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Advancing Construction Industries in Developing Countries: A Comprehensive Management Framework Considering the Levels, Obstacles, and Success Factors

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Keywords:

Construction industries; Construction manufacturing; Industry development; Industrial planning; Management framework.

Highlights:

- *Framework integrates ISO compliance and tech to boost Iraqi construction.*
- *Financial, manpower, and regulatory hurdles stall developing nations' construction.*
- *Public-private sector merger key to overcoming industry obstacles.*
- *ANOVA identifies finance, manpower, depreciation as critical barriers.*

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Abstract: There is a gap between the industry in developing countries and developed countries. This gap entails improving the industry and increasing the management role. Generally, the challenges facing developing countries' industries are management aspects of finance, technology, and experience. This study aims to develop a management framework for industry development by investigating the aspects of construction industry management in Iraq. However, the precise objectives are finding the constructs and items of Industry Level, Obstacle, and Success Factors. In addition to the literature review, the study comprised interviews and a series of questionnaire surveys. The interviews were conducted with five professional engineers based on prepared structured questions. The sampling method of the questionnaire was simple random sampling. The questionnaire design is based on three consecutive surveys based on a closed-ended question. The questionnaires have two constructs: background information and study objectives questions. The questionnaire was distributed to 103 engineers; however, only 85 to 90 were completed. The techniques used to analyze the data were mean values and ANOVA tests. The results showed that the level of construction industries was low due to obstacles, such as lack of financial allocations, manpower, and central regulations. These obstacles significantly affected investment and development in the industry. Also, the study revealed factors to develop the industry, such as activating the private sector, implementing projects, and satisfying competition. Consequently, a clear relationship exists between the study variables, so overcoming the obstacles of finance and expert manpower satisfied by supporting the investments and private companies. The developed framework consisted of four parts: factors of industry management, aspects of industry level, Obstacle factors, and Success factors. Each one of these parts contains several factors or items. The developed framework is a roadmap for developing the industry.

تطوير الصناعات الانشائية في البلدان النامية: هيكل إداري شامل يأخذ في الاعتبار المستويات والمعوقات وعوامل النجاح

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الخلاصة

هناك فجوة بين الصناعة في البلدان النامية والدول المتقدمة. تستلزم هذه الفجوة تحسين الصناعة وزيادة دور الإدارة. وبشكل عام، تتمثل التحديات التي تواجه صناعات البلدان النامية في الجوانب الإدارية للتمويل والتكنولوجيا والخبرة. الهدف الرئيسي للبحث هو انشاء هيكل إداري لتطوير الصناعة من خلال دراسة جوانب إدارة الصناعات الإنشائية في العراق. على اية حال، الأهداف الدقيقة هي العثور على بنيات وعناصر مستوى الصناعة والعوائق وعوامل النجاح. بالإضافة إلى مراجعة الأدبيات، تألفت الدراسة من مقابلات وسلسلة من استطلاعات الاستبيان. تم إجراء المقابلات مع خمسة مهندسين محترفين بناءً على أسئلة منظمة معدة. طريقة أخذ العينات في الاستبيان هي أخذ العينات العشوائية البسيطة. يعتمد تصميم الاستبيان على ثلاث استبيانات استقصائية متتالية تعتمد على اسئلة مغلقة. تحتوي الاستبيانات على بنيتين: المعلومات الأساسية وأسئلة أهداف الدراسة. وقد تم توزيع الاستبيان على ١٠٣ مهندسين، ولكن لم يكتمل منه سوى ٨٥ إلى ٩٠ استمارة. التقنيات المستخدمة لتحليل البيانات هي القيم المتوسطة واختبارات ANOVA. وأظهرت النتائج أن مستوى الصناعات الإنشائية منخفض بسبب معوقات مثل قلة التخصيصات المالية ونقص الأيدي العاملة والأنظمة المركزية. ولهذه العوائق تأثير كبير على الاستثمار والتنمية في الصناعة. كما كشفت الدراسة عن عوامل تطوير الصناعة مثل تنشيط القطاع الخاص، تنفيذ المشاريع وتحقيق المنافسة. وبالتالي توجد علاقة واضحة بين متغيرات الدراسة، لذا فان التغلب على معوقات التمويل ونقص القوى العاملة المتخصصة يتم من خلال دعم الاستثمارات والشركات الخاصة. ويتكون الهيكل المطور من أربعة أجزاء: عوامل إدارة الصناعة، معايير قياس مستوى الصناعة، عوامل المعوقات وعوامل النجاح. ويحتوي كل جزء من هذه الأجزاء على عدد من العوامل أو العناصر. الإطار المطور هو خارطة طريق لتطوير الصناعة.

الكلمات الدالة: الصناعات الانشائية، التصنيع، تطوير الصناعة، التخطيط الصناعي، الهيكل الإداري.

1.INTRODUCTION

This study focused on the industry in developing countries; therefore, the Iraqi industry is considered a case study. For the period 1920-2003, there was unclear interesting in the local industry as there is no identification for these industries in the records and industries statistics in Iraq. From 2003 until now, although of the economic openness, the economic growth of Iraqi construction industries still retarded due to several different reasons, such as failure to compete with the prices of exported products, implement big taxes on the incomes of industry projects, on the other hand, cancellation of customs duties on imported products. The current manufacturing policy in Iraq adopted a randomization technique with no planning and strategy goals. The industry witnessed a technological revolution in all aspects; however, these technologies are still in progress. The industry gains many benefits from these technologies [1]. Many factories and industrial institutions have been destroyed. Even the remaining active industries are almost not satisfying the expected profits. Also, nothing is interesting about sustainability and pure environmental requirements. Accordingly, this study considers the Iraqi industry management and planning. In developing countries, these difficulties and challenges are present alongside a general situation of socio-economic stress, chronic resource shortages, institutional weaknesses, and a general inability to deal with key issues. Evidence also shows that the problems have severely extended in recent years [2]. However, it is well known that there is a conflict between the industry and the environment when works and jobs could be affected by the environmental regulations and policies imposed on heavily regulated industries [3]. However, more work must be done on the issues of globalization [4, 5], the environment and the various aspects of culture related to construction activity, construction enterprises, and the construction industry in developing countries [2, 6]. The strategy of rehabilitation of industrial enterprises in Iraq requires a wide range of axes, such as the Technical axis, Management axis, Economy axis, supervisory axis, financial axis, and Law axis. These axes will be translated by the present study with several aspects formulated as a management framework of industry development. A literature investigation, search, and review were done to find previous studies and related references. The researcher could not find any research within the scope of the present study. However, the topics of the present literature review are strongly related to the research keywords, as explained consistently in the subsections listed below. Management has three trends: system, emergency, and strategies [7, 8]. A management framework consists of an interrelated network of items to support an approach to a management objective. Different management frameworks are being implemented in different institutes worldwide; however, their motives, adoption, and evaluation aspects are still fuzzy. The success of a management framework regarding its continuity and impact is a subsequent result of an efficient network [9]. However, the continuous and interesting of such management novelty comes behind implementing all aspects of the surrounding real field in interrelationships network [10]. Network effectiveness occurs in management when the usefulness of a user resulting from a management novelty depends on several other

users involved in a particular field [11]. The action of construction in Iraq is big and increasingly developing [12]. The key process of industry development is largely affected by product diversification, good marketing, and reduced costs, leading to increasing consumption, and the production lifecycle continues. As a consequent, the employment and the employees' income increased, and, on the other hand, the purchasing ability of consumers increased [13]. The finance management of the industrial sector impacts the industry development. However, this management required the availability of well-performance work of an institute and an active follow-up and measurements of economic conditions [13, 14]. The new technology has an essential role in the success of sustained industry development. Also, there is a relationship between new technologies, institute development, and business creation. Also, the developed industry significantly eliminates poverty and reduces unemployment [15]. The industrial planning can be defined in the same way as economic planning. It is a scientific and rational means to organize a series of interrelated and interdependent processes and prioritize them to meet previously planned goals and targets for the industrial sector within the strategy framework within a specified period, with appropriate means to achieve these objectives. However, success in industrial planning is difficult to guarantee, and many firms focus too much on technology [16, 17]. The developing countries should seek to develop construction industries, which are well poised to benefit from globalization. In addition to applying the local culture to facilitate their efforts towards achieving success on their projects [2, 18], finding the specifications of an industry that the customer demand is the key point of industry success [19], which is the basis of product planning related with all decisions about the introduction of new products, changes to existing products and withdrawal of old products. Product planning aims to ensure that the construction industries are successful by satisfying customer demands [20]. Manufacturing consists of several industry activities, such as building materials, i.e., cement, iron bars, and aluminum, considered as supplementary manufacturing, such as cement, class, and painting, depending on the local manufacturing of its principal materials. While the iron bars and aluminum depend on imported principal materials. However, industry manufacturers increasingly approach digitalization to deliver service development [16]. The construction industry affects economic divisions by manufacturing steel, cement, and machines [21, 22]. Some manufacturers have been specified as national manufacturing, which should be very interesting as big local required manufacturing is applicable for improvement and development. These manufactures, such as building equipment, concrete additives, and other materials, are used for roofing. Accurate manufacturing design is important in production systems to ensure efficient operations and excessive material usage, significantly impacting manufacturing cost and time [23]. According to the records of manufacturing prices, it synchronized booms and busts. These macroeconomic shocks motivate the development of a broad set of industrial commodities prices related to the construction industry [24-26]. There are several benefits within the satisfaction of integration for all manufacturing stakeholders' parties representing in ensuring knowledge, issues solutions, and engagement [27].

2.METHODOLOGY

In addition to the literature review, the present study's methodology is based on a series of research steps, including qualitative interviews and quantitative study by questionnaire surveys. Figure 1 shows the research method of the present study. For the questionnaire, the sampling technique used is Simple Random Sampling, and the data analysis techniques are Mean and ANOVA tests.

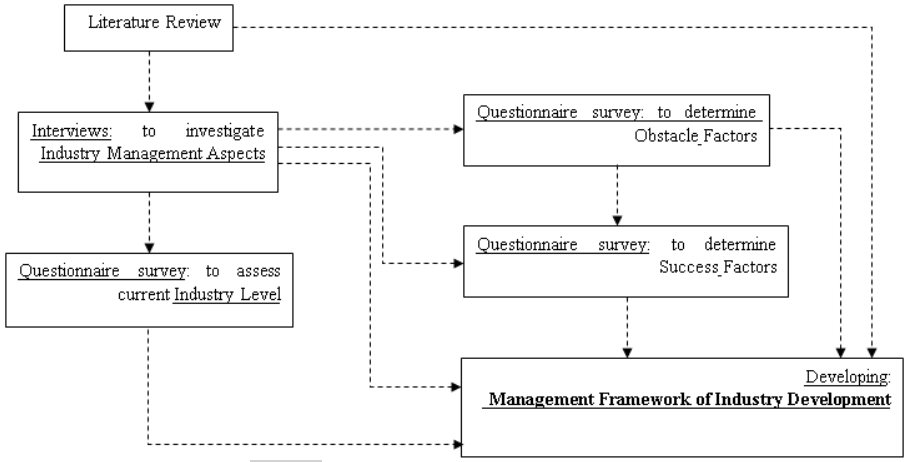

Fig. 1 Design of Research Method.

2.1.Interviews: to Investigate Industry Management Factors

The literature review revealed that no valuable study has been conducted about the construction industries in Iraq. Consequently, a Qualitative Study is needed to collect data for further studies. To perform this study, open-ended with experts in the construction industry were conducted. Qualitative study is a method of investigation assigned in many knowledge disciplines in practice [28]. The qualitative study was performed through observations and interviews. The interviews was flexible in modifying the questions according to the interviews preceding requirements [29]. For this study, the structured interview is the adopted method of interviewing. The interviews were conducted with five professionals in the Ministry of Construction and Housing and the Ministry of Industry and Minerals. The specifications of these professionals are shown in Table 1.

Table 1 Demography Specifications of the Interviewees.

No	Ministry	Engineering level	Educ. level	Work Experience (Yr.)	Engineering Specialization	Work position
1	Ministry of Construction and Housing	Consultant engineer	M. Sc.	25	Architecture	Assistant Director of Technical Department
2	Ministry of Construction and Housing	Consultant engineer	B. Sc.	30	Civil	Engineer in Technical Department
3	Ministry of Construction and Housing	Supervisor engineer	B. Sc.	21	Civil	Engineer in the Division of Studies and Planning
4	Ministry of Industry and Minerals	Consultant engineer	B. Sc.	39	Material	Director of the Department of Studies at the General Company for Construction Industries
5	Ministry of Industry and Minerals	Supervisor engineer	B. Sc.	17	Civil	Director of Studies and Planning Division, Project Design and Implementation Department

The main goal of doing the interviews is to find the factors of Industry Management. However, these interviews investigated different aspects related to the research objectives. The structured questions of the interviews are as follows:

- In your experience, what is the level of industry in Iraq? (Provide us with documents if possible).
- In your opinion, how much do the consumers depend on the local industry? (Provide us with documents if possible).
- In your opinion, has the local industry declined? If yes, what are the reasons for this?
- In your opinion, what factors can improve the local industry?
- How can the success of a certain industry be measured? What are its processes and elements?

The answers of the respondents have been collected. The analysis process of qualitative data is based on collecting, structuring, and interpreting qualitative data to understand what it represents because qualitative data is not numerical data [22]. The results of the interviews are the following:

- Industry level is very low;
- Local productivity covers 50% of market consumption;
- It could be increased up to 70% in case of developing factories and rehabilitation;
- The low level of local industries belongs to the following:
  - Incompleteness of the rehabilitation process due to lack of financial allocations;
  - Sagging staff (the number of employees more than needed);
  - Lack of manpower over time;
  - Central regulations restricted companies' work because of the delay in providing raw materials on time;
  - The depreciation of factories, especially after the year 2003;
  - Looting during the war in 2003;
  - Modern technology of manufacturing process in the developed countries compared to the old technology of Iraqi factories;
  - Lack of experience of man powers due to lack of keeping up with the latest work technologies and techniques of developed countries;
  - The locations of factories are unsuitable areas for industry activities and subjected to ineligible conditions for production;
  - Unawareness of the importance of implementing industrial cities;
  - The bad policy circumstances dumping the local economy and caused lacking in protecting the local products;
  - The high prices of raw materials and the high prices of electricity and fuel used in production.

- The interviewees believed that the factors that could develop the local industry are as follows: -
  - Liberalization of the private sector and involvement in it as a major contributor to the public sector;
  - Implementing major industrial projects;
  - Fixing all the problems and obstacles that caused the low level of local industries.

The success of a particular industry can be measured according to the needs of the country and depending on the business requirements. The interviewees pointed out that measuring the success of an industry could be done according to the following: -

- To what extent the industry conforms to the specifications specified by the designer;
- To what extent the conformity of local materials with the global materials accredited by international companies specialized in the specification ISO;
- Performing tests on manufactured products, such as corrosion and loads tests, can assist in determining the successfulness of these products;
- Before marketing the product, it is important to perform a study based on the amount of demand;
- The cost is successfully determining a particular industry;
- Supply consumers with products on time;
- Keep up with competitors by setting up industrial projects and marketing products.

2.2.Questionnaire Survey: to Assess Current Industry Level

The quantitative method is a familiar methodology for collecting data because it covers a wide range of research populations [28]. The quantitative study aims to obtain findings representing a wide range of respondents. The quantitative study was performed through a questionnaire survey. However, the present study consisted of three consecutive questionnaire surveys. All these surveys have been built on a closed-ended question so the respondents have to choose one or more among a set of alternatives for answers. The questionnaires were designed to have two constructs. The first construct is the background information of the respondents. The items, their shortenings, and measurement tools of this construct are shown in Table 2. The second one consists of several items represented in questions and answer choices related to each one of the study objectives. The answer choices of these questionnaire surveys have been based on a five Likert scale and the mean intervals of this Likert scale results are shown in Table 3. These scales have been adopted by Abdul Kareem and Abu Bakar (2013) [30]. A Likert scale is a frequently used rating scale to classify and measure the results and data; it consists of statements that the respondents could choose to rate their answers. The targeted respondents are engineers having good experience in the "Ministry of Construction and Housing" and the "Ministry of Industry and Minerals." The sample was randomly chosen to be cooperative respondents ready to respond to the three consecutive questionnaire surveys. This sample consisted of 103 engineers in several institutes belonging to these ministries; some are project managers, and some are Director Managers. Most of them have a B. Sc. degree; however, more than half of them have experience of more than five years. The methods adopted to analyze the data and find the results depended on the SPSS program with a guide from the SPSS Survival Manual [31].

Table 2 Construct, Items, and its Shortenings of Background Information of the Chosen Sample Respondents.

Construct	Item	Shortening	Measurement tools and intervals
Background Information	Respondent's position in the institute.	Position	Director Manager, Project Manager, Engineer, and other
	Respondent's level of education.	Education	Master, B Sc, and Diploma
	Respondent's years of experience.	Experience	<5, 5 – 10, and >10
	Respondent's engineering specialty.	Specialty	Civil, architecture, electricity, mechanics, water resources, and others.
	Respondent's Workplace	Workplace	Residential Buildings, Commercial Buildings, Roads and Bridges, Dams, Industrial Building, and others.

Table 3 Considered Strengthen, Agree-Disagree Level and Available-Not Available Results from Likert Scale Quantification.

Likert Scale	Level Indication	Agree Level	Availability Level	Shortening
1.00 - 1.50	Low	Strongly Disagree	Never	Position
1.51 - 2.50	Medium	Disagree	Rarely	Education
2.51 - 3.50	Good	Neither Agree nor Disagree	Sometimes	Experience
3.51 - 4.50	V. Good	Agree	Almost	Specialty
4.51 - 5.00	Excellent	Strongly Agree	Always	Workplace

The first questionnaire was built and designed to collect assessment indications to assess the industry level from a large sample. The items of this questionnaire were extracted from the interview results. Only 90 out of 103 distributed forms were returned; three were neglected because they were uncompleted, and only 87 were used. Table 4 shows the items, shortenings, and measurement tools of the construct industry level. Table 5 shows that the results of the Mean test of industry level are within the interval of good level (between 2.51 and 3.50) for "Quality Specifications, Product Price, and Local Consumption." On the other hand, the mean values for "Technology & Development and International Competitiveness" are within the medium level (between 1.51 and 2.5). These results revealed that the price of construction industries is reasonable, and the quality is good. In addition, the results showed that there is good local consumption for these industries. However, according to the global industries, these industries are at a medium level with technologies and developments.

Table 4 Construct, Items, its Shortenings, and Measurement Tools of Industry Level Assessment.

Construct	Item	Shortening	Measurement tools and intervals
Level of construction industries according to several indications.	Compatibility with quality specifications standards.	Quality Specifications	Excellent; V. Good; Medium; and Low
	Industry Technology and Development	Technology and Development	
	Reasonability of Product Price.	Product Price	
	Compatibility with global industries	International Competitiveness	
	Dependency on Industrial products by local consumers.	Local Consumption	

Table 5 Mean Test of the Indications to Assess Industry Level.

Level Indications	Mean	Std. Deviation
Quality Specifications	2.9655	.99356
Technology and Development	2.1034	.91543
Product Price	2.7816	.88166
International Competitiveness	1.8391	.97496
Local Consumption	2.5862	1.10550
Valid N (listwise)	N=87	

2.3.Questionnaire Survey: To Determine Obstacle Factors

Based on the interview results, a questionnaire survey form has been prepared to determine Construction Industries Obstacles. The construct of obstacle factors and their items, shortenings, and measurement tools are shown in Table 6. This survey was done with the same chosen sample, 103 respondents, but only 90 were completed and returned. The results shown in Table 7 proved the existence of most of the obstacles (10 of 12) highlighted within this study, such as "Financial Lack, Over Need Career, Manpower Lack, and Factory Depreciation." The smaller mean of these obstacles was more than 3.5, the almost-always interval. On the other hand, the obstacles of "Experience Lack" and "Unsuitable Factory Location" are in the interval of "sometime," meaning that sometimes these obstacles exist.

Table 6 Construct, Items and its Shortenings, and Measurement Tools of Construction Industries Obstacles.

Construct	Item	Shortening	Measurement tools and intervals
Construction Industries Obstacles	Lack of financial allocations	Financial Lack	Always, Almost, Sometimes, Rarely, and Never.
	The career is over the need of the institute.	Over Need Career	
	Lack of manpower	Manpower Lack	
	The obsolescence and depreciation of factories	Factory Depreciation	
	The looting and plundering that took place during the war on Iraq in 2003	War Robbery	
	The lack of industry development compared with developed countries	Development Retarded	
	Lack of experience of the executive staff of industrial projects	Experience Lack	
	The presence of factories in areas that are not suitable for industry and are exposed to conditions that are not eligible for production	Unsuitable Factory Location	
	Lack of interest in implementing industrial cities in Iraqi cities	No Industrial Expansion	
	Lack of local product protection	Neglect Local Production	
	The high prices of raw materials, as well as the prices of electricity and fuel to operate factories	Expensive Raw Material	
	Central regulations limit the companies' work in providing raw materials on time.	Central Instructions	

Table 7 Obstacle Factors of Construction Industries.

Obstacles	Mean	Std. Deviation
Financial Lack	4.1954	.88711
Over Need Career	3.7126	.97537
Manpower Lack	2.5747	1.36937
Factory Depreciation	3.9770	.92732
War Robbery	3.8276	1.05882
Development Retarded	3.7241	.94856
Experience Lack	3.1264	1.19888
Unsuitable Factory Location	3.2989	1.04676
No Industrial Expansion	3.8276	.96698
Neglect Local Production	4.1149	.86838
Expensive Raw Material	3.9770	.95207
Central Instructions	3.6437	.96421
Valid N (listwise)	N=90	

2.4.Questionnaire Survey: to Determine Success Factors

According to the Interviews and Obstacle Factors survey results, a questionnaire survey form has been constructed to determine the Success Factors. Only 85 of the respondents participated and completed the questionnaire answers. The construct of success factors and its items shortenings and measurement tools are shown in Table 8. Table 9 shows that the respondents agreed with the success factors that could enhance and develop the construction industries in Iraq, such as "Specifications as ISO, Products Tests, Providing in Time, and Competition Satisfaction." The smaller value of mean tests was more than (3.8), which is in the agree-strongly agree intervals.

Table 8 Construct, Items and its Shortenings, and Measurement Tools of Construction Industries Success Factors.

Construct	Item	Shortening	Measurement tools and intervals
Construction Industries Success Factors	Merging between the public and private sectors.	Activate Combined Sector	Strongly Agree, Agree, nightjar Agree nor Disagree, Disagree, and Strongly disagree.
	Producing the industries with low cost as much as possible.	Low Production Cost	
	Good leadership and allocation of responsibilities.	Good Leadership	
	Modern technology of new factories.	New Technologies	
	Implementing major industrial projects.	Big Industrial Project	
	Compatibility with the specifications appointed by the designer.	Specifications as Design	
	Compatibility of local materials with global materials regarding ISO specifications.	Specifications as ISO	
	Performed Tests for manufactured materials.	Products Tests	
	Commitment to deliver the product to the consumers on time.	Providing in Time	
	Keeping pace with competitors by implementing projects and good product marketing.	Competition Satisfaction	

Table 9 Success Factors of the Construction Industries.

Success Factors	Mean	Std. Deviation
Activate Combined Sector	3.8966	1.03468
Low Production Cost	3.8851	1.10417
Good Leadership	4.7471	.48748
New Technologies	4.8506	.38966
Big Industrial Project	4.4598	.72824
Specifications as Design	4.6437	.62834
Specifications as ISO	4.5287	.71266
Products Tests	4.6552	.56707
Providing in Time	4.6207	.55492
Competition Satisfaction	4.6667	.56376
Valid N (listwise)	N=85	

2.5.ANOVA Tests: to Investigate Significant Differences between Results

ANOVA tests were performed, and the significance level was $p < 0.05$. These tests have been performed to investigate a hypothesis that there were no significant differences between the mean scores for research constructs (Level, Obstacles, and Success Factors) about respondents' specifications (Position, Education, Experience, Specialty, and Workplace). The variances are homogeneous if the significant values of Levene's test are greater than 0.05 [26]. The results of these tests showed that the significant values were greater

than 0.05, so the homogeneity of variance assumption was unviolated. Also, the results showed no significant differences between the respondents' answers, regardless of their specifications. The output of these tests is quite large to be added here. As explained previously, the researcher could not find any relevant recent studies, especially in Iraq and developed countries. Therefore, there is a research gap regarding industry management, and there is no previous research to compare the present study's findings.

2.6.Developing: Management Framework of Industry Development

The main goal of the present study was to obtain a theoretical framework to be a head notes roadmap of developing the industry situation in developing countries according to different aspects of industry management represented by assessing the current level of industry and finding obstacles and success factors. Figure 2 shows the Management Framework of Industry Development. Mainly, this framework consisted of four main parts:

- Headline factors of industry management;
- Assessment aspects of industry level according to headline factors;
- Obstacle factors of industry development;
- Success factors of industry development.

Fig. 2 Management Framework of Industry Development.

2.6.1.Headline Factors of Industry Management

Generally, there are seven factors affecting industry management. These factors are:

- Quality;
- Finance;
- Competitiveness;
- Human resources;
- Production Projects;
- Customer Satisfaction;
- Strategies.

2.6.2.Assessment Aspects of Industry Level According to Headline Factors

The industry assessment aspects are related to each one of the headline factors. These aspects are as follows:

- Quality standard;
- Technology development;
- Cost and price;
- Competitive requirements;
- Production team and stakeholders;
- Factories and industrial projects;
- Local consumption;
- Industrial planning.

2.6.3.Obstacle Factors of Industry Development

The obstacles to industry development related to the headline factors and aspects are as follows:

- Lack of quality development;
- Lack of finance;
- High price of raw materials, Electricity, and fuel;
- Preferring Exported Products;
- Over need carrier;
- Lack of manpower;
- Lack of staff experience;
- Depreciation;
- Unsuitable factories;
- Unawareness regarding industrial cities;
- Lack of protection the production;
- Delay in supplying products;
- Lack of interesting and supporting private sector.

2.6.4.Success Factors of Industry Development

Based on the obstacles factors, the success factors to developing industry are:

- Adopting new technologies to improve quality;
- Taking suitable actions to reduce production costs;
- Implementing new market projects and improving marketing;
- Improving senior management roles and responsibilities allocation;
- Implementing major industrial projects;
- Fulfillment design and ISO specifications;
- Delivering products on time;
- Merging between private and public sectors.

3.CONCLUSIONS

The present study concluded the following:

- The level of construction industries was very low due to several obstacles, such as a lack of financial allocations, manpower, and central regulations. However, several factors could develop the local industries, such as activating the private sector and involving it within the public sector.
- Developing the industry required improving the product price, quality, and consumption. To achieve these improvements, developing a strategic managerial plan considering the related success factors is recommended. Also, the current technologies must be improved according to the global industry level.
- The obstacles are Financial Lack, Over-Need for Career, Manpower Lack, and Factory Depreciation. These factors significantly affect the industry development. These findings are compatible with previous studies, such as [2].
- The success factors of industry development are the compatibility of specifications with ISO, launching global tests, delivery on time, and satisfying competition requirements.
- The developed framework consisted of four parts in consequent order: Headline factors of industry management, Assessment aspects of industry level according to headline factors, Obstacle factors of industry development, and Success factors of industry development. The first part consists of seven factors: Quality, Finance, Competitiveness, Human resources, Production Projects, Customer Satisfaction, and Strategies. According to the first part, the second part comes with aspects, such as Quality standards, Technology development, Cost and price, and Competitive requirements. The third part consists of the obstacles, such as Lack of quality development and finance, need for a carrier, Lack of staff experience, and Delay in supplying products. The fourth part consists of the success factors, such as Adopting new technologies, reducing production costs, and improving marketing and management roles. The developed framework represents a guide to developing the industry through assessing the current level of the industry and finding obstacles and success factors.

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