

An Investigation of Quality Practices in Libyan Industrial Companies

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Abstract—This paper describes the collection and analysis of data obtained from face-to-face interviews conducted in selected Libyan industrial companies. The objectives of the interviews are to enhance understanding, and generate explanations of current issues in culture and quality management systems in Libyan companies. The method used in analyzing the questions, as well as the main finding of each question are explained. The interviews probed areas identify national and organizational culture, quality management systems, current methods, effects, barriers and other factors affecting the success of quality management implementation. Eleven questions are prepared and been discussed with the interviewees.

Keywords—Interviews, quality, culture, Libyan industrial companies.

I. INTRODUCTION

QUALITY MANAGEMENT practices requires an organizational culture that is quality-oriented and supported by top management, team working and group efforts, organizational learning and entrepreneurship, open communication, risk taking, continuous and permanent improvement, focus for both domestic and outside customers, partnership with suppliers, and evaluating and monitoring of quality [1]. Successful implementation of quality management system requires an appropriate company culture, where everybody is effectively working forward for the purpose of reducing waste and for helping their partners. Everybody realizes that their contributions are essential for the team in which they are members and for their customers. The work team also realizes that if they are not in their work physically as well as emotionally, there is jeopardy that the job will not be completed as professionally as possible. The success of the system depends on all of the employee's involvement and participation, and that requires leadership for organizational excellence [2]. Different problems and obstacles of introducing and implementing quality management systems will become visible in different countries due to differences in culture; this may affect the implementation processes to be different in different nations and regions. The values of QMS may or may not harmonize with the country's national culture values, thus for each country, some values may be easy to implement, and others may be more complicated [3]. A number of researchers studied the obstacles and barriers of

quality management systems in the Arab world nations. Al-Khalifa and Aspinwall [4] concluded that organizations in Qatar are away behind Western countries in quality management systems. Another study, conducted to investigate the current difficulties facing quality management systems in Yemen manufacturing companies, concluded that employees in Yemen's manufacturing companies are unaware of quality management concepts [5]. In general, Total Quality Management is a new management philosophy in the developing countries, and very challenging approach to be harmonised with their traditional management styles and culture [6]. A recent study concerning the investigation of quality management systems current status in the Arabic speaking countries indicates and assures a number of statements regarding quality management in Arabic countries in general as follows [7]:

- i. Arabic speaking countries are very slow in practicing quality management.
- ii. Managers do not have enough knowledge about TQM practices.
- iii. Managers feel that their culture is not suitable for quality management approaches.
- iv. Lack of knowledge, awareness and understanding of ISO and TQM.
- v. Lack of quality management literature in Arabic language.
- vi. Arabic speaking countries are lacking behind in quality management issues.

A study on Libyan private and public companies [8] found that there is a lack of research and poor management in Libyan companies, their findings indicate that most of the problems existing within Libyan companies were caused by:

- i. Lack of sufficient knowledge of quality control methods and techniques.
- ii. Lack of motivation of employees for good quality work.
- iii. Poor quality specifications, poor raw materials, poor operating equipment, and many other technical factors that require more investigation, development and studies.

In recent studies dealt with Libyan iron and steel company, and with Libyan oil and gas manufacturing companies indicated that TQM implementation level is low. In Libyan cement industry, the level of TQM implementation practices is also found low with a slightly higher level than both in the oil and gas, and in the iron and steel industries [9].

Hokoma et al. [10] mentioned that Libyan industrial companies undergo many difficulties due to administrative and operational problems. These difficulties are causing a strong negative impact on the utilisation level of many organisations, and that most of the Libyan industrial

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companies are operating with only 50% of their capacity utilisation level. Surprisingly, senior managers in the Libyan iron and steel company, and in the Libyan oil and gas companies are seriously willing to improve their business area through applying the latest quality and manufacturing management systems in order to achieve a high level of improvements [10], [11].

The research focus of this study comes from the day-to-day management problems in Libyan industrial companies, caused mainly by the absence of quality management system implementation in Libyan industrial companies [7], [8], [12].

II. METHODOLOGY

A total of ten large size manufacturing companies from four Libyan industrial sectors were selected in the interviews. Eight of the ten managers interviewed (OG1, OG2, OG3, CE2, CE3, EP1, EP2 and IS1) asked the authors not to identify their identity nor their company names, therefore the authors promised them to identify only the management position of the interviewee and identify the name of their companies by assigning a distinction symbol for each case, so that personal information are confidential and anonymous. The breakdown of the companies interviewed is given in Table I. All ten companies interviewed had claimed that they are not TQM companies, and assured that their companies are ISO 9000 certified.

III. DATA ANALYSIS AND RESULTS

The following discussion summarizes the interviews conducted with ten managers from different Libyan manufacturing sectors.

A. Concepts and Principles for TQM

Question: Are there any concepts and principles for TQM being implemented in your company, and how?

TABLE I
 BREAKDOWN OF COMPANIES INTERVIEWED

Industry	Company symbol	Interviewee position	Quality system	
			Type	year
Oil and Gas	OG1	Quality control manager		<10
	OG2	Maintenance manager	ISO	<10
	OG3	Production manager		<10
Cement	CE1	General manager		<5
	CE2	Quality control manager	ISO	<10
	CE3	Production manager		<10
Electric and Power	EP1	General manager		<5
	EP2	Production manager	ISO	<5
	EP3	Production manager		<5
Iron and Steel	IS1	Quality control manager	ISO	<10

From the interviews conducted with the managers of the ten companies (two general managers, three quality control managers, four production managers and one maintenance manager), all ten managers agreed and stated that all employee levels of the company do not understand TQM and has little knowledge about it. Does this mean that majority of the respondents don't know much about TQM. Meager knowledge

of TQM is another important barrier in the implementation process. The managers in all ten companies under study give an indication that the concepts of TQM have not been implemented in their companies. Also they have insisted and assured that the knowledge of middle and first-line managers and employees about the implementation of TQM is very low if ever existed, which means that TQM has never been a subject that has been seriously addressed and/or introduced by Libyan industrial companies, with no strategy for implementing TQM principles was ever adopted. This shows that it needs a helping hand in understanding for the top management and then to all levels. All ten managers in the companies under study said that the companies will carry out those TQM principles which are essential in the ISO 9000 standards. Also, it is seen that unless the company is completely aware of TQM principles, they will not be implemented it totally. Two of the quality control managers, one from company CE2 and the other from company IS1, noted that the new ISO 9001: 2008 standard focuses on process flow that can help to identify what needs to be controlled. This is unlike the old ISO 9001: 1994 and 2000 standard which focused on individual quality elements, thus failing to highlight the relationship between them. Out of the ten companies studied, three managers from companies OG3, CE1 and EP3 felt that the ISO 9000 series are sufficient to address their needs and that they do not want to subject their employees to anymore standards, whereas the other seven managers prefer to try new quality control systems only if they are confident and assured of the possibilities of success and the outcomes of the new initiatives.

B. Barriers Affecting the Knowledge and Understanding of TQM Philosophy

Question: What are the barriers affecting the knowledge and understanding of Libya's manufacturing companies on TQM philosophy?

The feedback from the interviewees of the case study pointed out that none of the interviewees have good knowledge about TQM. The majority of the interviewees have only a little bit of knowledge from what they have understood about TQM practices and implementation during ISO standard training courses programs. One general manager from company EP1, two quality control managers from companies OG1 and IS1, and one production manager from company CE3 have indicated that they have attended only a part of an awareness program of the ISO standard training programs due to the fact that they being busy.

The interviewees have assured that the majority of the employees knew about TQM just from the awareness training programs and/or conferences. It can be implied that despite there being a few training programs regarding quality management systems, six managers from companies OG1, OG3, CE1, CE2, EP1 and EP3 have said and assured that their employees do not understand enough about TQM which resulted and showed a lack of employees awareness. Most of the managers have expressed their need to hire external consultants from outside the country to help them with the

awareness and implementation process. The interviewed managers insisted that they believe there are consultation firms locally, but they do not believe that those firms are capable and have the abilities, experience and the manpower to depend on for consultation and training programs.

Another reason the interviewees mentioned is that TQM is almost absent in Libyan educational system, except at the engineering departments at some Universities and a few higher engineering institutes where they offer quality control course as an elective course. Also, there is no national quality program in the country. Even though the government had set a quality control department in the Ministry of Industry, Economy and Trade of Libya, it mainly considers international standards of products and raw materials. Eight managers from companies OG1, OG2, OG3, CE1, CE2, CE3, EP1 and EP3 insisted and confirmed that poor education and training programs represent a major barrier in the implementation of quality management systems in Libyan industrial companies. From these findings, the lack of TQM awareness, poor education, and lack of training are common barriers in Libya.

C. Management Barriers Facing Companies from Implementing TQM

Question: What are the management barriers facing the manufacturing companies to start implementing TQM?

From the interviews conducted, all ten managers said and assured that the most important elements of a team are their working members; people with knowledge and experience relevant to the process are required, with a limit of the number of members to keep the team small enough to be manageable. They said that there is a lack of working in teams and an absence of active and experienced leaderships within their companies. Two general managers of companies CE1 and EP1, and five managers from companies CE2, CE3, EP2, EP3 and IS1 stated that industrial sectors in Libya like all other sectors within the country went through several changes in the last twenty five years in terms of their dependency. Sometimes they follow the Ministry of Industry, Economy and Trade, in the next year they follow the Ministry of Service and so on. Such frequent changes of the ownership were the cause for the changes in the organisation structure.

The interviewees outlined that the presence of a hierarchical traditional structure makes the management follow the organisational structure. Mostly, the coordination between departments in the ten case study companies carried out through formal letters between different departments. For example, departments of different directorates in the organisation should go through managers officially to follow approved organisational structure and adhere with authorities given to the head of every department. Every department according to job description and organisational structure has its responsibilities and authorities. The head of any department believes that it is important to follow the written department's job description to be a successful head, to satisfy management and to show their qualifications.

A general weekly meetings in eight of the under study companies OG1, OG2, OG3, CE1, CE2, CE3, EP3 and IS1

occurred between general managers and middle managers to discuss the company's activities but no daily and monthly meeting in the middle departments was issued to communicate quality information amongst the entire company's staff. Also, there was no effort to communicate the importance of quality management system implementation between managers and supervisors or between supervisors and employees.

All ten interviewed managers confirms the effect of laws issued by the Libyan authorities such as act number 15 in the year 1981 which imposes restrictions on financial issues such as salaries and financial motivations. These laws and restrictions result in unwillingness from the leaders to take responsibilities. It is seen and understood from all interviewed managers that they believe the company's culture helps in providing the basis to form and modify behaviours, attitudes and values deem very important to the power structure of the company and the problem how to deal with. The management in all case studies were poor in the exchange of ideas and information with employees as an effective leadership tool to implement the system successfully.

The interviewed managers in all ten companies insisted that there is a lack of employee involvement, empowerment, no continuity in training programs and no concentration of training programs on how the people in the company can maintain the system. During the interviews, it had been concluded that top management experience a lack of commitment and lack of leadership, where they should focus on high-commitment broad principles. The Author had explained to the interviewees the importance and the necessity which guides the choice of specific practices and assured that the company introduces high-commitment practices comprehensively to promote the required employee attitude and behaviours that guarantee the success of quality management system initiatives. First line managers and employees must be kept motivated and encouraged to help smooth out the initial transitional stage in TQM implementation. This can be achieved by strong leadership, training and involvement from staff at all levels.

D. Culture Barriers Facing Companies from TQM Implementation

Question: What are the culture barriers facing the implementation of TQM in Libyan industrial companies?

During the interviews with the managers of the surveyed companies, the Author asked about the barriers facing Libyan industrial companies from implementing TQM. All interviewees considers that the general director of the company is always responsible to bring them quality awareness, knowing areas needed improvement, provide resources required by the system and can guide the company during all processes for quality management system. The interviewed managers in all ten companies indicated that appointing the general director as a management representative was itself a barrier affecting implementation of quality management system because the management representative is responsible for ensuring that the quality management system is appropriate and maintained,

responsible for promoting quality awareness, and monitor the performance of the system.

From the interviews with general managers and middle managers about the barriers facing companies from implementing TQM, the interviewees agreed on the fact that the biggest difficulty for their company to change is to look for the culture and how to change culture to support TQM program; e.g. sometimes there exist some rumours in the company that top management will be changed in the coming days, or rumours that some of the companies' activities will be closed down, this will affect the employees attention and behaviour looking for what is happening to them after that. All ten managers assured that their employees express their behaviour dissatisfaction by delaying or neglecting in doing something, or in other words discussing things that are usually out of work scope and waste a lot of time and money. Another barrier is that the hierarchal management in Libyan companies is centralized, which is very difficult if not impossible for employees participation in relation to share and be part of solving problems and share ideas.

The managers stated that family's historical relationship with the government and the influence of managers and employees in all management levels affects the decisions made by top management. From the interviews, it is concluded that first-line managers traditionally has been as the authority within a particular department on site (e.g. operation team, work supervisor), they are responsible for telling the workforce what to do, and they are very confused and afraid of consequences of any decision made. This means that the company sets unreasonable objectives and lack of understanding of each other's' perspectives.

The interviewees, after discussion and explanations, had understood and convinced that successful TQM implementation program depends on supervision being given the tools, skills, ability and responsibility to manage the process, and that TQM requires manpower resources and top management commitment by training all employees and educate them about TQM concepts and principles.

E. Factors at Work

Question: In your opinion, what are the factors that may help you in your work?

All interviewees agreed and believed that integrated job functions as a team work by strategic vision of the companies is the best way to continue success. Six of the ten interviewed managers from companies OG1, OG2, CE1, CE2, CE3, and IS1 cited that some tasks need a greater level of skilled and knowledgeable employees, and all ten interviewed managers stated that lack of employees training inhibited empowerment of employees. There was a strong tendency for some of these members to be on their guard against their colleagues. Also, seven out of ten respondents from companies OG1, OG2, CE3, EP1, EP2, EP3 and IS1 revealed that the coordination between departments within their companies was carried out through formal letters in which they complained it takes time and power to achieve small tasks.

The different management levels interviewed expressed their feeling that the lack of financial support from the government has delayed the start of implementation of the TQM as the companies belong to the public sector. Also seven interviewees from companies OG1, OG2, CE3, EP1, EP2, EP3 and IS1 pointed out that the existing policies like law number 15 in year 1981 should be reviewed or changed to more flexible act (restriction of Libyan employees' salaries in public sector organisations). The interviewees in all companies agreed that open communications about financial presentation in the companies with motivation are the factors to help conducting the work.

F. Influential Constants to Quality

Question: Are there any influential constants inside or outside the company related to quality?

During the discussion with the interviewees, eight managers from companies OG2, OG3, CE1, CE2, CE3, EP1, EP2 and EP3 indicated that there is no one to give them continuous advises to set goals and targets. The other implication is that while TQM companies should take into account the system-level features as a part of their approach, as far as this approach guarantees employee commitment towards quality goals, it can be expected that the influence of TQM on organisational results will be greater when its implementation is supported by a high-commitment strategy, and they said improvement possibilities can be implemented by the firm in the future by adopting a step-by-step approach. The managers also said that for large size companies to compete effectively and survive in confused markets, it is very important to implement some TQM implementation practices in the future, adopting a step-by-step approach, which can contribute to the firms' long-term success.

G. Effects of Libyan Culture on TQM Implementation

Question: Would you describe and summarize the effects of Libyan culture on the implementation of TQM program?

From the interviews with all representatives of the ten companies, eight managers from companies OG1, OG3, CE1, CE2, CE3, EP2, EP3 and IS1 agreed that the cultural barriers being very important in the implementation of a successful TQM program. The study revealed no changes in the management system, high level of bureaucracy, high level of centralization in decision making, lack of managerial efficiency, lack of management and financial supports, and corruption from different directions and levels of management were the main causes of the delay encountered in the Libyan companies in the implementation of TQM programs.

All managers interviewed stated that the use of quality tools and techniques such as SPC (statistical process control) and the development of systems to measure satisfaction of internal and external customers had a limited usage. The need for changes has driven initiatives in the public sector as the pressure to improve performance has increased. Also, the government can provide a strong support for the spread of TQM by lending moral support and legitimizing quality training programs and licensing of instruction. This means that

there is a shortage of lecturers and consultants with a real understanding of the fundamentals of TQM. Managers agree and insist that TQM and new technologies are an essential element in the survival of their companies.

H. Management Responsibilities and Authorities

Question: Do managers in your company know the responsibilities and authorities regarding decision making about quality aspects?

The interviewees pointed out that Libyan manager are unlikely to find it easy to delegate authority, to be flexible in executing decision or to respond well to criticisms. All interviewed managers had insisted that employees are not willing to be involved in taking decisions in their job as a fear from legal accountability from their departments. The top management, who is responsible for any problems, is accountable to these controller departments. Hence, they found it difficult to empower the employees in decision making. Managers had indicated that the Libyan authorities think that the number of controller departments can control and avoid any kind of fraud such as financial and managerial cheating. Through a strong and serious discussion with the interviewees it can be concluded that the multiplicity of controller departments in the country will affect the TQM implementation through lack of employee involvement and empowerment. Another critical issue the interviewed respondents had raised is that the political structure (socialism) of the country and other imposed policies and procedures resulted to overstaff (featherbedding system) in the organisation of an unskilled Libyan workforce. The Libyan government departments, which controls public sector organisations and companies, imposed some policies and procedures on the companies by appointing to hire or recruiting by force some Libyan people, either skilled or not skilled, to be employed in those companies.

This research has highlighted that the ten companies under study are not under pressure from the Libyan authorities and external customers to implement TQM. In terms of employee empowerment, employees are not well aware of their responsibilities and obligations, including aspects of quality management systems. Managers said that employees think that there is an obsession for managers to get visits and hospitality, there is no mutual trust between departments, and that is one of the ways in which the companies cultivates the TQM culture among its people. The manager's responses added that a proof is shown through the department's routine manual, and top management needs to be involved in the management review process to understand what goes on within the company, and understanding the current and future needs. Managers also gave another reason when they responded that according to the Libyan legislations, the management has to deal with employees, and the top management must provide the necessary resources to fulfil the company's quality objectives.

The study has useful implications for the Libyan authorities to encourage their organisations and companies to adopt TQM program and to support the Libyan economy.

I. Libyan Authorities Influence on Their Company's QMS Deployment

Question: Whether any Libyan authority departments have an influence or force the company to implement any quality management system program?

A question was asked to the company's managers in the interviews whether any Libyan authority departments have an influence or force the company to implement any quality management system program. All the answers came yes; they all indicated that the Ministry of Industry, Economy and Trade had forced their companies to implement and get ISO 9000 certification for international customer needs and media. All interviewees had claimed that government and top management were very supportive in gaining ISO 9000 certification.

Another question been asked if any support or influence from Libyan authorities departments regarding the implementation of other quality management systems such as TQM. All the answers from the participated interviewees were no, indicating that government and ministry authorities do not intervene and have no desire to intervene or direct the companies towards any quality policies rather than the ISO 9000 program.

The authors asked the interviewees if their companies will get any financial support from national authorities to support any proposed quality management system, where their answer indicated that, due to the fact that their companies belong to the public sector, it is very hard to get any financial support from the government to start any quality management system. The interviewed managers had made it clear that due to the effect of lack of Libyan authority's support on implementing quality management system program in the company, it is difficult for the company and the management, if not impossible, to seek or even think in implementing any quality management system program.

Managers have complained and blamed that there are no journal articles available to read to get knowledge about quality management systems, and that there are no any other information sources available to them to create knowledge regarding the quality management systems and TQM. They also mentioned that there are no site-visit exchanges with similar production companies worldwide, and if any exist, it is confined and benefited from people from either inside and/or outside their companies whom chosen for financial and social benefits rather than gaining knowledge.

J. TQM Implementation

Question: What do you think about TQM implementation in your company?

All management levels surveyed said, after explaining to them what TQM is all about, TQM would be very helpful because everything will be done correctly right from the start with the TQM principles. Managers said that employees will

participate in decision making and will be managed better and improve their opportunities for involvement. Furthermore, employees' knowledge, experience and ideas may improve the business strategy and may secure a good practical implementation. Employees at all levels need to know that their leaders want them to participate, they need to know that their leaders are willing to listen to them, support them, and remove any barriers facing them from expressing and displaying their ideas. All ten interviewees had agreed the top management of the company should make sure that everybody within the company from top to bottom has a clear picture about the long-term goals. This will affect management style, quality of communication, quality of products and indeed everything that is done within a company.

All ten managers interviewed argued that employee's involvement and empowerment in decision making was not demonstrated in the shop floor, and that needs a lot of work and efforts to make it possible. Employees should be rewarded to encourage them to participate in responsibility and in decision making, and give them the power and authority to make decisions, which means low scores on the power distance dimension and low centralization of power. The employees can take their decision to stop the production process if anything unusual happened and then call his supervisor to discuss with him what should be done.

All interviewees have highlighted three main reasons for not having enough TQM and quality management system knowledge, they mentioned them as follows:

- i. No TQM awareness programs have been introduced inside the company.
- ii. No opportunity was given to them from top management to attend training courses and workshops in the field outside the company.
- iii. The chances to attend any training programs related to quality are given usually to quality department staff only.

Relating to the management experience in this field, a question was asked about barriers and difficulties facing the Libyan manufacturing industry from implementing TQM program. The manager's responses were as:

- i. Lack of awareness programs of TQM at most of the Libyan authorities' departments and most organizations (all ten companies).
- ii. Lack of understanding of TQM programs and systems (OG2, OG3, CE2, CE3, EP1, EP2 and EP3).
- iii. Lack of specialist local consultancy bureaus to help in implementing TQM (OG1, OG2, OG3, CE2, CE3, EP1, EP2, EP3 and IS1).
- iv. There are no experts in implementation of TQM in the companies (all ten companies).
- v. Lack of knowledge about TQM culture (all ten companies).
- vi. Lack of financial support from the government (OG2, OG3, CE2, CE3, EP2, and EP3).
- vii. No skilled staff in the field of TQM implementation (all ten companies).

viii. There are not enough training programs to the employees relating to quality (OG1, OG2, OG3, CE1, CE2, CE3, EP1, EP2 and EP3).

ix. Lack of knowledge about TQM and culture (all ten companies).

K. Overcoming the Barriers of TQM Implementation

Question: How do you think the best ways to overcoming the barriers of implementing TQM in your company?

A question was asked to the interviewed managers 'how the company can overcome the barriers to the implementation of TQM program. The answers mentioned during the interviewees responses as below:

- i. Continuous and intensive awareness programs to all staff (all ten companies).
- ii. The respondents cited that internal auditing is one of the methods used to overcome many barriers with the help of consultants (OG1, OG2, OG3, CE1, CE2, EP1, EP3 and IS1).
- iii. The concentration of employee's awareness programs regarding the importance of the system (all ten companies).
- iv. Foreign consultant that has a good experience in TQM and QMS issues (all ten companies).
- v. By taking corrective actions and implementing them (OG1, OG2, CE1, CE2, EP1 and IS1).
- vi. Distributing of quality policy and objectives in every clear place everywhere in the company to give the employees the opportunity to know and read them (all ten companies).
- vii. The top management commitment towards implementation of the system (all ten companies).
- viii. More training programs relevant to TQM and QMS (OG1, OG3, CE1, CE2, EP1 and IS1).
- ix. Through intensive internal audits and through the help of consultants (all ten companies).

IV. CONCLUSION

This paper present the interviews conducted with ten managers in different Libyan industrial companies. These interviews gathered the views and notions from top and senior managers working for the targeted industries and involved in decision making process. The interviews discussed issues such as concepts and principals of TQM implementation, management and cultural barriers of TQM implementation, management responsibilities and authorities, and how to overcome the barriers of TQM implementation in their perspective. Through the conduction of face-to-face interviews, the Author summaries the main findings as in the following points:

- i. Employees in Libyan industrial companies have very low knowledge about TQM.
- ii. TQM never been implemented in Libyan industrial companies.
- iii. TQM is absent in Libyan educational system.
- iv. No national quality awards program in Libya.

- v. Lack of working in teams, and absence of active and experienced leadership within Libyan companies.
- vi. Coordination between departments within the same company is carried out through formal letters.
- vii. Lack of top management commitment and leadership.
- viii. Lack of employees training, involvement and empowerment.
- ix. Lack of dealing with external agencies for training and consultation.
- x. Lack of training and poor education of the employees.
- xi. General Managers are responsible to guide the company during all processes for quality management system.
- xii. Employees are impossible to participate in solving process and quality problems.
- xiii. Rumors affect the employee's attention.
- xiv. Lack of financial support delay the start of TQM implementation program.
- xv. Lack of financial motivations and low salaries.
- xvi. Lack of culture change towards more flexible management style.
- xvii. High level of management centralization in decision making and corruption from different management levels.

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