of "never" and "seldom" usage of the information received are bigger than "always" usage of such information. This applies in hotels of both the two countries.

2- The percentage of "always" usage of the information received in the British hotels is higher than that in Egyptian hotels. This implies more effectiveness for the British hotel information systems than the Egyptian hotel information systems. This also implies more satisfaction about the information received.

3- Considering that in hotels of both countries a percentage of more than 30 of the managers say that they seldom or never use the information they receive, this might indicate how relevant the information provided is for the managers' needs. It will not be surprising to know that this percentage of non-usage (seldom, never) is higher in Egyptian hotels than in British, if we consider that they have just developed their information systems by using computers since 5 years ago.

Figure (6.5) the usage of the information received by the managers in the hotel industry of both the U.K.& Egypt 1985



6.2.8 Reasons Behind Non-usage of Information Received:
Hotel Country Analysis, 1985 Data

In respect of the hotel country, the null hypothesis, H0, and the alternative hypothesis, H1, are as follows:

H0 : There is no difference between British hotels and Egyptian hotels , in terms of reasons behind non-usage of the information their managers receive.

H1 : There is a difference between British hotels and Egyptian hotels, in terms of reasons behind non-usage of the information their managers receive.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Reasons behind information non-usage	1985 data		Total
	British Hotel managers	Egyptian hotel managers	
1-It is too bulky	6	13	19
2-Needs too much sorting	4	3	7
3-Not up-to-date	0	6	6
4-It is incorrect	2	15	17
5-Others	5	11	16
Total	17	48	62

Chi-square = 5.389

Degree of freedom = 4

At 4 degrees of freedom the five percent of the chi-square distribution = 9.488

The chi-square is not significant at the five percent level (although the test result is significant at the one percent level). The null hypothesis, H0, that there is no difference between the British hotels and Egyptian hotels, in terms of reasons behind non-usage of the

information their managers receive, is accordingly not rejected.

There is accordingly no difference in the reasons behind non-usage of the information received by hotel managers in both the U.K. and Egypt. However, is there any difference among managers of different management levels in having these reasons of non-usage of the information they receive?.

6.2.9 Reasons Behind Non-usage of the Information Received: Management Levels Analysis, 1985 Data

In respect of the hotel managers' management levels, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no association between reasons for non-usage of the information received by managers, and the managers' management levels in hotels of both the U.K. and Egypt.

H_1 : There is an association between reasons for non-usage of the information received by managers and the managers' management levels, in hotels of both the U.K. and Egypt.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Managers' levels	1985 data		
	British hotels	Egyptian hotels	Total
	Total reasons	Total reasons	
Senior manager	2.55	27.2	29.75
Middle manager	2.55	9.6	12.15
Lower manager	2.55	8	10.55
Supervisor	7.65	3.2	10.85
Total	17	48	63.3

The numbers of the frequencies appeared in the above table are sometimes more or less than the total number of the responses received in each sample because of the style of the question used here 'multiple choice', where some managers marked more than one choice (reason) to answer one question, while other did not mark any of them (reasons).

Chi-square = 12.979
Degree of freedom = 3

At 3 degrees of freedom the five percent point of the chi-square distribution = 9.488

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H_0 , that there is no association between reasons of non-usage of the information received by managers and their management levels, is accordingly rejected, and H_1 accepted.

So there is accordingly an association between these reasons and the managers' management levels. A calculation of the chi-square value for each cell (not shown in the contingency table) reveals that in the British hotels both senior managers and supervisors claim to have more reasons for non-usage of the information they receive than managers in other levels. But in Egyptian hotels higher level managers claim to have more reasons for non-usage of the information they receive than lower level managers. This implies that middle level and top level

managers in the British hotels and top level managers in Egyptian hotels are less satisfied about the information they receive than others.

6.2.10 The Characteristics of the Information Structure in the Hotel industry of U.K. and Egypt

The structure of information is vital for access to use it. Reasons behind non-usage of information received can indirectly highlight the characteristics of structure of the information in the hotel industry. The following table shows percentages of these reasons related to each hotel country.

Reasons behind information non-usage	1985 data				Total
	British hotels		Egyptian hotels		
	No.	%	No.	%	
1-It is too bulky	6	35	13	27	31
2-Needs too much sorting	4	23	3	6	15
3-Not up-to-date	0	0	6	13	7
4-It is not correct	2	12	15	31	22
5-Others	5	30	11	23	27
Total	17	100	48	100	

The analysis of the data in the above table reveals the following:

1- Concerning the quantity of the information received a total percentage of 31 of the returns from hotels of both the two countries, say that the information received is too bulky. While concerning the quality of the information received, a total percentages of 7 and 22 of the returns indicate that the information received is out of date and incorrect.

2- Comparing the results of the two countries, we find that claiming the information quantity is higher in British hotels than in Egyptian hotels . While claiming the quality of the information is

higher in Egyptian hotels than British hotels.

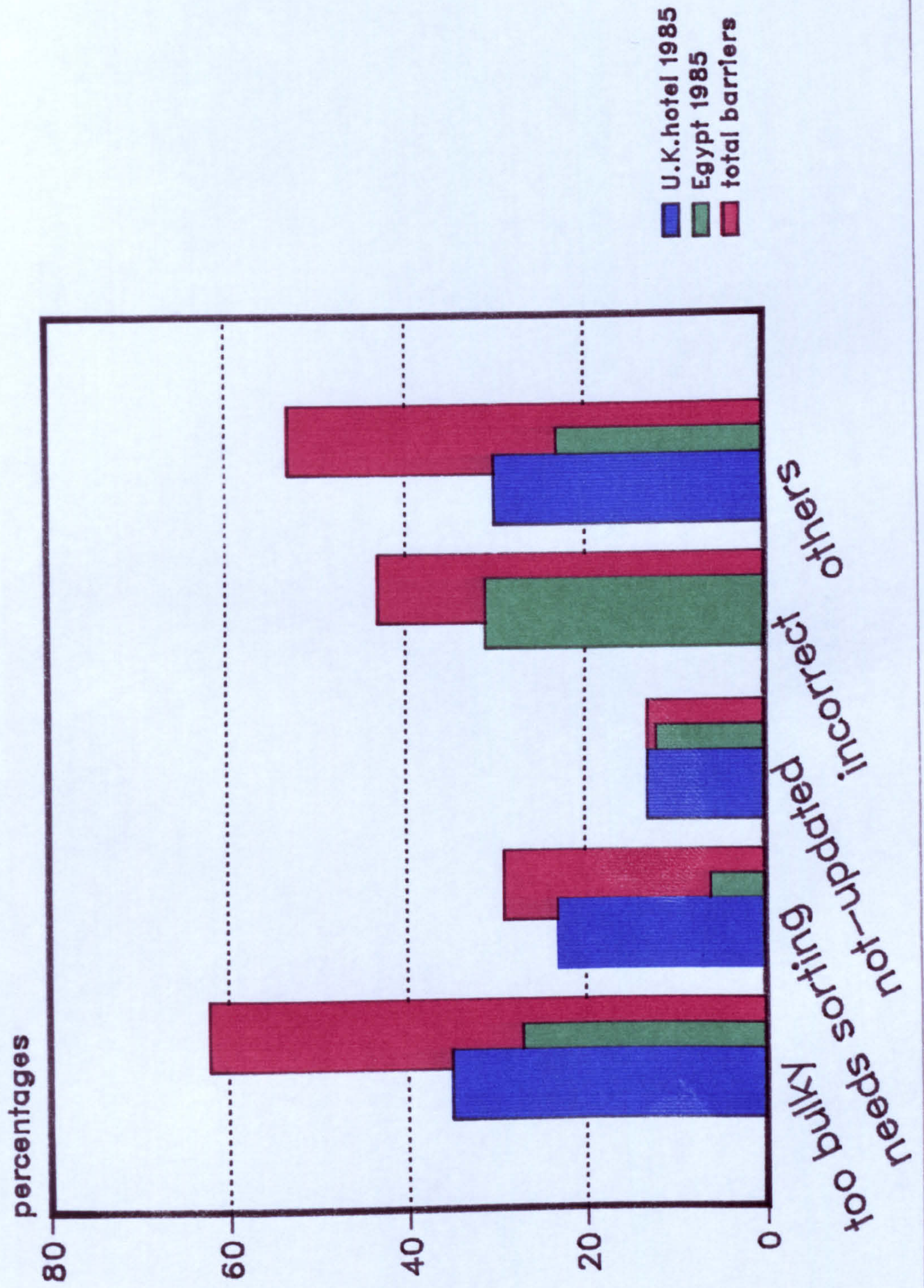
3- Considering the decision makers' information needs, we can conclude that, in British hotels, the decision maker may claim to have irrelevant information (required information is mixed with unnecessary information), while in Egyptian hotels, the decision maker may claim to have irrelevant information (out of date and inaccurate information).

The above conclusions are tested by other indirect questions, which confirm these characteristics of the structure of the information in the hotel industry of both the U.K. and Egypt, as follows:

Information structure	1985 data				Total
	British hotels		Egyptian hotels		
	No.	%	No.	%	
1-Easily identifiable	5	22	2	6	14
2-Hard to distinguish	1	4	12	34	19
3-Over supply	12	52	14	40	46
4-Short supply	5	22	7	20	21
Total	23	100	35	100	

The analysis of the data in the above table confirm the above results, where the British hotel managers claim to have an irrelevant quantity of information (over supply and short supply of information) more than Egyptian hotels. Egyptian hotels managers claim to have irrelevant quality of information (information hard to distinguish) much more than the British hotels managers. On the other hand, the British hotels are ahead of Egyptian hotels, in terms of having information that is easily identifiable, which is not surprising after using computers for 15 years.

Figure (6.6) the information characteristics (barriers) which the managers receive in the hotel industry of both the U.K. & Egypt 1985

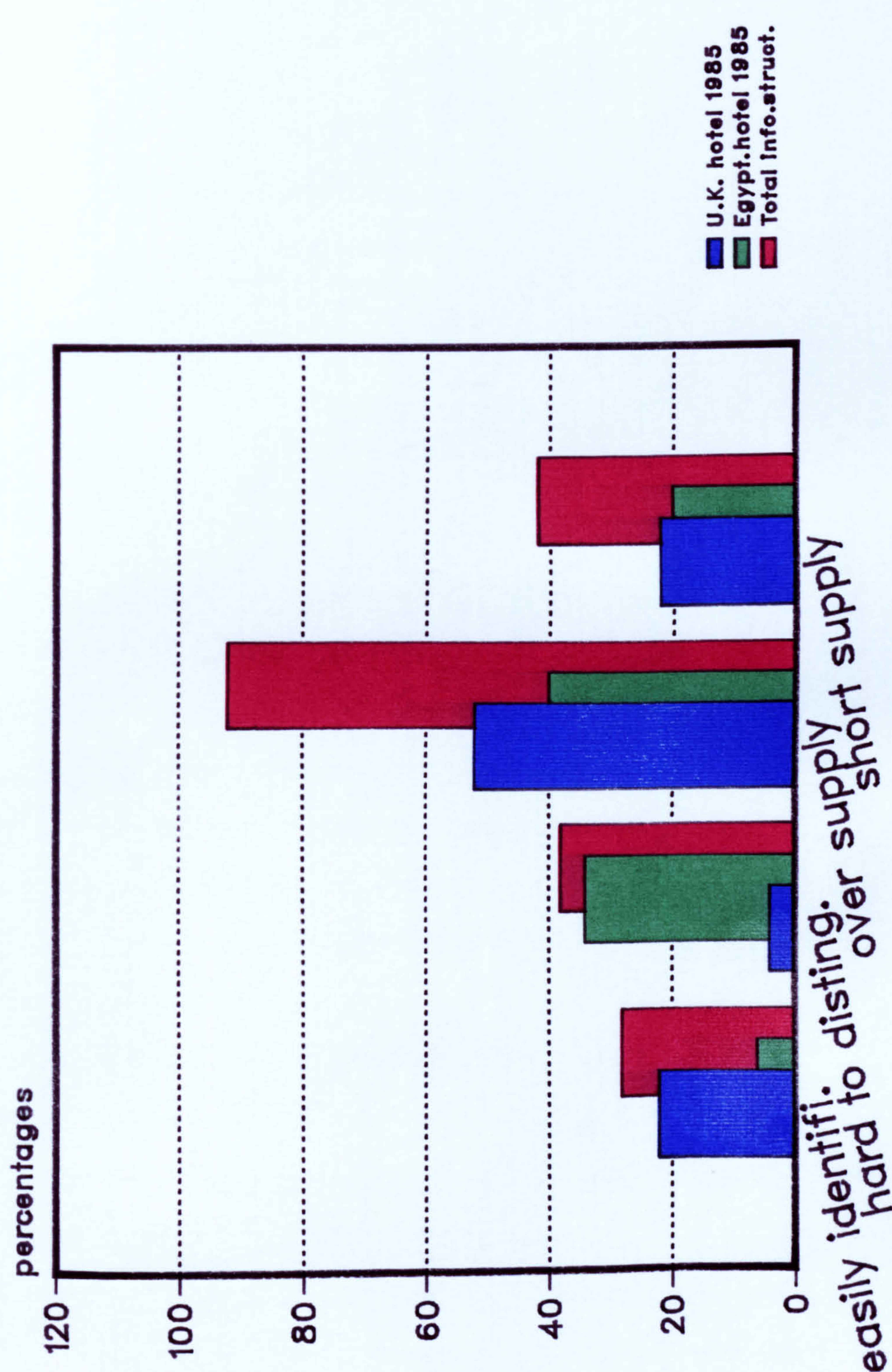


6.2.11 The Information Sources of Supply

Early in the previous chapter test results indicated that British hotels are using computers more than Egyptian hotels. In this chapter, we seek to know how far the hotel managers rely on the computers (data processing) department, as a source of information supply.

The following table shows percentages of sources of information supply, from which users (hotel managers) get their needs .

Figure (6.7) the structure of the information received by the managers in the hotel industry of both the U.K. & Egypt 1985



Sources of information supply	1985 data				
	British hotels		Egyptian hotels		Total
	No.	%	No.	%	%
1-Given straight from data processing departments	6	19	1	3	11
2-Given straight from a person at higher level	9	28	15	40	34
3-Given straight from a person at lower level	12	37	14	38	38
4-Others	5	16	7	19	18

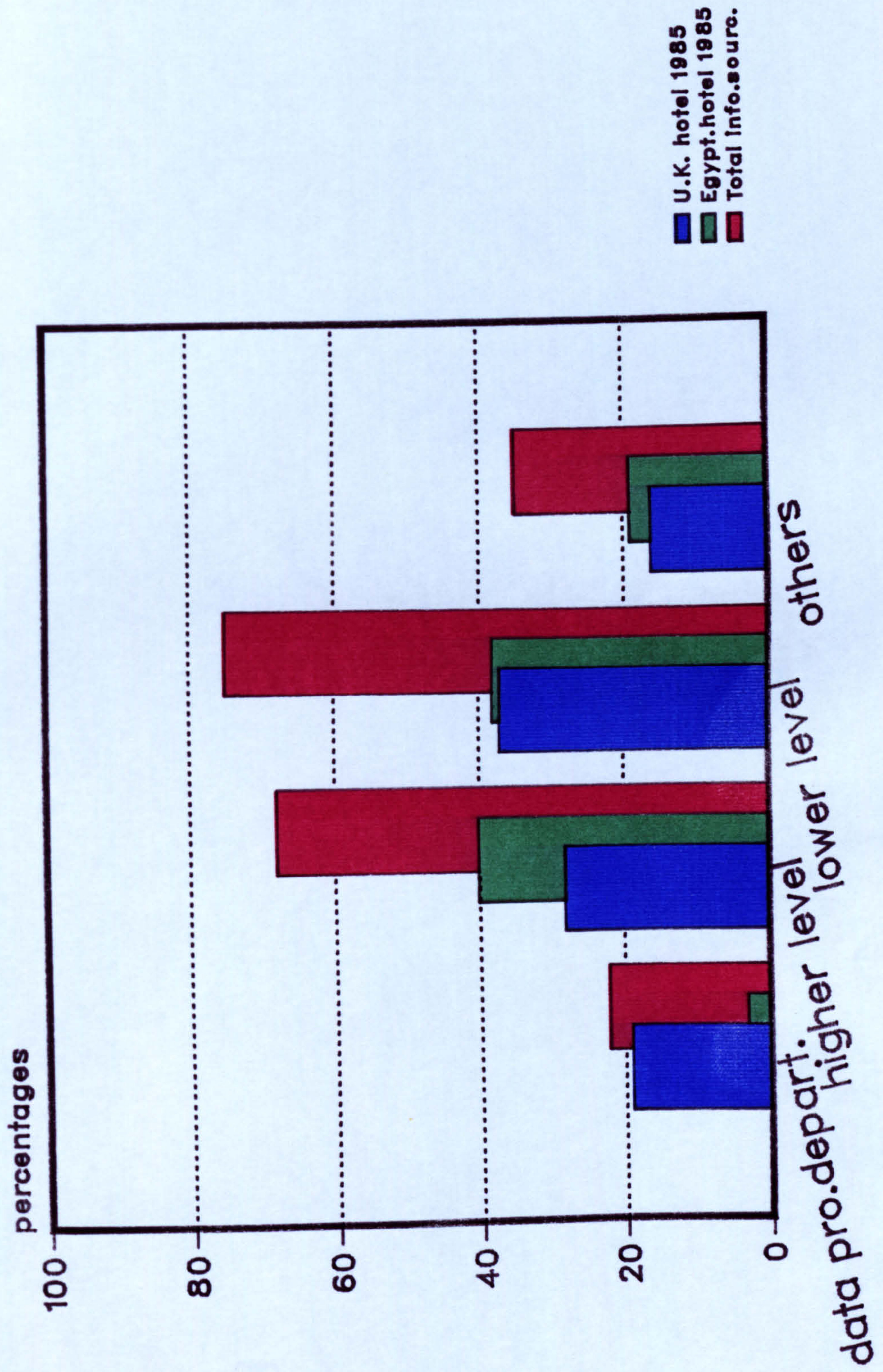
The analysis of the data in the above table reveals the following:

1- Comparing the total percentages of returns, we can conclude that in hotels of both the U.K. and Egypt, computer (data processing) departments are not the main source of information supply. The returns reveal that higher percentages of managers rely on sources other than computer departments to get their information needs. So managers, in most cases, have to go to collect their information needs from persons in lower or higher levels.

2- This conclusion conforms with other conclusions, which describe the structure of information received and reasons behind non-usage of information received. Managers are not encouraged to rely mainly on computers, but they rely on other sources instead.

3- The low percentage of managers who receive their information through computer departments (data processing units) in Egyptian

Figure (6.8) sources of information supply used by managers in the hotel industry of both the U.K. & Egypt 1985



hotels is justified because computer applications are still on a limited scale and computer departments are not established yet in some hotels that are using computers.

4- Considering percentages of returns about usage or non-usage of information received, reasons behind non-usage of information received, and sources of information supply used, in both the British and Egyptian hotels we can draw a conclusion about the association between the characteristics of information received and the managers' usage and reliability on such information provided. More information barriers (reasons for non-usage) create less usage for such information, and consequently less reliability on computer (data processing) departments. This is explained in the following figure.

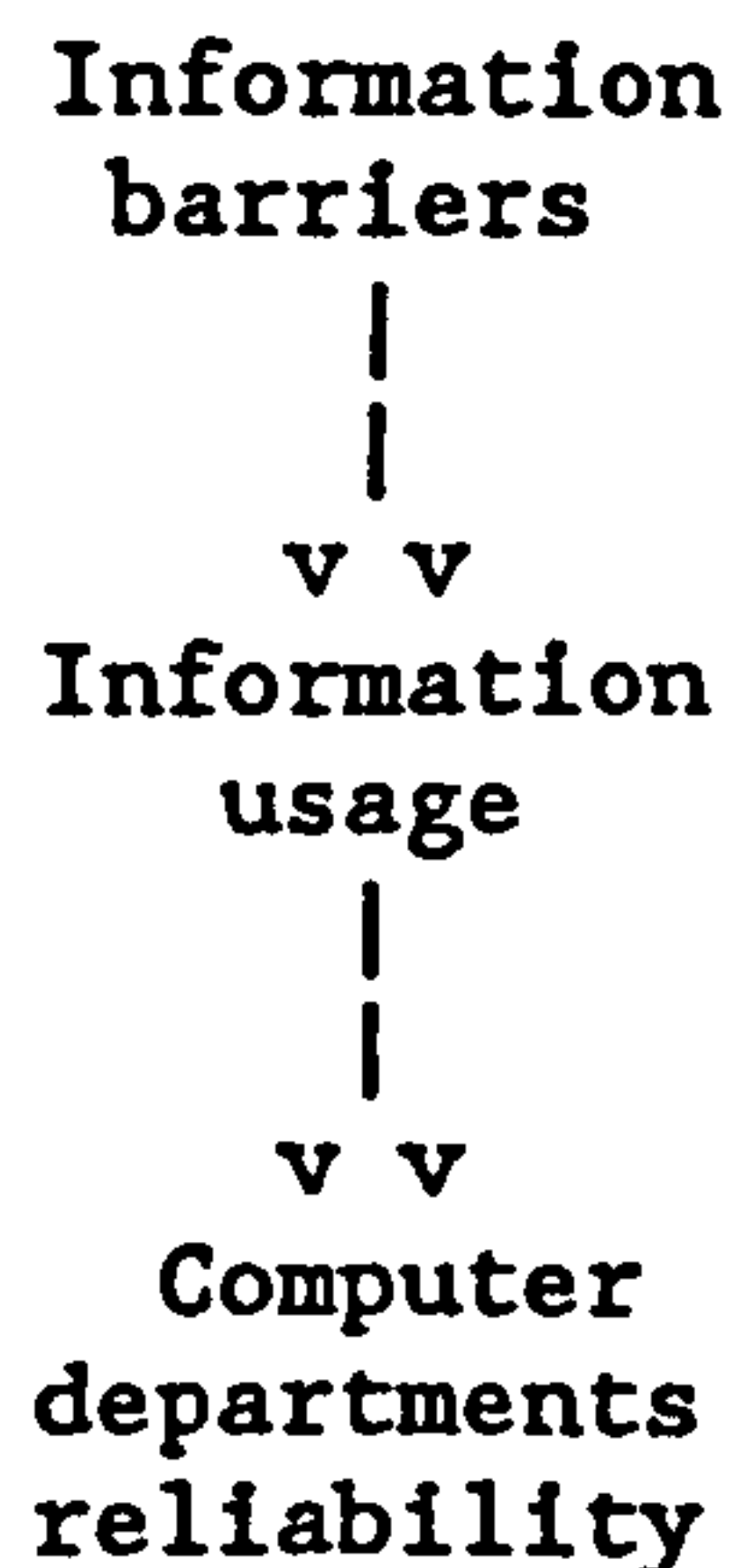


Figure (6.9) The association between information characteristics (barriers) and both information usage and computer departments reliability

6.2.12 The Hotel market Information Systems

In the last few pages we discussed the usage and non-usage of the information received by hotel managers. In this part of this chapter we will investigate how accurate and updated the customer information systems are in the British and Egyptian hotels. Will the outcomes conform with our last findings about the the information barriers there?.

6.2.12.1 Customer and Guest History Information Systems

The following table shows percentages of returns about having customer and guest history systems and how accurate and updated is the information they provide in both the British and Egyptian hotels.

Marketing information systems	1985 data			
	British hotels		Egyptian hotels	
	Frequencies	%	Frequencies	%
1- Customer information systems used	15	75	17	57
2-Accuracy of customer information systems used	12	60	13	43
3-Customer systems of updating	9	45	13	43
4-Guest history information systems used	17	85	17	57
5-Accuracy of guest history information	15	75	11	12
6-Guest history systems of updating	10	50	16	53
Out of total sample responses	20	100	30	100

The analysis of the data in the above table reveals the following:

1- The British hotels are ahead in having both customer and guest history information systems.

2- Concerning the accuracy of information of both customer and guest history systems, returns indicate that British hotels are ahead of Egyptian hotels.

3- As for the systems used for updating both customer and guest history information, the responses indicate a similarity between hotels of the two countries in having these systems, but with different techniques .

Having this difference between the British and Egyptian hotels, in terms of market information systems, how far is this difference significant?.

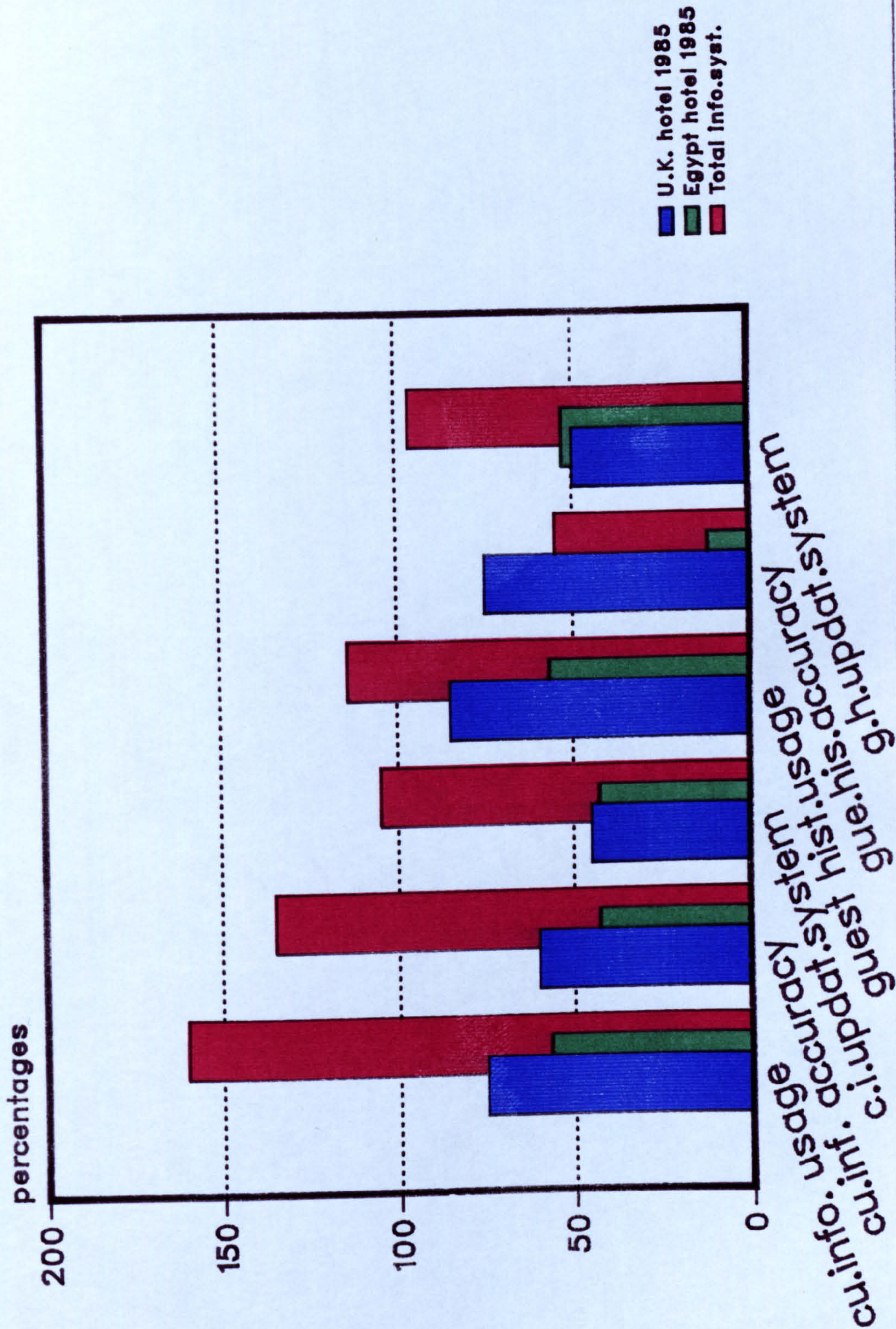
In respect of hotel country, the null hypothesis, H_0 , and the alternative hypothesis, H_1 , are as follows:

H_0 : There is no difference, in terms of the characteristics of the market information systems, between British and Egyptian hotels.

H_1 : There is a difference, in terms of the characteristics of the market information systems, between British and Egyptian hotels.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Figure (6.10) the evaluation of customer information systems in the hotel industry of both the U.K. & Egypt 1985



Market information systems	1985 data		Total
	British hotels	Egyptian hotels	
1-Customer information systems	15	17	32
2-Accuracy of customer information	12	13	25
3-Customer information systems of updating	9	13	22
4-Guest history information systems	17	17	34
5-Accuracy of guest history information	15	11	26
6-Guest history systems of updating	10	16	26
Total	78	87	156

Chi-square = 5.747

Degree of freedom = 5

At 5 degrees of freedom, the five percent point of the chi-square distribution = 11.070

The chi-square test is not significant at the five percent level (although the test result is significant at the one percent level). The null hypothesis, H_0 , that there is no difference between the British hotels and Egyptian hotels, in terms of the characteristics of the market information systems, is accordingly not rejected.

There is, accordingly, no evidence to suggest that there is a significant difference between British hotels and Egyptian hotels, in terms of the market information systems provided. The test result might be surprising, especially, for British hotels which are using information technology for 15 years.

6.2.13 Hotel Market Information Sources

How far are hotel managers satisfied about their market information sources. Do they get enough information, and how often they use these sources?. The following table shows percentages of responses about the quantity of information hotel managers get from these sources, and how often they use such sources of market information.

Market information sources	1985 data				
	British hotels		Egyptian hotels		Total
	Frequencies	%	Frequencies	%	
1-Contain all information	11	36	7	17	27
2-Contain part of the information	6	19	12	29	24
3-Contain enough information	6	19	9	21	20
4-Contain very little information	3	10	10	24	17
5-Others	5	16	4	9	13
Total	31	100	42	100	

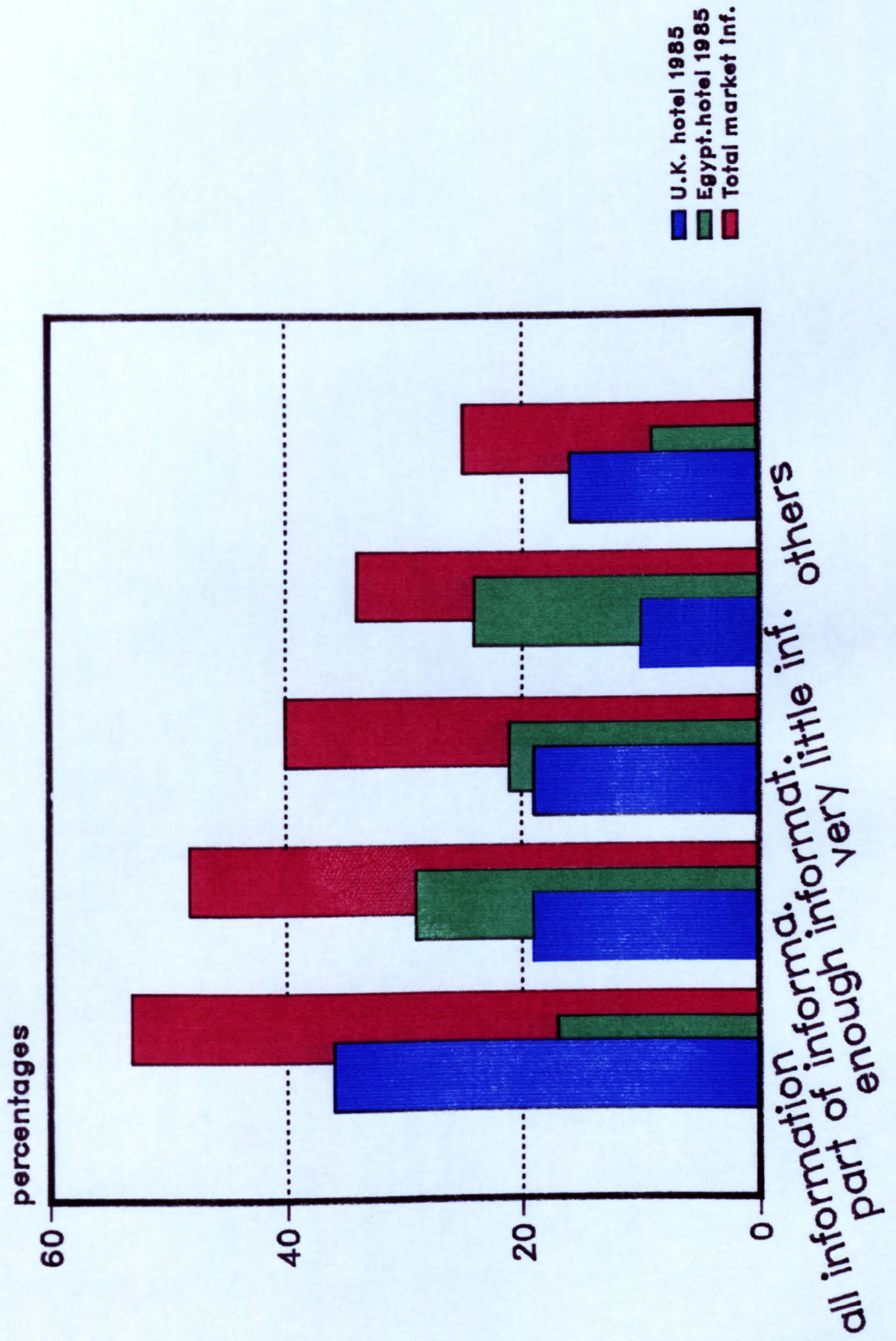
The analysis of the data in the above table reveals the following:

1- A total percentages of 27 and 20 of the returns, indicate that managers are satisfied about the information these sources contain.

They state that (27 %) of these sources contain all the information they need and enough information (20 percent). This data suggests that British hotel managers are ahead of Egyptian hotel managers.

2- On the other hand a total percentages of 24 and 17 of the returns indicate that other hotel managers are not satisfied about the information these sources contain. They state that these sources

Figure (6.11) the evaluation of the market information sources used by managers in the hotel industry of both the U.K. & Egypt 1985



contain a part of the information they need (24 percent) and very little information (17 percent). The data suggests that Egyptian hotel managers are ahead.

Does the managers' satisfaction, about the information these sources contain, affect their degree of usage for such sources?.

The following table shows how often managers use these sources of market information under such conditions.

Degree of usage of market informat. sources	1985 data				
	British hotels		Egyptian hotels		Total
	Frequencies	%	Frequencies	%	%
1- Always	6	19	10	26	23
2-Seldom	8	23	8	21	22
3-Never	12	35	7	19	27
4-Others	8	23	13	34	29
Total	34	100	38	100	

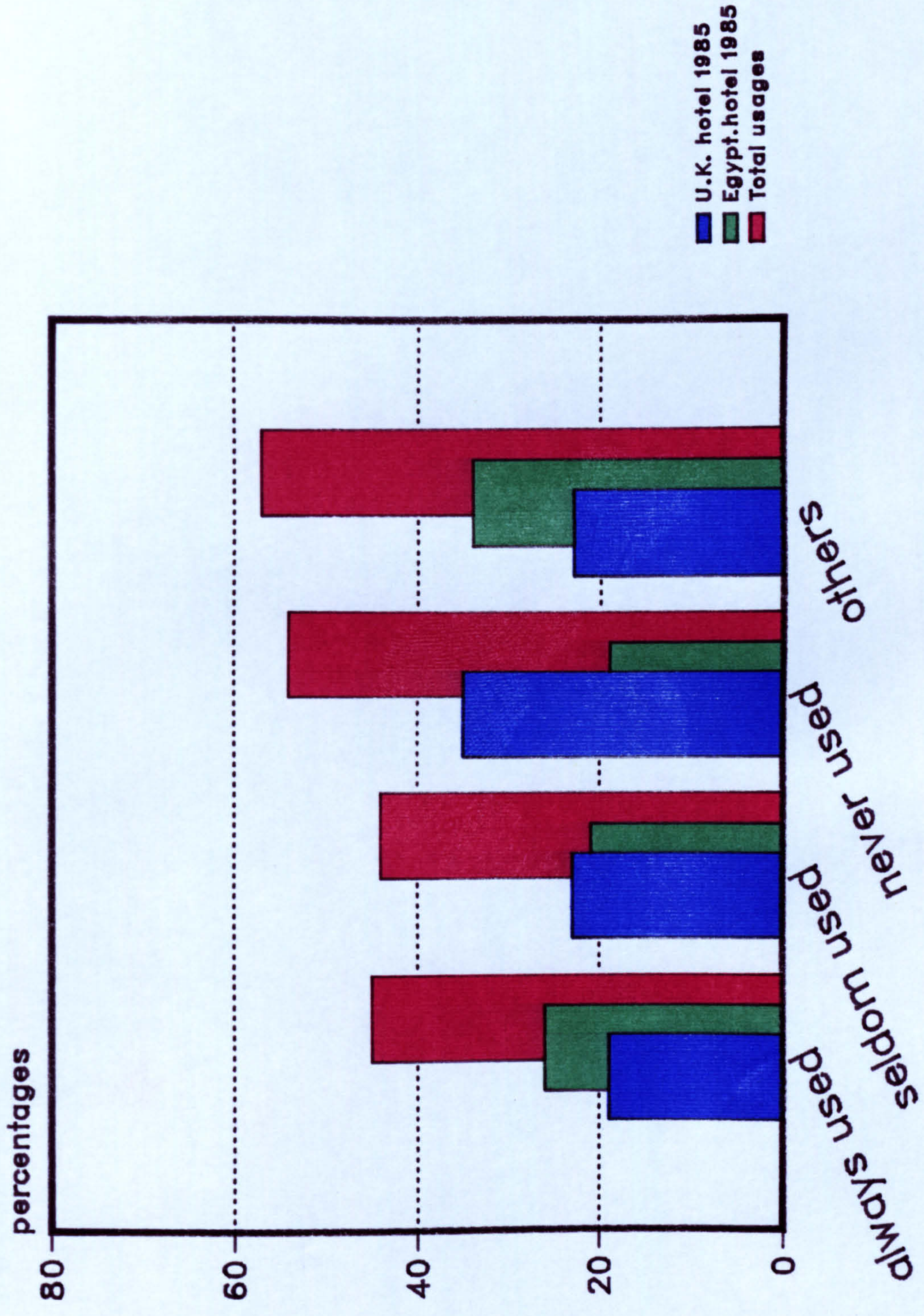
The analysis of the data in the above table reveals the following:

1- A total percentage of 23 of the returns indicates that managers in both British and Egyptian hotels are satisfied about their sources of market information and so they "always" use them. The data suggests that Egyptian hotel managers are ahead of the British hotel managers.

2- On the other hand, other managers are not satisfied about their market information sources, where total percentage of 22 and 27 of their returns indicate that they "seldom" and "never" use such sources. The data suggests that Egyptian hotel managers are ahead of the British hotel managers.

3- The association between satisfaction about these sources and degree of usage for such sources, using the total percentages of returns, is

Figure (6.12) the use of market information sources by managers in the hotel industry of both the U.K. & Egypt 1985



shown in the following figure.

Market information Sources	1985 data		
	British hotels	Egyptian hotels	Total
	%	%	%
1-Satisfaction	27	19	23
2-Usage	19	26	23

The analysis of the data in the above table reveals that in British hotels satisfaction is higher than usage, while satisfaction is lower, in Egyptian hotels, than usage.

6.2.14 Market Information Sources Satisfaction and Usage: Hotel Country Analysis, 1985 Data

How far is the difference in the above results between British hotel managers and Egyptian hotel managers significant?. Is there any association between the hotel country and market information satisfaction and usage?.

In respect of the hotel country, the hypothesis is as follows:

H0 : There is no association between the hotel country and both satisfaction and usage of hotel market information sources.

H1 : There is an association between the hotel country and both satisfaction and usage of hotel market information sources.

The following table is a chi-square test of goodness of fit, with regard to the 1985 data.

Satisfaction			
1985 data			
and usage of market infom.	British hotel	Egyptian hotel	Total
1-All inform.	11	7	18
2-Part of infom.	6	12	18
3-Enough inform.	6	9	15
4-Very little information	3	10	13
5-Others	5	4	9
6-always	6	10	16
7-Seldom	8	8	16
8-Never	12	7	19
9-Others	8	13	21
Total	65	80	145

Chi-square = 8.28

Degree of freedom = 8

At 8 degrees of freedom, the five percent point of the chi-square distribution = 15.507

chi-square test is not significant at the five percent level (although the test result is significant at the one percent level). The null hypothesis, H_0 , that there is no association between the hotel country and both satisfaction and usage of hotel market information sources, is accordingly not rejected.

There is accordingly no evidence to suggest that there is an association between the hotel country and both satisfaction and usage of market information sources. A calculation of the chi-square value for each cell (not shown in the contingency table) reveals that there is no association, and the data suggests that British hotels are ahead of Egyptian hotels.

6.3 Summary Table of Principal Results

Keys :

- * Significant results at the 5 % level .
- *E Significant result at the 5 % level .
in the direction expected .
- *U Significant result at the 5 % level .
in an unexpected direction .
- N.S. Non-significant result .
- P.R.E Percentage of result in the
direction expected .
- P.R.U Percentage of result in an
unexpected direction .

Hotel practice	Goodness of fit data 1985 British and Egyptian hotels	Test of association data 1985				Percentage result direction	
		Country analysis		Management category analysis		U.K.	Egypt
		U.K.	Egypt	U.K.	Egypt	U.K.	Egypt
1-Managers' information purposes	*	*U *U	N.S.	N.S.	P.R.U	P.R.U	
2-Managers' information frequency	*	*U*U	N.S.	N.S.	P.R.U	P.R.E	
3-Managers' information time and forms	N.S.						
(1)Information time			N.S.	N.S.	P.R.E	P.R.E	
(2)Information forms			N.S.	N.S.			
4-Information usage	N.S.		N.S.	*E	P.R.E	P.R.E	
5-Information barriers	N.S.	N.S.N.S.	*E	*E	P.R.U	P.R.U	
6-Information structure					P.R.E	P.R.E	
7-Sources of information supply					P.R.U	P.R.E	
8-Information barriers influence over usage or non-usage of such inf.							P.R.E P.R.E
9-Hotel market inform. systems	N.S.						

(1)Usage of customer and guest history						P.R.E P.R.E
(2)....information accuracy						P.R.E P.R.E
(3)....systems of updating						P.R.E P.R.E
10-Hotel market information sources						P.R.E P.R.E
(1)Usage and satisfaction	N.S.	N.S.	N.S.	*U	*E	P.R.E P.R.E.
(2)Degree of usage for such sources						P.R.U P.R.E

6.4 Summary of Conclusions

In this chapter we investigated the relationship between users' attitude towards the information they receive and their usage for such information. The literature review included at the beginning of this chapter suggested that there is a positive association between users' attitude towards the information they receive and their usage for such information. We used the users' view about the characteristics of the information they receive, to reflect their attitudes, and we tested that with degrees of usage for such information.

Hotel practices for the above relationship in both British and Egyptian hotels are basic and clear through the 1985 data. Because British hotels have been using information technology (computers) for more time than Egyptian hotels, so we expected more positive associations in the British hotels than the Egyptian hotels.

Differences in practice between British hotels and Egyptian hotels have been found in mixed directions. Certain differences were in the direction expected. These differences are as follows:

- 1- An increase in the information hotel managers receive for the purposes of decision, in both British and Egyptian hotels.

- 2- An increase in the daily and weekly information received (which is usually used for operational management work) and over monthly and annually information received (which is usually used for tactical and strategic management work).
- 3- An increase in the information received on time over late or early information, in both the British and Egyptian hotels.
- 4- More managers in the British hotels are always using the information they receive than managers in the Egyptian hotels. Fewer managers in British hotels seldom or never use the information they receive, than in Egyptian hotels.
- 5- More high level managers, in Egyptian hotels, are always using the information they receive than lower level managers . Fewer information barriers have been expressed by high level managers in both British and Egyptian hotels, than in lower level managers. We used the reasons for non-usage of the information received as indications for these barriers.
- 6- Less identifiable and distinguished information is received by Egyptian hotel managers than the British hotel managers. Consequently because of these information barriers, less managers are relying upon computer (data processing) departments, to get their information needs, than other information sources of supply, in both British and Egyptian hotels.
- 7- More usage for customer and guest history information systems was found in British hotels than Egyptian hotels, along with more accurate and updated information for these information systems than in Egyptian hotels.
- 8- In spite of these information barriers, more managers are satisfied about the information they receive and using in British hotels than in

Egyptian hotels.

Other practices have been found in unexpected directions as follows:

1- In terms of the hotel country, Egyptian hotel managers are receiving more information for different management uses than are the British managers. In terms of managers' management levels, there was no significant difference in the information received for different purposes of use, between the higher level managers and lower level managers. It was expected that higher level managers should receive more information for decision making purposes than lower level managers. It was not expected to find Egyptian hotel managers receiving more information for the purpose of decision making process than British hotel managers. British hotel managers receive less information for tactical and strategic work than Egyptian hotel managers, but they receive more information for day-to-day work (operational) than Egyptian hotel managers.

2- In both British and Egyptian hotels, senior managers receive more information than middle and lower managers (who are supposed to receive more detailed information).

3- In terms of the hotel country, no significant difference was found in the reasons for information non-usage, between British hotels and Egyptian hotels. On the other hand, the British hotel managers have more information barriers, in terms of quantity, than Egyptian hotel managers, while Egyptian managers have more information barriers, in terms of quality, than do British managers. Consequently, as mentioned before, managers in hotels of both countries relying less upon computer departments than upon other information sources of supply.

4- No significant difference was found between the British hotels and Egyptian hotels, in terms of the accuracy and updating of information

included in both the customer and guest history information systems.

5- In terms of managers management levels, British managers in higher levels are relatively less satisfied about their market information sources than high level managers in Egyptian hotels. Consequently, Egyptian hotel managers (in general) are relying more upon their market information sources than the British hotel managers. We were expecting to find more usable, reliable market information sources in the British hotels because of the help of using computers there.

7.1 INTRODUCTION

In the preceeding chapter, we discussed the characteristics of the information received by the hotel managers. From these characteristics , some conclusions regarding the features of the information systems, which are available in both British and Egyptian hotels, were drawn. In this chapter we discuss the other two components which highlight the hotel information systems needs for managers. These components are, the skills of the hotel managers and the sources of their information communications.

The differences between British and Egyptian hotel managers in terms of these skills and sources of communication will explain the influence of the managerial environment over the needs of the hotel information systems in both U.K. and Egypt.

Some hypothesis based on the literature review of the hotel management will be testd by the chi-square test for goodness of fit. In this chapter the hotel management category will be used as a basis for analysis and comparison.

7.1.1 The Essential Skills the Managers Practise to Do Their Jobs

In this part of chapter Seven, we direct questionnaires to the hotel managers asking them to describe the skills essential to their jobs. The hotel managers are supposed to grade their answers on scale of seven points starting from"require very little"to"require great deal". These skills cover the communication kinds, the computational and numerical skills, and finally the abillities of both decision making and managerial supervision.

7.1.1.1 The Communication Kinds: Country Analysis

In respect of the hotel country the hypothesis is as follows:

H0 : There is no association between the hotel country and the kinds of communication that the hotel managers practise in their jobs.

H1 : There is an association between the hotel country and the kinds of communication that the managers practise to their jobs.

The following table is a chi-square test of goodness of fit with regard to the 1985 data.

Data 1985							
kinds of communica.	U.K. Hotels			Egyptian Hotels			Total
	Little	Average	A great deal	Little	Average	A great deal	
1. Verbal c. ability	8	0	9	21	2	1	41
2- Written c. ability	4	0	16	14	4	8	46
Total	12	0	25	35	6	9	41

Chi-square = 10.35
degree of freedom = 5

At 5 Degrees of freedom, the five percent point of the chi-square distribution = 11.070

The chi-square test is not significant at the five percent level (although the test result is significant at the one percent level).

The null hypothesis, H0, is accordingly not rejected. There is accordingly no evidence to suggest that there is an association between the hotel country and the kinds of communication used in British and Egyptian hotels. This reveals that managers in both the British and Egyptian hotels practise the same kinds of communication without any

significant difference.

7.1.2 The numerical Skills: Country Analysis

In respect of the hotel country the hypothesis is as follows:

H0 : There is no association between the hotel country and the numerical abilities that hotel managers practise in their jobs.

H1 : there is an association between the hotel country and the numerical

abilities that hotel managers practise in their jobs.

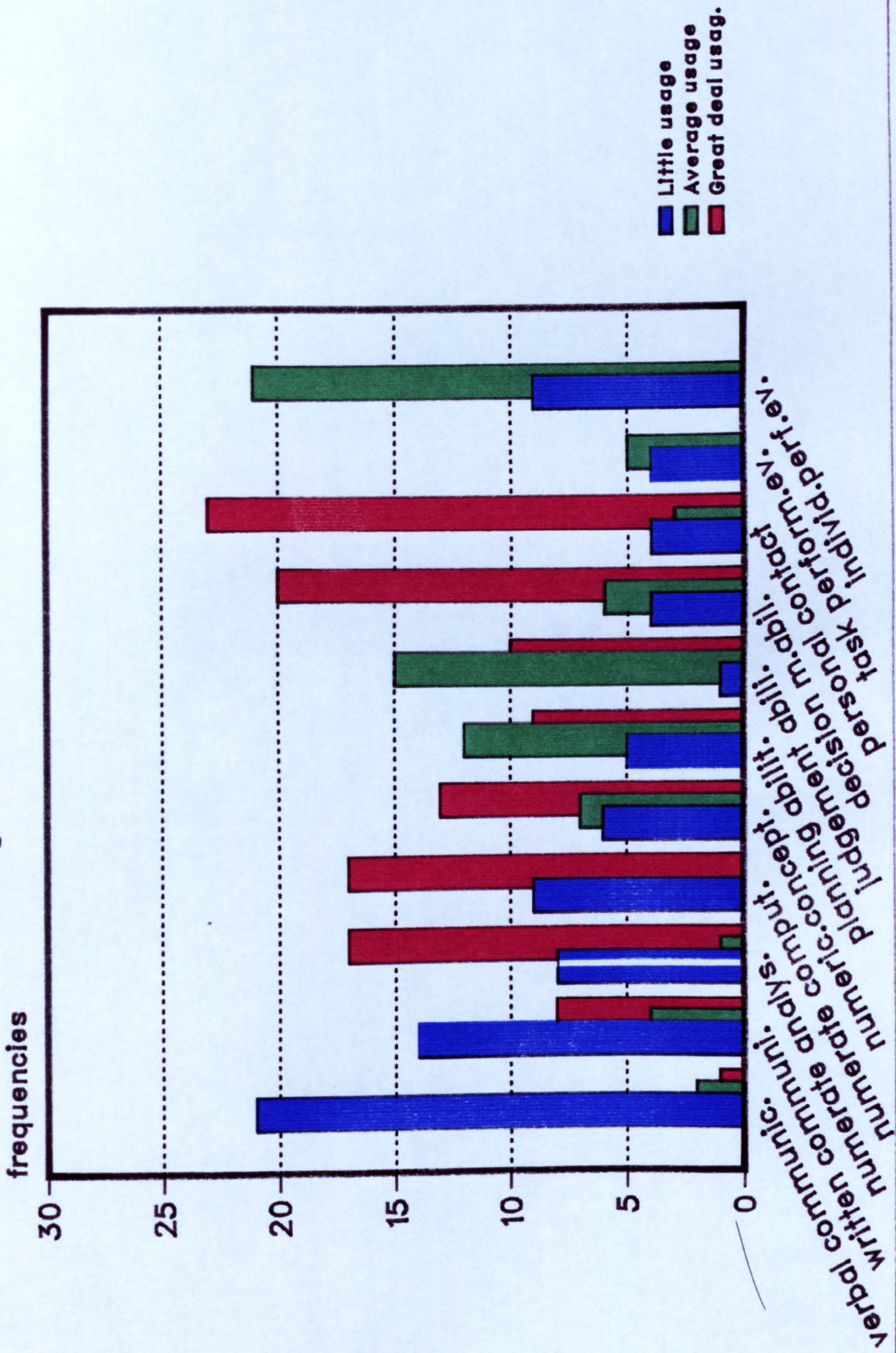
The following table is a chi-square test of goodness of fit with regard to the 1985 data for this practice.

Numerical skills	Data 1985						Total
	British Hotels			Egyptian Hotels			
	little	average	agreat deal	little	average	agreat deal	
1-Numerical analysis ability (interept. of numer.	1	9	8	9	11	7	45
2-Numerate computational ability (simple manipu_ lation of	6	8	5	9	0	17	45
3-Numerical conceptual ability (simple manipulation of numerical	6	10	3	6	7	13	45
	12	19	8	12	20	47	135

Chi-square = 44.24

Degree of freedom = 10

Figure (7.1) the essential skills (abilities) the hotel managers practise in their jobs in the Egyptian hotels using the 1985 data .



At 10 Degrees of freedom the five percent point of the chi-square distribution = 18.307

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level.

The null hypothesis, H_0 , is accordingly rejected, and H_1 accepted. There is accordingly an association between the hotel country and the numerical abilities (skills) which hotel managers practise in their jobs. A calculation of the chi-square values for each cell (not shown in the contingency table) assists in interpreting the table. This reveals that the British hotel managers are significantly different from the Egyptian hotel managers in the numerical skills they practise to do their jobs. The data suggest that British managers are more sophisticated than Egyptian managers in practicing these numerical skills.

7.1.3. The Decision Making Skills: Country Analysis

In respect of the hotel country, the hypothesis is as follows:

H_0 : There is no association between hotel country and the decision making abilities (skills) that hotel managers practise in their jobs.

H_1 : There is an association between the hotel country and the decision making abilities (skills) that hotel managers practise in their jobs.

The following table is a chi-square test of goodness of fit with regard to the 1985 data.

decision making skills	Data 1985						Total
	British Hotels			Egyptian Hotels			
	little	average	great deal	little	average	great deal	
1-planning ability (forecasting future actions)	2	5	12	5	12	9	45
2-judgement ability (selecting between alterne)	0	5	14	1	15	10	45
3-decision making scope (direct responsibility for taking action over a defined supply management)	20	20	19	4	6	20	199
Total	2	10	45	10	33	49	139

Chi-square = 23.544
Degree of freedom = 10

At 10 Degrees of freedom the five percent point of the chi-square distribution = 11.307

The chi-square test is highly significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H0, is accordingly rejected, and H1 accepted. There is accordingly an association between the hotel country and the management and supervision abilities (skills) practised by the hotel managers. A calculation of the chi-square value for each cell (not shown in the contingency table) assists us in interpreting the table. This reveals that in terms of decision making skills, there is a significant

difference between British and Egyptian hotel managers. The data suggests that Egyptian managers are one step ahead of the British managers in practising these abilities . A calculation for the chi-square test, in terms of the total skills practised by the hotel managers , indicated that there is a difference between the British and Egyptian hotel managers.

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H_0 , is accordingly rejected and H_1 accepted. There is accordingly an association between the hotel country and the decision making abilities (skills) practiced by the hotel managers. A calculation of the chi-square value for each cell (not shown in the contingency table), assists us in interpreting this table. This reveals that in terms of the decision making skills, there is a significant difference between the British hotel managers and Egyptian hotel managers. The data suggests that the Egyptian managers are ahead of British counterparts in practising these decision making abilities.

7.1.4 The Management and Supervision Skills : Country Analysis

In respect of the hotel country, the hypothesis is as follows:

H_0 : There is no association between the hotel country and the management and supervision abilities (skills) that the hotel managers practise to do their jobs.

H_1 : There is an association between the hotel country and the management and supervision abilities that the hotel managers practise to do their jobs.

The following table is a chi-square test of goodness of fit with regard to the 1985 data.

Mangmnt. supervision	1985						Total	
	U.K. Hotels			Egyptian hotels				
	little	average	agreat	little	average	agreat		
1-Personal contact off all aspects of supply task / material	0	5	14	4	3	23	49	
2-Evalua. of task performance	3	3	13	5	5	20	49	
3-Evaluation of indivi- dual sub- ordinate,s performance	13	3	3	9	21	0	49	
Total	16	11	30	18	29	43	147	

Chi-square = 76.76

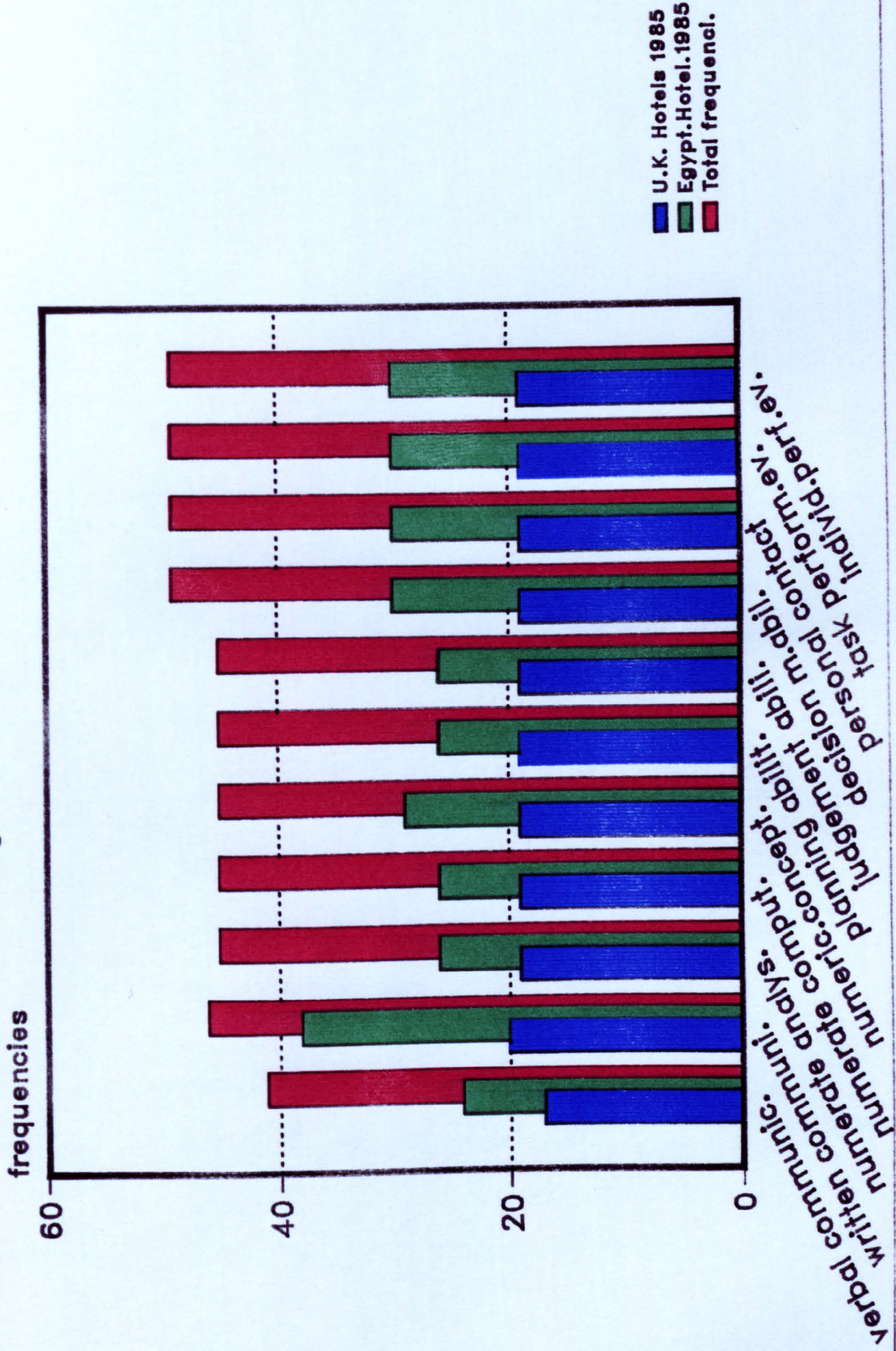
Degree of freedom = 10

At 10 degrees of freedom, the five percent point of the chi-square distribution = 11.307

The chi-square test is highly significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H_0 , is accordingly rejected and H_1 accepted. There is accordingly an association between the hotel country and the management and supervision abilities (skills) practised by the hotel managers. A calculation of the chi-square value for each cell (not shown in the contingency table) assists us in interpreting this table. This reveals that in terms of the management and supervision abilities there is a significant difference between British and Egyptian managers. The data suggests that the Egyptian managers are ahead of the British managers in practising these skills (abilities).

To summerise and interpret the results of the last few tests, the

Figure (7.2) the essential skills (abilities) which the hotel managers practise in their jobs in both the U.K. & Egyptian hotels using the 1985 data .



following table shows the differences in the essential skills practised by the hotel managers in both the U.K. and Egypt as follows:

Management Skills	Test Result	1985	
		British Hotels	Egyptian Hotels
1- Communicat. Skills	Not Significant	4.25	6.1
2- Numerical Skills	Significant	32.3	11.94
3- Decision M. Skills	Significant	10.77	12.77
4- Management and Skills	Significant	33.1	43.66

The analysis of the data in the above table reveals the following:

1- The test results proved to be not significant for the communication abilities (skills) which the hotel managers practice in both the British and Egyptian hotels.

2- The test results proved to be significant for the numerical, the decision making and the management and supervision abilities practised by the managers in both the British and Egyptian hotels.

3- This means that the needs of the management system which are supposed to be different in the two countries, do not influence some of the managers skills (communication), while at the same time they affect others (numerical, management and supervision skills).

4- Taking into consideration that the adopted management system, especially in large hotels over 300 bedrooms, is an international system, this can explain the results of tests as follows:

a- Large hotels in the U.K. and Egypt are usually owned or managed by big companies which have branches distributed all over the world.

b- On the other hand these large hotels which are not owned or

managed by these big companies are supposed to have at their disposal the latest international techniques of the hotel management to keep in the market and competition.

c- The needs of the management system in the country can influence the skills of running the hotels but not the skills of managing the hotels.

d- To manage, you need communication skills and usage of different techniques to get the information needs for different purposes. While basically to run a hotel you operate and supervise the hotel staff and make decisions accordingly.

e- The management policies are usually determined by the owner company which are always revised, changed to keep with the international competition of the hotel industry. So there is no chance for the local needs of the management system to influence them. But the managerial environment of the country can affect both the operation and supervision of hotels. These are mainly influenced by the managers' common sense, skills, experiences and background education.

5- The data suggests that the Egyptian managers are better equipped in their communication, decision making and managerial supervision, but not in the numerate techniques and computational skills. These explain the difference in the influence of the management needs in the British hotels which have been using computers since 15 years ago.

7.2 Media Sources for Communication Information

In the last few pages we reached a conclusion that the needs of the management system in the country is likely to influence the managers skills but not the types of communication they use. Both the facilities and the forms of communication are usually designed and determined centrally by the hotel company head quarters. Here we intend to examine, in more detail, the sources available for communication information, and see how differently the managers use them in both the British and Egyptian hotels. The analysis of the computing and the non-computing sources for communication information will help to test this last conclusion.

7.2.1 The Non-comuting Sources: Country analysis

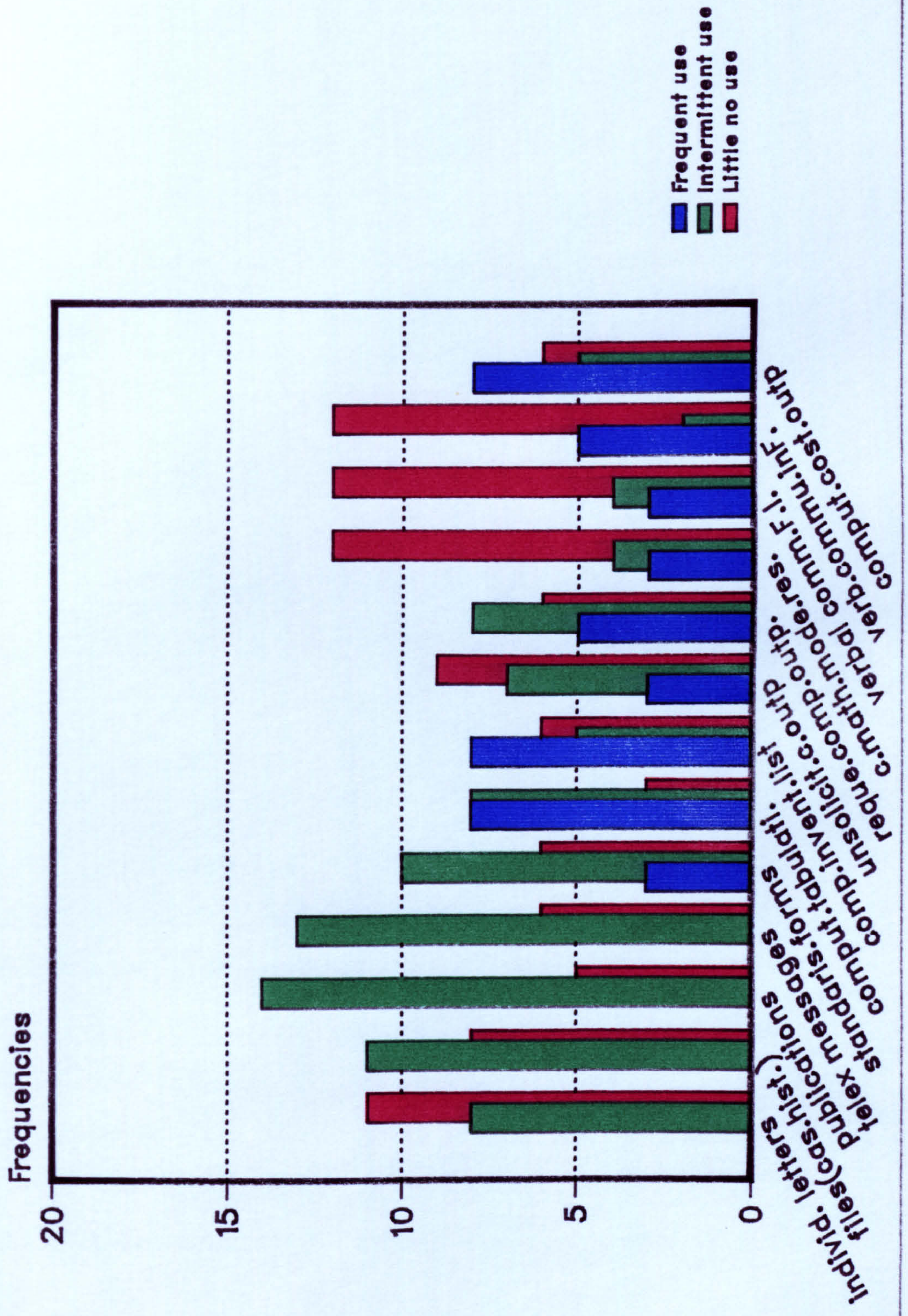
In respect of the hotel country, the hypothesis is as follows:

H0 : There is no association between the hotel country and the non-computing sources for communication information.

H1 : There is an association between the hotel country and the non-computing sources used by the hotel managers for communication information.

The following table is a chi-square test of goodness of fit with regard to the 1985 data for this practice in both the British and Egyptian hotels.

Figure (7.3) the media sources for communication information used by managers in the British hotels according to the 1985 data .



Non-computing Sources for comm. inform.	1985						Total
	British Hotels			Egyptian Hotels			
	frequent use	intermitt. use	little use	freq. use	interm. use	litt. use	
1- Individ. letters or memos	0	8	11	4	0	26	46
2- Flies (case hisrories	0	11	8	3	7	20	49
3- Publicat- ions	0	14	5	4	8	18	49
4- Telex messages	0	13	6	3	4	23	49
5- Standarised forms	3	10	6	2	7	19	47
Total	3	56	36	16	26	106	243

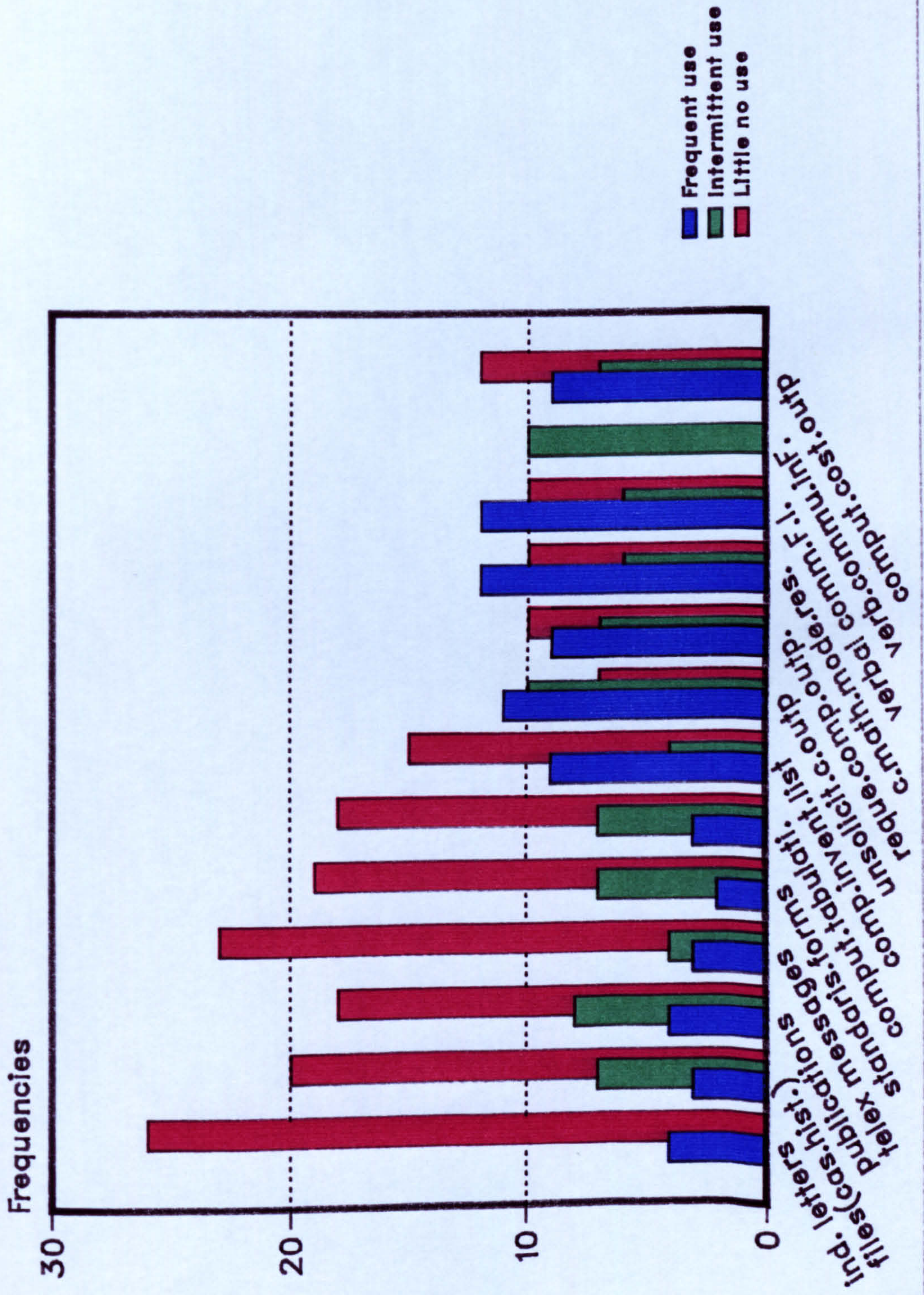
Chi- square = 19.106

Degrees of freedom = 20

At 20 Degrees of freedom the five percent point of the chi-square distribution = 31.410

The chi-square test is not significant at the five percent level (although the test result is highly significant at the one percent level). The null hypothesis, H₀, is accordingly not rejected. There is accordingly no evidence to suggest that there is an association between the hotel country and the non-computing sources for communication information used by the managers in both British and Egyptian hotels. The data suggests a move forward in the use of these non-computing sources by the Egyptian hotel managers over the British hotel managers. The test result confirms the last conclusion, where the needs of the management system in the country do not influence the non-computing sources used for communication information. Also the increased chi-square value for the Egyptian hotels over the equivalent British figure confirms the previous data results where the use of computers in

Figure (7.4) the media sources for communication information used by managers in the Egyptian hotels according to the 1985 data .



Egypt is less widespread than in the U.K. . Consequently, non-computing sources for communication information are used more in Egypt.

7.2.2 The Computing Sources: Country Analysis

In respect of the hotel country, the hypothesis is as follows:

H0 : There is no association between the hotel country and the computing sources used by the hotel managers for communication information. .

H1 : There is an association between the hotel country and computing sources used by the hotel managers for communication information.

The following table is a chi-square test of goodness of fit with regard to the 1985 data, for this practice in both the British and Egyptian hotels.

Computing Sources For Commun. Informatio.	1985			Egyptian Hotels			Total
	U.K. Hotels			Frequ.	intern.	litt.	
	Frequent	Interrmitt.	little				
1- Computing Tabulations of Files Records	8	8	3	3	7	18	47
2- Computer Inventory Listing	8	5	6	9	4	15	47
3- Unsolicited Computer Outputs	3	7	9	11	10	7	47
4- Requested Computer Outputs	8	5	6	9	7	10	45
5- Computer Costing Outputs	8	5	6	9	7	12	47
6- Computer Mathemat. Model Results	3	4	12	12	6	10	47
Total	35	37	42	53	41	72	280

Chi-square = 29.734

Degree of freedom = 25

At 25 Degrees of freedom, the five percent point of the chi-square distribution = 37.652

The chi-square test is not significant at the five percent level (although the test result is highly significant at the one percent level). The null hypothesis, H_0 , is accordingly not rejected. There is accordingly no evidence to suggest that there is an association between the hotel country and the computing sources used by the hotel managers for communication information. This test result does not confirm the last conclusion, where the needs of the management system in the country do not influence the skills for communication information used by the hotel managers in both the British and Egyptian hotels. The data suggests a move ahead too for the managers of the Egyptian hotels over those in

the British hotels in using the computing sources for communication to get their information. The low reliability of the British hotel managers on the computers as a source for information supply (which had been shown in previous tests) might explain the above test result.

7.2.3 The communication of Formal and Informal Information: Hotel Country Analysis, Data 1985

In respect of the hotel country, the hypothesis is as follows:

H0 : There is no association between the hotel country and the use of verbal communication for getting formal and informal information by hotel managers.

H1 : There is an association between the hotel country and the use of verbal communication for getting formal and informal information by hotel managers.

The following table is a chi-square test of goodness of fit with regard to the 1985 data in both British and Egyptian hotels.

Verbal communic.	1985						Total
	British Hotels			Egyptian Hotels			
	Frequent use	Intermitt. use	Little use	Frequ. use	Intermitt. use	litt. use	
1- Verbal communic. of formal informat. (Face to face or telephone)	3	4	12	12	6	10	47
2- Verbal communic. of informal (Early war- ning of change, inform. of political factors)	5	2	12	9	10	9	47
Total	8	6	24	21	16	19	94

Chi-square = 1.81

Degree of freedom = 5

At 5 Degrees of freedom the five percent point of the chi-square distribution = 11.070

The chi-square test is not significant at the five percent level (although the test result is also not significant at the one percent level). The null hypothesis, H_0 , is accordingly accepted. There is accordingly no evidence to suggest that there is an association between the hotel country and the verbal communication practised by hotel managers in both British and Egyptian hotels to get their formal and informal information.

The test result confirms the last conclusion that the needs of the management system in the country do not influence the managers skills for communication information. A calculation for the chi-square value for each cell (not shown in the contingency table) reveals that the Egyptian hotels are slightly ahead than the British hotels in using

these verbal communications. This can be explained by the fact that the written communications do not help much in getting the work done quickly. Routine procedures of work (Bureaucracy) is the dominant style of management in most of the business organisations in Egypt.

7.3 The Skills of the Hotel Managers and Their Sources for Communication Information : Hotel Management Category Analysis

Do the results of the last tests differ from one management level to another in the British and Egyptian hotels?

In the following test we will examine the association between the managers abilities, sources for communication information which they practise and their management levels. Also we will find out how the results of this test are different because of the influence of the needs of the management system of the country in both the U.K. and Egypt hotels.

7.3.1 The Managers Skills: Hotel Management Category Analysis

In respect of the hotel management category, the hypothesis is as follows:

H0 : There is no association between the management levels, the skills and the sources for communication the managers practise in the British and Egyptian hotels.

H1 : There is an association between the management levels, the skills and sources for communication information practised by the managers in the British and Egyptian hotels.

The following table is a chi-square test of goodness of fit with regard to the 1985 data.

Hotel management Category	1985				Total	
	British Hotels		Egyptian Hotels			
	Managers Skills	Sources For Commun. Inf.	Managers Skills	Sources For Commun. Inf.		
1- Senior Manager	31.2	37.05	175.7	209.7	206.9	246.8
2- Middle Manager	31.2	37.05	62	74	93.2	111.1
3- Lower Manager	31.2	37.05	51.7	61.7	82.9	98.75
4- Super- visor	93.6	111.15	20.7	24.7	114.3	135.9
Total	187.2	222.3	310	370	497.3	592.4

The numbers in the above table represent the total frequencies of the different kinds of skills practised by the hotel managers in both the U.K. and Egypt to do their jobs compared with the total frequencies of the different types of sources they use for communication information. This is to show any association between managers' levels and both the skills and the information sources used. The calculation is based on the distribution of these frequencies according to the share of each management level in each sample.

Chi-square = 35.26
Degree of freedom = 3

At 3 Degrees of freedom the five point percent of the chi-square distribution = 7.815

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis, H₀, is accordingly rejected and H₁ accepted. There is accordingly an association between the hotel management category and the skills practised by the managers. The calculation of the chi-square value for each cell (not shown in the contingency table) reveals that managers at the higher and the bottom levels (senior manager, supervisor) are practising more skills than managers in the middle and lower levels in both British and Egyptian hotels. The data suggests a move ahead for the British hotels over the Egyptian hotels in this practice.

7.3.2 The Sources for Communication Information: Hotel Management Category Analysis

In respect of the hotel management category, the hypothesis is as follows:

H0 : There is no association between the hotel management category (managers levels) and the sources for communication information used by hotel managers.

H1 : There is an association between the hotel management category (managers levels) and the sources for communication information used by hotel managers.

The following is the result of a chi-square test of goodness of fit with regard to the 1985 data for this practice, as shown in the last table:

Chi-square = 61.281

Degree of freedom = 3

At 3 Degrees of freedom the five point percent of the chi-square distribution = 7.815

The chi-square test is significant at the five percent level. The test result is also highly significant at the one percent level. The null hypothesis , H0, is accordingly rejected, and H1 accepted.

There is accordingly an association between hotel management category and the usage of the sources for communication information by managers in different levels. The calculation of the chi-square value for each cell (not shown in the contingency table) reveals that managers at the higher and the bottom levels use these sources for communication information more than the managers in the middle and the lower levels in both the British and Egyptian hotels. The data suggests a move ahead for the British hotels than the Egyptian hotels in this practice.

7.4 Summary Table for Principal Results

Keys

- * Significant results at the 5 % level .
- * E Significant result at the 5 % level in the direction expected .
- * U Significant result at 5 % level in an unexpected direction .
- N.S. Non-significant result .

Hotel Practice	Goodness of Fit	Tests Of Association Using The 1985 Data			
		Country Analysis		Management Category Analysis	
		U.K. H.	Egyp.H.	U.K. H.	Egyp. H.
	Using				
	1985 Data Between U.K. and Egyptian Hotels				
1- Managers Skills :					
- Communic. Abilities	N.S.			* E	* E
- Numerate and Comput. Abilities	*	* E	* E		
- Planning and Decision Making Abilities	*	* U	* U		
2- Media Sources for Communic. Information :				* E	* E
- Non-Computing Sources	N.S.				
- Computing Sources	N.S.				
- Communication For Formal and Informal Information	N.S.				

7.5 Conclusion

In this chapter we tested the differences between the British and the Egyptian hotels in terms of the skills of the managers and the media sources for communication information practised by the hotel managers.

The test results proved to be not significant for both the abilities of communications and the Media sources for communication information used. On the other hand the test results proved to be significant for the differences in the planning and decision making abilities used.

The influence of the needs of the management systems of the country over the abilities used in work is believed to be the main reason behind the significant differences of the test results. The managerial environment of the country is also believed to be the dominant factor which affects the needs of the management system of the country.

An investigation of the influence of the Egyptian managerial environment over the organisation's maturity will be carried out in chapter 9. The investigation will be based on the assumption that planning, co-operation, communications and the structure of the organisation are factors which shape the maturity of the hotel organisation and consequently, they determine the diffusion of the successful information systems in the hotel industry in Egypt.

CHAPTER 8 : THE DECISIONS OF THE HOTEL MANAGERS
AND THEIR INFORMATION NEEDS
(A DECISION-ORIENTED APPROACH)

8.1 Introduction

Planning for management information systems (MIS) IS an important task for organisations in both the hotel industry and manufacturing industry. As G. B. Davis (ref. 43) mentions, the multitudinal definitions for MIS have a common theme that provides a basis for approaching the MIS planning problem. This theme (Management Information Systems) should provide the information necessary to support the purposeful behavior of managers. This implies being engaged in activities to achieve particular goals. To carry out these activities effectively, managers often seek information. Many aythers such as Coleman and Rilely (ref. 44), Maclean and Soden (ref. 45) suggest that MIS planning efforts should be linked directly to the goals of the organisation, but the important issue is how to achieve this linkage.

The decision approach adopted in this chapter focuses on the decisions made in the hotel organisation. Why do we use the decision-oriented approach to MIS planning?. This approach, as Henderson and West (ref. 46) explain, is used for several reasons:

1 - Decision making is a critical activity for managers. This approach helps to insure the relevance of future systems by focusing on this critical activity.

2 - A decision approach provides a foundation for communication between the analyst and the manager. Managers articulate their information needs in terms of supporting particular decisions, while the analysts translate these need statements into potential information systems.

3 - Accordingly, the need to support particular decisions is linked to the goals and objectives of the organisation. By relating the MIS development to the support of particular decisions, it is ensured that the MIS plan is consistent with the overall plan of the organisation.

In this chapter we ask hotel managers in both the British and Egyptian hotels about the decisions they regularly make and the types of information they regularly receive. Then we ask the managers whether or not they like to be informed with other types of information such as special studies, trade, technical reports or Magazines and special topics.

Finally for the purpose of evaluation, we ask the managers about:

1 - The information they would like to get which they are not currently getting.

2 - The types of data analysis programs they would like to see made available.

3 - The four most helpful improvements that could be made in the present information system actually existing in their hotels.

This approach calls for a sequence of structured group processes in which:

a- Critical decisions are defined,

b- Critical information necessary to support these decisions is defined and,

c- Information system is characterised in terms of lack of both information and data analysis programs which are not available and finally, the improvements which could be made for the present information system.

The analysis of the responses received will help to draw some

conclusions for:

- 1 - A descriptive model for the available and the expected information systems components for decision making in hotels (decision, information needs and data analysis programs).
- 2 - Identification of both the decision and the decision maker's information needs which are still unrecognised in the MIS literature.
- 3 - The part played by computers in the information systems for decision making in hotels.
- 4 - The differences between the British and Egyptian hotels in terms of the above and last three points.

The discussion in this chapter will be based on some qualitative reasons we mentioned before in the literature review. Out of these qualitative reasons we will draw our hypothesis and check them through the data available.

This chapter, along with the last chapter, discusses three main components of the hotel information systems components. These are (skills, sources for communication information and decision information needs of the hotel managers).

8.2 The Decision Approach for Designing Information Systems

Several authors have discussed and proposed the decision orientation for designing information systems. Ackoff (ref. 47) suggests the process of using this approach to any particular information system as follows:

- 1 - It should begin with identifying the decision that the system is intended to support.
- 2 - Having identified the decisions, information needs can be assessed, often with the help of formal models, and the MIS can be

designed.

King and Cleland (ref.48) point out that the usage of this approach for the analysis of information requirements is useful at two levels:

a- It helps the manager to understand the potential of the system to enhance the decision making.

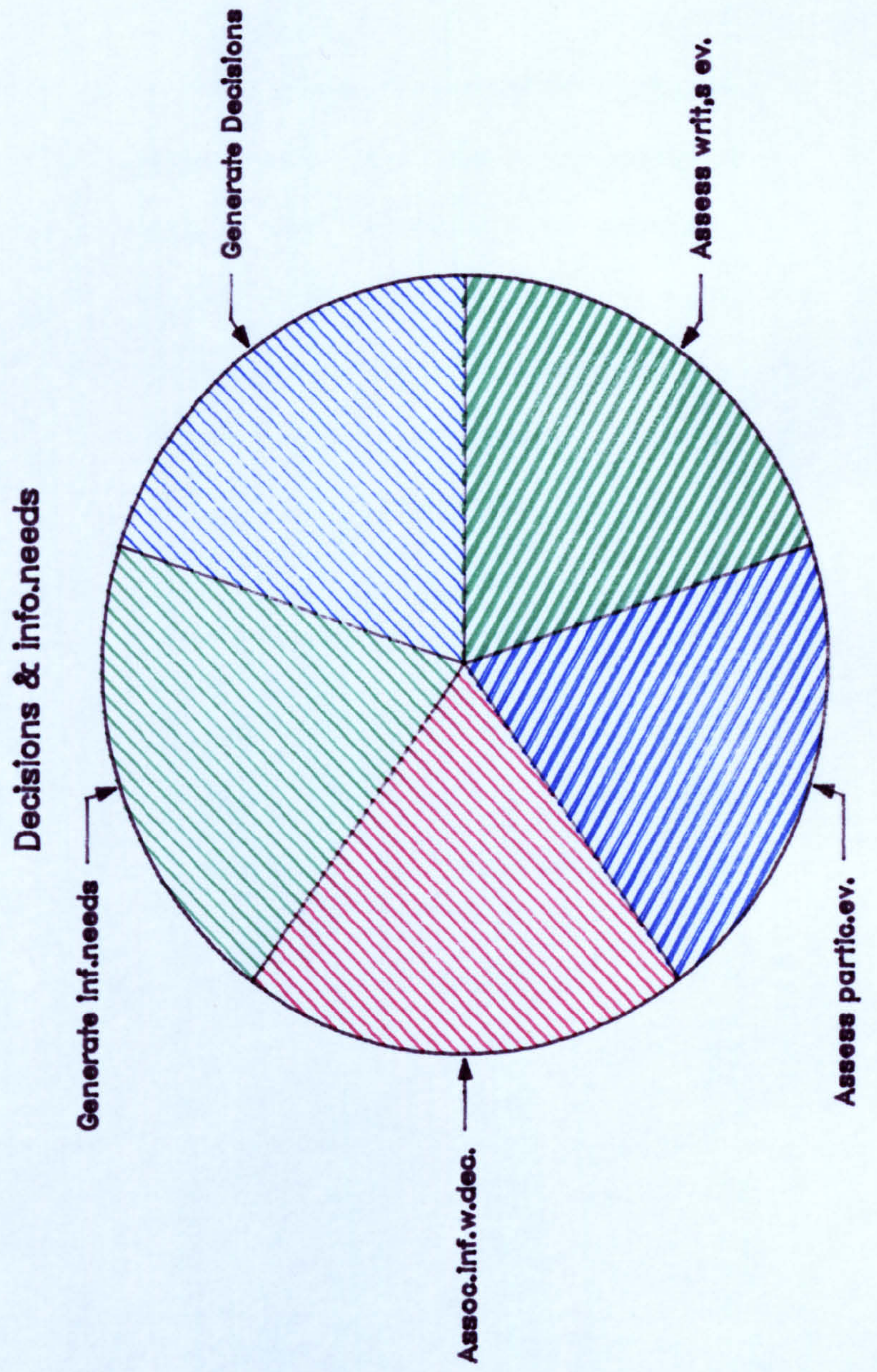
b- It allows the managers to participate effectively, so the system becomes much more likely to be used.

At a more general level, this orientation is the basis for a growing body of literature relating to decision support systems (ref. 48) and (ref. 49). For example, Keen and Scott Marton (ref. 49) focus on analysis of the decision process in the predesign stage.

The decision approach also helps the MIS planners in determining the information needs at the organisational level, where the task confronting many MIS designers is to find a common basis by which to assess organisational needs. This approach, which is presented here, utilizes critical decisions for such a basis. Information needs for the organisation are generated and assigned priorities in the context of the particular behaviour (decision making) they support.

To operationalize the methodology, the hotel managers (as participants) are asked to list the decisions they make to fulfill their responsibilities. Then the managers are asked to list what they need to know (information) in order to support their decisions in the first step. The last two steps help to identify the critical decisions (the five highest priority decisions) and the critical information needs for these decisions. The next and final two steps involve the participants evaluation for their information systems in terms of the lack of both the information received and the data analysis programs, and finally their suggested improvements. The last two steps also involve the

Figure (8.1) Decision Treatment
(decision - oriented approach to identify the information needs)



researcher evaluation in terms of the qualitative reasons driven from his literature review.

The following figures shows the five steps used to operationalize this decision oriented approach.

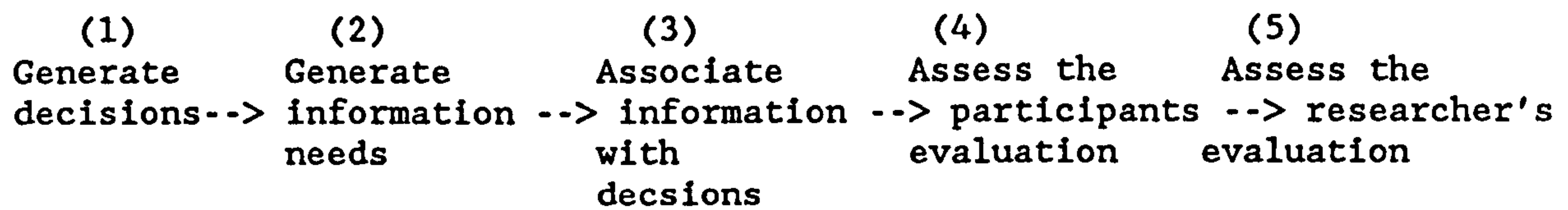


Figure (8.2) Decision Treatment

8.3 The critical Decisions for the Hotel Managers

One of the difficulties which face the information system designer is to be aware of the decisions the managers make and the information they need to get to make decisions. Most of the complaints by managers are that the information systems provided in their organisations do not suit the purposes of their uses. One problem is that some managers are unable to identify their decisions and their information needs. Consequently this makes it more difficult for the system analysts to satisfy the decision makers when they design the information systems in their organisations.

The following table shows how far the managers are able to identify their decisions and describe their information system needs in both British and Egyptian hotels. Later on we will show the implications on the accuracy of the information systems available.

Managers Decisions		1985					
Information Systems Needs	British Hotels		Egyptian Hotels		Total(1)		
	Frequency	%	Frequency	%	No.	%	
1- The decision the managers make (decisions identific.)	11	55	16	53	27	54	
2-The information the managers need for making decisions	14	70	10	33	24	48	
3- Regular information getting	14	70	16	53	30	60	
4- Current information which are not getting	13	65	8	27	21	42	
5- Special studies the managers request	11	55	10	33	12	42	
6- Special Magazines, trade or technical reports received	11	55	5	17	16	32	
7- Special topics to be kept informed with	14	70	4	13	18	36	

(1)The sample represented in the above table is 50 managers, 20 managers from the British hotels and 30 managers from the Egyptian hotels .

Based on the assumption that the hotel managers who cannot identify their decisions and their information system needs are unable or unwilling to do so, the analysis of the data of the last table reveals the following:

1- In British hotels, 55 percent of the managers could identify the decision they make, against 53 percent in Egyptian hotels.

2- As for the information the managers need to make these decisions, 70 percent in the British hotels against 33 percent in Egyptian hotels could specify their information needs with a total 48 percent in the whole sample.

3- About the regular information the hotel managers receive, 70 percent in the British hotels against 53 percent in Egyptian hotels could specify this regular information with a total 60 percent in the whole sample. On the other hand 65 percent in the British hotels against 42 percent in Egyptian hotels could specify the current information they need but they do not get, with a total 42 percent

in the whole sample.

4- About the special studies the hotel managers request, 55 percent in the British hotels against 33 percent in Egyptian hotels could identify these studies with a total 42 percent in the whole sample.

5- As for the Magazines and the trade or technical reports, 55 percent of the hotel managers in the British hotels receive them while they are doing their jobs against 17 percent in Egyptian hotels, with a total 32 percent in the whole sample.

6- Finally 70 percent in the British hotels could specify the special topics about which they needed to be kept informed, against 13 percent in Egyptian hotels with a total 36 percent in the whole sample.

7- The data in the last table reveals a considerable difference between the British and Egyptian hotels in terms of the specification of the information system needs (information, studies, Magazines, reports and special topics) but not for the identification of the decisions the managers make.

8- In the whole sample there is still a considerable percentage, which is over 40 percent of the managers, that cannot either identify the decisions they make or specify their information systems needs. This confirms with the view we started with in this investigation.

9- The implication of the above for the accuracy of the design of the manager information systems should be higher in the British hotels than in the Egyptian hotels. The system analysts will be faced with more difficulties in Egyptian hotels than in British hotels, and consequently they will have to rely on other sources to recognize the needs of the hotel system.

10- The writer supposes that the structure of the hotel industry and the style of management affect the ability of the hotel managers or their willingness to identify both their decisions and information needs . For example, in Egypt where the hotels are supervised or controlled by a public sector company , the managers are not free to make decisions or define their information needs. They follow instructions and regulations set by the headquarters of the supervisory company . However, the case is different in the private sector hotels, which are few in number compared with the public sector hotels. This might explain the considerable differences in the percentages between the British and Egyptian hotels.

8.3.1 The Critical Decisions of the British Hotel Managers

The British hotel managers were asked to identify the decisions they make while they are doing their jobs and to arrange their decisions according to their priorities. Here are some examples of the responses as shown in the following table.

Critical Decisions of British Hotel Managers

Department	Priority	Decisions On
1- Head Manager	1	Accept Reservation
2- Food and Beverage	1	Staffing Levels
	2	Rooms and Liquor G.P.S.
	3	Bought
	4	Forecast
	5	Stock Gross
3- Front Office	1	End Of Day Computer Work
	2	Reception
	3	Cashier
	4	Security
	5	Any Thing and Everything
4- Central Computer Service	1	All areas relating computer information for preparation of functional specification
	2	Evaluation and selection of systems equipments
	3	Contract negotiations and placement of orders
	4	Supervision of installation and commissing of Software and Hardware
	5	Implementation of Software and staff training
	6	Organising support
5- Computer O D P	1	Operational
		Procedural
6- Head Office	1	Legal
	2	Financial
	3	Take Overs
	4	Insurance
7- Systems	1	Forecasting
	2	Pricing
	3	Sales Problems

Table (8.3) Decision priorities in the British hotels

The analysis of the data in the above table reveals the following:

1- Some managers are very brief when they identify the decisions they make , where they put them under one inclusive decision (Example No.1).

2- Other managers state their area of work interest in which they make decisions (Example Nos. 2, 3).

3- Some managers are unable to distinguish between the decisions they make and the responsibilities they practice in their work . As a result, they give their job descriptions instead (Example No. 4).

4- Others indicate the kind of subjects under which the decisions they make can be classified (Example Nos. 6, 7). While on the other hand, other managers indicate the nature of the process for which their decisions are made (Example No. 5).

5- The overview of the decisions list in the last table confirms the assumption that the managers cannot identify the decisions they make, but instead they describe the topics or the subjects and the functions through which they make their decisions.

8.3.2 The Critical Decisions for Egyptian Hotel managers

To compare British and Egyptian hotels in terms of the decisions that their managers make, Egyptian managers were asked to identify the decisions they are regularly called upon to make. The following table shows some examples of the responses received as follows:

Critical Decisions For Egyptian Hotel Managers

Departments	Priorities	Decisions On
1- Personnel and Training	1	Training programs design
	2	Developing staff skills and experiences
2- Front Office (Reception and Reservation)	1	Determine the rooms prices (up or down prices change)
	2	Determine the Tourist groups prices
	3	Determine the special offers and the reduction in prices for Travel Agents, groups of tourists, and airlines
3- Manager Director	1	Determine the fixed expenditures
	2	Bought
	3	Reservations
	4	Determine the replacement and maintenance needs
4- Manager Director	1	Rooms sales
	2	Direct and control the hotel staff and solve their problems in work
	3	Bought
	4	Pricing
5- Housekeeper	1	Manage and control the staff of department
	2	Customers Comfort
	3	Organising the stock consumptions
	4	Keep the hotel rooms tidy and clean
6- Assistant manager Director	1	Managerial decisions
7- Sales	1	Imports
	2	Food and Liquor
8- Accounting and Finance	1	Procedural
	2	Legal
	3	I receive the decisions from manager director or company head quarter (which supervises us)

Figure (8.4) Decision priorities in Egyptian hotels

The analysis of the data in the above table reveals the following:

1- Some Egyptian hotel managers identify their decisions under some topics or broad functions they practise in their work. Others mixed them with their job descriptions and their responsibilities (example Nos.1, 3, 5, 7).

2- Some managers could identify their decisions like rooms, prices changes, giving special offers for group customers and fixed

expenditures limits (example Nos. 2, 3).

3- Other managers describe the nature of the decisions they make, like procedural, legal, and managerial decisions (example Nos. 6, 7).

4- The overview of the decisions list of Egyptian hotels reflects the main interests and problems which Egyptian managers have, like managing and controlling hotel staff, imports and a bureaucratic style in making decisions (especially in the public sector hotels_ example Nos. 4, 5, 8).

8.4 The Decisions and the Managers' Information Needs.

One of the goals of the decision oriented approach is to provide a valuable support for the development of MIS plans. As Henderson and West (ref. 46.p.49, 51) say, this approach introduces a common communication, where managers are able to relate priorities in terms of critical decisions and information needs. The planning efforts, according to this approach, do not focus on the "how to" technological issues, but rather on the requirements of decision making. Consequently, focusing upon the decision reveals several insights that become a critical part of the strategic MIS plan.

The hotel managers were asked to specify their information needs in terms of the decisions they make. The following table show some examples of the responses to questions about the managers' intomation needs to make decisions , the regular information they get, the current information they ask for but they do not get. By relating this data to the manager's decisions and his main responsibilities, this can give an overview of the hotel MIS needs.

Decision and Associated Information Needs

Departments	Responsibilities	Decisions	Total Information Needs		
			Information Needs	Regularly Getting	Currently Not Getting
1- Food and Beverage	1-Overall 2-Profitability 3-Hygiene 4-Efficient Running	1-Staffing Levels 2-Rooms and Liquor G.P.S 3-Bought 4-Forecast 5-Stock Gross	1-Figures 2-Previous Records 3-Forecast 4-Weekly Wage 5-Weekly Stock Level	1-Previous figures 2-Wage Analysis 3-Weekly Reports	1-Forecast 2-Sale Analysis
2-Front Office	1-End of Computer Work 2-Recept. 3-Cashier 4-Security 5-Anything and Everything	The Same like in the Responsibility of Front Office	As much as possible	1-Registered cards 2-Computer Reports 3-Question -naire	1-More accurate informat. Shorter Question -naire
3-Computer O D P	1-Smooth Running of computer	1-Operational 2-Procedural	1-Historic Data 2-Statistics		1-various 2-Turn-over
4-Head Office	1-Financial 2-Legal	1-Legal 2-Financial 3-Take overs 4-Insurance			
5-Systems	1-All tasks involving in installing computers in hotels	1-Forecasting 2-Pricing 3-Sales problems	1-All the reservation data		

Figure (8.5) Decisions and Information Needs of The British Hotel Managers

The analysis of the data in the above table reveals the following:

1- Most of the complaints about the information which is wanted but not currently available, are concerned with the information quality and characteristics. Information for forecasting, sales analysis and turnover are missing. The variety, accuracy and brevity are also missing characteristics in the information provided.

2- The written information is the major quality of the information which is regularly available (for example previous figures, reports, registered cards and questionnaires) . Past information is important in the information needs identified (for example historic data, statistics, previous records and previous figures).

How different is the analysis of the information needs for Egyptian hotel managers from the above British data analysis?. We will find out through the following table which shows information needs of Egyptian hotel managers. The comparison will also allow us to show the difference in the priorities of responsibilities, decisions, information needs for the same hotel department in different countries within different managerial environments.

Decision Associated With Information Needs

Department	Responsibili.	Decisios	Total Information Needs		
			Information Needs	Information Regularly Getting	Information Not Currently Getting
1-Front Office	1-Reception 2-Reserva- tion	1-Determine the rooms prices 2-Determine the groups prices (Tourists) 3-Determine the special offers and reduction in prices Travel Agents	1-Prices of compititors 2-Percentages of occupancy and volume of Business day by day shares of comititor hotels 3-Average room rate/per day		1-Shares and volume of Business for competitors (large hotels) in Egyptian hotel market
2-Head Office		1-Determine fixed expendit-ures 2-Burchasing 3-Reservat-ions 4-Determine replacement and mainten-ance needs	1-Stocks 2-Expected time for occupancy 3-Expexte expendit-ures and payment and maint-enance period 4-The avail-able unoccpied rooms 5-Occupancy ratio 6-Expected reservation to be fullfill	1-Sales centers incomes per day 2-Expendit-ures p/day 3-Estimated plans and actual achievement p/month/ p/3 months/and p/year 4-Detailed reports of problems of implemenration	
3-Sales	1-Import	1-Hotel market 2-Food and Liquor	1-Total figures 2-Hard currency and exchange (money data) 2-Competitors hotels 3-Techniques and metkods used in comp-etitor hotels	1-Data for hotel customers 2-Total figures of hotel sales 3-Expected for-ecasted sales	about hotel 2-Latest develop-ment in the hotel market locally and interna-tionally

4-Personnel and training	1-Design training programs	1-Determine training programs	1-Individual skills 2-Staff experiences and abilities 3-Staff evaluation reports	1-Personnel data 2-Historic data 3-Annual reports	1-Latest development in the hotel training technique and program
5-Head Office	1-sales 2-Managing staff 3-Burchasing	1-Workk proced-ures and written instruction for implementation	1-Workk proced-ures and laws of supervising company	1-Clear and unrestr-icted work proced-ures to compete with private competi-tors in hotel market 2-Statist-ics about world Tourism trends 3-Prices , policies adopted in the market 4-Compet-itors hotels	

Figure (8.6) Decision and Information Needs in The British And Egyptian Hotels

The analysis of the data in the above table reveals the following:

1- In Egyptian hotels the style of management influences the managers' decisions and their information needs. For hotels which are supervised by the public sector companies, the work procedures and instructions are the main sources of getting information to make decisions. Competition in the hotel market is the main information

need the (private) foreign management hotels seek.

2- Considering the above fact, we find differences in the responses of two head offices, one in the public sector and the other in the private, in terms of the decisions they make and the information they need. For example, expenditures, occupancies, replacement and maintenance are the main cores for decision and information needs for the private hotels, whilst the normal hotel functions, and the instructions of the supervising company and the work procedures are the main cores for the decisions and the sources of information for the public sector hotel, with more emphasis on the management staff and less emphasis on profitability (example Nos. 2, 5).

3- In Egyptian hotels the missing information (which is not currently available) is about competitor hotels, the latest development in their techniques, their style of managing their business, their total share in the hotel market and finally changes in the hard currency and money markets day by day. On the other hand, British hotels complain about the accuracy of and the variety of the information they get. This reflects the uncertainty and competition in the Egyptian hotel market, against the stability of the British hotel market and the growing interest in improving the quality of information in British hotels. The difference in the management styles between the public sector hotels and the private (foreign management) sector hotels is likely to influence both the decisions and the information needs in each. The difference the managerial environment of the country between the British and Egyptian hotels influences the decisions and the information needs of the managers in each hotel.

4- Forecasting is joint information requirement by managers in both

British and Egyptian hotels, where in the British hotels it is considered very important, but in Egyptian hotels it is hardly used.

8.5 Other Support Information Means

Other means to provide the hotel manager with data and to update his information are the special studies he periodically requests, technical and trade Magazines or reports he likes to be sent to him regularly and specific topics with which he likes to be kept informed. Does the managerial environment influence the support information means of the hotel manager as well?. The following table will show the list of the studies, Magazines or reports, and topics recommended by both the British and Egyptian hotel managers.

Support Information Means	British hotel managers	Egyptian hotel managers
1-Special studies	1-Forward booking 2-Breakfast analysis 3-End of monthly A/C reports 4-End of year A/C reports	1-Intensive or periodical computer programs design 2-Studies about hotel market needs 3-Tourist companies in the hotel business 4-Customers nationalities 5-Conferences held in Egypt or in Cairo (the capital) 6-International hotel prices 7-Costs and prices of replacement and maintenance in the hotel business 8-Sources of finance available and amounts of credits, ways repaments 9-Monthly statistics for employment, absence, days off 10-International Tourism market 11-Develoment in the international and local hotel techniques and business 12-Hotel market competition 13-Latest develoment in the hotel decoration and cleaning equipments 14-Accounting and Financial guid-lines for the hotel work procedures

		15-Universities in the different countries which provide weekly or extensive training programs for hoteliers
2-Magazines and reports	1-Catering Magazines 2-Sales and marketing Magazines 3-Hotel and Caterer 4-Business Magazines 5-T-Technical reports 6-Computer monthly 7-Caterer and Hotel keeper 8-Cornel Quartely 9-T.T.G.	1-Daily and official newspapers 2-American Association 3-Drinks 4-Economic and Sceintific magazines
3-Specific topics	1-Technology 2-Equipment 3-Prices 4-Menues 5-Technical advances 6-DI.F.F. S/W Applications 7-New ideas	5-Hotel Industry Associaton (H.I.A.) 6-Hotel and Restaurants 7- M A B I 8-International Hospitality Association (I H A) 9-Tax and social insurance Magazines 1-Airlines flight prices and transportation costs 2-Social insurance laws 3-Health Insurance 4-Tourism and Hotel news 5-Hotel decorations

Figure (8.7) Other Support Information Means in both British and Egyptian Hotels

The analysis of the data in the above table reveals the following:

1- The special studies identified by the British hotel managers indicate the actual studies they regularly request and get. But the special studies mentioned by Egyptian hotel managers indicate the studies they hope to be provided with but do not get . The missing information topics (provided in the table which shows the information needs they are not currently getting) confirms this conclusion.

2- The shortage of hotel libraries in Egypt may be deduced from the list of the special studies identified by Egyptian hotel managers. Data and information about the local and international hotel market, competition, latest development in the hotel business and sources of credit and finance (which are the same topics of missing information needs mentioned before) are emphasised again.

3- Forecasting and evaluation studies are indicated in the responses of

the British managers, against studies for the hotel functions and work procedures in the responses of Egyptian managers. These reflect the influence of the country managerial environment on the interests of the managers and the sort of problems with which they deal.

4- The tactical information system is reflected in the kind of Magazines, reports and specific topics identified by Egyptian hotel managers. Paul Gamble 1984 (ref.31 pp. 22-24) argues that the information system they need goes beyond ordinary business functions to allow access to the external information on markets (travel agents, airlines, tour operators) and consumers (from government, other commercial or local organisations). On the other hand, development in the information technology, services, equipments and hotel functions (Administrative information systems) are the main interests of the British hotel managers.

8.6 The Managers Evaluation of Their Market Information Systems

Moving from the decision making and information needs in general, to the specific and important topic of marketing information systems, We asked the hotel managers about the available customer information sources, systems of updating both the customer and guest history information, and reasons for always or never using these available systems. Then we sought the managers' evaluations for these systems, asking them about the customer information and programs they would like to be added to the available systems, and the four improvements they suggest that could be made for the present systems in their hotels. A distinction between the British hotels and both the public sector and the private sector (foreign management) hotels in Egypt will show the influence of the managerial environment on each, which will be commented

upon later.

The following table shows some examples of the managers responses about the evaluation of their customer information systems.

Marketing information systems	British hotels	Egyptian hotels	
		Private sec.hotels (Foreign management)	Public sec. hotels
1-Customer information sources	1-Computer 2-Customer breakdown (i.e.company users list) 3-Registered cards (Manual) 4-Accounts reports 5-Short Questionnaires 6-Individual records 7-Accounts 8-Breakdowns by nationality 9-Market Segment 10-Sources of Booking for the total market 11-F/O statistics on Nationality 12-Sources of BKG in the hotel 13-Rules	1-Guest index file 2-Commercial accounts records 3-T/Agents records 4-Companies agreements 5-Sales and Marketing reports 6-Questionnaires 7-Statistical and analytical studies	1-Customer contacts 2-Some foreign agents 3-Marketing Bureaus of the supervising company all over the world 4-Visits 5-Conferences
2-Access programs	1-Reservation 2-Bookings 3-Billing 4-Invoicing 5-Guest history 6-Operational systems	1-Reservation 2-Check in for individuals 3-Check in for groups 4-Check in for W/I	1-Financial Analysis 2-Accounting analysis 3-Wages analysis (All through the supervising company)
3-Reasons for usage or none-usage of the available systems	1-The only systems available 2-No other informaton available 3-Decisions are based on data and informa-tion that what compu-ter gives me 4-You need accurate facts to help in making decisions 5-No other means	1-They help in -Forecasting for the permanant and temperory ratio of customers -Expected time of customers arrivals -Occupancy forecast for all seasons 2-Because there is no computer in the reservation depart. we use the manual systems	1-There is no computer avail-able in the hotel, it is only used in the supervising company 2-We use manual systems because they are the only systems that provide acurate data 3-Ido not need

them
 4-As training manager my job does not use them

4-Information liked to be added to the systems available	1-Payroll 2-Sales ledger 3-Bought ledger 4-Guest history 5-Personnel details 6-Word processing 7-Bookings 8-Manual systems for certain data	1-Stock control 2-Imports 3-Hard currency prices changes 4-Reservation and rooms occupancy by computers	1-Planned budget for replacement and maintenance 2-Pricing policy and definite authorities given to the hotel managers
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5-Data analysis programs liked to be available	1-All 2-Determine profitability 3-The more the better	1-Statistics and information about the international Tourism trends 2-Pricing policy 3-Competitors hotels 4-Customers analysis 5-Stock analysis 6-Wage analysis	1-Statistics and information about the international Tourism trends 2-Pricing policy 3-Competitors hotels 4-Customers analysis 5-Stock analysis 6-Wage analysis
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6-Systems of updating customers information	1-Invoices 2-Guest histories 3-Black lists 4-Manual systems	1-Delete history 2-History addition 3-Using computers 4-Manual systems	1-There is no need because of stability of customers nature, style 2-Data received from departs. like : Recep. , Reservation , Stock and inventory, Accounting 3-Lists of food and menu 4-Total figure of hotel incomes 5-Cartatick manual system
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7-Systems of updating the guest history information	1-Automatic guest checkout 2-Computer	1-History and Guest records (delete and addition) 2-Manual system	1-Cartatick 2- Records 3- Hotels in large Cities we can not always follow the changes in
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guest history
It is not used
anymore now

8-Some suggested improvements in the whole available systems	1-Management A/C 2-Guest history 3-Reliability 4-Speed 5-Quiter 6-Maintenance	1-Replacing the manual systems with computerised systems	1-Combine the front disk (office) with the back disk and other dept. 2-Computer or manual system (Board or Screen) to show the situation of the latest occupancies , unoccupan. , expected occupancy, ready rooms for customers 3-Computerised systems to keep documents 4-To change the Accounting systems and work procedures to suit the nature of the hotel business 5-More freedom for managers to make decisions about occupancies , to increase incomes, stock control and burchasing without the company permission 6-Clerical employees should be in less number than Hoteliers number . 7-Use Cartatick system because it is easier 8-Introducing Microfish system to keep
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documents
 9-Introducing computers in the branches of the hotel
 10-To feed the company computer with data directly from the hotel to the main company computer
 11-Replacing manual system with computerised systems

Figure (8.8) The Characteristics of the Marketing Information Systems in the British and Egyptian Hotels

The analysis of the data in the above table reveals the following:

- 1- In Egypt, the usage of customer written sources of information by the public sector hotels is less than that in the private (foreign management) sector hotels. Where verbal communications with external organizations (for example bureaux, conferences, visits and foreign agents) are the main sources used. On the other hand, customer local written sources of information are available and more usable in the British hotels than in Egyptian private sector hotels. For example reports, records, customer data analysis by nationality and company statistics, are as customer information sources used in the British hotels and usually contain a specific detailed information about the hotel customers. In contrast, records, reports for commercial accounts, travel agents, companies agreements, and finally sales and marketing sources provide a genuine raw data in Egyptian private sector hotels.
- 2- The computer is used as a customer information source only in British hotels.

3- Computer programs which are used to get access to required information are different in terms of the computer stage development (Paul Gamble 1984 ref. 31). While the public sector hotels in Egypt are using computer programs for clerical functions (financial, accounting and wages) the British hotels are using programs for general administration functions (reservation, booking, invoicing, billing and guest history) . On the other hand, the private (foreign management) sector hotels in Egypt are mainly using programs for back office and control (check-in and check-out for individuals and groups). So both the British and Egyptian private sector hotels use computers for administrative work only, while Egyptian public sector hotels use them for clerical purposes.

4- The future demands for information and data analysis programs do not conform with the above conclusion. While the British hotel demands are concerned with more functional information and data analysis programs of ordinary business, Egyptian hotels are concerned with more clerical and tactical information and data analysis programs which allow access to external information on markets and consumer behaviour (for example, stock control, replacements and maintenance, wage analysis and reservation are clerical information required, whilst commodity market, and money market conditions, consumer information, tourist and travel information , and hotel market competition, are examples of hotel tactical information which managers would like to have added to the available systems).

5- Marketing in the hotel business can be used for two purposes, control and sales planning. The number of rooms rented out in one night is useful for the first purpose (control) while the number or percentage of the vacant rooms in one night is useful for the second purpose (sales

planning). The marketing information that belongs to the second purpose helps more to improve the marketing decisions in the hotel business rather than the information and management statistics provided for control purposes (Melvyn Greene, ref. 50 pp. 155-163). Systems of updating used for customer information and guest history (shown in the last table) are functioned to achieve control purposes (whether they are using manual or computerised techniques) in both British and Egyptian hotels. Examples are black lists, check-out, delete and addition to the guest history, invoices and data for confirmation from hotel departments (such as reception, accounting, finance, food and beverage). Replacing the manual systems by computer systems to enjoy the technical aspects of using computers (such as speed, reliability, keeping documents, easier communications and updating data) are the main interests of managers in both the British and Egyptian hotels. Marketing information to cover rooms, restaurants and function rooms for sales planning purposes is missing. For example, guest histories, as Gamble (ref. 31 p.119) says "containing records of individual guests or of organizations which have used the hotel, are extremely valuable for the manager. Not only to enhance levels of service to former guests and customers, but they are a necessary device for comparing actual performance with the performance intended in the marketing plan".

6- Although computers have an important role to play in maintaining guest histories and sales planning systems, this part is missing in Egyptian hotels which do not use computers and use manual systems only (for example the Cartatick system). The trouble with using manual systems only is that it is such a laborious and time consuming task that may become both expensive in labour and grossly inaccurate in content (Doswell and Nailon ref. 51 pp. 12-14).

7- A revision of the information needs, support information means and customer information sources (identified by hotel managers who are using computers in both British and Egyptian hotels) indicates that they are aware of their marketing information needs for planning purposes, but not in detail. For example forecasting, money markets, commodity markets, consumer behaviour and Tourist and Travel Agents are topics for information needs mentioned in the last table. P. Gamble (ref. 31 pp. 118-122) and Melvyn Greene (ref. 50 pp. 155-163) provide examples, in the form of tables, for how to break down these topics into detailed information needs for planning purposes (examples of the tables suggested by these writers are included in the appendix of this study).

8- The influence of the managerial environment on Egyptian hotels is clear in both public and private sector hotels, in terms of the differences in the information which managers would like to be added to the available systems and suggestions for improving the present information systems. The managerial problems which face the public sector hotel manager in running his hotel (because of being a part of the bureaucratic systems of both the government and public sector) appeared as the main topic for his system needs and complaints. For example over employment, unclear policy of replacement and maintenance, restricted procedures, limited authority given to making decisions, insufficient communication facilities, document file keeping, all reflect the present and expected system needs of the manager. While on the other hand, the worry and concern by the private (foreign management) sector hotel manager about the stability of the money market (price changes of hard currency) and the country's economy, government policy and attitude towards tourism (Tourist trends) all reflect his main present and expected system needs.

9- As for the British hotels which are using or not using computers, there are some environmental factors which clearly influence the adoption of information technology and computer application in the hotel industry. Firm size, the influence of the retailing industry (in terms of technology, organisational structure and marketing techniques which have been copied over into hotel and catering with little change as a new style of management; increased control especially for large firms which are encouraged at the prospect of future expansion using computerisation to lower the risk of the control problems and diseconomies traditionally associated with large scale operations) the falling cost of data processing equipment and development of systems for smaller users, are some examples of the positive environmental factors which influence the usage of computers in British hotels (Marian Whitaker ref. 24 pp. 51-52). On the other hand, because the hotel industry is generally "slow on the uptake", the lack of the technical expertise and problems with the technology suppliers, are other examples of the negative environmental factors which prevent the spread of using computers over many hotel applications.

10- The individual characteristics of each hotel environment might explain the varying degree of computer usage in terms of location, volume and velocity of trade, hotel image, guest facilities, prices, and management style adopted, in both the British and Egyptian hotels.

8.7 Summary and Conclusion

In this chapter we studied the information systems for decision making in both British and Egyptian hotels. The decision making approach had been used to find out what decisions the hotel managers make, what information they use, what computer programs are usually available. An evaluation of the present information systems in hotels is studied in

terms of the unavailable information and data analysis programs required by managers there and the main suggested improvements for the future information systems needs.

The differences between the British and Egyptian hotels are highlighted and commented upon. The reasons behind the above differences (in terms of decisions, information needs, computer programs, and future improvements) are explained. The differences of the country 's managerial environment and the hotel management style are beleived to be the main reasons behind our findings.

The study of the differences of the information system needs for decision making between the British and Egyptian hotels are believed to be due to the difference in the countries' managerial environments and the corresponding information technology usages. The differences between the public sector hotels and the private (foreign management) sector hotels in Egypt are believed to be due to the difference in the management style used (adopted) in running their hotel.

An investigation of the Egyptian managerial environment and the hotel management styles will be carried out in chapter 9. The investigation will be based on the assumptions that Egyptian managerial environment affects the maturity of the hotel organisation especially in the public sector hotels , which consequently determines the available information needs. Also the hotel management style adopted influences the structure of the hotel organisation, the marketing decision process, the productivity and the diffusion of the information technology.

9.1 Introduction

Description of information systems in the literature is usually connected with the usage of computers and developments in information technology. Subjects like computer facilities, computer programs, manager information needs, user problems ... etc, are the main topics of study and research in efficient information systems design.

The literature is full of topics about the new concept of information systems computerisation moving from the old concept of manual system. But the literature is lacking in topics about the application of information systems, in terms of organisation maturity and management style. The managerial environment (which determines the maturity and the management style of the organisation, is an important issue because it is different from one organisation to another, from one industry to another and from one country to another. The success of the design of information systems is mainly determined by satisfying individual MIS needs, which is also characterised by the influence of the managerial environment over the organisation. This is why a perfect and ideal MIS design has not been achieved, even for all organisations in one industry.

Information systems are means to improving the performance of managers in making decisions. To be usable, they should be able to cope with the individual characteristics of the environment of the organisation and the management needs where they are applied.

In the last chapter, we discussed some topics which represent the main components of hotel information systems. A comparison was made between British and Egyptian hotels in terms of jobs done by computers

or by other data processing machines, attitudes and usage of information received by managers, skills and sources of communications for information practiced by managers, and finally decisions, information needs and data analysis programs required by managers. Significant differences proved to exist (between British and Egyptian hotel), especially for jobs done by computers or other data processing machines, managers skills, managers decisions and information needs.

An examination of these differences led to the recognition of influence of the country's managerial environment, which characterises the organisation's maturity and management's style and could create differences in information systems needs.

In this chapter we will investigate the outcomes of the comparison of the last chapters in the Egyptian hotel industry. I shall study the managerial environment which influences information systems needs. The study of the maturity of the organisation will highlight differences in computer applications, manager attitudes, skills, and sources of communication. The study of management style will highlight the individual decisions and information needs of managers. A description of the structure of both the Tourism control system and hotel industry will be the starting point with each main topic. The analysis in this chapter is based on data collected through interviews with top managers in both the tourism sector and the hotel sector in Egypt. Data from various studies and official published reports about the Egyptian managerial environment are explained.

9.2 The Structure of the Tourism Control System in Egypt

The components of the Tourism sector in Egypt mainly cover two kinds of activities, i.e supervision and control for both tourism and hotel

business. The following are the main components which influence the decision making in tourism and the hotel market (ref. 52):

1- Ministry of Tourism and Civil Aviation, where it supervises and controls tourist Bureaux in all big cities and towns in Egypt.

2- The Tourism High Council (ref.53) which discusses and plans the important matters and general policy for tourism in Egypt.

3- the general Egyptian foundation for tourism encouragement. Some of its main responsibilities (ref. 54) are to encourage tourism inside and outside Egypt. It also controls and advises all internal and external bureaux at airports. These general responsibilities are usually practised in detailed activities like the evolution of existing tourist facilities, the design of programs to encourage tourism, planning to attract tourists to Egypt, the provision of marketing and technical advice to companies and institutions in the tourism sector.

4- Public sector companies for hotel services. There are three companies with a total hotel capacity of 14878 rooms in 1980 and 25740 rooms in 1981 (ref. 55). These companies are "Egyptian Hotel Company" , "Egyptian Large Hotels Company", and "General Egyptian Company for Tourism and Hotels".

5- Companies and Travel Agents, where they book, sell tickets, and reserve rooms in hotels. They also organize journeys for individuals and groups , exchange money, insure tourists through insurance companies, sell tickets for nightclubs and public parties (ceremonies) and offer some private services for tourists (like getting visas to stay or leave).

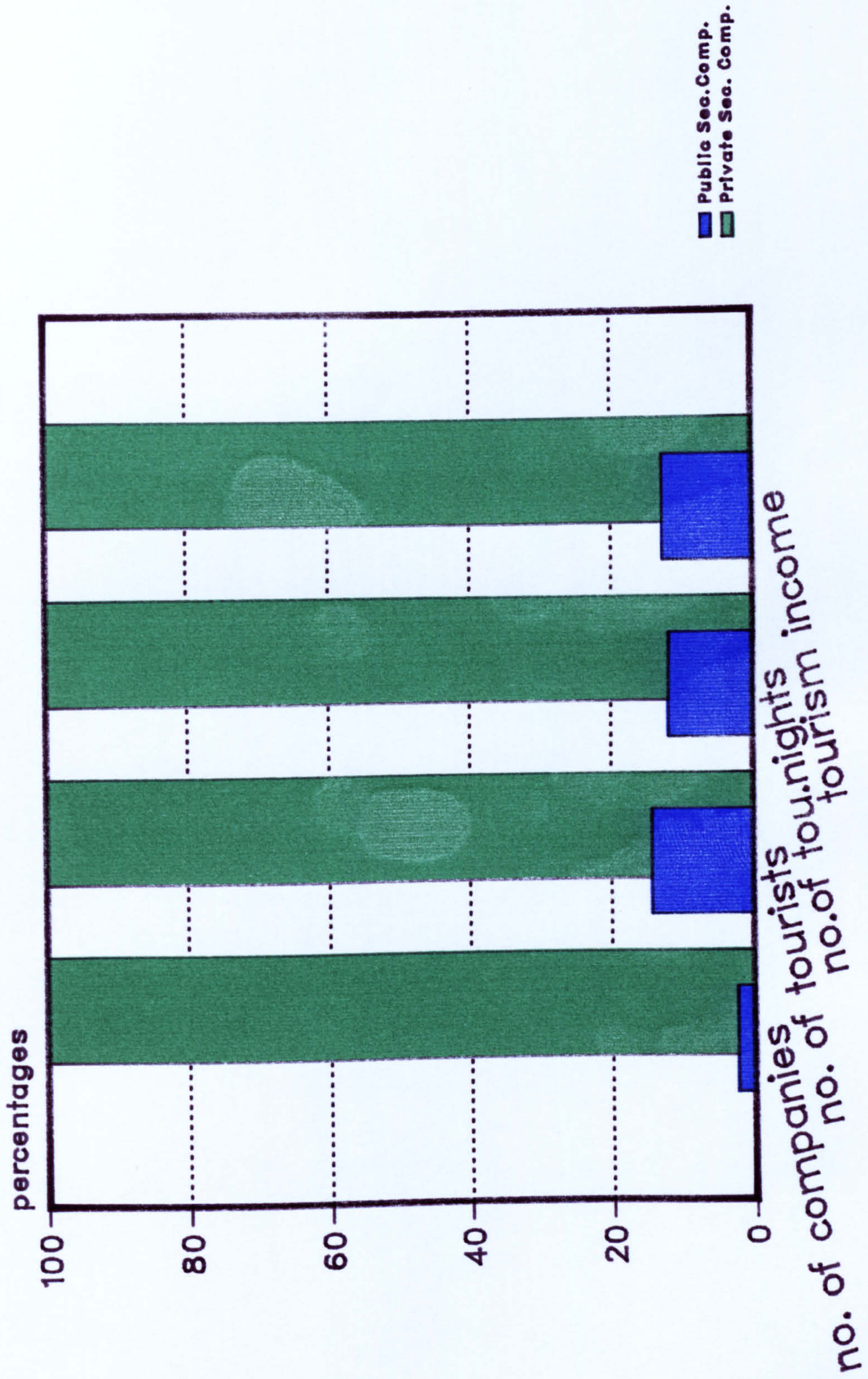
6- The tourism sector structure includes 240 tourism companies that belong to the private sector. These include companies for transport

services, public shops for food , drink, selling antiques, and finally "The Egyptian Union For Tourism Chambers and Tourism Information Service"(ref. 56) .

The following figure shows a comparison in market share between public sector and private sector companies, in terms of the number of companies, number of tourists and income. The data reveals the superiority of the private sector companies over the public sector companies until 1980. The market share percentage of the public sector was less than 15 percent of the private sector companies' share.

The following figure shows a direct relation between the hotel industry and both the Ministry of Tourism and Civil Aviation and the Egyptian Union For Commercial Chambers . They provide advice in the form of hotel studies and they control pricing policies. They represent the relation between the hotel industry and the Ministry of Tourism. The communication channels between hotel industry and Commercial Chambers Union, with regard to the exchange of information about hotel activities, tourist shops and travel Agent policies are shown in figure 9.2.

Figure (9.1) the tourism market share of public sector companies from the total tourism market share of the private sector companies in Egypt 1985
 source : ref. 52 p. 144



Ministry of
Tourism and
Civil Aviation

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hotel studies &
pricing control for --->

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hotel
Activity

Egyptian
Union for
Commercial
Chambers

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Mutual Information ----->

Figure (9.2) Structure of Relations and Communications For Information
Between Hotel Industry And Tourism Sector
Source : ref. 52 p. 148

How far has the Tourism sector gone in influencing the hotel industry, in terms of the success of the hotel business?. The answer to this question will be illustrated by giving some examples from the real world of Egyptian hotel and Tourism sectors.

9.2.1 Planning and the Maturity of Organisations

Results in chapter 4 proved that there is a significant difference in the application of information technology between the British and Egyptian hotels. A test result for reasons against using computers in carrying out hotel jobs proved to be significant between the two countries. To find out why these reasons are different, a study for the variations in management policy, objectives and definitions of "efficiency", are investigated, because they have an important influence on the outcome of decisions to use information technology. The investigation is based on the assumption that the management philosophy and the impact of using new technology in British industry against the lack of planning and co-ordination in Egyptian industry are different matters of concern which chart the diffusion of a successful MIS development across the industry. The following examples explain the image of the Tourism sector which control the industry in Egypt:

1- A long term plan for development and a strategy for future marketing opportunities are that missing. The consequences are that institutions and foundations identify separate objectives for themselves which do not belong to any comprehensive plan, so the subsequent activities of control, supervision and training programs are usually useless (ref. 57 p. 17).

2- A lack of data and scientific studies creates much exaggeration and unrealistic ambition in designing short term plans. For example

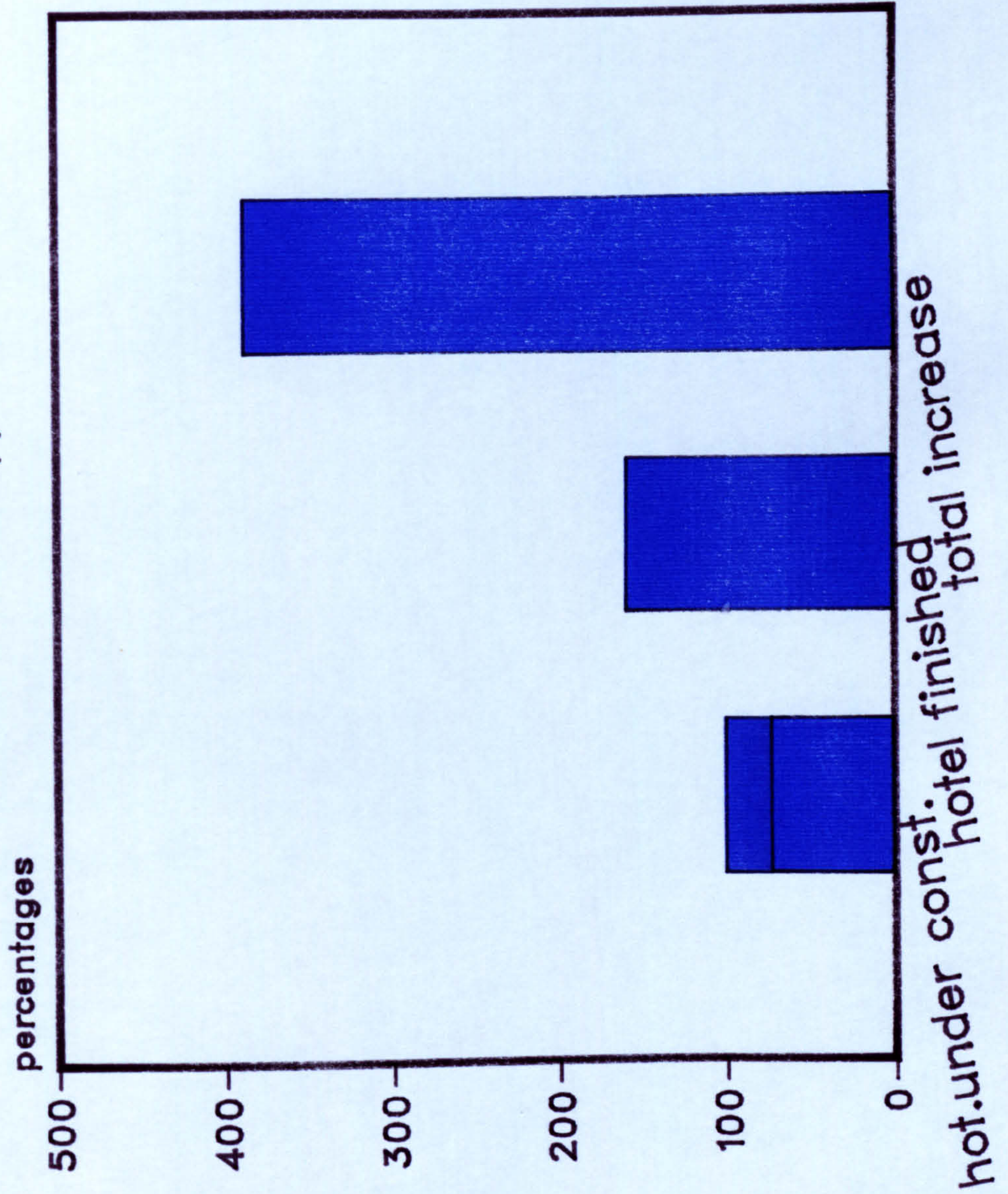
(ref. 52 p. 149) the Highest Council For Tourism which is responsible for overall planning of tourism sector stopped meeting for three years . Few scientific studies have been done since the establishment of the Ministry of Tourism, one of which had been done by a Western German consultancy office (ref. 58 pp. 6-20), and another by an Egyptian consultancy office. Both studies were concerned with planning the development of tourism in Egypt during the 1980-1986, and none of their results have been used in practice.

3- Lack of co-operation and control between departments, and over Tourism projects creates consequences like (ref. 52 p. 150), many individual Tourism projects start and finish without licences, yet they manage to be licenced later. The lack of a comprehensive map for the economical, agricultural, industrial and geographical resources for Egypt encourages the start of more unlicenced projects.

4- Co-operation and communication to exchange data and information between the tourism sector and other sectors (which provide services) are missing. Information (published or written) about the activities of other sectors, and people in charge, there are not available. Meetings to plan for mutual work are very rare too (ref. 59 p. 3).

5- The effect of this lack of planning and of studies of marketing requirements in the hotel industry is represnted in the unnecessary increase of hotel capacity in Egypt within the last five years (ref. 54 pp. 75-79). The result is that hotel capacity in Cairo at the present time is sufficient until the year 2000. The following figure shows the ratio of increase in hotel capacity compared with what was planned until 1985 (ref. 55 pp. 2-4).

Figure (9.3) the expected increase in the hotel capacity percentage in the hotel industry of Egypt by 1985
 source : ref. 55 pp. 2-4



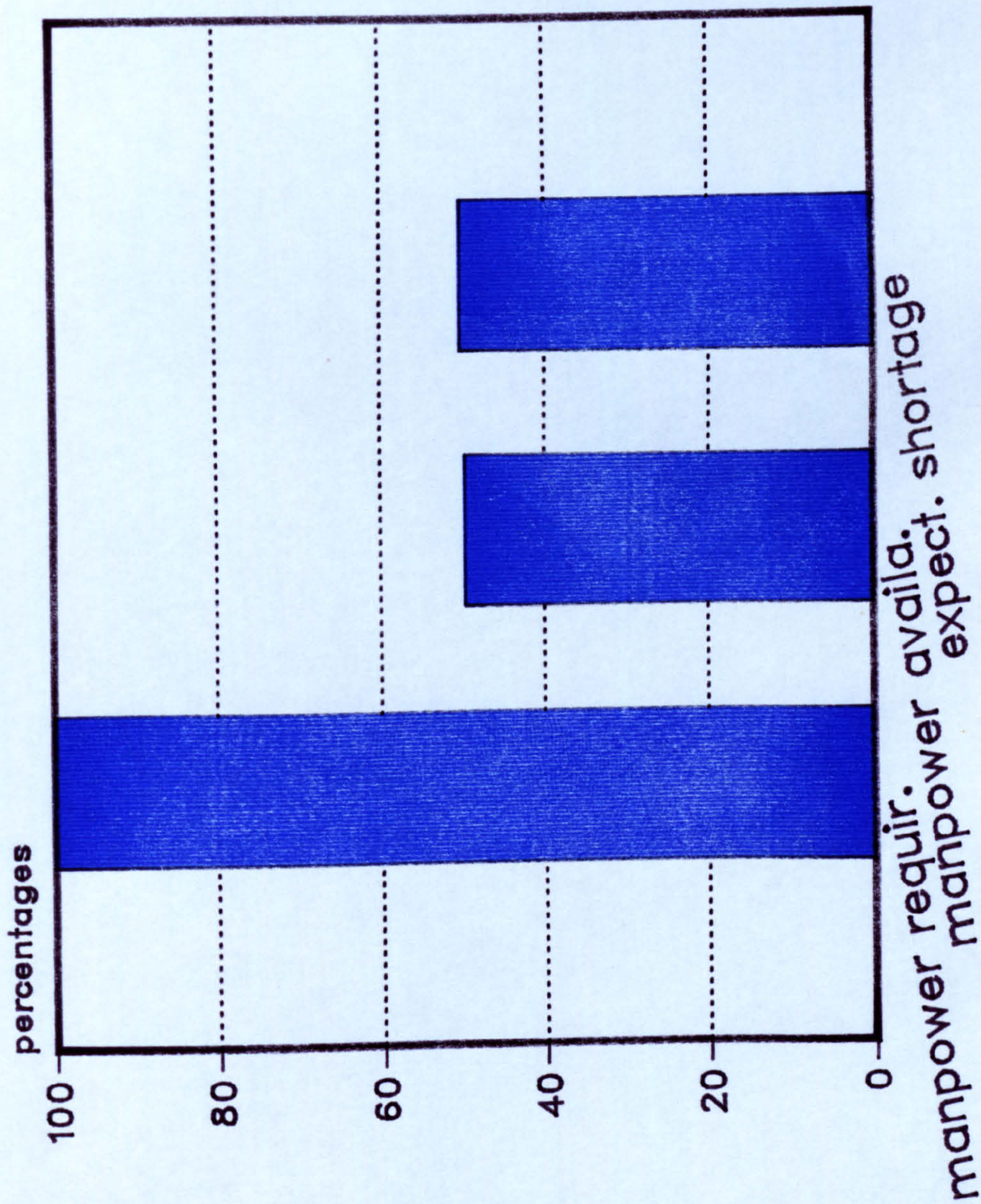
6- A lack of manpower planning influences the supply of the needs of the hotel industry. The analysis of data of present and expected manpower required in the hotel industry reveals that over 50 percent of the required manpower is not available (ref. 60 p. 8). The enclosed figure shows the gap between the required against expected manpower that was supposed to be available until 1985. There is a shortage in the management and hotelier staff and their assistants in most departments except for the front desk, accounting, maintenance, laundry and the unskilled labour in general. Staff for internal control, restaurants and bars represent the highest percentages of the unavailable hotel manpower in 1985.

The other question is what is the effect of having this sort of poor planning and co-ordination upon the information systems in organisations?. The answer is the lack of an effective communication or important data (information) which are necessary to satisfy work needs. We shall give examples and reasons for this conjecture in the following pages.

9.2.2 Organisation Structure and Forms of Communication

In chapter 7 the test results proved that there is a slight difference between British and Egyptian hotels in terms of communication means, forms and skills (abilities) used. But this difference does not prove to be significant. To find out why these differences are there, we study the structure of the organisation of the tourism sector which supervises and controls the hotel industry. We also study the organisation structures of some of the public sector hotels. An investigation of the kind of organisation structure which dominates actually in work, will identify the forms of communication (formal or

Figure (9.4) the expected decrease in the manpower requirements available to the hotel industry in Egypt by the 1985
source : ref. 60 p.8



informal) which are practised. The investigation will be based on the assumption that the kind of organisation structure which is actually in work determines the forms of communication used, which consequently determine, to some degree, the kind of information systems used. The study highlights some characteristics of the structures of the organisations in Egypt as follows (ref. 51 pp. 188-189):

1- In organisation theory, goals and strategies of a company determine the organisation structure, which consequently determines the detailed functional structure, job descriptions, wages and communications. In the private sector companies, the market needs and shares determine the structure of the organisation great deal and employment legislation has little influence over the organisation structure which are usually decentrally managed.

2- In Egypt, especially in public sector and governmental organisations, neither goals or market needs determine the organisation structure nor its development. The employment laws are centrally issued and applied without any distinction in terms of size, activities, responsibilities from one organisation to another. The result is a formal organisation structure, with functions and responsibilities, in some companies, which are used only on official records but not in the actual work life (ref. 62 pp. 2-9).

3- The Communication and information systems, which are required for actual work life, flow in another informal structure.

4- The study of the organisation structure of the tourism sector in general and of public sector hotels in detail, shows that there are two kinds of structures. One is formal in records but not used and the other is informal but applied in practice. Some examples are provided below:

a - Some departments have been created by laws, while others without.

b - In the same organisation, some responsibilities are carried out by different departments at the same time. For example, activities of collecting data, doing research, pricing, are carried out by both the planning department and the control department at the same time.

c - The department of statistical and research studies is mainly interested in carrying out individual studies which satisfy personnel needs more than marketing needs. The duplication and multiplicity of the data collectors cause much delay and changes in the data received.

d - The most common structure used in organisations or inside in departments is the informal organisation structure which usually brings the staff to work as a team in order to cope with the work needs (in terms of quantity and quality). The lack of communication with other departments or external organisations, the disqualification of some of the staff, and the bureaucratic procedures are the main reasons to move from a formal organisation structure to an informal one. The following figures explain the difference between the two kinds of structures.

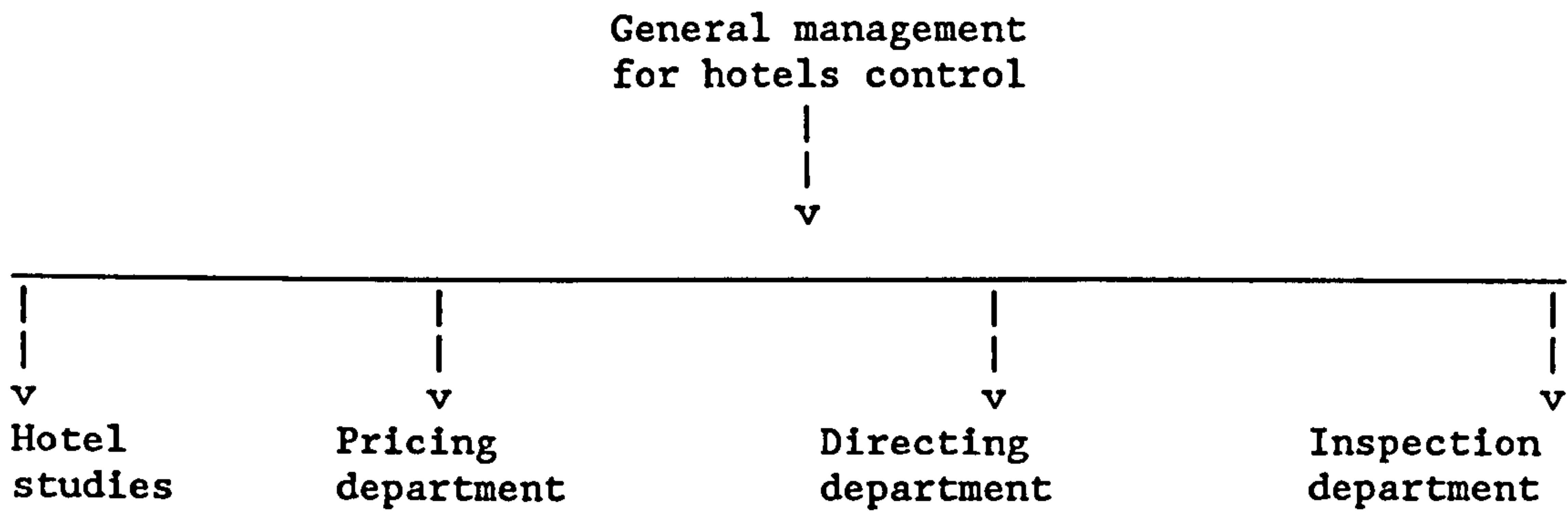


Figure (9.5) Formal organisation structure of the General management for hotel control

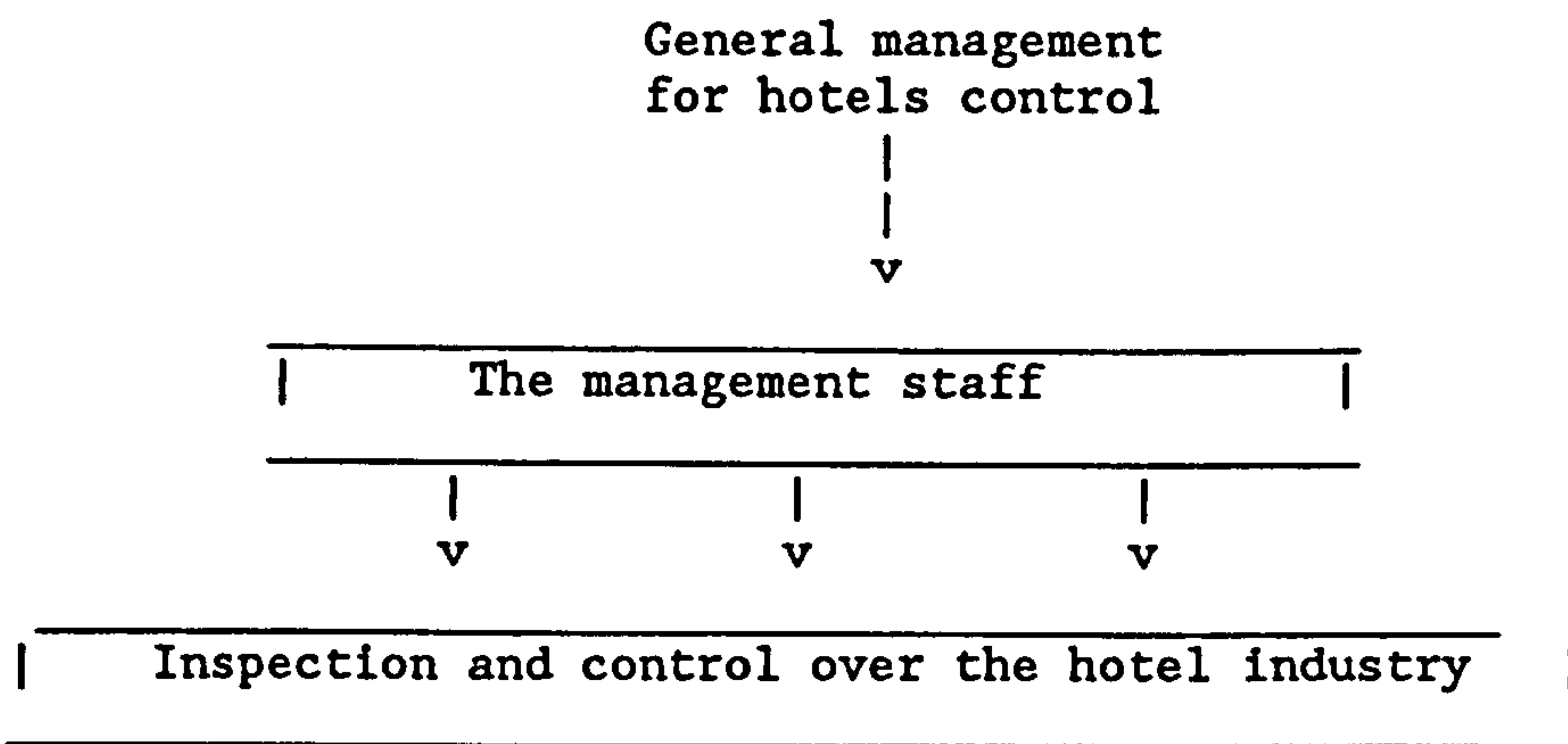


Figure (9.5.1) Actual "informal" organisation structure of the General management for hotels control

Source : (ref. 52 p. 174)

Senior manager for
research and statistical
studies

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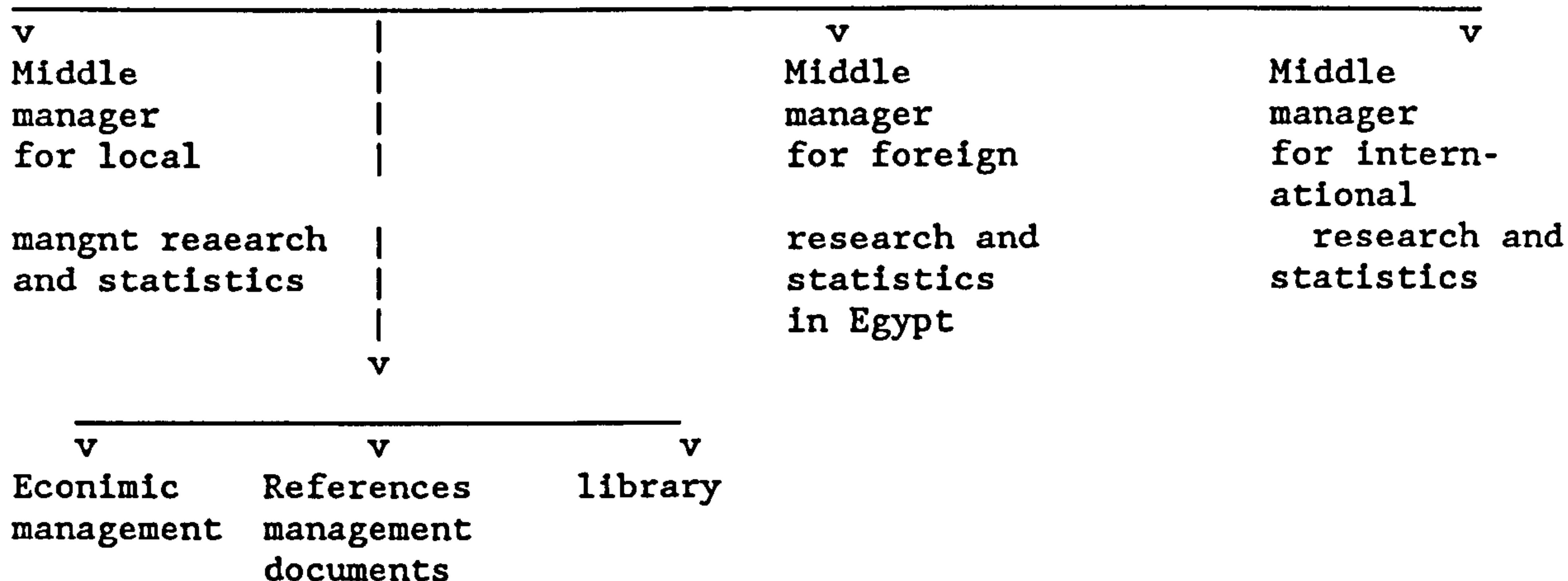


Figure (9.6) Formal organisation structure for research and statistical studies department

Senior manager for
research and statistical
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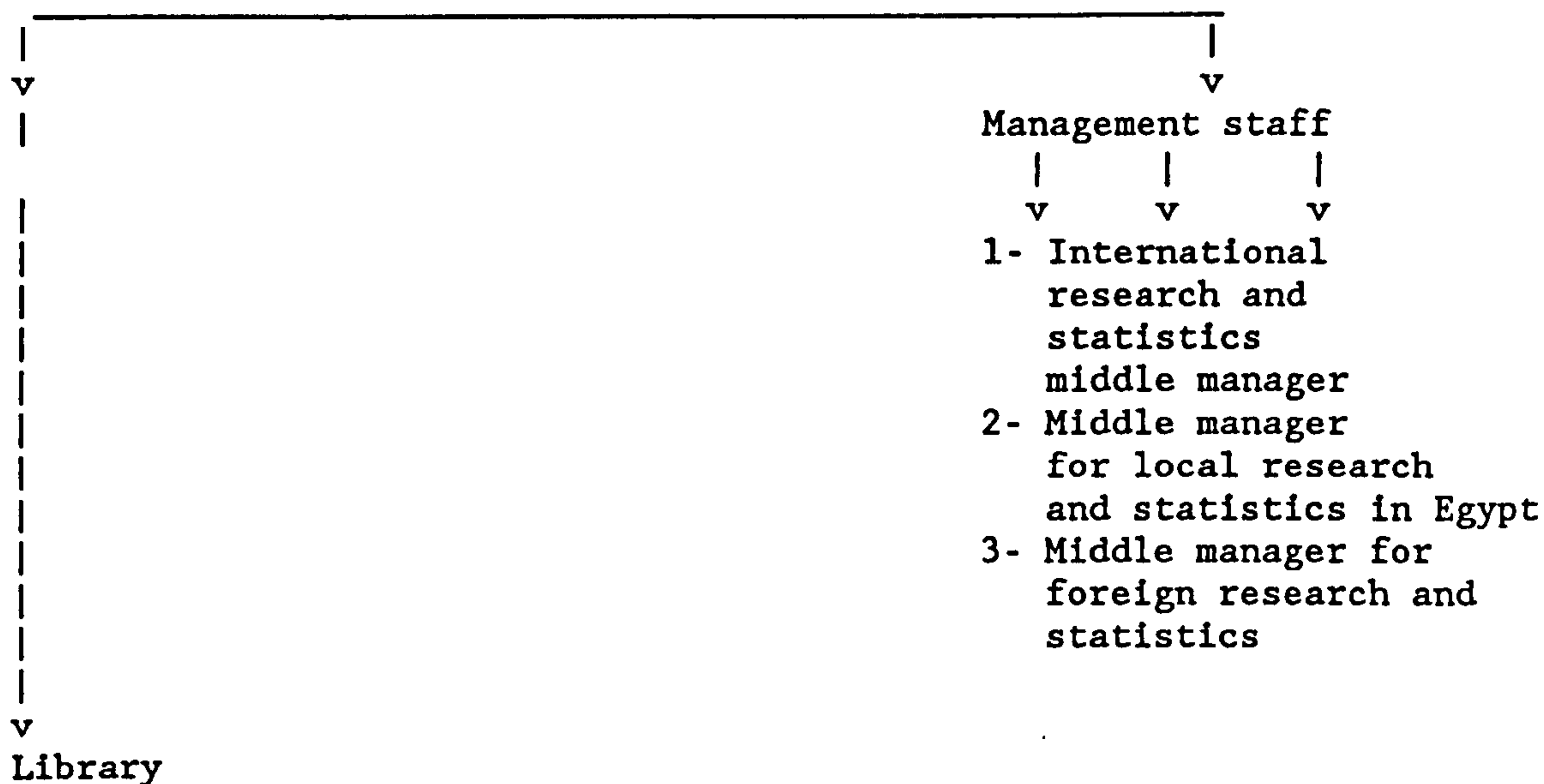


Figure (9.7) Actual "informal" organisation structure for research and statistic studies department

Source : ref. 52 p. 160

9.2.3 The Organisation Maturity and the Quality of the Available Information

The test results in chapter 6 indicated that there is a significant difference between British and Egyptian hotels in the use of information received by managers. The reasons for not using the received information, which also proved to be different in each country, were related to the quality and quantity of that information. An investigation into the influence of the organisation characteristics upon the availability of important information was carried out in the tourism sector and public sector hotels in Egypt. The investigation was based on the assumptions that the success of the used information systems would be determined by the maturity of the organisation. Absence of formal organisation structure and job descriptions, work load and task importance, poor communication facilities and the invalidity of the information protection law, are some of these organisation characteristics. Some examples are given below (ref.52 pp. 215-220):

1- At top management levels (head of departments), the percentage of unavailable important data is higher than at lower levels, simply because they have more responsibilities, important tasks to do and decisions to make. All of which rely mainly on information (i.e. departments of control).

2- At lower management levels, the percentage of unavailable important data is less because they do not depend so much on information to do their work (i.e. department of local Tourism).

3- The absence of both formal organisation structure and formal job descriptions causes confusion among staff about what they are supposed to do, and what quality and quantity of information they should use. For example control tasks, especially for hotels and

tourist shops, are not clearly identified and they are not carried out by staff of control departments. The lack of sufficient data is the main excuse or complaint for unsuccessful work.

4- The location of a department and the manner in which its activities are done affect data availability. The percentage of unavailable important data (information) is much higher in departments which are responsible for external tourism and advertisement than in local tourism departments.

5- The lack of compulsory law to provide the data required, and the inefficient means of communication with external Bureaux and Agents are the main reasons for the receipt of unnecessary data.

6- The shortage of qualified staff for collecting external data (especially from foreign bureaux) and of facilities provided are the main reasons.

The following figure shows reasons behind information unavailability according to reasons of priority.

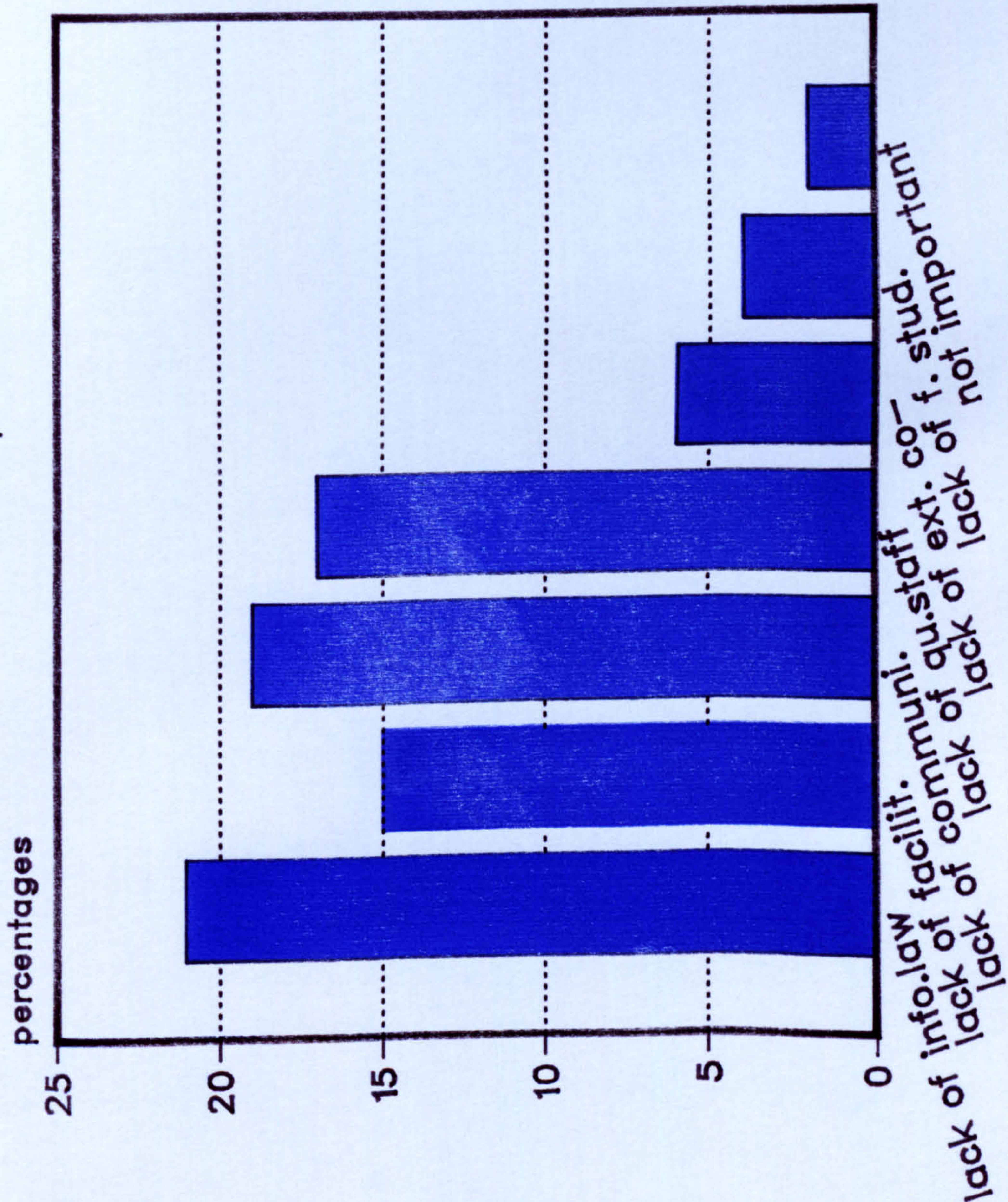
9.3 Structure of Management Styles Practised in Egyptian Hotel Industry

There are many styles of management used in running hotels, simply because there are different hotel companies which use different management policies in the hotel market.

Management style is concerned with techniques and management thinking which influence the ways of running hotels. A hotel's special characteristics, its system needs and its success in the hotel market are mirrors which reflect a hotel's management style.

The management styles adopted by different companies in hotel market often reflect the latest development in management school of philosophy. These would include "Scientific Management", "Human Relations",

Figure (9.8) reasons for the unavailability of the important data required by the managers in the tourism sector of Egypt
 source : ref. 52 p. 220



and "Management by Objectives". The following are the special characteristics of the hotel industry in Egypt in terms of management styles and system needs (ref. 63):

1- There are two types of hotel management staff that run Egyptian hotels, Egyptian managers and foreign managers.

2- There are many management styles adopted and practised in the Egyptian hotel market: the American, French, Indian, Swiss, and Egyptian styles. Each style has its characteristics and effects on the hotel's success.

3- The American management style is represented by both the International Hilton Company in Egypt (which runs two Hilton hotels) and the International Sheraton Company (which runs three Sheraton hotels). The main characteristics of the management styles of these American companies are "Decentralisation", and "Human Relations". The main technique of control which is used is "Estimated Budgetary Control Systems".

4- The French management style is represented in Egypt by Meridian Hotels Company, which runs Meridian hotel in Cairo. The French management style has obtained most of its characteristics from the Americans, simply because most of the staff in the Meridian hotel in Cairo originally came from hotels that used American style (for example, they were working in Hilton hotels in Egypt before). The influence of the American style of management is not only in Egypt, but, as B. L. Baggett recognises (ref. 64 pp.2-4), it is all over Europe. European hotel companies, trying to compete in the international hotel market, adopt American management techniques because they are successful.

5- The Indian management style is represented in Egypt by the O Bray

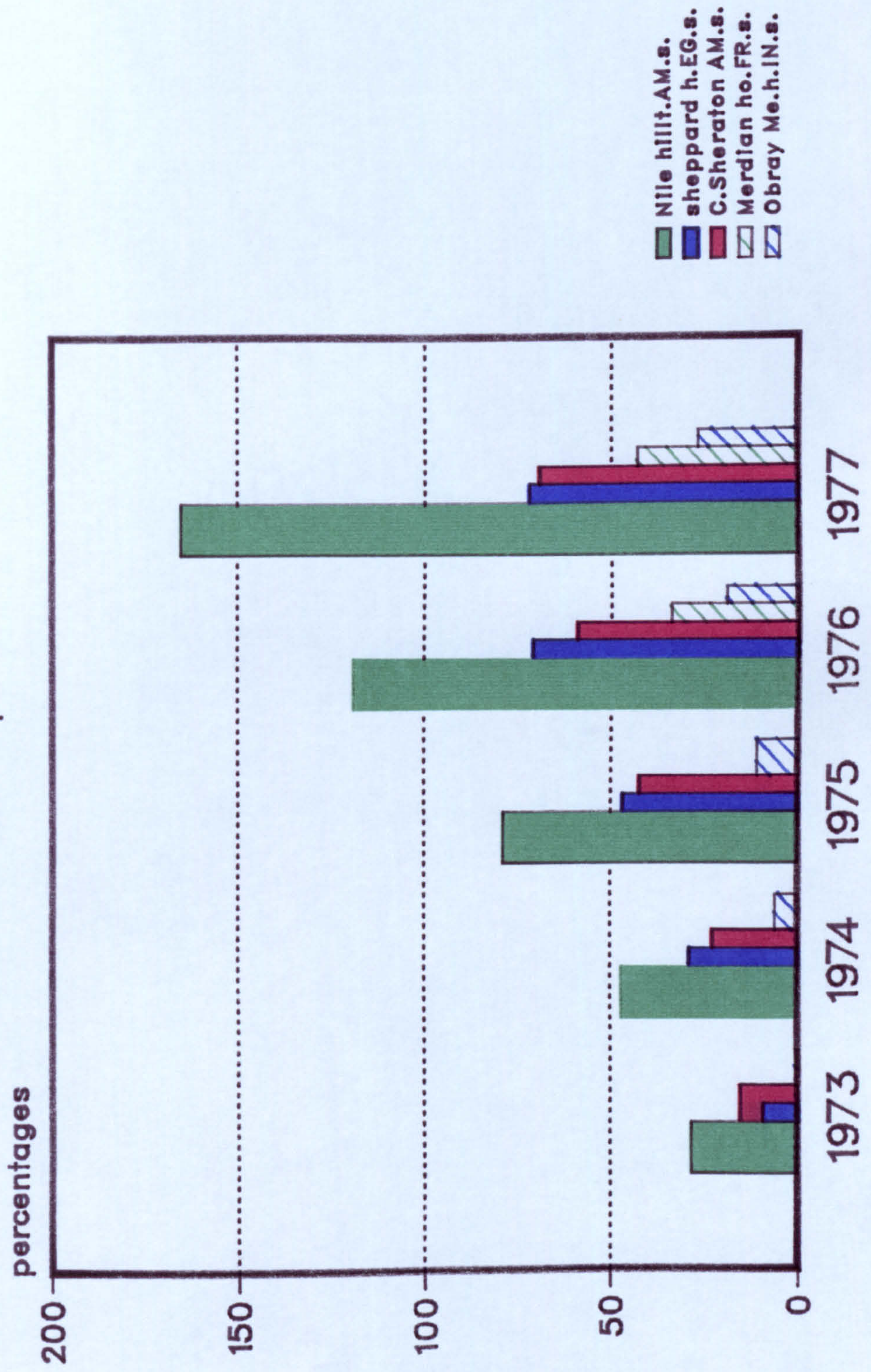
Hotel Company, which runs two hotels one in Cairo and the other in Aswan. The Indian style also receives some advantage from the American techniques, if only by using "Estimated Budgets" for control.

6- The Swiss management style is represented by the Egyptian Swiss Company for Motels, which runs Jolie hotels. Scientific Management, Budgetary Control Systems and continuous plans for training are the main American techniques used by the Swiss style in Egypt. The difference between the American style of management and other styles which adopt some of the American techniques is represented in the other special characteristics of each style which play important part to attract the hotel customers, and for which each management style has to keep it and to make sure that they are there. Hotel image, guest facilities, prices..etc, are some examples of these characteristics.

7- In hotel industry in general, success in running or managing work is critical because the sum of money (capital) invested in fixed assets is almost 90 percent of the whole invested capital (Edwin B. Feldman ref. 65 p. 3). So in the hotel industry, the part played by hotel staff and their management style is important for that success. It is estimated that the productivity in the hotel industry was not more than 45 percent in 1960, against 80 percent in other industries. One explanation for that situation is given by Lattin (ref. 66 pp. 142-143) who argues that it is due to the recent introduction of modern management techniques into the hotel industry after the second half of the 20 century, compared with other industries.

8- Changes in tourism trends, moving from one area to another in the world, and from time to time, influence investment policy in the

Figure (9.9) the percentage of the investment return achieved by hotels of different management styles in Egypt between 1973-1977
 source : ref. 63 p. 287



hotel industry, where the principal financial objective is to earn sufficient profits to cover capital investment in the shortest possible time to avoid risk. For example, during 1967-74, tourism market moved away from Egypt because of the Middle East war. The same happened in South Asia because of the Vietnam war (ref. 67 p. 57). Considering the above facts, management style has a major effect on productivity and success. In addition, there is a difficulty in forecasting because of the continuous changes in the economic, Social and Political environment in the hotel market. As a result, professional hotel management is essential (ref. 68 pp. 55- 58).

9- A study by Bassuny (ref. 63 pp. 9-8) to investigate the association between hotel management style and hotel productivity and success in the Egyptian hotel market, showed the following results:

a- The percentage of investment return (profits) was different between one hotel company and another depending on different management style.

b- A past analysis of hotels which changed their management styles proved that they achieved different percentages of investment return (profits) thereafter.

c- The employment of foreign management staff to run Egyptian hotels seemed to improve the percentages of investment return, because of their different styles of management. An investigation of the reasons behind that change showed that they (foreign staff) are keen to make full use of available resources and to reduce the costs of services provided.

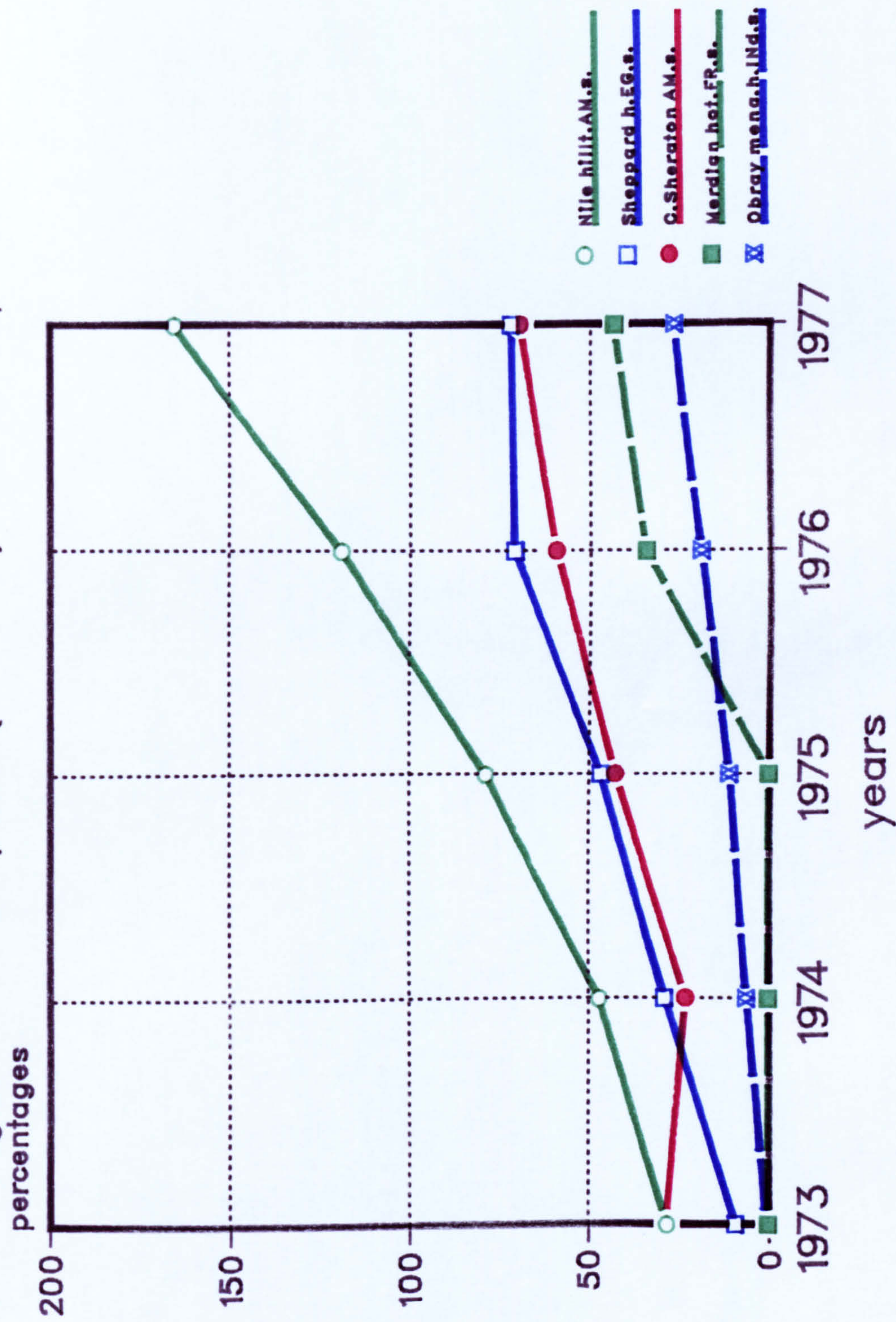
d- Some examples (in figures) to show the results mentioned above are given below (ref. 63 pp. 421- 423):

1- Hotels which use the American management style (Hilton and Sheraton hotels) respectively achieved investment returns of 28 percent and 15.5 percent against losses in hotels which were owned by Egyptian companies, although a percentage investment return of 9.3 was achieved in one hotel of an Egyptian company (Sheppered hotel) which is equal to about one third of the investment return average of the Hilton company.

2- The contribution to the Egyptian National Economy of hotels adopting the American style, in terms of investment net profits, is double that of the Indian and Egyptian, while it is close to the contribution of the French.

3- The change in management staff and management style which took place in some Egyptian hotels (for example, by allowing the Oberay Indian Company to take over management and control of Menahouse Hotel, and by allowing an Egyptian company to take over management and control of Sheppered, Lower Egypt, Egypt For Hotels, and Towerhotel Companies) increased profits for the first (Menahouse hotel), and doubled profits for the second (Sheppered...), as shown in the following figure.

Figure (9.10) the percentage of the investment return achieved by hotels of different management styles in Egypt within 1973-1977
 source : budgets of hotel companies (1973-1977) from ref. 63 p. 287



9.3.1 Egyptian Management Style and the Hiring of Foreign Hotel Staff

The Swiss style of management was used in running hotels in Egypt until 1959. The Swiss style was the one which dominated hotels all over the world until the American style (chain hotels) started in 1950.

The Foreign management style started in Egypt after the Hilton Hotels Company contracted to run the Nile Hilton in Cairo in 1954. Later on, the American company was replaced by an Egyptian company. By 1958, Egyptian government decided to make every foreign company Egyptian (Nationalisation). The Egyptian management style was there based upon an English company (Egypt Hotels Company Ltd) which was allowed to continue under the name of Shepperd and Egypt hotels.

By 1961 the government nationalised most industries owned or run by foreign companies. A process of reorganisation and restructuring of the hotel industry resulted in four big Egyptian hotel companies. These companies formed the structure of public sector hotels in Egypt from 1961 until 1976. In 1976, these four companies were joined together to form one big company called "Egyptian Hotels Company", which represents the pure Egyptian style of management in running Egyptian hotels .

On the other hand the foreign management styles (American, French, Indian and Swiss) represented by foreign companies continued to operate but under the Egyptian company called "EGOT". The only exception was the Hilton Hotel Company which joined the other public sector hotels under one company which had been established by 1961.

The growth of international hotel companies and dependance on foreign staff to run hotels first started in 1960 (ref. 69) and has spread all over the world. In Egypt many reasons were behind this attitude:

- 1- Instability in the Middle East during 1960-1970 affected very

much the tourism market. Operating existing hotels was unprofitable. In return , the success of the American style and the ability of big international hotel companies to do marketing all over the world through their chain hotels, helped to increase occupancy. All these considerations encouraged more contacts with both foreign companies and foreign management staff.

2- Instability of the political situation in Egypt especially after 1961 and nationalisation of foreign industries. This forced many employees either to leave or join other companies in the neighbouring Arab countries. The problem was that they were replaced by unprofessional hotel staff which caused a lot of damage to the Egyptian hotel style of management. Some of these staff were brought from the army and others from governmental offices, where they influenced the hotel industry with routine and bureaucratic methods which they used to practise before.

3- Development in both marketing concepts and management science in the hotel industry. Where traditional hotel services changed, not only personal experiences but also management science became required in running hotels. Chain hotels spread all over the world, simply because small hotels wanted to take advantage of advanced marketing services provided in big hotel companies.

4- Finally, the development in machines and the use of computers in the hotel industry, where there is an increased realization of the importance of having effective information systems to control rooms, foods and drink services. They were important too in studying customer and guest histories to plan for the future, together with their ability to carry out accounting, and financial work to control hotel clerical functions, thus saving time and providing accuracy in

making hotel decisions.

Out of the above explanation we can identify the Egyptian management style as a style which combines some of the past experience of the British and the Swiss management styles, where they dominated the Egyptian hotel market in the past, and the governmental style of management represented in the public sector style of management. The American style is the only one which lasted from the past until now represented in the Nile Helton hotel supervised by the public sector hotel in Egypt.

9.3.2 The Influence of Management Style Over the Hotel Marketing Decisions Process

The study of hotel decisions and information needs in chapter 8 highlighted some differences between British and Egyptian hotels. In Egypt it was shown that private sector hotels are different from public sector hotels in terms of manager decisions and information system needs. An investigation of the influence of management style upon marketing decisions in both private sector hotels (which are mainly run by foreign hotel companies) and public sector (which are run by an Egyptian hotel company) is carried out.

The investigation is based on the assumption that hotel management style determines both structure and decisions of marketing and planning functions in hotels. System needs and problem faced in hotels are different according to the management style used there.

A comparison between public sector hotels and private sector hotels (foreign management hotels only) is done to test the above assumption. Marketing and planning functions, decisions, system needs and management problems are subjects of this investigation (ref. 70 pp. 231-285):

1- How far do Marketing and Sales departments exist in Egyptian hotels?.

a- In public sector hotels, there are no departments for marketing or sales, although there is a central marketing department in Cairo that belongs to the Egyptian hotels company which runs all public sector hotels.

b- In the private sector hotels (foreign management hotels), there is a department for sales in each hotel. In addition, there is a central marketing department in Cairo that belongs to a foreign management company abroad.

2- How far do Market Research departments exist in Egyptian hotels?.

a- There are no market research departments in any of either the private or public sector hotels.

b- In foreign management hotels, market research is conducted, but without a department in the hotel organisation structure.

3- What organisational levels are marketing and sales functions practised in the hotel organisation structure?.

a- In public sector hotels, the General Manager and his Senior Managers do this job, as an extra responsibilities.

b- In private sector hotels (foreign management hotels), marketing and sales departments are supervised in two ways, firstly by the hotel General Manager from the point view of management and implementation, and secondly by Central Sales department outside the hotel (in Cairo), both technically and functionally.

4- What are the marketing and sales policies adopted in Egyptian hotels?.

a- In public sector hotels, the central department for marketing and sales in the Egyptian hotels company centrally determines reservations, prices, investment and communication policies. In addition, hotel studies, work manuals and customer guides are designed

by the company. Management by production is the present objective of public sector hotels and their strategic (future) objective is to change to management by sales.

b- In foreign management hotels, the following tasks are usually done by central department for marketing and sales: planning and evaluation for sales, promotion, sales analysis and evaluation, prices and products planning. Management by sales is the present objective for foreign management hotels and their strategic (future) objective is to change to management by marketing.

5- The Decision Making Process in the Hotel Product Planning

a- Product planning is mainly concerned with strategic decisions which determine product mix, by launching a new product, changing the variety of available products or developing their present uses.

b- In general, the management company (which runs or owns Egyptian hotels) is the only one which has authority to plan for hotel products, based on the company's philosophy and policy, whilst the hotel managers make daily variety operating decisions and carry out other daily routine managerial work.

c- Management in both the company and in the hotels work together in making investment decisions for launching new products or services, and this is applied in both the public sector and foreign management hotels.

d- Only in foreign management hotels does the sales department take part in product planning, by providing the general manager and his senior managers with necessary data, information, suggestions, and opinions and comments of both Tourists and tourism companies. Public sector hotels do not obtain such facts because they have no internal sales department.

e- Hotel statistics indicate that there is an association between

success and how much hotels spend on product planning. The more they spend The more they develop their products (ref. 71 p. 225).

f- In public sector hotels approval of both company and Ministry of Tourism is necessary before making any investment decision by the hotel management. Full details must be provided to generate a budget for implementation. An investigation by all departments of both the company and the Ministry of Tourism is usually carried out, which takes an unnecessarily long time and is a bureaucratic process.

6- Future Plans to Develop Hotel Service

a- Future plans to develop hotel service are mainly concerned with replacement , facilities renewal (equipment, furniture, construction) and estimated financial budget.

b- In public sector hotels written plans for replacement and renewal, are unavailable for the majority of hotel managers. The minority of them who claim to have written plans for both replacement and renewal, complain that the very limited budgets available do not help much to achieve what is planned.

c- On the other hand written plans are available in foreign management hotels and continous checks for maintenance are carried out to examine competition in international markets.

d- Customer studies, as a source of marketing information to plan for developing hotel services, are not used regularly in public sector hotels. The overloaded responsibilities of the hotel manager and his seniors, due to not having a department for sales and marketing, do not allow them to do such regular studies.

7- Strategic Decisions to Develop Hotel Products

a- On the local level (hotel local demands), constraints of product variety are different between public sector hotels and foreign management hotels. Equality of treatment in terms of imports is heavily demanded by public sector hotels, in order to be able to compete with foreign management hotels, which have this advantage. While providing customer entertainment facilities, business communication facilities are top priority for foreign management hotels.

b- On the national level, constraints of product variety are also different. Using computers for reservations in public sector hotel chains, good timing of replacement and financial supplies, qualified staff, work free (apart from the public sector) in the hotel market, are top priorities for public sector hotels. On the other hand, greater freedom to work in tourism market, some reductions in both national import customs and posting control and highly qualified staff are the characteristics of foreign management hotels. Both kinds of hotel jointly demand more modern development in main service equipments, techniques, and fast communication facilities.

c- In public sector hotels, the lack of using market research and product planning techniques, leaves hotels unable to make any strategic decisions about the quality and variety of services they offer. As a result, they rely mainly on tourism companies to do this job, for example to design more tourism programs, to provide transportation for customers, to attract Conferences, Exhibitions and parties (especially in the non-tourism seasons) . In foreign management hotels, these tourism companies do a similar job, but through the hotel receptions.

8- Hotels Problem and the Influence of the Managerial and Economic Environment

a- The Egyptian economic policy (open door economic policy) has affected pricing and non-pricing competition between hotels. Public sector hotels can take advantage of the pricing competition but not of the non-pricing competition, which foreign management hotels usually take. Pricing competition is concerned with the quality of services offered. It's prevalent in public sector hotels because they have been in the Egyptian hotel market longer than foreign management hotels and so their assets cost is Zero now. On the other hand, the more freedom foreign management hotels enjoy (due to not being a part of public sector or governmental systems) the better the services they provide.

b- The influence of the above environmental elements and the increase in Egyptian hotel capacity over the last five years have helped to change the nature of the hotel market. Both kinds of hotels (public sector and foreign management hotels) need to change their philosophy from management by production or management by sales to management by marketing, to be able to cope with the latest economic changes.

c- The main problems which face hotel managers, related to improving the quality of services and the average of room occupancies, are different in public sector hotels from foreign management hotels. Bureaucratic routines in public sector hotels are their main concerns, whilst bureaucratic routines when dealing with governmental offices (for example when paying customs, or collecting a regular share of the supply of food and drink) represent much concern for foreign management hotels. Both kinds of hotels face the same problems resulting from shortage of qualified and trained hotel staff available in Egypt, which is more serious in public sector hotels, because low wages force even the available qualified staff to leave.

9- The following figures explain control and communication between

hotels, their hotel companies and the Ministry of Tourism in Egypt.

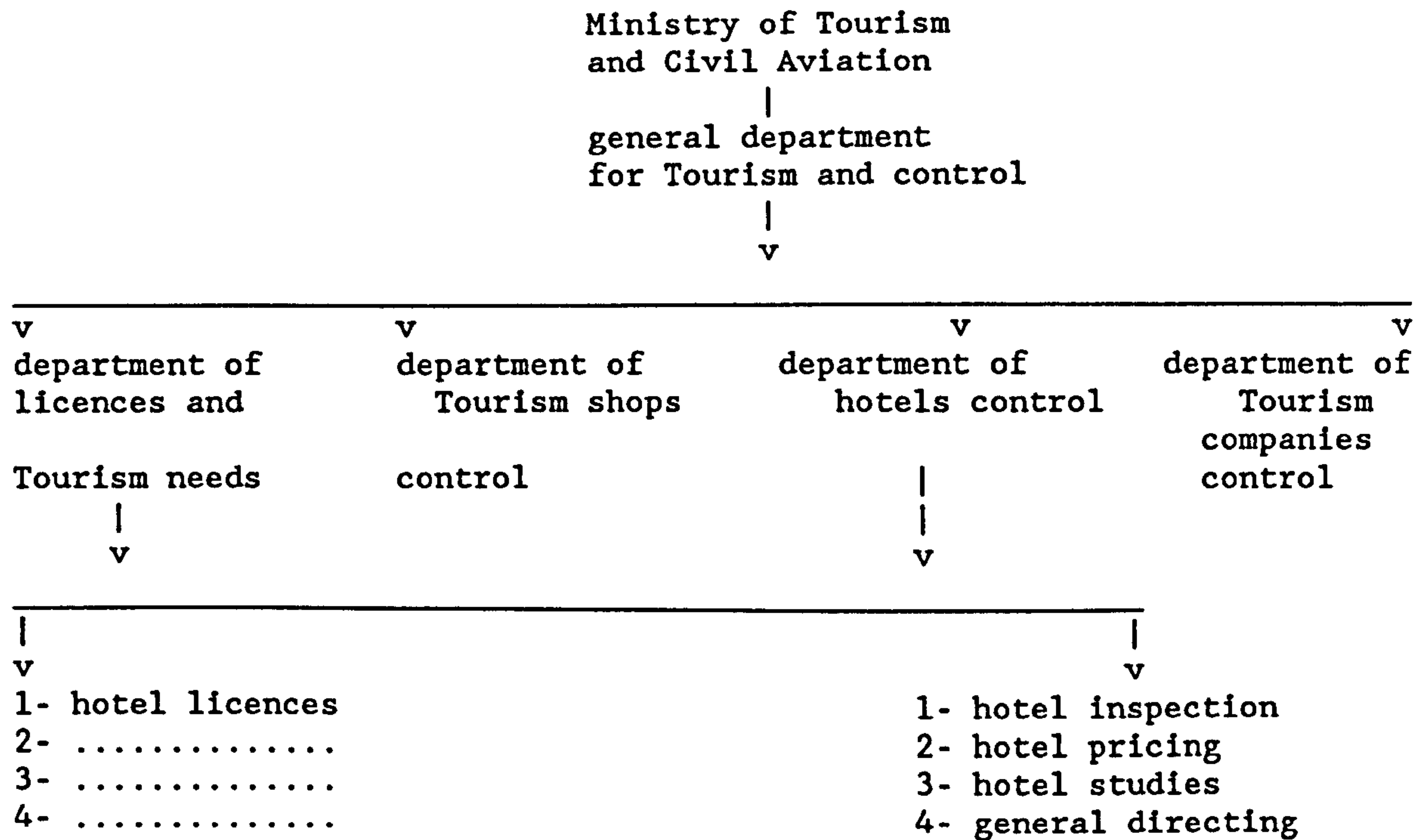


FiGure (9.11) Organisaton structure for the General Department of Tourism and Hotel Control in Egypt
Source : (ref. 52 p. 171)

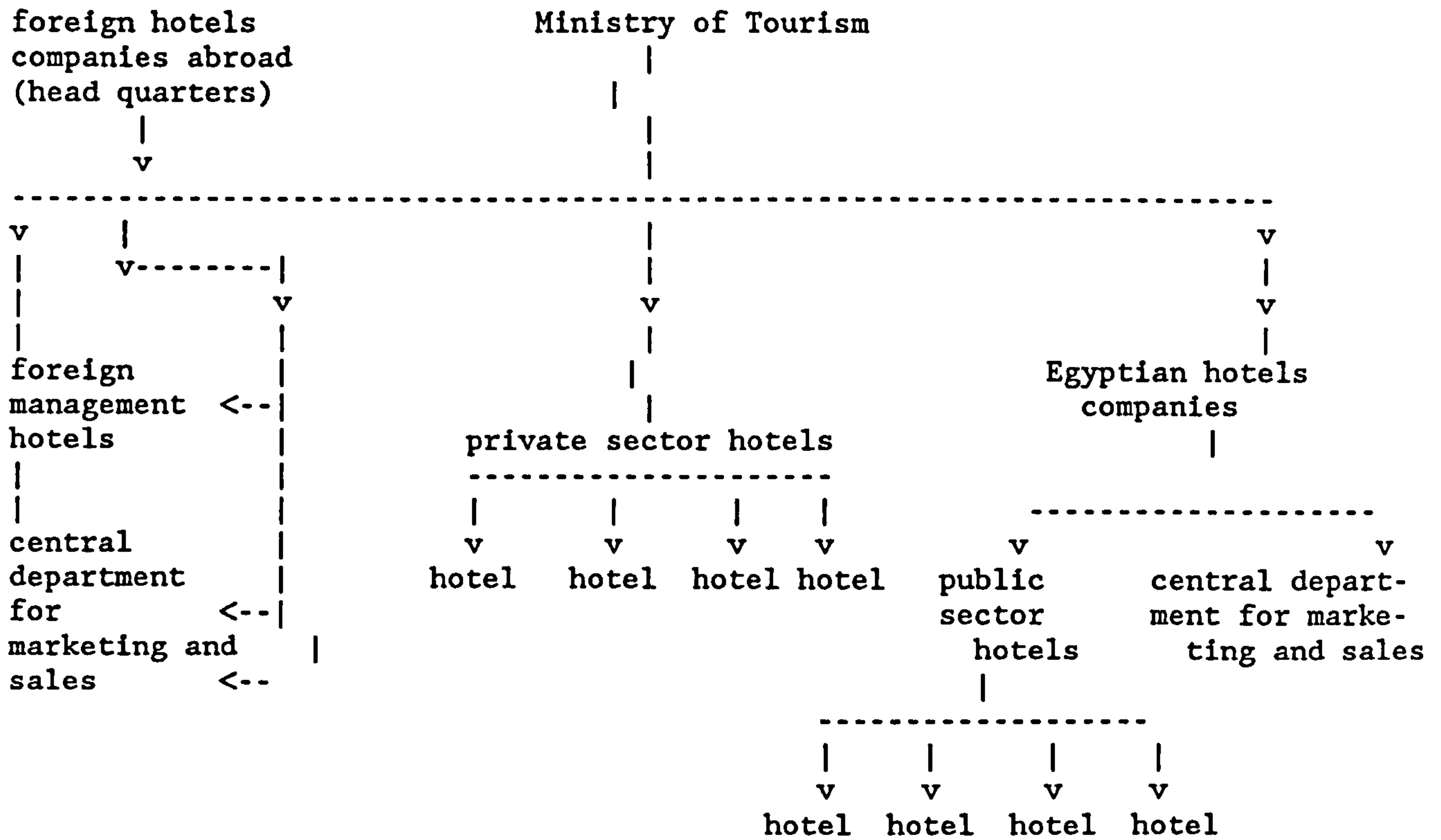


Figure (9.12) The structure of the hotel market in Egypt (directions of control and communications)

9.4 Evaluation of Information Systems Concepts and Computerisation In Egyptian Industries

Mason and Mitroff (ref.72) In their article "a Program for Research on MIS", propose that an information system consists of at least one person of a specific psychological type who faces a problem within some organisational context for which he needs some evidence to arrive at a solution, and the evidence is made available to him through some mode of presentation. They accordingly identify two aspects of this organisational context (firm structure, working people) but they do not include the environmental aspects.

Here we will try to identify the variables of the environmental context, which affect success and failure of MIS in the hotel industry of Egypt. We divide these variables into three categories

(uncontrollable, partly controllable and controllable variables). Current knowledge on each kind of variable and interaction between them will be surveyed, also propositions are stated as a basis for further research, as follows:

1- Concepts of both system and information systems are not clearly understandable to managers in the Egyptian hotel industry. The following are some examples of hotel managers' answers when they were asked about these concepts (ref. 73, 74):

a- Information systems concept is to have computers.

b- Our main problem is to allocate the staff we have in public sector hotels, more than to care about developing (improving) work by introducing information systems.

c- Unclassified files are there on the departments' floor.

d- Even if we introduced information systems (computers) there is no guarantee that maintenance of systems will be easily available.

e- We do not trust the accuracy of data with which we are provided.

f- We need to get rid of all restrictions we face whilst collecting data, before we think about introducing information systems.

g- The same collected data is different from one source to another, which cause a lot of confusion while using it.

10- Social characteristics and the environmental culture of an individual's private life usually influence the individual's style of work. These are some examples:

a- Attitudes and satisfaction of managers are determined by some factors like family life, Geographical location, background education, job qualifications.

b- In a society where there is a high percentage of illiteracy, personal connections are more usable in solving problems than adopting scientific methods.

c- The contribution of the manpower supplied to the efficiency of work is limited, due to their qualifications (in terms of quality and quantity). In a study about information systems in tourism sector in Egypt (ref. 51 p. 341), the results of a survey showed that 60 percent of the present working staff are women, 30 percent of working staff are either on leave or working in the neighbouring Arab countries, 20 percent of available staff are qualified by having a university business degree, while only 5 percent are qualified by having a hotel and tourism university degree. 55 percent of working staff are qualified by having a university social studies degree. Considering that training facilities are not sufficiently provided, this affects the work efficiency.

d- Change resistance and low wage criticisms are common and represent obstacles against improving work style.

11- Success or failure of information systems is determined by controllable and uncontrollable variables, and the uncontrollable variables will continue for some time to come. Here are some examples of both kinds:

a- Systems concepts, attitudes, individual work style and manpower replanning are controllable variables, for which careful training programmes can do a great deal.

b- Job and wage satisfaction, work facilities and attitudes against data collection and information secrecy are partly controllable variables, where major change in work systems of the

Civil Service in Egypt is required.

c- The following are some of the uncontrollable variables which influence information system success in the hotel and tourism sectors:

- (1) Lack of data required about local and international hotel markets.
- (2) Relating information needs to decision making and comparing cost with benefits when doing computer feasibility studies.
- (3) Lack of "systems" education which contributes both to the systems approach and to methods of interpretation.
- (4) Psychological climate which affects the seriousness and honesty of staff who are collecting data required as the result of restrictions faced.
- (5) Commercial (business) and personnel applications are common computer applications, due to lack of experts and experience. In a study about computer applications in production in 1976 (ref. 74) figures show that 89 percent, 9 percent, 51 percent and 41 percent of companies used computers for personnel, production planning, accounting, and other work respectively. On the other hand, the same study shows that service and commercial companies used computers for the same applications as follows: 59 percent, 68 percent, 55 percent respectively.

9.4.1 Computerisation in the Hotel Industry
Compared With Other Industries in Egypt

Usage of computers in Egypt nowadays is spread over many industries, whether they are governmental, public foundations, public sector or private sector industries. All statistics shown in this chapter do not include any data about the military, central intelligence, foreign Embassies nor any international organisation working in Egypt. According to latest statistics published in 1982, the following figure shows the number of computers used in large hotels in Egypt and in companies which produce the computers, as well as computers applications in private sector hotels.

hotel name	number of computers used	producer and model of computer used	hotel computer applications
1- Nile Hotel	2	N . C . R (499)	Hotel work and private service (commercial)
2- Cairo Sheraton	1	" "	Hotel work (commerc.)
3-Sheraton Hotel	1	" " " " "	
company			
4- Floating	1	" " " " "	
Hotels			
Sheraton			
company			
5-Merdian Hotel	1	" (500) " " "	
company			
6-Hilton Rammsis	2	I . B . M " " "	
Total	8		

Figure (9.13) Computer Applications in Private Sector
Hotels in Egypt

Source : ref. 76 p. 176

The analysis of the data of the above figure reveals the following:
1- The average number of computers used in hotels is one computer, except for hotels that belong to the Hilton hotels company, where

there are two computers.

2- The most common computer used is N.C.R.(499).

3- Typical computer applications in hotels are commercial hotel work. Only in the Nile Hilton hotel are there some applications for private services. But the question is where is the hotel industry, in terms of using computers, compared with other industries in Egypt?. The following figure shows the numbers of computers used in each industrial category.

Industrial category	Numbers of computers used	Percentage
Private sector companies	149 (including 8 computers in large hotels)	41.4 (5.4)
Public sector companies	92	25.6
Governmental sector	30	8.3
Public foundation sector	89	24.7
Total	360	100

Figure (9.14) Numbers of computers used in Egyptian industries according to 1982 statistics
Source : ref. 75 pp. 150-188

The analysis of the data in the above figure reveals that private sector companies are the major users of computers, while the governmental sector comes at the bottom of the list. Private sector (foreign management) hotels use only 5.4 percent of the total number of computers installed.

9.4.2 Commercial Applications of Computers in Egyptian Industries

If commercial work is the major computer application in the hotel industry in Egypt, what is the situation in other industries?. The following figure shows the kinds of computer programs used in Egyptian industries according to the 1982 data, using the working hour as a

statistic unit for comparison.

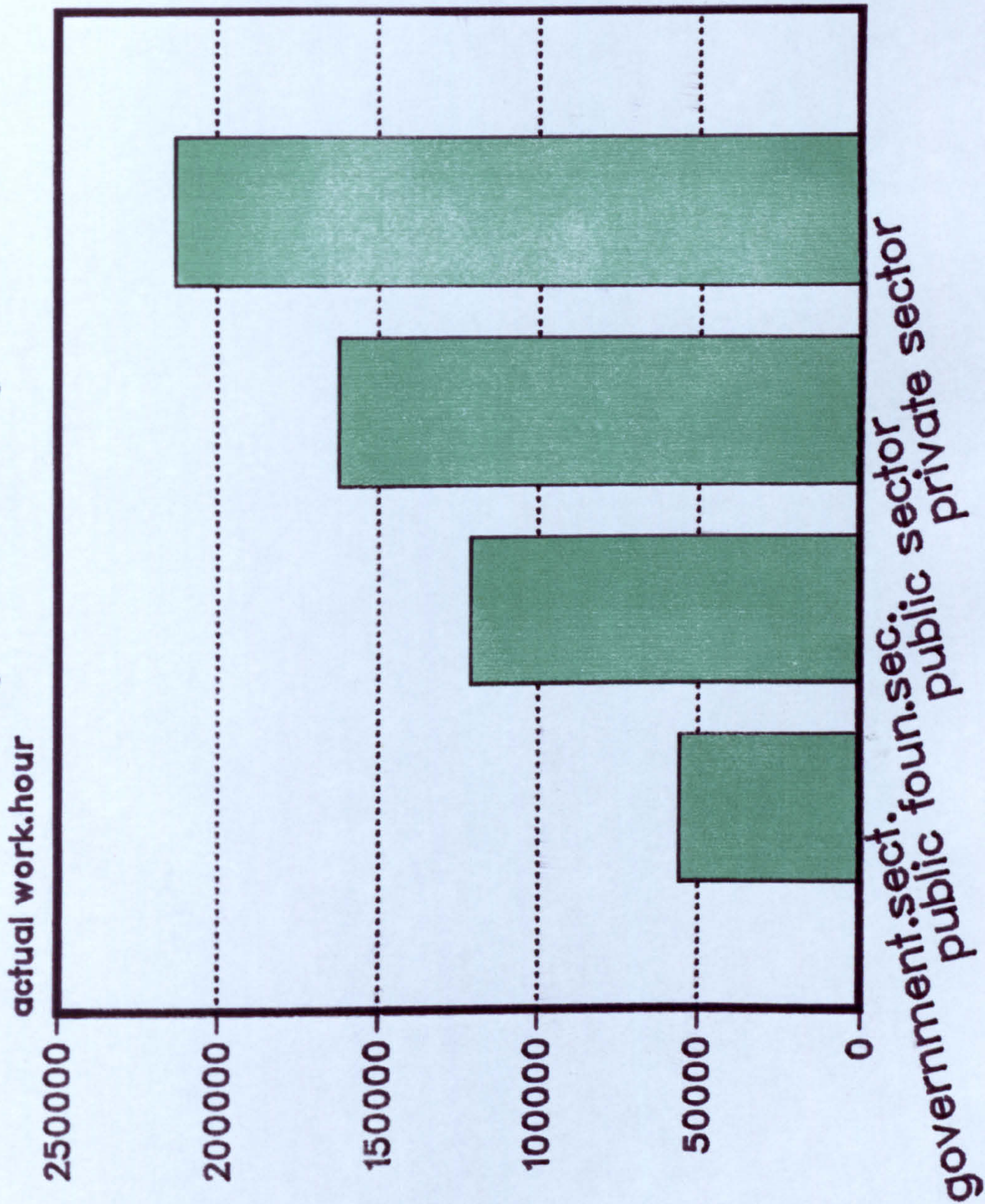
1982				
Total working hours of computer programs				
Industrial sector	Commercial programs	Scientific programs	Other statistic programs or special purposed programs	Total
Governmental sector	2875	3340	49549	55764
Public foundations sector	74145	31624	15362	121131
Public sector	134178	8240	19885	162303
Private sector	148333	13687	51139	213159
Total	359531	56891	135935	552357

Figure (9.15) Actual working hours of computer programs used in Egyptian industries in 1982

Source : ref. 75 p. 148

The analysis of the data in the above figure reveals that commercial computer programs are used six times more than scientific programs, and twice more than other statistic or special purpose programs. On the other hand, private sector companies are using computer programs four times more frequently than the governmental sector and almost twice more than both public foundations and public sector companies, as shown in the next figure.

Figure (9.16) a comparison between the commercial computer programs and the total computer programs used in the Egyptian Industries in 1982 using the total working hours



If commercial programs are the major computer applications in Egyptian industries , what sort of commercial applications take place?. The following figure shows the kinds of computer commercial applications using actual working hours of 1982 data.

Kinds of commercial computer applications used	Total actual working hours	Percentage
1- Wages and salaries	73254	20.4
2- Budget and financing accounts	109940	30.6
3- Stock control	47565	13.2
4- Costs, transportation cost, and expenditures	12473	3.5
5- Customers and agents accounts	23770	6.6
6- Fixed assets and fixed assets consumption	2776	0.77
7- Production and materials	12193	3.4
8- Sales accounting	14055	3.9
9- Income collections (bills and documents)	63505	17.7
Total	359031	100

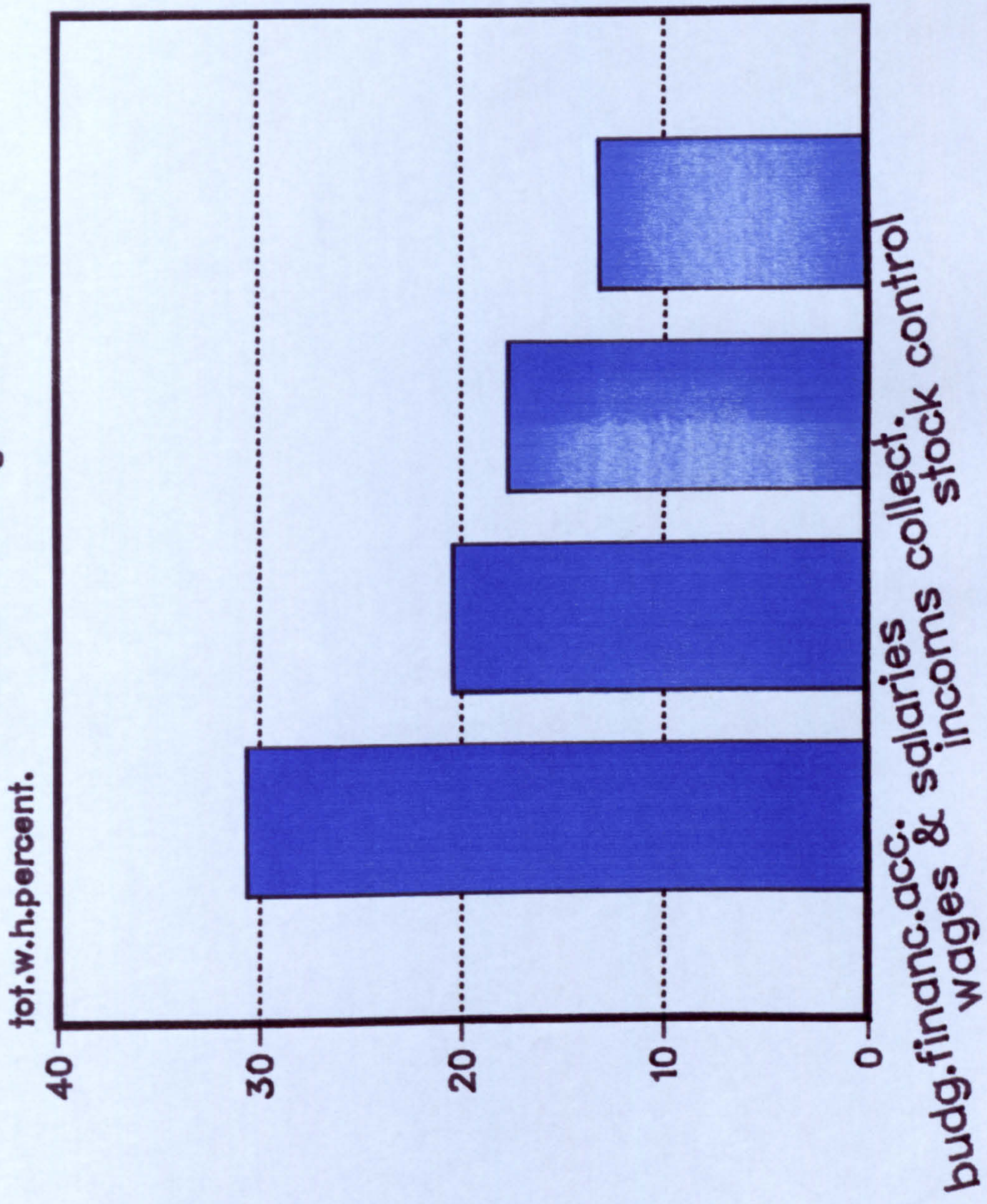
Figure (9.17) Total actual working hours of commercial computer programs used in Egyptian industries in 1982
Source : ref. 75 p. 149

The analysis of the data in the last two figures reveals that budget and financial accounts, wages and salaries, bills and documents of income collections are the major commercial computer applications in Egyptian industries, as explained in the next figure.

If both private sector and commercial computer applications are the major applications , in terms of using computers and computer programs, the question is how efficiently do these applications take place, and how different in the efficiency from one industry to another and from each kind of application to another?.

Differences between what was planned and what actually took place in terms of computer program applications will be used to evaluate the efficiency of application, based on the 1982 data. Figures of non-used

Figure (9.18) the comparison between the main commercial computer applications in the Egyptian industries in 1982 using the total actual working hours



computer programs will be used as a unit for comparison, as shown in the following Figure.

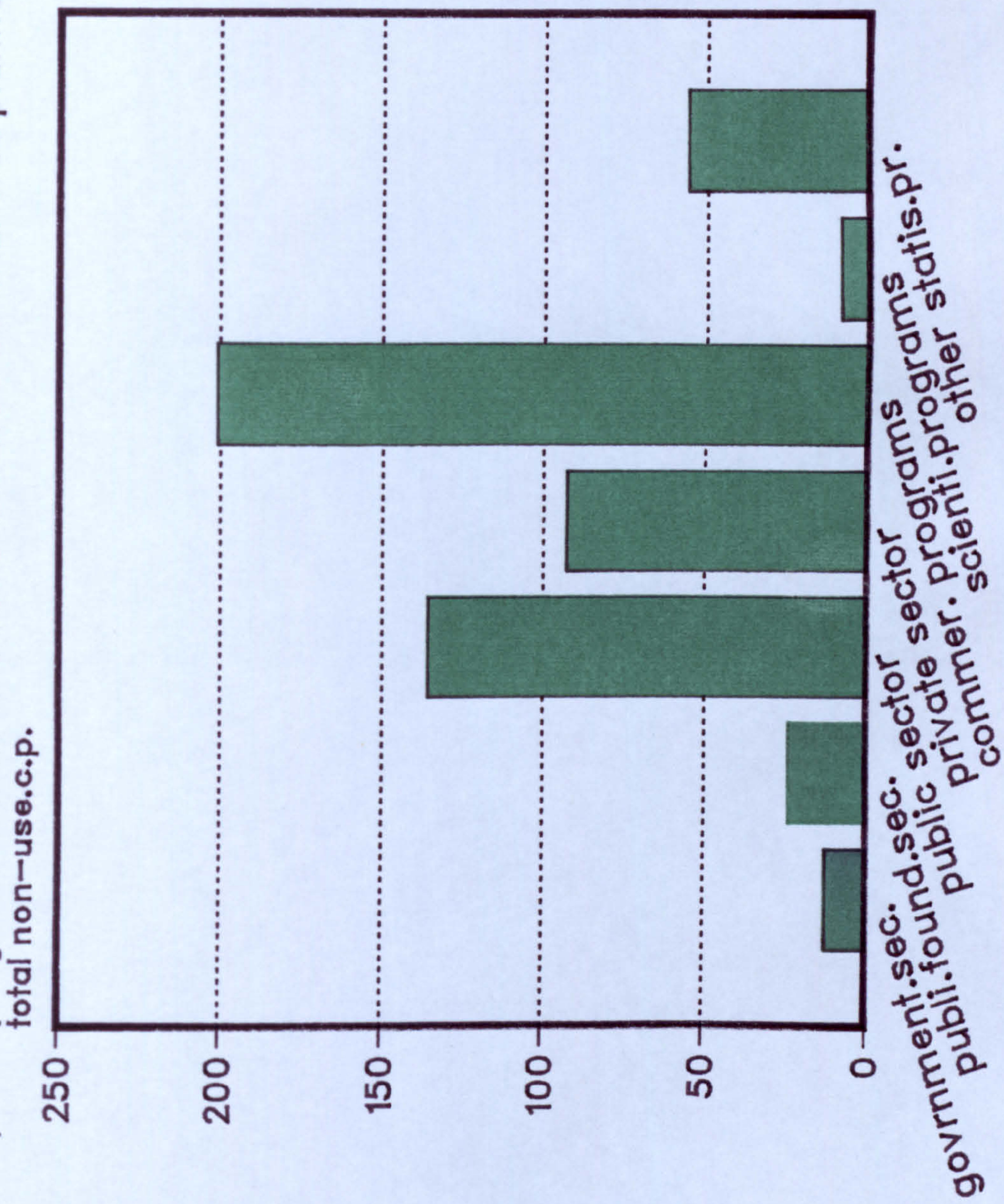
The analysis of the data in the above figure reveals that public sector companies have the major share of non-used computer programs, in spite of the availability of these programs. The private sector companies come in second place. The governmental sector has the least share of non-used computer programs, not because of efficiency but because of being at the bottom of the list of industries applying computers. This explanation is emphasised again when we examine total figures of non-used computer programs for each computer application, shown in the same figure. Commercial and statistical applications take the first and second places, in terms of non-used computer program share simply because they are in the top of the list of applications done by computers.

We might therefore hypothesise that in Egyptian industries, the more computer programs are applied, the less efficiency achieved, in terms of the share of non-used available computer programs.

Statistics for one year (1982) is not enough to draw conclusions, but if we look at total figures over five years (1977-1982) we see a repetition of the same aspects of efficiency of computer applications in Egyptian industries.

The following figure shows the distribution of computer units over 5 years which were available to each industry in terms of used and non-used programs.

Figure (9.19) the efficiency of using the computer programs in different industries and different computer applications using the figures of the computer programs which had not been used as what was planned in 1982



Industrial sector	Years												Total use	% non-us	
	1977	1978	1979	1980	1981	1982	1977	1978	1979	1980	1981	1982			
	use	no.	use	no.	use	no.	use	no.	use	no.	use	no.	use	no.	
Govern- mental sector	13	-	13	-	16	1	17	3	23	4	30	3	102	11	10.8
Public foundations sector	28	-	48	1	41	3	53	2	77	3	89	9	320	18	5.6
Public sector	35	-	40	3	48	10	58	14	85	8	92	12	348	47	13.5
Private sector	14	-	25	-	33	1	162	4	116	9	149	16	395	30	7.6
Total	90	-	126	4	138	15	190	23	301	24	360	40	1165	106	37.5

Figure (9.20) Used and non-used computer units in Egyptian industries during 1977-1982 .

Source : ref. 75 pp. 312-313 and pp. 318-319 .

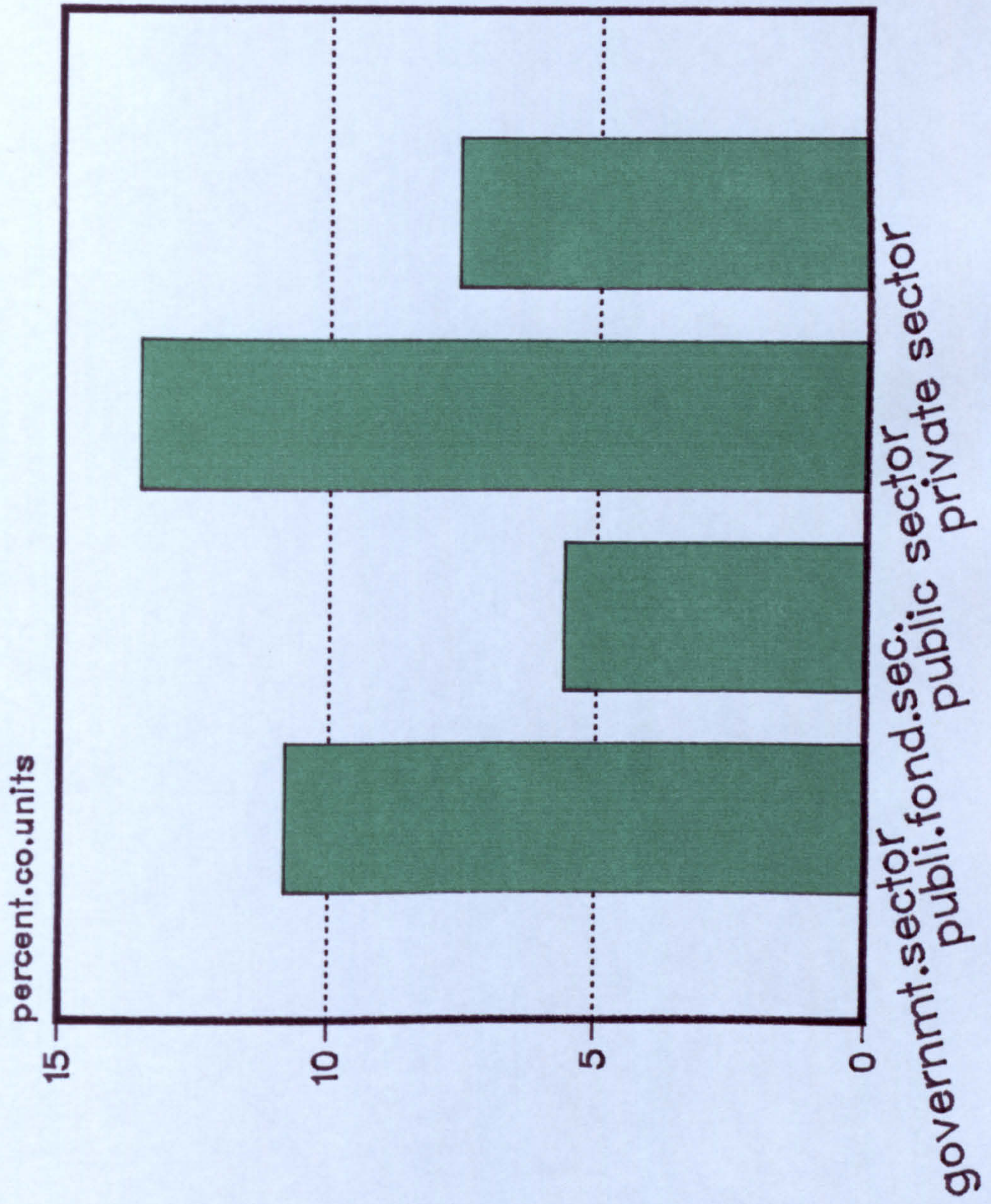
Analysis of the data in the above figure reveals the following:

1- Public sector companies and public foundations were in the lead in terms of using computers between 1977-1979. The private sector started to take the lead between 1980-1982, while the governmental sector was always behind between 1977-1982.

2- A comparison between public sector companies and private sector companies (where figures are almost similar in terms of number of computer units used) shows that the private sector is more efficient in using computers, because the waste in terms of non-used provided computer units is twice in the public sector more than in the private sector. So we can draw a conclusion that over the period from 1977-1982 the efficiency of using computers is higher in the private sector than in other sectors, considering the figures of used and non-used computer units provided.

On the other hand, using actual working hours of computers used over the period 1973-1982, compared with planned working hours (estimated

Figure (9.21) the non-used computer units which are available to the industries of Egypt within 1977-1982



when contracting) can highlight the productivity of using computers in Egyptian industry over this period of time, as shown in the following figure:

Computer usage working hours			
Years	% Percentage of actual working hours	% Percentage of planned working hours	% Percentage of net working hours
1973	118.3	100	18.3
1974	135.5	100	35.5
1975	133	100	33
1976	142.8	100	42.8
1977	158.3	100	58.3
1978	105.5	100	5.5
1979	103.4	100	3.4
1980	89.1	100	-10.9
1981	90.9	100	-9.1
1982	153.7	100	53.7

Figure (9.22) Computer productivity in Egyptian industry
using actual and planned working hours
over the period 1973-1982

Source : ref. 75 p. 333

Figure (9.24) the actual working hours and the net working hours of the computer usage in the Egyptian industries within 1973-1982

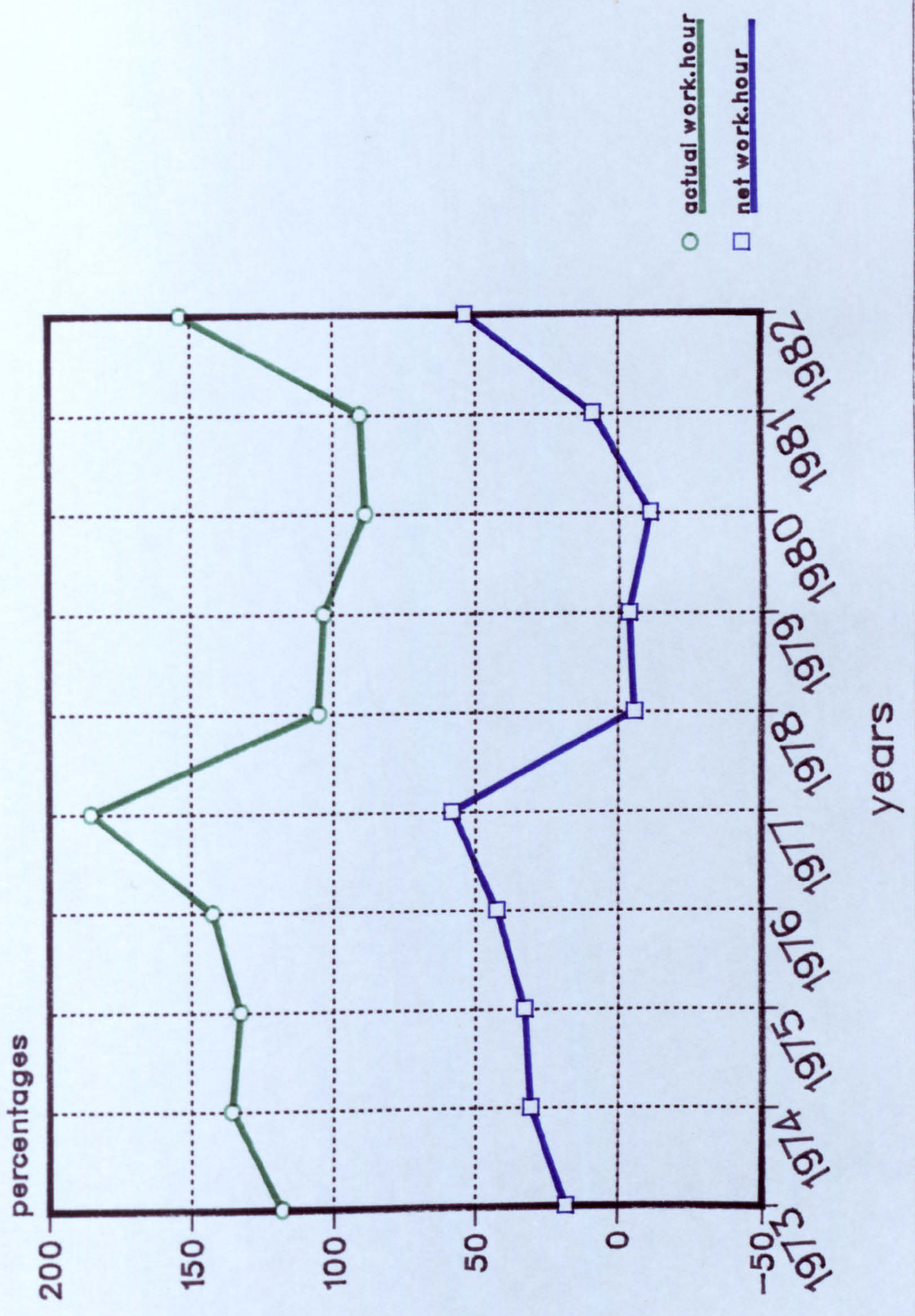
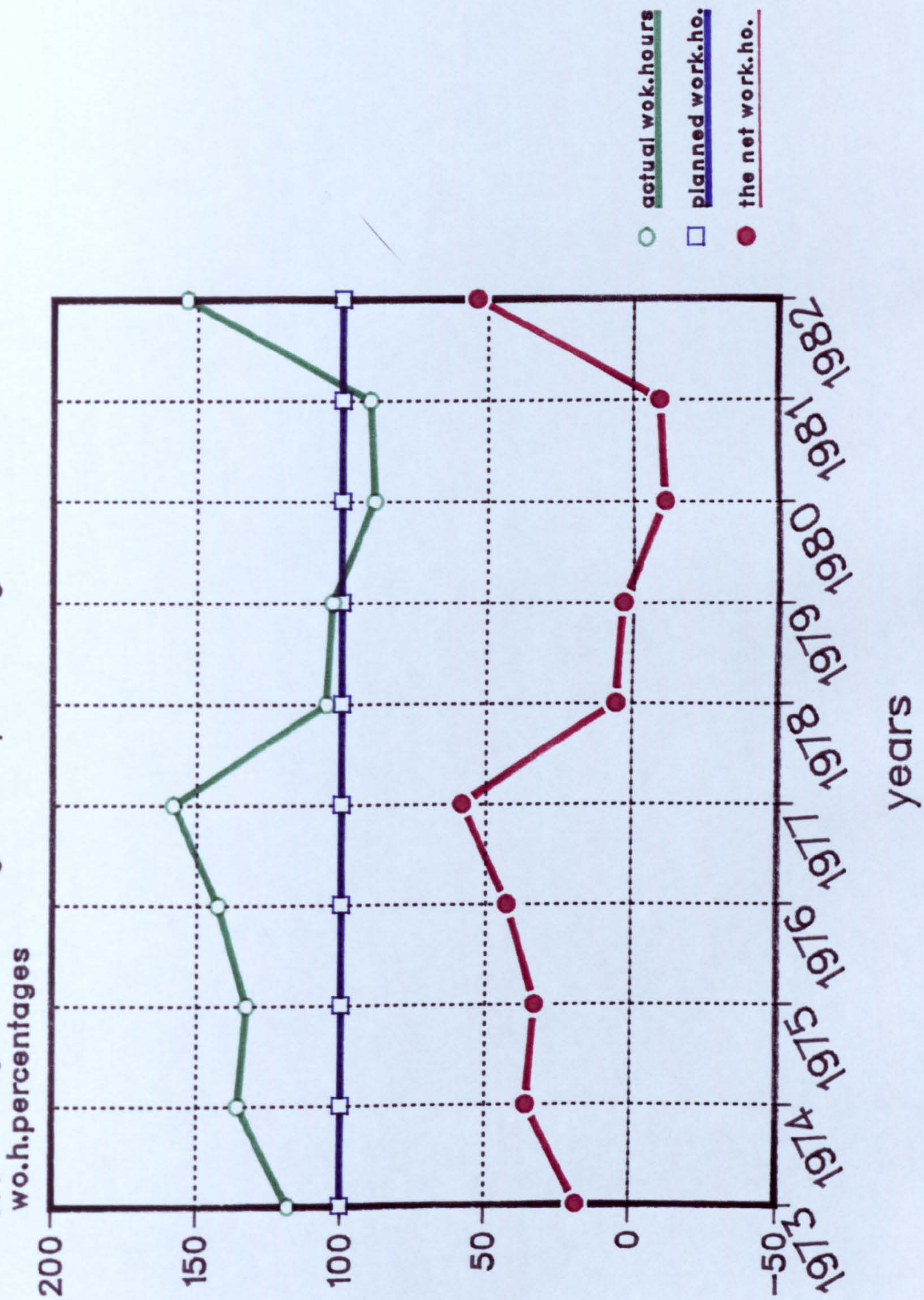


Figure (9.23) the comparison between the actual working hours achieved and the planned working hours estimated when using computers in industries of Egypt using the working hours percentage within 1973-1982



The analysis of the data in the above figure reveals that both 1977 and 1982 were the most efficient and productive years in terms of net actual working hours of using computers in Egyptian industry, where percentages were 58.3 in 1977 and 53.7 in 1982. Trends of change for these percentages over that period are shown in the last figure. There is a positive association between actual working hours and net working hours of using computers, except for 1980 and 1981.

In terms of kinds of computer programs used in Egyptian industry, statistics of a period of five years indicate again that commercial programs are the major computer programs used compared with scientific and statistical programs. On the other hand, figures of non-used available computer programs (as an indicator for efficiency) are much higher in commercial computer applications than in others, which supports our previous conclusion. The following figures present details of the total number of both actual working hours and non-used available computer programs for each computer application in Egyptian industry.

Years	Total actual working hours of computer programs used		
	Commercial programs	Scientific programs	Others programs
1977	135602	10135	-
1978	37800	648	21142
1979	206231	24777	48206
1980	242378	49469	24083
1982	135935	56891	359531

Figure (9.25) Actual working hours of computer programs in each computer application in Egyptian industry between 1977-1982

Source : ref. 75 p. 335

Years	kinds of available computer programs which had not been used						
	Commercial programs		Scientific programs		Other programs		Total programs
	No.	%	No.	%	N.	%	No.
1978	43	95.5	1	2.2	1	2.2	45
1979	67	8.7	11	13.2	5	6.2	38
1980	60	74	8	9.8	13	16	81
1981	182	93.3	9	4.6	4	2	195
1982	201	75.5	9	3.4	56	21	266

Figure (9.26) Total numbers of non-used available computer programs in Egyptian industry between 1978-1982

Source : ref. 75 p. 339

One of the problems which affect using computers is the lack of qualified staff to operate them. This problem is more acute in third world countries because most of these countries are not so old in employing information technology. The consequences are that they use many foreign experts to do the job.

Statistics show that less than 50 percent of computer experts employed in Egyptian industries are foreign staff. The following figures show that American, Candian and English experts form the majority of

Figure (9.27) the actual working hours of the computer programs achieved in different computer applications in Industries of Egypt within 1977-1982

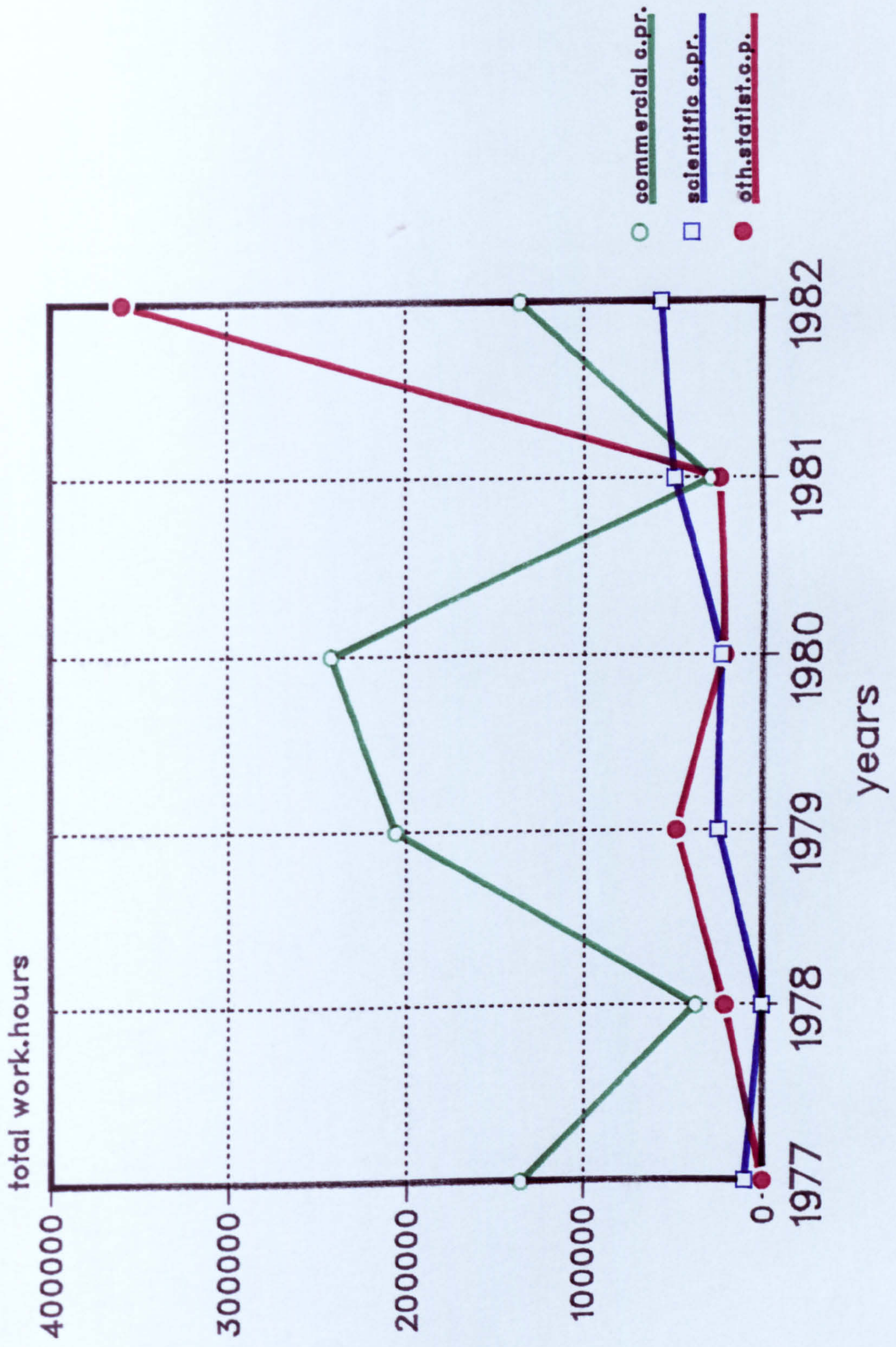
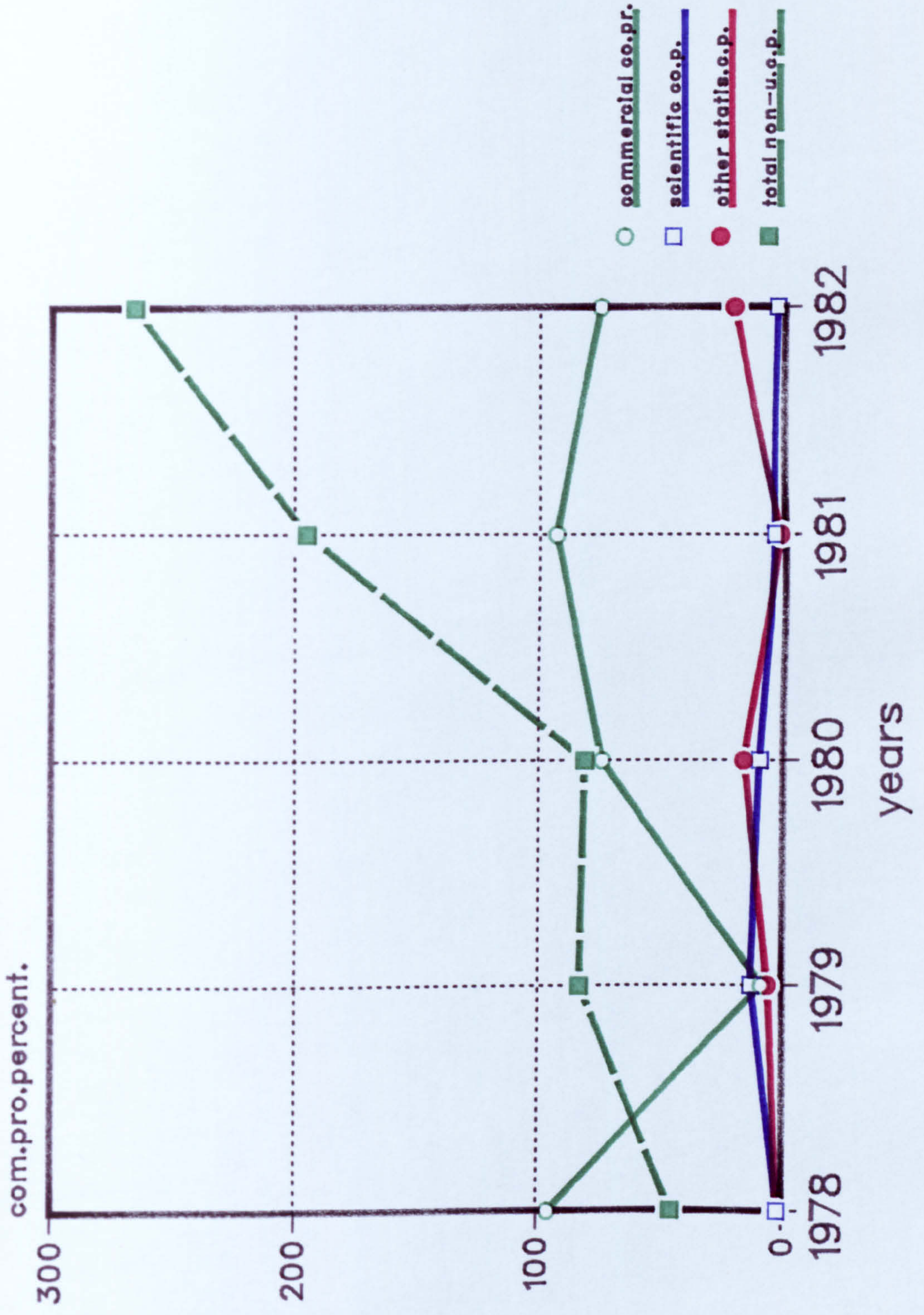


Figure (9.28) the changes in the non-used available computer programs in different computer applications in the Industries of Egypt within 1978-1982



foreign staff employed in Egypt. The number of foreign computer experts employed in Egypt has been increasing since 1977, which associates with the increase in using computers in Egyptian industries explained before. The analysis of the data in the following figures also reveals that French and Indian computer experts employed in Egypt are at the bottom of the list, along with the Swiss.

Computer Staff Nationality	Years						Total	
	1977	78	79	80	81	1982	No.	%
Egyptian	11	27	19	24	39	39	56.3	159
American	-	-	7	11	11	13	14.9	42
Canadian	2	6	2	-	8	8	9.9	28
English	4	**	6	7	2	2	7.4	21
Swiss	-	-	1	5	-	-	2.1	6
Danish	-	-	1	1	4	3	3.2	9
French	-	10	2	1	1	1	5.3	15
Indian	-	-	-	1	1	-	0.71	2

** Consultancy Office

Figure (9.29) Computer Experts employed in Egyptian industries within 1977- 1982

Source : ref. 75 p. 332

9.4.3 Cultural Differences and the Applicability of the Management Theory

The analysis and the outcomes of the last two chapters of this study, shed light on the influence of the cultural differences between U.K. and Egypt over the characteristics of the existing information systems. In the rest of this chapter we will show the findings of two other studies, which can answer the question of 'to what extent is the contemporary western management theory and practice suited to the Arab culture and economic environment?':

1- Ideas concerning the problems of transferring management philosophies and practices across cultural boundaries are investigated with particular reference to the differing transferability of

quantitative and qualitative subjects, based on the assumption (J. Martyr, ref.11i p.46) that "western management theory and practice is more culture bound than is sometimes realized, where in practice some parts of it are not applicable to Arab culture though other parts are". Martyr's findings (ref11i pp. 312-314) support his assumption and provide a framework for considering the transferability of management subjects (philosophies and practice) against cultural boundaries, as follows:

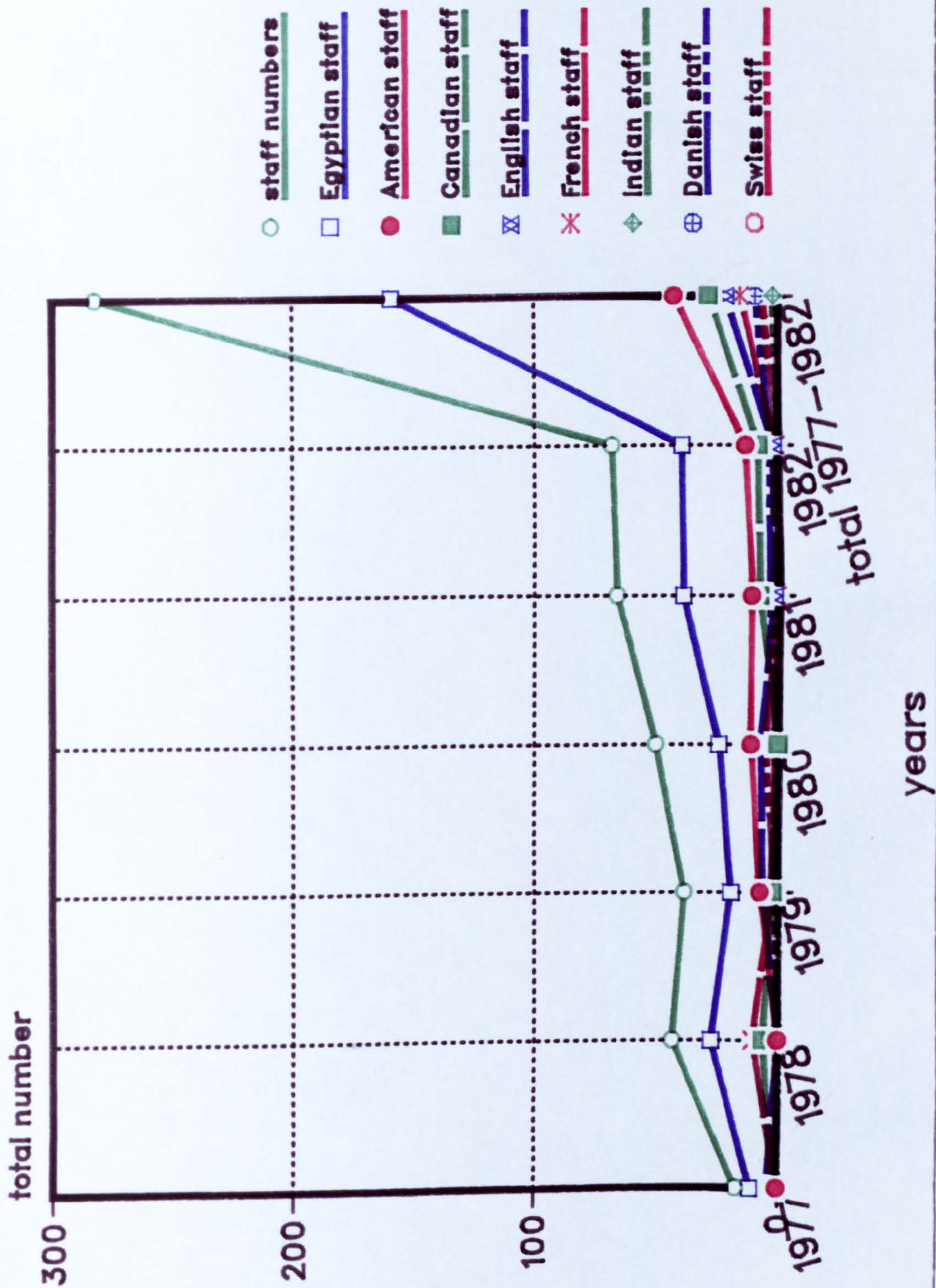
a- Subjects which are both quantitative in nature and relevant to society, (Engineering, Maths, Physics, Chemistry, etc.) can be transferred and practised.

b- Subjects in the transition zone which are affected by cultural boundaries (Art, Business and Social subjects), partial transferability and applicability can be expected.

c- Non-transferable subjects (Theology, Law, Politics, Taxation) are defined as having no tangible impact on another society.

2- The impact of the culture on an Arab executive's style and attitudes is demonstrated with respect to his decision making style, conflict management, his interpersonal style and attitudes towards time and change, as in Muna's study (ref. 11m p. 118). Muna's findings (about the management style and attitudes of Arab executives in the context of their social environment) strongly suggest that certain managerial styles and skills required in the Arab world may differ from those practised in the western cultures.

Figure (9.30) the computer staff employed in the industries of Egypt in terms of total number and nationality within 1977-1982



9.5 Summary and Conclusion

In this chapter we investigated some assumptions which had been drawn out of the last chapters, where a comparison between British and Egyptian hotels was carried out. The Egyptian managerial environment and hotel management styles were the main topics of this investigation.

the the structure of the hotel industry and the tourism sector which controls and supervises hotel activities in Egypt are explained. Hotel management styles , their differences in terms of management thinking, hotel techniques and productivity are shown.

An analysis of the problems of the public sector hotels which influence hotel organisation maturity helped to reflect the characteristics of the Egyptian management environment which exists.

A comparison between public sector hotels and foreign management hotels in Egypt is carried out to show the influence of management style used upon the process of marketing decision making, system needs and the kinds of problems faced. The investigation highlighted the following results:

- 1- Management environment affects hotel organisation maturity in planning , co-operation, communications and the validity of organisation structure. All of these factors influence information systems success especially in public sector hotels.

- 2- Management styles adopted by foreign management hotels are much more successful than those of public sector hotels. This success is reflected in greater productivity, and satisfaction towards system needs.

- 3- The influence of bureaucratic management systems upon public

sector hotels is more recognised due to their control and supervision by governmental offices. This influence is the main cause of problems and complaints. It also shapes the decision making process and information system needs in the public sector hotels.

4- The principal success achieved by foreign management hotels in the Egyptian hotel market, compared with the achievement of the public sector hotels, is the application of the latest hotel techniques and information technology provided by their company head quarters abroad. But their standard is still behind the international one, because they are limited by country environmental problems.

5- The overview of information technology diffusion and of information system success in British hotels compared with Egyptian hotels, indicates different matters of concern. Firm management, the impact of technology over employment, productivity and the development of advanced computer programs for management needs represent the main concerns of information systems theory and research in the United Kingdom. In contrast, management environment, management style and the maturity of the organisation, represent the main concerns in undeveloped countries, which suggests the need for different or modified theory for successful MIS to suit these countries.

10.1 Introduction

The longitudinal analysis in chapter 5 shows that there have been a number of changes in computer applications between 1970 and 1985. Some of these changes were in the direction expected, but others were not.

In this chapter conclusions will be drawn based upon the longitudinal analysis. Issues arising from these conclusions were discussed in follow-up interviews conducted with hotel managers, both in the U.K. and in Egypt. Further investigations of some environmental system characteristics were carried out in Egyptian hotels. A general overview of the structure of computer usage in the industries of Egypt (including the hotel industry) highlights the efficiency of the computer usage there.

Areas for further research based upon this study are identified.

10.2 Conclusions - Longitudinal Study

The longitudinal analysis shows that there are changes in the application of computer systems in British hotels between 1970 and 1985. A comparison between the British hotels and Egyptian hotels, using the 1985 data, also shows differences in their computer applications.

The main issues concerning hotel computer applications, which were subjects of questions in the posted questionnaire used in this study, are the use of computers (whether own computer or outside computer bureau), jobs done by computers (whether they are regular jobs or planned jobs), the use of other data processing machines to do hotel jobs if there is no computer, reasons against putting jobs on computers, and finally future plans for using or extending computers.

The longitudinal analysis in the British hotels is based on using

the results of a study which had been done in 1970. A comparison between the 1970 results and the 1985 questionnaire results has been carried out. Differences among hotels in terms of hotel country, hotel management category (managers' levels) and occasionally hotel size have been used as hypotheses to be tested in this study.

10.2.1 Computer Usage

The longitudinal analysis in the British hotels shows that changes took place in the use of computers in hotels. The use of computers in hotels was classified in two categories: hotels which have their own computer premises and hotels which use an outside bureau.

The longitudinal analysis indicates that with regard to both the two classifications of computer usage, changes have taken place but they are statistically insignificant. These changes are in the directions expected, towards an increase in using computers for doing hotel jobs. With regard to hotel size, we carried out few tests which show that there are changes which have taken place, but they are statistically insignificant too. These changes are in the directions expected, towards a reduction in using computers in small hotels. This decrease was justified on the grounds that large luxury hotels have economic reasons for using computers more than small hotels.

The comparison between British hotels and Egyptian hotels showed significant differences statistically. These differences are in the unexpected direction, towards an increasing use of computers in Egyptian hotels. This was justified on the grounds that most large luxury hotels in Egypt are branches of big international hotel companies which are using computers and sometimes run by their foreign management staff. Another explanation is the desire of the hotel management to employ the

latest developments in management and information technology.

10.2.2 Jobs Performed by Computers

The issue of the jobs done by computers is related to the development of using computers in doing hotel jobs. The idea is to find out the changes that have taken place in the regular and planned jobs to be done by computers between 1970 and 1985. The longitudinal analysis shows that there is a change in both regular and planned jobs done by computers between 1970 and 1985, and it was in the directions expected. More regular jobs are done by computers and some of the planned jobs in 1970 have already been done by computers in 1985. The explanation lies in the development of the information technology in this period (1970-1985), and also the increased willingness of industry (including the hotel industry) to use computers to save time and effort.

Management work (especially for high level jobs) is still planned for computers in 1985. Operational and tactical level jobs in other industries have had some success in being done by computers. In the hotel industry the clerical and administrative level jobs are done by computers, especially in large hotels. This was justified on the grounds that little development in computer programs have been achieved to help in management work because of the difficulty of identification, variations, and because of the attitudes of the managers themselves against using computers.

With regard to the size of British hotels, there are changes which have taken place that were statistically significant. In fact, large hotels are applying computers to do their jobs more than small hotels because it is more economically justified in large hotels.

Further, the tactical and strategic management work for middle and

higher managers are still the planned jobs to be done by computers in the future. No significant changes have taken place between 1970 and 1985.

A comparison between British hotels and Egyptian hotels showed a significant statistical difference in the expected direction ; i.e. there is a greater increase in regular and planned jobs done by computers in British hotels compared with Egyptian hotels. This can be explained by recognising the recent employment of computers in Egyptian hotels. By comparing the situation in 1985 with that of 1970 in British hotels, it is evident that it takes a considerable time to have qualified staff and to change the work system when jobs are performed by computers.

10.2.3 Uses of Other Data Processing Machines

Before introducing computers in hotels, other data processing machines were used. The point of studying jobs done by other data processing machines was to see the changes that took place in using these alternative data machines after the impact of computers.

The longitudinal analysis shows that there is a change in the use of other data machines in British hotels in the expected direction. For example, an increase in the use of other data machines in 1985 compared with 1970 has taken place, and at the same time there has been an increase in the use of computers. the explanation of this goes back to the big development in the tourist industry and hotel business compared with the inadequacy in the development of using computers and in the availability of qualified computer staff.

With regard to hotel size, it was supposed that small hotels employ more other data processing machines than large hotels. This was

justified on the grounds that large hotels can use computers more economically than small hotels. The 1985 data shows that the British large hotels use other data processing machines more than small hotels, and the differences between them are statistically significant.

A comparison between British hotels and Egyptian hotels concerning other data processing machines shows a significant difference in the direction expected. Egyptian hotels use more data processing machines than British hotels, and the difference is statistically significant. The explanation of this is quite simple, because Egyptian hotels use computers less extensively.

10.2.4 Reasons Against Computers Performing Jobs

The hotel survey in 1970 showed that there were some reasons which prevented hotels from using computers and also for letting computers tackle jobs. The point of the 1985 survey was to see the changes that have taken place within this period of time and to identify reasons against computers doing jobs.

It was supposed that these reasons would be different in 1985 from those of 1970, or those reasons to vanish by the development of the information technology in the last 15 years. Also it was expected that the problems that small hotels face in putting jobs on computers should be different from those of large hotels.

The longitudinal analysis shows that there is a change in the reasons for putting jobs on computers in the British hotels in the expected direction. The same problems still exist in 1985 (there is insufficient work to be done by computers ; very expensive, intend to do that-no time yet). But some new reasons were also discovered, for example the lack of technically qualified staff. The changes proved to

be statistically significant towards an increase in most of the reasons in 1970 against putting jobs on computers. The results of 1985 can be interpreted in the same way, for example with regard to hotel size, the change in the reasons against putting jobs on computers in the British hotels was not significantly different between small hotels and large hotels.

A comparison between the British hotels and Egyptian hotels shows a significant difference in the direction expected. The previous results confirm that fewer jobs were performed by computers in Egyptian hotels than in British hotels. This is because Egyptian hotels use less computers, but employ more other data processing machines. In fact the use of computers in Egyptian hotels is recent and this adds to reasons and problems against using computers to tackle jobs.

10.2.5 Future Plans for Using or Extending The Use of Computers

The conclusions of the last few pages describe both the pros and cons of the present situation of using computers and other data processing machines in performing hotel jobs. Extending these ideas to the future plans of using computers, the longitudinal analysis shows that there is a change in their application in British hotels. The changes which have taken place are in the direction expected ; where there was a significant increase to extend the idea of using computers to do jobs in 1985 compared with 1970. The development in the information technology, in the last 15 years, has created more opportunities and expectations to extend the use of computers. New jobs will be expected to be performed after 1985 and these were not performed in 1970.

A comparison between the British hotels and Egyptian hotels, using

the 1985 data, shows that there is a statistically significant difference in the future plans to use or extend the use of computers, as was expected. The influence of the development of information technology, the use of computers in foreign management hotels and foreign management staff in large Egyptian hotels, are some of the reasons behind the ideas of future plans to extend the use of computers in Egyptian hotels compared with the British hotels.

10.3 The Managers' Satisfaction and The Use of Information Received

An investigation of the association between the users' attitude towards the information they receive and their degree of usage for such information has been carried out. This was based on the assumption, proposed in the literature, that there is a positive association between users' attitude and their degree of usage for the information they receive.

The hotel managers were asked about the characteristics of the information they receive and how often they use it. A comparison between the responses of the British hotel managers and Egyptian hotel managers was carried out, using the 1985 data. Some of the results were in the direction expected, while others were not. The main proposition was that the use of computers was supposed to increase this positive association.

The results show that in both the British hotels and Egyptian hotels there is an increase in the information received for the purpose of decision making process. There is also an increase in the daily and weekly information received which helps in the operational management work ; quantity of the monthly and annually information, which helps in tactical and strategic management work, was less than the corresponding daily and weekly information. Finally there is an increase in the

information received"on time"over"late"information.

Concerning the extent of use of the information received, the"always" used information is more in the British hotels than in the Egyptian hotels. But the "seldom"or"never"used information was more in Egyptian hotels than in British hotels. However, the"top"managers of Egyptian hotels are"always" using the information they receive more than"top"managers of the British hotels.

The information characteristics (information barriers) which affect the use of information received has been discussed. These characteristics (barriers) are increasing at the lower management level more than at the higher management level. In terms of the quality of the information received, the Egyptian hotel managers are receiving less identifiable and less distinguishable data than those in the British hotels. But in terms of information quantity, managers in hotels of both countries are not receiving the suitable quantity (short or over supply) of information, which does not help much for the decision making purpose. The use of computers did not help much to change this structure of information received.

As a result of these characteristics (barriers), the managers in both British and Egyptian hotels do not rely mainly on the data processing (computer) departments to get essential information, but they use other information sources. The attitude of Egyptian hotel managers is that they favour an increase in the use of these other information sources more than do British hotel managers.

When considering the components of an information system in a hotel, the results show that use of the customer and guest history information systems was more extensive in British hotels than in Egyptian hotels, with more accurate and up to date information.

On the other hand, the comparison of management category (managers management levels) between the British and Egyptian hotels based on the hotel size shows unexpected results. It was found that there were no significant differences between top management level and lower management level in terms of the purposes of use of the information received, as well as between small hotels and large hotels. In terms of the hotel location, there was no significant difference between the British hotel managers and Egyptian hotel managers in the purposes of use of the information they receive. It was expected that large hotels and higher level managers would receive more information for decision making purpose than small hotels and lower managers, in both British and Egyptian hotels.

When considering the information system components in hotels, it was found that there were no significant differences between the British hotels and Egyptian hotels in terms of using customer and guest history information, especially in considering the accuracy and timeliness of this information sources. But on the other hand, Egyptian hotels are more appreciative of the market information sources, which are more usable there than in the British hotels.

Generally speaking it is shown that there is a positive association between the attitude of the users and their degree of usage of the information they receive. The information characteristics (information barriers) affect how often managers use the information they receive and also their reliance on the computer departments as a source of information supply. This highlights one of the important factors which affect the use of information systems for decision making in the hotel organisation.

10.4 Manager Skills, Sources of Communication and the Influence of the Managerial Environment

The discussion was based on the assumption that recognition of the needs of hotel managers, in terms of skill, sources of communication for information helps in the design of realistic information systems. The differences in these needs between one country and another for the same job reflect the special managerial environment in which managers are practicing their jobs.

The results of this comparison show that for managers in both the British and Egyptian hotels, there is no significant difference between the verbal and written communications they practise. But there are significant differences, in terms of the numerate and computational abilities, the planning and decision making abilities which they practise as part of their job. The results show that British hotel managers are ahead of Egyptian hotel managers, in practising numerate and computational abilities. This is quite acceptable if we consider that the British hotels have been using computers for ten years longer than the Egyptian hotels. On the other hand, the results show that Egyptian hotel managers are ahead of the British hotels in practising planning, decision making, and the management supervision skills. The managerial environment in which Egyptian hotel managers operate their hotels are not standardised and are changing over time. Thus careful judgement is required by the managers to plan, and to make different decisions according to these changes to control the work system. The background education and experiences of the hotel managers (staff) are also important considerations. Even for the foreign hotels, in Egypt, managers are following the broad guidelines of management procedures provided by the company headquarters abroad, but they operate within the

environmental climate of the country.

The results above concerning the influence of the managerial environment are also suggested by other comparison results of the media sources used by managers for communication. It was found that there was no significant difference between British and Egyptian hotels in terms of using these media sources for communication by managers. These sources (whether they are computing or non-computing, verbal or written, formal or informal) are used by managers according to the management procedures they follow. But the interpretation of the information, using more skills of planning, decision making and management supervision, is influenced by the country managerial environment. A comparison of these results showed that Egyptian hotel managers are ahead of British hotel managers in using the available computing sources for communicating information, although they have just started using computers. This result is in an unexpected direction.

10.5 The Basis for the Hotel Follow-up Interviews

The previous comparison study between the British hotels and Egyptian hotels, concerning some information systems issues, highlighted some differences among hotels in the two countries. Issues about computer usage, computer applications, manager satisfaction about the information they receive, skills (abilities) the managers practise for planning, decision making, management supervision and ways of communicating information, all were examined. The explanation and search behind these differences have led us to recognise the influence of the managerial environment on some of these issues in Egyptian hotels.

Since this study is concerned with the factors which affect the needs of the hotel information system for decision making, issues

arising from the influence of the managerial environment over the information needs of decision making, and the maturity of the hotel organisation, will form the basis for follow-up interviews. These interviews are conducted with the hotel managers in both the U.K. and Egypt. The results of other published studies will be used as well, as a source of information to investigate these issues.

The number of the hotels participating in the interview program was determined as a result of the combination of a number of factors. Certain of these relate to the constraints of time and finance which limit the capacity of a single investigator. In an attempt to minimise these problems, hotel interviews were mainly restricted to the area of Greater London in the U.K. and Greater Cairo in Egypt . Other factors relate to the hotel managers themselves, where a number of them were unwilling to participate for a number of reasons: for example, lack of time as the managers were busy and a fear that important confidential information would become known to others.

In order to overcome the fear of disclosing important confidential information , a guarantee was given to each participating hotel manager that the information they provided would be treated as confidential, and it would not be possible to identify individual hotels directly or indirectly in any published work.

The interviews took a semi-structured form, with the completed postal questionnaires of the 1985 forming the basis for the interviews, combined with a series of follow-up questions. The semi-structured form, was adopted in order to provide an initial common framework for each interview, whilst enabling the interviewer to follow up interesting issues as they arose. In some hotels more than one response was obtained.

10.5.1 The Managers' Decisions and Their Information Needs

Some issues arise from the data analysis, about the managers' satisfaction concerning the information they receive (for decision making purpose) and the characteristics of such information. Firstly, what are the decisions hotel managers make, and what information needs do they have in doing their jobs?. Secondly, if they are unhappy about the information they receive, what other information and data analysis programs would they like to be made available?. Thirdly, what are the the most important improvements that they suggest should be made to the present information system in their hotels?.

The study has come up with some results about the managers' abilities to identify the decisions they make and the information they need, which might answer some of the questions mentioned in the literature review chapter. These results can also be developed , through further research, to articulate a descriptive model for the hotel information system, in different managerial environments.

In the literature review, R. Ackoff argues that one of the reasons "why MIS fail" is that the managers who make decisions are unable to identify their decisions or specify their information needs, and that makes it difficult for the information system designers to satisfy the managers' needs.

The results show that a total percentage of 54 of the managers, in the whole sample, could identify the decisions they make but not in details (for example general decision topics or headings) , and 48 percent could broadly specify the information they need for making these decisions.

A comparison between the British hotels and the Egyptian hotels shows that British managers are slightly ahead of Egyptian managers in

identifying their decisions, but a long way in specifying their information needs (for example 70 % against 53 % could identify their decisions, and 70 % against 33 % could specify their information needs).

Similar results have emerged from a comparison between the special studies they request, special Magazines and technical, trade reports they receive, and the special topics about which they like to be kept informed. British hotel managers are ahead of Egyptian managers in being able to name these support information means.

The implications of these results mean more difficulties for the information system designers, because a considerable percentage (over 40 %) of the managers for whom they design the information systems, cannot be of much help. This also confirms what is assumed in the literature about some of the reasons for the failure of MIS.

The analysis of some of the responses reveals that the managers are confused about the concepts of the decisions they make, the responsibilities they carry out and their job descriptions. Others indicate their work area and the topics or subjects under which their decisions can be classified.

The analysis of the answers in the Egyptian hotels indicate that managers describe the nature of the decisions they make (such as procedural, legal, and managerial decisions), whilst others reflect their complaints and problems because of the bureaucratic style of management practised there, especially in the public sector hotels.

A clear message can be seen from the response of Egyptian hotel managers. This is that the private sector hotels (run by foreign management staff) are enjoying more freedom in making their decisions than the public sector managers. The public sector managers are tied with bureaucratic governmental rules and procedures imposed by both the

supervising company and the Tourist Ministry. This reveals the importance and the affect of management style in the hotel decision making process in Egyptian hotels.

10.5.2 The Evaluation of Information which the Managers Receive

The issue of the difference between the information the hotel managers regularly get and that which they currently do not get arose, as result of the manager dissatisfaction concerning the characteristics of the information they receive.

The results reveal that information for forecasting, sales analysis and customer turnover are missing. Further, the variety, shortness, and accuracy characteristics are missing from the information the managers do get.

Written information and past information are a major and joint kind of information received by managers in both the British and Egyptian hotels. For example, figures, reports, registered cards, historic data, statistics, previous figures and past records are emphasised.

A comparison between British hotels and Egyptian hotels concerning the information needs which are currently not being received reflect the managers' interests and aspects of the hotel market in each country.

Information about competitor hotels, the latest developments in other hotels' techniques, competitors' styles of management and their total share in the hotel market, and daily changes in the exchange rates and in the money market are the major pieces of missing information in Egyptian hotels. On the other hand, accuracy, variety, and up-to-date information are missing characteristics in British hotels.

Information needs for forecasting is a common topic of the hotel managers in the two countries. However, they are different in their

degree of periority. For example, forecasting information is most important in British hotels, but is least important in Egyptian hotels.

A comparison between hotels in the public sector and those of the private sector (foreign management hotels), in terms of their information needs , reflect differences in the problems they face and decisions they take to deal with their problems. For example, the cutting of expenditures , room occupancies, replacement and maintenance are the main topics with which managers of the private sector hotels are concerned. On the other hand, we found that following rules and instructions, work procedures determined by the supervising company are the main interests of managers in the public sector hotels. Staff control and doing the official (formal) hotel functions take most of the time of the managers there.

The style of management which differs between the public sector hotels and private sector hotels in Egypt, affects both problems and decisions each has. Consequently, it affects their information needs.

The differing environment between the British hotels and Egyptian hotels also influences the managers' main interests about the hotel market, and consequently their information needs in that respect. For example, changes in the work system, the uncertainty in both the hotel market and money market, and competition are the main topics for the required information in Egyptian hotels. On the other hand, the stability of the hotel market, future forecasting, and the growing interest of improving the information quality provided, are the main topics which attract the managers' interests in the British hotels.

10.5.3 Other Support Information Means

The special studies, Magazines, technical or trade reports, and special topics are some other support information means used by hotel managers. A comparison between the British hotels and Egyptian hotels, in terms of manager preferences of using these means, indicates some results which reflect the information system "stage" in each country (clerical, administrative, and tactical stages). These stages are described by P. Gamble 1984 (ref. 31). It also emphasises some of the previous results about the managers' information needs.

The special studies identified reveals a shortage in the Egyptian hotel' libraries, especially in having references or studies about the local and international hotel market, competitor hotels, competition, latest developments in hotel techniques and sources of credit and finance, which are the main topics for information needs previously identified.

The influence of the style of management over the support information means is clearly reflected in both the British and Egyptian hotels. For example, functional and technical studies and updated work procedure guides are required by Egyptian hotel managers. On the other hand, forecasting and evaluation studies are needed by the British hotel managers.

The tactical information system stage is reflected in the kind of Magazines, reports and specific topics identified by Egyptian hotel managers. The information presented goes beyond ordinary business functions to allow access to external information on markets and consumers.

On the other hand, the administrative information system stage is reflected in the kind of Magazines, reports and topics which the British

hotel managers identify. Here the information presented is about the latest development in the information technology, hotel services, hotel equipment and functions.

10.5.4 The Evaluation of the Marketing Information Systems

The managers interviewed highlighted some differences between British hotels and Egyptian hotels, in terms of the characteristics of the present marketing information systems. They also suggested some improvements that should be added to the present systems.

In terms of customer information systems, the written information sources used in public sector hotels are less than those in private sector hotels in Egypt. The former rely mainly on verbal communications to get things done quickly and to avoid the long process of the bureaucratic system. On the other hand, written customer information sources are quite usable in both the British hotels and Egyptian private sector hotels. This is simply because they are not a part of the governmental system there.

The nature of the data which is usually provided by these sources in the British hotels are specific and detailed. However it is genuine raw data (needs much sorting and analysis) in the Egyptian private sector hotels.

The computer is used as a source of customer information in the British hotels, while it is not used for this purpose in Egyptian hotels which have computers. For example, Egyptian hotels only use computers for clerical and control functions (such as finance, accounting, and wages in public sector hotels and check-in, check-out for individuals and groups in the private sector hotels). However, the computer is used as a source of customer information in the British hotels for

administrative functions (for example reservations , bookings, invoicing, billing and guest history).

The future demands for customer information and data analysis programs show different attitudes. The demands of the British hotels are concerned with more ordinary business functional information and data analysis programs (which is more or less within the administrative hotel information). The demands of Egyptian hotels are concerned with more clerical and tactical information, which allow access to external information on markets and consumer behaviour.

The results show that the market and consumer information in both the British and Egyptian hotels are mainly used for control and functional purposes, but not for marketing and sales planning purposes. The responses to the systems used for updating both the customer information and guest history, in hotels of both countries, support the last result, whether these systems used are computerised or manual systems. For example , black lists, check-out, deletions and addition in the guest history, invoices and data for confirmation from other departments are common methods used for updating customer information for the purpose of control and not for planning.

Suggestions to improve the present information systems are mainly concerned with replacing manual systems with computerised systems. For example, in Egyptian hotels the Cartatick manual system is used to update the customer and guest history information. The technical advantages of using computers, such as speed, perfection, reliability, keeping documents, easier communications and data updating are the principal reasons.

Marketing information usage for planning purposes (which covers rooms, restaurants, room functions, and sales) are missing in both the

future demands and suggested improvements by the hotel managers in both the U.K. and Egypt. This usage can help to compare the actual performance with the estimated one in the hotel marketing plan. The revision of the information needs and customer information sources identified by the hotel managers reveals that managers are aware of using such information and sources for planning purposes but not in detail. For example, information about forecasting, money markets, commodity markets, consumer behaviour, tourist and travel agents are some examples of broader information topics which are recognized by hotel managers of both the U.K. and Egypt.

The results of the comparisons mentioned above reflect the effect of the managerial environments in both countries. In hotels in the public sector of Egypt, managers face problems associated with being a part of the governmental system in Egypt. This is apparent in their suggestions of improvement. For example, clearer information about replacement policy and maintenance procedures, identifiable authorities of decision making, awkward communication facilities and document keeping and over employment are some examples of these problems and future demands which reflect some of the characteristics of the bureaucratic work system in Egypt.

On the other hand, concern and worry about the economic stability of the country, changes in the money market (in terms of prices of both foreign currency and shares), tourism policy, import facilities, and future attitudes of both import and exports and tourism trends are the main topics of information needs and marketing sources of the private sector hotels in Egypt.

However, in the British hotels (which may or may not be using computers) firm size, the falling cost of data processing equipment and

the development of systems for small users are some examples of the factors which positively influence the use of computers. Also the influence of the retailing industry (in terms of the technology, organisational structures, marketing techniques) is another environmental factor which positively encourages the adoption of more information technology and computer applications. These techniques have been carried over into the hotel and catering industry with little change in the form of a new style of management to increase control and lower the risk of control problems which are normally associated with large scale operations.

As was suggested by Whitaker (ref.24) in the literature review, the slowness of the take up of the hotel industry, the lack of technical expertise and the problems with the technology suppliers are other negative environmental factors which decrease or prevent the spread of using computers in many hotel applications in British hotels.

Finally, the writer's general point of view is that it is not only the country environment, but also the individual characteristics of each hotel which might explain the varying degrees of employment of computers and advanced information systems in hotels in the two countries. For example, location, volume of trade and business, hotel image, guest facilities, prices and the management style are some examples of these characteristics.

10.5.5 The Influence of the Managerial Environment In the Egyptian Hotel Industry

Based on the analysis of a comparison between British and Egyptian hotels (in terms of the managers' decisions, information needs, suggested improvements to the present information systems), it can be concluded that the managerial environment influences and shapes these

needs and demands. This is more clearly noticed in Egypt.

The literature describing reasons for MIS failure mainly claim that the individual characteristics of the environment and management needs of both the organisation and users are difficult considerations to be taken into account by the information system designers (analysts). Thus they usually suggest or design an ideal system which does not cope with the real needs.

So more investigations were carried out to determine how the characteristics of the Egyptian management environment affect the success of the information systems in Egyptian hotel industry. Interviews with top managers in the tourism sector, in hotels in the public sector and in the private sector, compiled with other previous studies, could focus upon the special characteristics of the Egyptian environment.

10.5.5.1 The Structure of the Tourism Control System in Egypt

the analysis of the data concerning the tourism sector, which supervises and controls the hotel industry, have shown some results which describe the image of the management planning and the maturity of the organisation practised there. These results follow:

- 1- A long term plan for development and a strategy for future opportunities are missing. The lack of both information and scientific studies leads to exaggeration and unrealistic ambition in designing short term plans. The lack of co-operation between departments in the tourism sector, the increase of control over tourism projects because of the lack of having a comprehensive map for the economic, agricultural, industrial and geographical resources of Egypt. Co-operation and communication to exchange data or information

between the tourism sector and other industrial sectors are missing.

2- The influence of this lack of planning and studying of the needs of the hotel market has led to an unnecessary increase in hotel capacity in Egypt within the last five years, enough to satisfy the hotel market needs until the year 2000. The lack of manpower planning influences the supply of the hotel industry with its needs, where the data reveals that over 50 percent of manpower needs are not available.

3- The informal structure of both the organisation and type of communication (which is different from the formal one) is the actual structure used in real life, especially in the tourism sector and in hotels of the public sector. Some of the reasons which bring this informal structure to work, avoiding the use of the formal one, are the lack of communication with other departments and external organisations, the disqualification of some of the staff provided and the long bureaucratic procedures of the formal structure. This determines an informal channel of communication for information.

4- The characteristics of the maturity of the organisation determine, to a considerable extent, the success of the information system used. On the other hand, the absence of formal definitions of the organisation, job descriptions, work loads, task importance, communication facilities. These are some examples of the characteristics of a lack of organisation maturity.

5- The consequences are that the percentages of the important information which is unavailable is over 50 percent in most departments. These departments include Tourism and Research Statistics, Tourism Planning, Advertisement and Press, External Bureaux and The International Tourism Relation. the percentage of the unavailable important data which is under 50 percent are in

departments such as tourism Projects and Internal Control of tourism companies. the managers in the higher management levels are receiving a higher percentage of important data than managers of the lower levels, simply because they do more important tasks for decision making. The absence of the formal organisation structure and job descriptions causes confusion among the working staff about the quantity and quality of the information they need to carry out their responsibilities.

10.5.5.2 The Influence of Management Style over the Process and the Structure of Hotel Marketing Decision Making

1- The investigation of the styles of management used in Egyptian hotels shows that they are different according to the management policy adopted by the owner or supervising company which run hotels there . Five management styles are used. They are characterised as American, French, Swiss, Indian, and Egyptian styles of management. Egyptian management style is based on a combination between the British, American and Swiss styles. The Swiss management style is the oldest one, while the American management style is the most successful one.

2- The success of the American management style (in terms of achieving more profits and a higher percentage of investment return in Egyptian hotel market) has encouraged the others to adopt the American management style in their work. The use of foreign management staff to run Egyptian hotels has shown improvements in the profit and investment return, because they are keen to use the available resources rationally and also to reduce the cost of the services offered. Egyptian management style is represented by the public sector

hotels and the American management style, as practised in Egyptian hotels, is contributing to the Egyptian national economy twice as much as the Egyptian management style achieves.

3- The interviews with the hotel managers of different management styles have come up with some results about the structure of the process of marketing decision making, and system needs to deal with both the organisational and economic problems which the managers face in the hotel market. For example, there are no departments for marketing sales or marketing research in public sector hotels, while there are in the foreign management hotels. Usually this job is done by each of the central marketing departments in the headquarter of the owner or supervisory company. However, in foreign management hotels, from the point view of management and implementation, the Sales and Marketing department is supervised by the hotel General Manager, and technically and functionally by the central sales department in the company. On the other hand, policies of reservation, prices, investment, and communications are determined by the supervising company in the public sector hotels, as well as work manuals and customer guides. The central department of marketing and sales in the supervising company of the public sector hotel works on planning, evaluation for sales promotion, sales analysis, sales evaluation, planning for prices and products. On the other hand the management staff in the hotel work on the implementation of the details of the plans. While the management by production is the present objective, in the public sector hotels, the future (strategic) objective is to change to management by sales. Both management by sales and by marketing are the present and future objectives in the foreign management hotels in Egypt. So the investigation reveals that public

sector hotels are different from the foreign management hotels, in terms of the structure and objectives of sales and marketing functions.

4- The public sector hotels do not take part in the planning process of the hotel products, which is usually done by the supervisory company. However, the foreign management hotels take an important part, in such planning by providing information, necessary data, suggestions and the comments of tourists, tourism companies and customers.

5- While the management staff in the public sector hotels are always busy with the daily routine decisions of running and controlling the work, the management staff in foreign management hotels are spending more money and time on the product planning. It is shown statistically that there is an association between the hotel success, development and expenditures on product planning.

6- The approval of both the supervising company and the Ministry of Tourism is necessary before making any investment decision in the public sector hotels. For example, decisions for replacement, renewal and maintenance usually take a long time through a routine process. Future plans about that are normally not available for the majority of public sector hotels. The minority of hotel managers who have plans usually are short of money because of the limited budget upon which they rely. On the other hand, customer studies as a source of information for services planning as well as written plans for replacement are used regularly in foreign management hotels. However, the over loaded responsibilities of the public sector hotel manager and his seniors, due to the lack of having a sales department, prevent them from regularly using their customer information sources.

7- The strategic decisions for developing hotel products are represented in the determination of the product variety and mix offered by the hotel. The problem that the public sector hotels face are different from these that the foreign management hotels face in that concern. While "less restrictions "are demanded by public sector hotels, equally with the foreign management hotels as top priority, the provision of facilities for the business communications and customer entertaining, are the essential requirements of the foreign management hotels. Using computers for reservations in chain public sector hotels and changing the bureaucratic systems of work are long term (strategic) objectives of the public sector hotels. While there is more freedom to work in the hotel market and tourism market, there are some reductions in both national customs and post (mail) control, and highly qualified staff are the principal demands of the foreign management hotels.

8- Strategic decisions to develop the quality and the variety of services offered in the public sector hotels are blocked because of the lack of market research and product planning activities. Tourist companies usually take over these activities for commission in the public sector hotels, while these companies do the same job through hotel receptions in the foreign management hotels.

9- The priced and non-priced competition, the sellers market and buyers market and management by production and by sales or by marketing are new marketing and economic (concepts) for the Egyptian hotel market which are used now. The public sector hotels have to take advantage of price competition to be able to survive. Foreign management hotels have to make full use of the freedom to import and of not being a part of the public sector bureaucratic system.

10- The lack of strategic planning in estimating hotel capacity helped to increase hotel capacity available more than the actual and expected needs. This changed the nature of the hotel market from a sellers market to a buyers market, where customers are more in control. This represents a big challenge in the near future for both the public sector and foreign management hotels.

11- The shortage in qualified trained staff is a joint problem which represents another challenge for future (strategic) manpower decisions in both kinds of hotels. But the problem is more serious in public sector hotels because the low wages offered there do not encourage the qualified staff to stay. Some of them join foreign management hotels because they are better paid there.

10.5.6 The Evaluation of MIS Concepts and Computerization in Egyptian Industries

Interviews with managers in Egyptian hotels have revealed some results about their understanding of MIS concepts and the variables which affect the success of MIS. The analysis of the data published by The Central Institution For General Data And Statistics, in December 1983, reveals some other results about computerization in the hotel industry and other industries in Egypt. These results are as follows:

1- Both the system concept and MIS concept are not fully understood by hotel managers. The use of computers for keeping files are their main interests in any information system they have. The mistrust of both the data provided, data sources used and the low protection of information are their complaints.

2- The factors which contribute to the success or the failure of MIS are controllable, partly controllable and uncontrollable variables. Training and changing the attitudes of the education system are some

examples of these controllable variables. Satisfaction about salaries and work facilities are other examples of the partly controllable variables, with which the government has a great deal to do with. The internal and external tourist market information, the computer feasibility studies, system concepts, managers styles, resistance to change and finally the low protection of information are some examples of the uncontrollable variables.

3- The common computer applications in industries of Egypt are concentrated in the accounting and the personnel management functions. Also using the 1982 data, the most common computer model used in the large luxury hotels in Egypt was the N.C.R. computer model 499. The commercial work was the major application of computer programs used in these hotels.

4- Using the 1977-1982 statistics, an investigation was carried out of computerization in industries of Egypt, as well as the major computer applications, the efficiency of such applications, and the computer experts (staff) employed in the industries. The data analysis revealed the following:

a - The private sector companies are at the top, compared with other sectors, in the use of computers. The public sector companies come next and the governmental sector are at the bottom of the list.

b - The commercial computer programs are at the top, among other kinds of computer programs used. The scientific computer programs come next and the other programs for statistics and special purposes come last.

c - When concerned with the efficiency of employing computers in industries of Egypt, the private and public sectors are ahead of

other sectors in terms of the total working hours of the computer programs used. The public foundations sector and the governmental sector come next.

d - When concerned with the kind of commercial work done by commercial computer programs, it is found that the budget, financial accounts, wages, salaries, bills and documents for income collections are the major commercial computer applications.

e - Although both the public sector and private sector are ahead of other sectors in terms of using computers programs, they have the worst record in the number of computer programs which they did not apply as planned.

f - The public sector and the government sector are ahead of other sectors in terms of the number of computers available but not yet being used.

g - Using the statistics of the total actual working hours and the net actual working hours of the computer programs used in the Egyptian industries, the analysis of the data reveals that there is a positive association between them. The greater the increase in the actual working hours the greater was the net actual working hours (compared with what was planned) between 1973-1982, with exception of the two years 1978 and 1979, where the association was negative.

h - There is a positive association between the actual working hours of using computers in Egyptian industries and the estimated (planned) working hours of using computers between 1973 and 1982, except for the three years 1980, 1981 and 1982, where the association was negative.

i - The total actual working hours of the commercial computer

programs used in Egyptian industries are higher than that of all other computer applications used.

j - Egyptian industries seem to have a problem with the lack of computer staff employed, where only 56.3 percent of the computer experts, until 1982, were Egyptian and the rest (43.7 percent) were foreign. American, Canadian, and English experts comprise major foreign staff that are employed in Egyptian industries, while French and Indian computer staff exist but to a much lesser extent.

10.6 Areas for Further Research

The needs of information systems are dynamic and developing. They have a considerable potential for research and some specific areas of research relating to this study are outlined below:

1- A continuation of the longitudinal study to establish developments in the British hotel practices over a longer time period. The hotels in this study provide a unique opportunity for continuing research. A longitudinal study to establish developments in Egyptian hotels over period of time would provide a unique opportunity as well for continuing research. We could not ofcourse, do that in this study because the data which covers the period between 1970 and 1980 in Egyptian hotels were not available. But comparison could be made in a few years' time if the same study were conducted. A comparison between the British hotel results and Egyptian hotel results would be again interest.

2- Investigations of individual hotels in a study to explore, in greater depth , the decision making process and its information system needs. This could help to determine the following:

a - How different are the process and the needs from suggestions in the literature.

b - How different are the process and the needs in the British hotel industry from those in other British industries.

c - How far does computerisation in the British hotel industry contribute to the identification of the process and the needs, at different management levels and with different management styles.

3- An investigation concentrating on the characteristics of the managerial environment in different countries, to see whether their MIS problems and their ratio of progress are different from those indicated by this study. A developing theory concerning factors which contribute to the success or failure of information systems might be drawn, to suit countries with different environmental needs.

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APPENDICES

Appendix 1 : Marketing Information Needs (1)

1- Marketing Information - Rooms

- Unoccupied room statistics by type of room
 - Average room rate by type of room
 - Last room revenue (number of rooms not sold multiplied by average room rate achieved)
 - Dollar occupancy percentage
 - Occupancy forecasts
 - Occupancy by major source
 - Guest profile
 - Average length of stay
 - Sources of business by country
 - Sources of business - Conferences
 - Businessmen
 - Tourists
 - etc .
 - Business turned away
 - Percentage of " no shows "
- #### 2- Marketing Information - Restaurants
-

- Covers per meal period
- Covers analysed into residence / 'chance'
for each meal period
- Average spends per cover (food)
- Average spends per cover (drinks)
- Total average spends per bill (check)
- Average spends analysed into price brackets
- Customer profiles

- Seat turnover ratios per meal period
- Table turnover ratios per meal period
- Popularity indices per meal period for food ,
wines and other drinks

3- Marketing Information - Function Rooms

- Utilization ratio of function rooms
- Type of function - profile of customers
- Number of times function room fully utilized
- Average size per function
- Numbers attending into groupings related to total size
- Average spend (food , drinks , total)
- Average spend per square food or metre (food , liquor , sub-total :
cattering , rental , total)
- Menu popularity (food , wines , and other drinks)
- Pattern of utilized days
- Numbers staying overnight
- Estimated benefits for other areas
(e.g. bars , coffee shop , etc)

(1) From Melvyn Greene , " Marketing Hotels into The 90 s " , W. Heineman Ltd , , W. Heineman London , 1983 .

appendix 2 : computer programmes used for data analysis
and drawing figures (some examples)

SPSS programe for data analysis

```
run name          hotel mis
variable list     var001 to var216
input medium      disk
input format      fixed(f2.0,78f1.0/f2.0,78f1.0/f2.0,57f1.0)
n of cases        50
missing values    var001 to var216(9)
frequencies       general -all
options           1,3,5,6,8,9
statistics        1,2,5
finish
```

Programme M1 for figure (2.2)

```
universal case ascii.
generate a clustered bar chart. overlap 65.
title
"FIGURE (2.2) THE USE OF COMPUTER FACILITY BY DIFFERENT "
"MANAGEMENT LEVELS"
" ".
independent tick marks no. frame. bar root 0 .
message 999
"MANAGEMENT LEVEL"
.
DIVISION LABELS --
"top" --
"upper" --
"middle" --
"lower" --
"total" .
INPUT DATA.
"mainframe and microcomputer"
1 , 0
2 , 2
3 , 2
4 , 1
5 , 5
"microcomputer"
1 , 3
2 , 8
3 , 20
4 , 3
5 , 34
"mainframe"
1 , 4
2 , 3
3 , 14
4 , 7
5 , 28
"level"
1 , 7
2 , 13
```


3 , 36
4 , 11
5 , 67
END OF DATA.
dependent grid
YES
.
dependent label is " ". legend text is " ".
message 999 connect point is 0 -0.5,units plot-%,x 0,y 102.
page border no.
every dist outline white. send.
FILE

Programme M45 for figure (9.30)

universal case ascii.
generate a plot.
title
"figure (9.30) the computer staff employed in the industries of"+--
" Egypt"
"in terms of total number and nationality within 1977-1982"
" ".
msg 999 connect 0 -0.5, units plot-%, x 0, y 102,
"total number"
.
independent label
"years"
.
DIVISION LABELS --
"1977" --
"1978" --
"1979" --
"1980" --
"1981" --
"1982" --
"total 1977-1982" .
INPUT DATA.
"staff numbers"
1 , 17
2 , 43
3 , 38
4 , 50
5 , 66
6 , 68
7 , 282
"Egyptian staff"
1 , 11
2 , 27
3 , 19
4 , 24
5 , 39
6 , 39
7 , 159
"American staff"
1 , 0
2 , 0
3 , 7

4 , 11
5 , 11
6 , 13
7 , 42
"Canadian staff"
1 , 2
2 , 6
3 , 2
4 , 0
5 , 8
6 , 8
7 , 28
"English staff"
1 , 4
2 , 0
3 , 6
4 , 7
5 , 2
6 , 2
7 , 21
"French staff"
1 , 0
2 , 10
3 , 2
4 , 1
5 , 1
6 , 1
7 , 15
"Indian staff"
1 , 0
2 , 0
3 , 0
4 , 1
5 , 1
6 , 0
7 , 2
"Danish staff"
1 , 0
2 , 0
3 , 1
4 , 1
5 , 4
6 , 3
7 , 9
"Swiss staff"
1 , 0
2 , 0
3 , 1
4 , 5
5 , 0
6 , 0
7 , 6
END OF DATA.
independent grid
YES
.
dependent grid

YES

. frame.

every curve symbol count

YES

.

every curve thickness 3, symbol blanking.

curve 1 ring. curve 2 square. curve 3 bullet. curve 4 block.

dependent label ' '. legend ' '. every curve symbol outline 2 . send.

FILE

Programme C63 for figure (8.1)

universal case ascii. centimeter off. layout hrh.

generate a pie chart.

x page 9. y page 7.5. no border.

title

"Figure (8.1) Decision Treatment"

"(decision - oriented approach to identify the information"++
" needs)"

.

DIVISION LABELS

"Generate Decisions"

"Generate inf.needs"

"Assoc.inf.w.dec."

"Assess partic.ev."

"Assess writ,s ev."

.

INPUT DATA.

"Decisions & info.needs"

1 , 20

2 , 20

3 , 20

4 , 20

5 , 20

END OF DATA.

percent annotation

NO

.

data annotation

NO

.

annotation prefix

.

annotation suffix

.

annotation placement

external

.

every pie outline white, box is 0.0 9.0 0.0 5.75. legend ' '. go.

FILE

The Research and Doctoral Programme

In conjunction with Brunel University



Greenlands, Henley on Thames, Oxon RG9 3AU
Telephone: Henley on Thames 571454 (0491 571454)
Telex 849026 HENLEY G

Henley
The Management College

FROM THE RESEARCH COORDINATOR Professor Malcolm Warner

Dear Sir

In collaboration with Henley-The Management College, I am undertaking a research project which is supported by the Egyptian Government on the use of computers in the hotel industry. During the early 1970's in the UK, this subject has been discussed by both management and academics. One common conclusion that has been revealed is that the use of computers in the industry is growing in importance. Some firms have already installed computers of their own while others are making use of the Computer Service Bureaux. However, there are some companies' management who are uncertain about the scope of the computer's application in their business.

I am seeking the views of managers and executives in the hotel industry as to how the application of the computer assists in the running of an hotel's operations and procedures, and also in its ability to satisfy management's requirements as an aid to decision-making. I would kindly appreciate your help with this project.

The questions contained in the attached form are designed to seek your opinion about a number of issues which have already been identified. I have left space in the final section of the form for your personal comments.

The form has been coded to protect your identity and no answers which are given will therefore, be directly attributed to you (confidentiality and anonymity are assured).

Your cooperation will be of utmost value.

Yours faithfully

Mahmoud A M Hassan

EGYPTIAN EDUCATION BUREAU

TELEPHONE: 01-491 7720
TELEX: 27313 EGEDBU G

4 CHESTERFIELD GARDENS,
LONDON, W1Y 8BR

Our Ref:

Your Ref:

7 February 1985

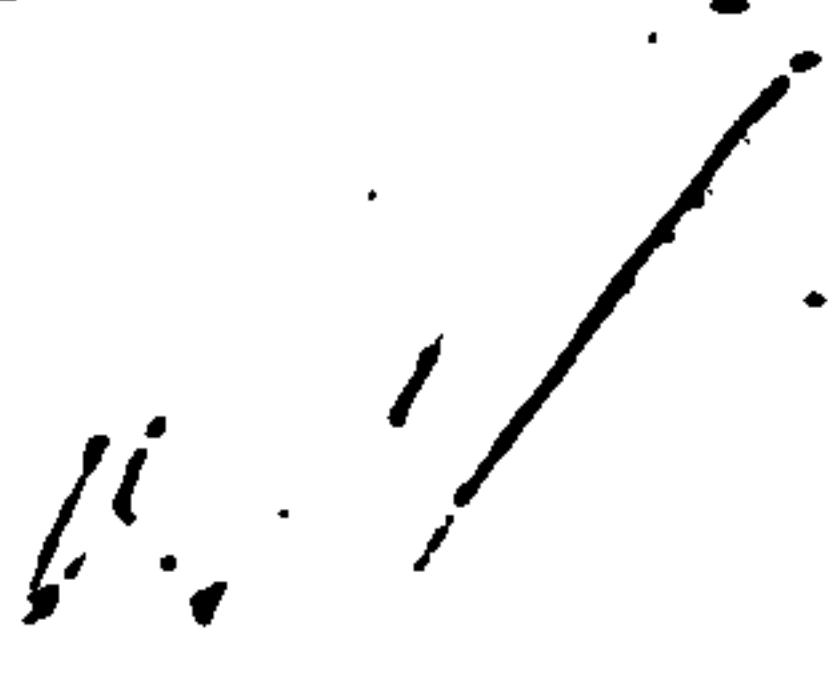
Dear Sir

We should like to introduce Mr Mahmoud A M Hassan who has an official grant from the Egyptian Government to carry out a Research Project in Management. This project is under the supervision of Professor Roy Stainton of Henley: The Management College, Henley-on-Thames.

The aim of the Research work is to develop a plan model for the information systems requirements in hotels in Egypt. As Mr Hassan's research depends on the analysis comparison between hotel surveys carried out in 1970 in UK and present situation, he is presenting the enclosed questionnaire to you and to the major hotel companies for information in his research.

We should be most grateful if you would complete the enclosed questionnaire, and we assure you that any information or data supplied will be in complete confidence. Your cooperation in this matter will be highly appreciated.

Yours faithfully



Dr Ibrahim Hamimy
Cultural Counsellor
and Director

Enc

Section A - The use of computers in hotels

1. Does your hotel use computers in the hotel and catering field?

yes ()
no ()

If your answer is 'yes' - which of these do you do?

have a computer on your own premises
use a computer bureau

2. What regular jobs are being done on the computer at the present time? Have you any (other) jobs planned for the computer which are likely to be on the machine during the next twelve months?

	<u>Regular</u> <u>Jobs</u>	<u>Planned</u> <u>Jobs</u>
- statistical tabulation		
- credit sales ledger		
- inventory, stock control		
- periodic statement of accounts/profit and loss accounts		
- bought ledger		
- payroll		
- mailing address list ³ / ₄		
- booking		
- costing		
- forecasting : future planning, mathematical models		
- others like (.....)		

3. Do you employ any other machines using cards (eg Data processing machines) - whether on your own premises or someone elses?

yes (|)
no (|)

If your answer is 'yes', please place a tick () in the most appropriate box.

Jobs put on data processing machines.	used	not used
- sales analysis	()	()
- bought ledger	()	()
- stock control	()	()
- invoices and stocks	()	()
- analysis	()	()
- invoices, statistics statements, stocks, payroll	()	()
- sales invoices, purchasing, payroll, stocktaking	()	()
- general management information, stock controlling, control of sales and purchasing	()	()
- other details not given like (.....)	()	()

What made you decide against putting these jobs on a computer/
reasons for not putting on computer jobs now done on other machines?

- insufficient work (not worthwhile) ()
- too expensive ()
- no technically qualified staff ()
- intend to : no time yet ()
- wait until we have our own computer ()
- firm not large enough ()
- it takes too long ()
- will do so eventually ()
- prefer present arrangement ()
- firm being taken over ()
- will consider in another year ()
- unable to find ideal computer ()
- either too big or too small ()
- others like (.....) ()

What made you decide to put the other jobs on a computer/
reasons for putting on computer jobs now done by it?

- too accurate ()
- speed ()
- too much to be done ()
- others like (.....) ()

Turning to the future, have you thought of using (extending your use of)
a computer?

- yes ()
- no ()

If your answer is 'yes' can you give details of these plans?
What job have you in mind, please place a tick () in the
most appropriate box

- inventory/stock control ()
- periodic/statement of accounts ()
- profit and loss accounts
- payroll ()
- bought ledger ()
- statistical tabulations ()
- credit sales ledger ()
- forecasting, mathematical models ()
- costings ()
- mailing address list ()
- bookings ()
- others like (.....) ()
- ()
- ()
- don't know which job ()

If your answer is 'yes', can you indicate how likely it is that
you will follow up these plans?

- will definitely follow up ()
- will probably follow up ()
- don't know ()

9. If your answer is 'yes', what jobs have been considered in these plans to extend the use of the computer?

	considered	not considered
- scheduling and invoicing	()	()
- reorderings, vehicle scheduling	()	()
- all clerical functions	()	()
- depot stocks invoicing and sales	()	()
- sales accounts and purchase analysis	()	()
- everything considered but not feasible on this machine, we'll have to wait until we purchase a large model	()	()
- most things can be done	()	()
- management accounting	()	()
- general accounting	()	()
- others like (.....)	()	()
.....		

Section B - This part of the questionnaire asks you to describe your job, as objectively as you can.

1. To what degree are the following skills essential to your job?

Require very
little

Require a
great deal

1 2 3 4 5 6 7

- a. verbal communication ability
- b. written communication ability
- c. numerate analysis ability (interpretation of numerical data)
- d. numerate computational ability (simple manipulation of numerical data)
- e. numerical conceptual ability (need to understand and use more advanced maths, techniques probability theory, or techniques)
- f. planning ability (forecasting future actions to meet forecasts)
- g. judgement ability (selecting between alternate actions)
- h. decision-making scope (direct responsibility for taking action over a defined supply management area)
- i. personal contact of all aspects of supply task/material
- j. evaluation of task performance
- k. evaluation of individual sub-ordinate's performance

- . Among the various media sources open to you for communication information, would you please indicate your average usage.

	Constant very frequent use		Intermittent use			Little no use	
	7	6	5	4	3	2	1
a. individual letters, memos							
b. files (case histories)							
c. publications							
d. telex messages							
e. standardised forms							
f. computer tabulations of files records							
g. computer inventory listing							
h. unsolicited computer outputs							
i. requested computer output							
j. computer costings outputs							
k. computer mathematical model results							
l. verbal communications of formal information (face to face or telephone)							
m. verbal communication of informal information (early warning of change, information of political factors,							

The task is
lightly loaded
with inform-
ation and is
boring

The information
involved in my
jobs keeps me
adequately busy

The information
involved in my
job overwhelms
me

1

2

3

4

5

6

7

n. in terms of
information load,
which position
on the following
scale best
describes your
job situation?

Section C- Information needs supply to evaluate the effectiveness of your information needs supply. Please place a tick () in the appropriate box.

1. What is the information you receive needed for?

Decision-making/taking	()
Mandatory action	()
Search and action	()
Advice only	()
Information only	()
Others like (.....)	()
.....)	()

2. The frequency you receive the information is :

daily	()
weekly	()
monthly	()
annually	()
others like (.....)	()

3. What form does the information you receive take:

normal printout	()
microfische	()
others like (.....)	()

4. Does the information you receive arrive:

on time	()
too late for action	()
too early and filed	()

5. Before the computer information was available, was it processed:

manually	()
not processed	()

6. Do you use the information:

always	()
seldom	()
never	()

7. Is the data you require from the information given:

easily identifiable	()
hard to distinguish	()

8. If the information is not always used, is it because:

- it is too bulky ()
- needs too much sorting ()
- not up-to-date ()
- it is incorrect ()
- others (please specify) ()
-

9. Is the information you receive:

- Given to you straight from the ()
computer department
- Given to you from some other ()
person at a higher level
- Given to you from some other ()
person at a lower level
- Others like (.....) ()
-

10. Do you think that you receive an optimal amount of information? If not, is it due to over supply or short supply of information?

- yes ()
- no ()
- over supply ()
- short supply ()

b. This part of the questionnaire seeks to recognise the features of the reservation system and information needed for making decisions there.

1. Do you have in your hotel information system for your customers?

- yes ()
- no ()

If the answer is 'yes' do you consider the information it has, accurate and up-to-date?

- yes ()
- no ()

and what is the system usually used to update?

2. Do you have in your hotel an information system about guests' history?

- yes ()
- no ()

If the answer is 'yes' do you consider the information it has, accurate and up-to-date?

- yes ()
- no ()

and what is the system usually used to update it?

3. What kind of programs do you have to get access to the information you need? and how many do you actually use?

Programs existed	programs used
1 -	1 -
2 -	2 -
3 -	3 -
4 -	4 -
5 -	5 -

4. What are the sources of information you have in your hotel to study your customers and your total market to make your decision?

1 -	5 -
2 -	6 -
3 -	7 -
4 -	8 -

5. To what extent do these sources of information contain all the information you need?

all the information	()
part of the information	()
enough information	()
very little information	()
others like (.....)	()
.....	

6. How often do you use these sources of information to make your decision?

always	()
seldom	()
never	()
others like	()
(.....)	

If your answer is either 'always' or 'never' please say why?

9. In which Department of the hotel do you work?

10. What are the main responsibilities of your work in this Department?

11. Which management category either describes, or most nearly describes your own position/level in the hotel?

- Management director or president ()
- Hotel director or Vice president ()
- General Manager ()
- Senior Manager ()
- Middle Manager ()
- Junior Manager ()
- Other ... please state.

7. Is there any information now produced by the computer which you distrust and so use alternative sources?

yes ()
no ()

If the answer is 'yes' please name this information and these alternative sources:

<u>Information</u>	<u>Alternative sources</u>
1 -	1 -
2 -	2 -
3 -	3 -
4 -	4 -
5 -	5 -
6 -	6 -
7 -	7 -

8. Is there any information which you would like to see added to the system?

yes ()
no ()

If the answer is 'yes' please name it:

1 -	7 -
2 -	8 -
3 -	9 -
4 -	10 -
5 -	11 -
6 -	12 -

Section d- This part of the questionnaire seeks to recognise your information needs for making your decisions. Please answer these questions in as much detail as you can, please use separate paper, if needed.

1. What types of decisions are you regularly called upon to make?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

2. What types of information do you need to make these decisions?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

3. What types of information do you regularly get?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

4. What types of information would you like to get which you are not currently getting?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

5. What information would you want daily? weekly? monthly? yearly? and from what sources of information?

- | information
required | time | source |
|-------------------------|------|--------|
| 1 - | | |
| 2 - | | |
| 3 - | | |
| 4 - | | |

6. What types of special studies do you periodically request?

- | | |
|-----|-----|
| 1 - | 4 - |
| 2 - | 5 - |
| 3 - | |

7. What magazines and trade or technical reports would you like to be sent on a regular basis?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

8. What specific topics would you like to be kept informed of?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

9. What types of data analysis programs would you like to see made available?

- | | |
|-----|-----|
| 1 - | 5 - |
| 2 - | 6 - |
| 3 - | 7 - |
| 4 - | 8 - |

10. What do you think would be the four most helpful improvements that could be made in the present information system in your level or department?

- 1 -
- 2 -
- 3 -