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Strategic Evaluation Plan and Improvement of Cement Plants (Iraqi Kurdistan Region - as a Case Study)

A B S T R A C T

The cement plants in the Kurdistan Regional Government of Iraq (KRG) have made a considerable contribution to the economy of the region and almost dominated the cement market in the entire region and middle and south of Iraq. The cement plants as a part of KRG's industrial sector needs to consider strategic planning, through this research the condition and quality of the cement plants in KRG have been evaluated, using Strengths, Weaknesses, Opportunities, and Threats analysis (SWOT Analysis) technique as a strategic planning tool to demonstrate weakness points and strong points in the cement production process and to review opportunities to turn weaknesses into strengths while identifying the challenges facing this process and suggesting strategies to develop the cement plants. The main aim of the current study is to strategically evaluate, plan, and improve cement plants in KRG through the application (SWOT Analysis Technique). To achieve the study objectives, the methodology consists of a literature survey and field survey; including Interviews, field visits, data collection, presentation, analysis, and discussion of the results. In this study the reality of cement production in Iraq and Kurdistan region of Iraq has been demonstrated, the research sample was Gasin Cement Company (GCC) located in Sulaimaniya Governorate, SWOT analysis has been conducted to study the reality in the plant, some strong points, weakness points, opportunities, and threats have been founded. As a strong point; the quality of cement in GCC is high then as a weakness point Absence supervision on contractor's work, after that as an opportunity Iraqi government has prevented the import of cement since 2016, finally as a threat the fluctuation of oil price does have dangerous effects on the cement market.

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التطوير الاستراتيجي لمصانع الاسمنت (إقليم كردستان العراق - كدراسة حالة)

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الخلاصة

ساهمت مصانع الاسمنت في إقليم كردستان العراق بنسبة كبيرة في اقتصاد المنطقة وسيطرت تقريباً على سوق الاسمنت في الاقليم بأكمله ووسط وجنوب العراق. تحتاج مصانع الاسمنت، كجزء من القطاع الصناعي لحكومة إقليم كردستان، إلى التفكير بالتخطيط الاستراتيجي، نحاول من خلال هذا البحث تم تقييم حالة و جودة مصانع الاسمنت في إقليم كردستان ، باستخدام تحليل نقاط القوة والضعف والفرص والتحديات (تحليل سوات) كأداة للتخطيط الاستراتيجي لإظهار نقاط الضعف و القوة في عملية إنتاج الاسمنت ، ومراجعة الفرص لتحويل نقاط الضعف إلى نقاط قوة مع تحديد التحديات التي تواجه هذه العملية واقتراح الإستراتيجيات لتطوير مصانع الاسمنت. الهدف الرئيسي من الدراسة الحالية هو التقييم والتخطيط و التحسين الاستراتيجي لمصانع الاسمنت في إقليم كردستان العراق من خلال تطبيق (تقنية تحليل سوات). ولتحقيق أهداف الدراسة ، تتكون المنهجية من المسح الأدبي والمسح الميداني ويتضمن: المقابلات والزيارات الميدانية وجمع البيانات والعرض التقديمي والتحليل ومناقشة النتائج . تم في هذه الدراسة توضيح واقع إنتاج الاسمنت في العراق وإقليم كردستان العراق ، وعينة البحث هي شركة أسمنت كاسن الكائنة في محافظة السليمانية ، وقد تم إجراء تحليل سوات لدراسة الواقع في المصنع ، عدد نقاط القوة ونقاط الضعف والفرص والتحديات إن وجدت. إن نقطة قوة جودة الاسمنت في المعمل عالية. أما غياب الإشراف على أعمال المقاول فهو نقطة ضعف . أما ما يعد فرصة فهو منع الحكومة العراقية استيراد الاسمنت منذ عام 2016 . و أخيراً كتهييد فان لتقلب أسعار النفط آثارا خطيرة على سوق الاسمنت.

الكلمات الدالة: إقليم كردستان العراق, معمل الاسمنت, تحليل سوات.

1. INTRODUCTION

Cement as a construction material is and has been necessary during the last few centuries with growing demands, in this growing market, the government of Iraq has started to depend on itself and planned its own cement company. Iraq is considered one of the most consuming countries of cement in the world as it constitutes the main material in the construction which demand increasing due to the large population increase in the country, in addition to the continuous reconstruction in areas that have faced conflicts and sabotage as a result of wars and terrorist acts, where the country needs an estimated 3.5 million residential units, besides the residential units and the infrastructure of the liberated areas [1].

The cement industry in Iraq dates back to 1936 with the establishment of the Baghdad plant with a design capacity of (400,000) tons per year with a capital of (200) thousand dinars according to the Iraqi Cement State Company [2]. The actual production of this plant began in 1955 after the addition of three production lines of the plant, after that period Iraq witnessed a renaissance of construction industries and continued the process of establishing cement factories affiliated to the Iraqi General Cement Company with increasing production until the production of cement factories in Iraq in 1986 rose to more than (12) million tons annually, (7.5) million of which for local consumption, and (4.5) million were exported, Egypt alone was importing from Iraq one million tons of cement annually [2].

Local cement production continued to escalate until 2003 with a quality that exceeded most of the foreign cement products according to the Central Organization for Standardization and Quality Control in Iraq [3] and international companies examining quality standards. But after the war in 2003, the national cement industry witnessed major setbacks and losses as a result of the invasion of local markets with low-quality imported cement because of the Iraqi economy's orientation to the policy of free-market without taking into consideration the protection of local products, including cement, which created a devastating competition for local cement threatened the demise of this industry and demobilization

of its Employees. The suffering of the cement industry continued to compete with the importer with the continued waste of billions of dollars in the importation of cement which does not meet the Iraqi standard threatening the future of construction and depleting huge amounts of hard currency annually [2].

As it is known that the economy of Iraq is one of the renter economies with a single resource, namely oil, and as a result of the collapse of the latter's prices in international markets, the state tended to correct and reform the economic approach in the country by starting to support the national production to achieve diversification in sources of income and the government began its economic reform project to protect the cement production issuing Cabinet Decree No. (409) of 2015 banning the importation of cement, this decision has achieved a turning point for the industry and the new government's direction in the restoration of the local economy [2].

SWOT analysis is a tool used for strategic planning and strategic management in organizations [4, 5,6], it can be used effectively to build organizational and competitive strategy [4,7]. In accordance with the System Approach, organizations are wholes that are in interaction with their environments and consist of various sub-systems, in this sense; an organization exists in two environments, one being in it and the other being outside [4]. It is a necessity to analyze these environments for strategic management practices. This process of examining the organization and its environment is termed SWOT Analysis [5], "SWOT Analysis is an analysis method used to evaluate the 'strengths', 'weaknesses', 'opportunities' and 'threats' involved in an organization, a plan, a project, a person or a business activity" [6].

"SWOT Analysis is a simple but powerful tool for sizing up an organizing resource capabilities and deficiencies, its

market opportunities, and the external threats to its future” [5].

Nowadays most organizations engage in strategic planning. Strategic planning is a way to help an organization be more productive by helping guide the allocation of resources to achieve goals. In other words, it is a part of strategic management. Strategic planning is a key to successful strategic management [6].

Strategic management is the continuous process of creating, implementing, and evaluating decisions that enable an organization to achieve its objectives. Strategic management allows an organization to be more proactive than reactive in shaping its future; it allows an organization to initiate and influence rather than just respond to activities, and thus to exert control over its destiny [4,5].

Strategic management consists of the analysis, decisions, and actions an organization undertakes to create and sustain competitive advantages [7]. The strategic management process is a sequential set of analyses and choices that can increase the likelihood that an organization will choose a ‘good strategy’, that is, that generates competitive advantages [8].

It begins with a vision. Vision is a picture of the future. It describes the desired future position of the organization. The second step of the strategic management process is the mission. An organization’s mission is its long-term purpose. Missions define both what an organization aspires to be in the long run and what it wants to avoid in the meantime. Objectives are the third step of the strategic management process. Objectives are concrete goals that an organization seeks to reach [5,9].

The next phase of the strategic management process is external and internal analysis also called SWOT Analysis. By conducting an external analysis, an organization identifies the critical threats and opportunities in its competitive environment. It also examines how competition in this environment is likely to evolve and what implications that evolution has for the threats and opportunities an organization is facing. While external analysis focuses on the environmental threats and opportunities facing an organization, internal analysis helps an organization identify its organizational strengths and weaknesses. It also helps an organization understand which of its resources and capabilities are likely to be sources of competitive advantage and which are less likely to be sources of such advantages. Based on SWOT Analysis, organizations can choose the appropriate strategy [5,9].

As a result, considering external and internal factors are essential because they clarify the state in which the

business or the unit operates, enabling it to get a better perspective for the desired future [7].

This study will be an investigation and assessment of the cement plants in KRG Iraq, through the study the reality of the Gain Cement Company(GCC) as a (case study) to find weak points in the current quality system by identifying problems and defects and try to treat them using SWOT Analysis. The main aim of the current study is to strategically evaluate, plan, and improve cement plants in KRG through the application (SWOT Analysis Technique).

2. RESEARCH SIGNIFICANT

The cement plants in the Kurdistan Regional Government of Iraq (KRG) have made a considerable contribution to the economy of the region and almost dominated the cement market in the entire region and middle and south of Iraq. Therefore, the cement plants as a part of KRG’s industrial sector need to consider strategic planning to continually improve their performance and products by using SWOT Analysis Technique. Through this research, the performance of the cement plants in KRG has been evaluated, using SWOT Analysis Technique, and suggesting four strategies for improving the system for the cement plants in KRG.

2.1.1 RESEARCH AIMS

The main aim of the current study is to strategically evaluate, plan, and improve cement plants in KRG through the application of (SWOT Analysis Technique) to evaluate and analyze the quality of cement plants in the Kurdistan Region of Iraq (KRG). To achieve the main aim, specific objectives were adopted to reach the aim of the research as follows :

- Presenting and explaining the current method (stages of the production process) for the production of cement in the plants of the research sample .
- Defining weaknesses and strengths in the quality control system currently practiced in the research sample cement plants, the reasons behind this, and the extent of the impact of each reason on the quality of the cement using Strengths Weaknesses Opportunities and Threats analysis (SWOT analysis).

3. RESEARCH METHODOLOGY

To achieve the study objectives, the research work has adopted the following methodology:

- 1) Literature survey: includes reviewing of pertinent literature, scientific reference including books, conferences, journals, and magazines that discussed quality, seven tools.
- 2) Field survey: includes:

- Interviews, field visits, data collection, presentation, analysis, and discussion of the results.
- SWOT analysis: To demonstrate weakness points and strong points in the cement production process, and to review opportunities to turn weaknesses into strengths while identifying the challenges facing this process.
- Display conclusions, recommendations.

4. GASIN CEMENT COMPANY

Gasim Cement Company (GCC) is one of Faruq Holding's company for producing cement in Kurdistan Regional Government in Iraq KRG, it is located 35 km to the southwest of Sulaimaniya city in a small town named Bazyan, the project is built on an area of 2252 acres with 350,000,000 USD, the work has started in June 2013 by the Sinoma International Engineering Corporation as the main contractor, and some of the construction works were done by Zaria Construction Company ZCC, which is one of the Faruq Holding's companies. This plant can produce 6000 tons/ day of cement with the probability to double the production by building a second line after the first line, this plant is expected to create 500 job opportunities according to Faruq holding's officials [10].



Fig. 1. Gasim cement company plant.

Before constructing a cement plant the first thing to consider is the availability of raw materials like the availability of calcium carbonate in the quarry and the distance from it to the plant. The geologist team is the key factor to determine this, the calcium carbonate widely exists on earth's crust but this doesn't mean that we can construct a cement plant wherever we wanted, because that this compound existence percentage varies, and the industrial required percentage of this compound is between (75-79) %, although we cannot obtain calcium carbonate at this perfect rate continuously, so it must be mixed with other materials such as Silica, Alumina, and Iron oxide. This means that the plant needs another natural source for these compounds a Clay quarry. In GCC the limestone and clay quarry are both located beside the plant which makes the transportation expenses low. But the availability of the mentioned compound in a quarry is varying so the cement plant needs some other materials to correct the mix, and these materials are obtained through special quarries, or imported from another country, and they are:

- High grid limestone: for increasing the percentage of calcium oxide (CaO) in the mix.
- Sand: for increasing the percentage of silica in the mix.

- Bauxite: for increasing the percentage of Alumina in the mix.
- Iron Ore: for an increasing percentage of Iron in the mix.

These materials are known as correction materials or additive materials, and they are kept in big storage known as additive material storage. Explosives are used in the limestone quarry to obtain limestone, and then it is transported to the plant, in the same time clay is obtained by an excavator from its quarry, and also transported to the plant to start the first stage of producing cement.

5. SWOT ANALYSIS IN GASIN CEMENT COMPANY (GCC)

SWOT Analysis is a process that involves four areas into two dimensions. It has four components: 'strengths', 'weaknesses', 'opportunities', 'threats'. Strengths and weaknesses are internal factors and attributes of the organization, opportunities and threats are external factors and attributes of the environment. SWOT Analysis is typically drawn out in a four-quadrant box that allows for a summary that is organized according to the four section titles. **Figure 2** is a SWOT Analysis, with its four elements in a 2x2 matrix [11].

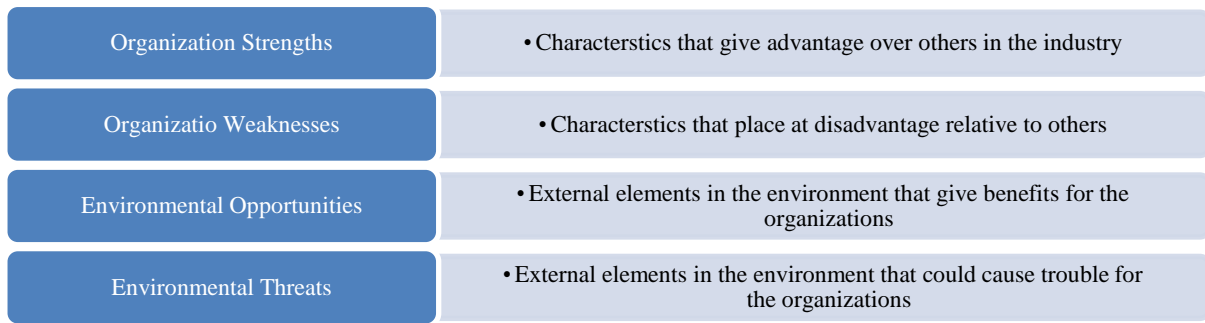


Fig. 2. Components of SWOT analysis [11].

In SWOT Analysis, strong and weak aspects of an organization are identified by examining the elements in its environment while environmental opportunities and threats are determined by examining the elements outside its environment. In this sense, SWOT Analysis is a strategic planning tool used to evaluate the strengths, weaknesses, opportunities, and threats of an organization. In other words, the manager’s role is to try to ‘fit’ the analysis of externalities and internalities, to balance the organization’s strengths and weaknesses in the light of environmental opportunities and threats [12]. For a more accurate and detailed explanation of the current situations of Gasin Cement Company (GCC), the SWOT analysis is the most suitable tool to demonstrate the state of the GCC with respect to the internal and external factors comprehensively. SWOT Analysis is an analysis method used to evaluate the ‘strengths’, ‘weaknesses’, ‘opportunities’, and ‘threats’ involved in a GCC in these studies.

The researchers used scientific methodology to utilize SWOT analysis by field survey including observing the Gasin Cement Company (GCC), doing interviews, asking engineers in charge, holding a meeting, and observing the problems and responses for more than a year from January 10, 2019, to March 10, 2020, and staying in the GCC at least two days per week. A field survey is defined as recording the prevailing condition of a particular system [13]. By conducting SWOT analysis the strength and weakness points of GCC will be demonstrated, classified, and focused on to step forward toward more GCC success, then the external environment will be demonstrated and studied to help the GCC in its future policy and decisions. The following are the detailed internal and external factors with tabulated SWOT analysis.

The appropriate research sample size (N) is depending on the required level of confidence and the type of distribution according to “Standard recommended practice for choice of a sample size to estimate the average quality of a lot of processes” (ASTM E122, 1979) [14], as shown in Table 1.

Table 1. Sample size for Required Confidence Level of (ASTM E122, 1979) [14].

Required Confidence level	Confidence Factor	Sample size (N)	
		Normal Distribution	Triangular Distribution
95%	1.96	11	16
99%	2.58	19	28
99.7%	3.00	25	38

According to Table 1, the required sample size (N) for (99.7%) confidence level is equal to (25) in a normal distribution, this means any sample size equal or more than (25) will achieve this requirement, therefore, the researcher distributed (80) forms to the engineers working in cement factories in the Kurdistan region of Iraq, and (50) forms were received which were audited and ascertained to complete the answers, and neglected (10) forms due to the appearance of some of the negatives related to the lack of completeness of their answers, and thus the researchers have covered most of the groups working in this vital field from the construction sector because the research sample is subject to natural distribution. So the number of received questionnaire forms is greater than (25) and that will achieve a confidence level equal to (99.7%). These (40) forms will be depended on as a basis for the statistical analysis. The answers to the questionnaire were divided into five categories, each of which represents a specific evaluation range which is (Very Important, Important, Sometimes importance, Little important and Not Important), and the degree of evaluation for each of them is calculated based on (Class Interval) and as shown in Table 2.

Table 2. The weight value of descriptive frequencies.

Categories	Class Interval	Weight Value (WV)
Very Important	80-100	90
Important	60-80	70
Sometimes important	40-60	50
Little important	20-40	30
Not Important	0.0-20	10

Referring to general statistical theory, the Arithmetic Mean (AM) is given by:

$$AM = \frac{\sum(\text{Number of frequencies} \times \text{Weighted value for particular choice})}{\text{Total number of the answers}} \quad (1)$$

Because of the Weight values, the AM will have the same result as the Relative Importance Index (RII).

For setting up the selection criterion, it has been proposed that significant answers are those that have scored an Arithmetic Mean (AM) value of more than fifty ($AM \geq 50$) by overall management personnel selections, which means disregarding answers that have shown a mean frequency of “None or Rarely or Poor”, and scored an Arithmetic Mean (AM) value of less than fifty ($m < 50$) by overall management personnel selections [15,16].

5.1 Determining and Analyzing Internal Factors

The internal factors come from the Gasin Cement Company (GCC) behavior, the adopted system to run the GCC, the attitude of the employees. The internal analysis of the GCC is critical in identifying the source of competitive advantage. It pinpoints the resources that need to be developed and sustained to remain competitive. By definition, a competitive advantage must be unique to the GCC to generate profits above the industry average. The strategic management process starts with an in-depth evaluation of the GCC by looking at its internal resources and capabilities, these being the source of its core competencies, which in turn create a competitive advantage.

5.1.1 Organizational strengths

Strength is the characteristic that adds value to something and makes it more special than others. Strength refers to a positive, favorable, and creative characteristic; it means that something is more advantageous when compared to something else. In this sense, strength refers to a positive, favorable, and creative characteristic. GCC has many Organizational strengths as shown in **Table 3**:

Table 3.
Points of Strength in SWOT analysis.

Items	Strength
S1	The quality of produced cement is higher than other cement plants.
S2	Good composition of raw materials.
S3	GCC does have Product differentiation leverage, it is preferable and required by the companies because of its quality and by the workmen because of its workability (workability comes from blain; GCC has the highest blain by that, best workability).
S4	GCC marketplace in middle and southern Iraq is a very strong and well-known brand, and GCC’s market share is bigger than its production capability
S5	GCC has a good pricing policy
S6	The packing process is available at all times
S7	The selling process is available at all times, the availability of the dispatch, scale, and packing team 24 hours a day 7 days a week, even on the holidays and maintenance days unlike other cement plants nearby.
S8	GCC has a good promotional program including (advertising, personal selling)
S9	Sufficient sales team.
S10	The good safety training program

Some frequencies and the Arithmetic Mean (AM) for Strength can be shown in **Table 4**, all variables have relative importance (Arithmetic Mean) greater than 50%,

and for this, all variables are taken into consideration in the SWAT analysis as shown in **Table 11**.

Table 4. Number of Frequencies and Arithmetic Mean for Strength.

Variable	Observed Frequency					AM	Rank
	10	30	50	70	90		
	None important	Little important	Sometimes important	Important	Very important		
S1	0	0	1	3	36	87.5	1 st
S2	0	0	7	11	22	77.5	4 th
S3	0	0	15	13	12	68.5	5 th
S4	0	9	7	12	12	63.5	7 th
S5	0	1	27	12	0	55.5	10 th
S6	0	0	5	4	31	83	2 nd
S7	0	0	5	4	31	83	3 rd
S8	0	8	9	13	10	62.5	9 th
S9	0	0	21	12	7	63	8 th
S10	4	3	6	8	19	67.5	6 th

5.1.2 Organizational Weaknesses

Weakness refers to not having the necessary competency. In this regard, weakness is an unfavorable characteristic, therefore, GCC has many Organizational Weaknesses as shown in **Table 5**:

Table 5. Points of Weaknesses in SWOT Analysis.

Items	Weakness
W1	Employee's morale is low
W2	Inexistence of a good technical professional training
W3	Different salaries for employees doing the same job.
W4	Insufficient salary
W5	Absence of financial and managerial incentives for employees
W6	Absence of supervision on Sinoma's operators and maintenance team
W7	GCC's location is about 30Km away from the other cement plants in the area and for the incoming trucks from the middle and south of Iraq that means more distance to drive, by this more transportation cost
W8	GCC's road from the highway to the plant is one side relatively narrow road
W9	Excess electricity consumption (according to the plat controller).

The number of frequencies and the Arithmetic Mean (AM) for Weaknesses are shown in **Table 6**, eight variables out of nine have relative importance (Arithmetic Mean) greater than 50%, and for this, all variables that have AM greater than 50%, are taken into consideration in the SWAT analysis as shown in **Table 11**.

Table 6. Some Frequencies and Arithmetic Mean for Weaknesses.

Variable	Observed Frequency					AM	Rank
	10	30	50	70	90		
	None important	Little important	Sometimes important	Important	Very important		
W1	10	23	7	0	0	28.5	9 th
W2	0	0	0	33	7	73.5	4 th
W3	0	1	3	0	36	85.5	2 nd
W4	9	3	5	19	4	53	8 th
W5	4	3	9	14	10	61.5	7 th
W6	0	0	1	6	33	86	1 st
W7	0	0	21	13	6	62.5	6 th
W8	3	2	0	3	32	79.5	3 rd
W9	0	2	1	37	0	67.5	5 th

5.2 Determining and Analyzing External Factors

The external factors come from the external environment, political environment, market fluctuation, economical forces and changes, technological development, environmental circumstances, governmental regulation changes, industry environment, and socio-cultural environment. These factors are external factors that must be studied, analyzed, and GCC strategic plan is based upon them, to make each drop of benefits out of the available opportunities, and to protect and/or reduce risks and damages that are predicted as a threat to the GCC by the SWOT analysis.

Table 7

Points of Opportunities in a SWOT analysis

Items	Opportunity
O1	Market fluctuation: The most known fluctuation in the cement and construction industry is the seasonal fluctuation of the market, where the construction works increase rapidly after the rain season (rain season starts from October to the end of April) hence the demand for cement increases rapidly, It is this increase which makes the sales reach the plant production limit.
O2	Governmental regulation: the regulation and orders from ongoing governments are influencing the cement market directly, the most important decision made by the Iraqi government to prevent importing cement (decision No. (409) for the year 2015) is a real opportunity for GCC.
O3	Production lines: GCC has one production line with a capacity of 5200 tons/day, with expanding the capacity of more than one production line according to available market share.

The number of frequencies and the Arithmetic Mean (AM) for Opportunities can be shown in **Table 8**, all **Table 8**.

Some frequencies and arithmetic mean for Opportunities.

Variable	Observed Frequency					AM	Rank
	10	30	50	70	90		
	None important	Little important	Sometimes important	Important	Very important		
O1	0	0	8	7	25	78.5	2 nd
O2	0	0	0	11	29	84.5	1 st
O3	4	3	5	25	3	60	3 rd

5.2.2 Environmental Threats

For GCC managements, a threat is an element that makes it difficult or impossible to reach the GCC goals. For this reason, the threat is a negative characteristic that

5.2.1 Environmental opportunities

Opportunities are conditions in the external environment that allows GCC to take advantage of organizational strengths, overcome organizational weaknesses or neutralize environmental threats. For GCC managements, an opportunity is a convenient time or situation that the environment presents to the GCC to achieve its goals. The environmental opportunities of cement business for GCC are analyzed as shown in **Table 7**:

variables have relative importance (Arithmetic Mean) greater than 50%, and for this, all variables are taken into consideration in the SWAT analysis as shown in **Table 11**.

should be avoided. The environmental threats of cement business for GCC were analyzed as shown in **Table 9**:

Table 9.

Points of Threats in SWOT analysis.

Items	Threat
T1	Political environment: it is a fact that the political situation will affect the businesses around the country positively or negatively, in Iraq the political situations are always critical, this will make individuals, project owners and investors think twice when it comes to the building and construction works, but the political situation will be at its most critical state 6 months before the elections and 6 months after the elections, and sometimes more. By this, we find something close to a pattern that every 4 years (or when changing the government) the cement business will face a decrease in demand for more than a year. Though this is just a theoretical assumption, and the political situation is complicated, not measurable, and multi-factor state, but it is the most near to the actual state. This poses a threat to GCC and must be dealt with.
T2	Change in economic forces: the global and regional economic changes will affect directly construction works, thus the demand for cement, for instance, the price of oil reduced in 2014 to its minimum, this led to the stoppage of most of the construction works. Since Iraq’s economy is based mainly on extracting and selling oil in the international market, in this sense the change in the price of oil in the international market will affect the economy of Iraq, hence construction works and demand on cement. This poses a threat to GCC. GCC must be able to find other markets in case of decreasing the oil price.
T3	Competitors: GCC has made its reputation since it has started to sell cement in 2016 and earned its market share, but constructing new cement plants in the area may pose threat to GCC and its market share since new plants means new technology and/or new machinery with more efficiency, so any new plant will pose a threat to GCC.
T4	Security situation: Iraq’s security state is critical, there are certain situations of non-security destabilizing the security of Iraq, this will directly influence the construction works and by that decreasing the demands on cement industry, construction works and by that decreasing the demands on cement.

The number of frequencies and the Arithmetic Mean (AM) for Threats can be shown in **Table 10**, all variables have relative importance (Arithmetic Mean)

greater than 50%, and for this, all variables are taken into consideration in the SWAT analysis as shown in **Table 11**.

Table 10.

A number of Frequencies and Arithmetic Mean for Threats.

Variable	Observed Frequency					AM	Rank
	10	30	50	70	90		
	None important	Little important	Sometimes important	Important	Very important		
T1	0	0	19	14	7	64	4th
T2	0	0	0	9	31	85.5	1st
T3	2	1	5	24	8	67.5	3rd
T4	0	1	10	13	16	72	2nd

5.3 SWOT MATRIX IN GASIN CEMENT COMPANY (GCC)

The SWOT Analysis provides a framework for analyzing strengths and weaknesses -internal- and opportunities and threats -external-, and It helps to focus on minimizing weaknesses and taking the greatest possible advantage of

opportunities available, therefore, considering external and internal factors is essential to get a better vision for the desired future in GCC, as shown in **Table 11**.

Table 11.
SWOT Analysis for GCC.

Strengths		Weaknesses	
S1	Quality of cement	W2	Inexistence of training
S2	Raw materials.	W3	Different salaries.
S3	Product differentiation leverage	W4	Insufficient salary
S4	Market place strong	W5	Absence financial and managerial incentives
S5	Pricing policy	W6	Absence supervision on operators and maintenance team
S6	Available Packing process	W7	Transportation cost
S7	Available Selling process	W8	Narrow roads
S8	Promotional program	W9	Excess electricity consumption.
S9	Sales team.		
S10	Safety training program		
Opportunities		Threats	
O1	Increase in demands of the cement	T1	Critical Iraq's political situation
O2	prevented the import of cement	T2	Oil price fluctuation
O3	New production lines	T3	New cement plants in the area
		T4	security conditions

5.3.1 SWOT Strategies in Gasin Cement Company (GCC)

SOWT matrix identifies potential tactical strategies that could be deployed to exploit opportunities or defend against threats through the leverage of the existing

strengths and the reduction of weaknesses. Four strategies can be adopted to develop the efficiency of GCC as shown in **Figure 3**.

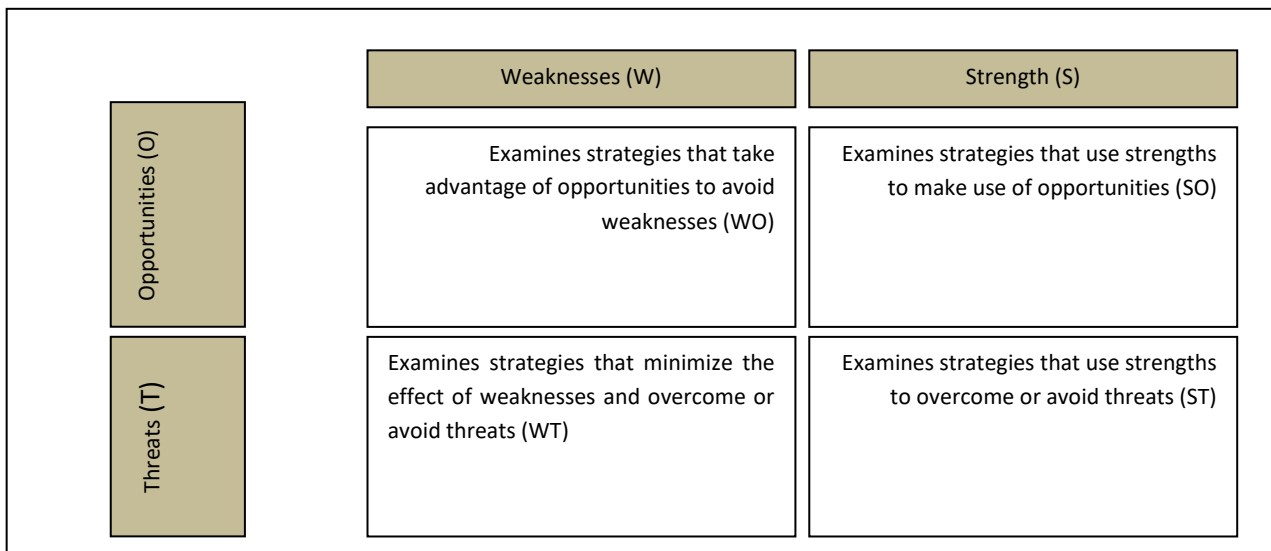


Fig. 3. SWOT Strategies in Gasin Cement Company (GCC).

5.3.1.1 Weaknesses Opportunities strategy (WOS)

Weaknesses opportunities strategy (searching strategy) in the first quadrant attempts to maximize opportunities arising from the external environment and

eliminating the organization's internal weaknesses that hinder its growth. It is overcoming weaknesses by taking advantage of the opportunities

If GCC does want to conduct this strategy they must maximize their opportunities and take advantage of them to the ultimate, for example taking advantage of the increase in demands of cement after the rain season, putting a fair price on the cement after considering cement price of the surrounding cement plants because of the government's decision of preventing the importation of cement, and considering a new production line would be an excellent investment during the current situation, this would renounce the employees of their financial problems with the company (because of the rising opportunities for new

positions) and makes them more focused on their job, which will turn out to benefit them to be more accurate and learn more about the technical details, and also there would be a pressure from GCC's management board on the contractor (SINOMA) to work fault free so they can catch up with GCC's plan to take advantage of the opportunities. This may work throughout an intensive managerial plan that should be well explained for all the employees, and real pressure must be put on the contractor to work fault-free.

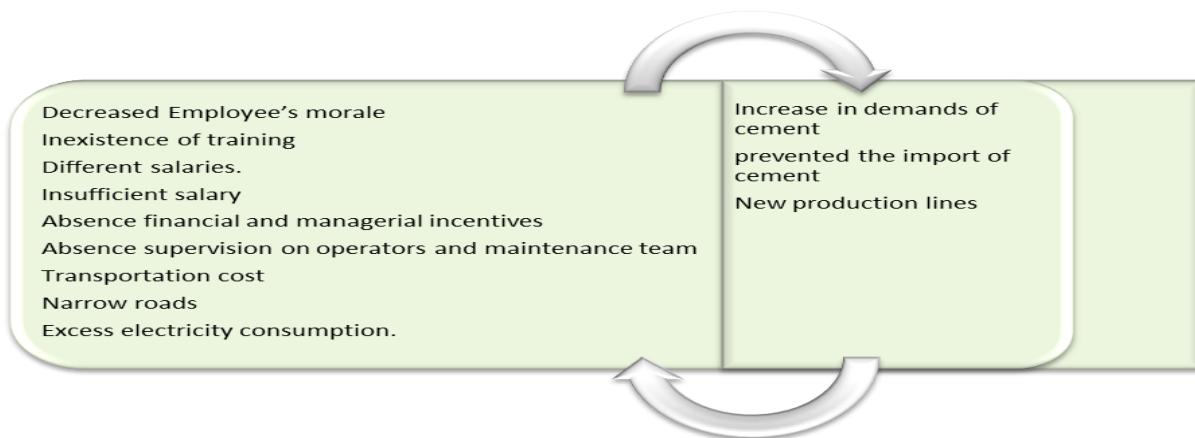


Fig. 4. Weaknesses Opportunities Strategy (WOS).

5.3.1.2 Strength Opportunities strategy (SOS)

Strength opportunity strategy (taking advantage strategy) in the second quadrant is an ideal situation where the organization can maximize both strengths and opportunities. It is taking advantage of the strengths in favor of the opportunities.

In this strategy, GCC must attain the maximum advantage of the available opportunities as mentioned previously in the WO strategy, besides that increasing the internal strength of its organization. First GCC must attain and/ or increase the level of quality of its product; next, they should maintain the product differentiation leverage and seek for more elements that are desirable by the

customers and improve it to have more product differentiation leverage elements by this improving its market; then improving its customer service and the selling department and make the employees more collaborative and behave with the customers at the best; after that, the packing process should be zero mistake zone and the employees should treat the customers at the best, finally GCC should consider even better promotional program considering getting to the mind of the end-user, by this increasing the internal strengths and advantaging from the environmental opportunities to reach maximum benefit.

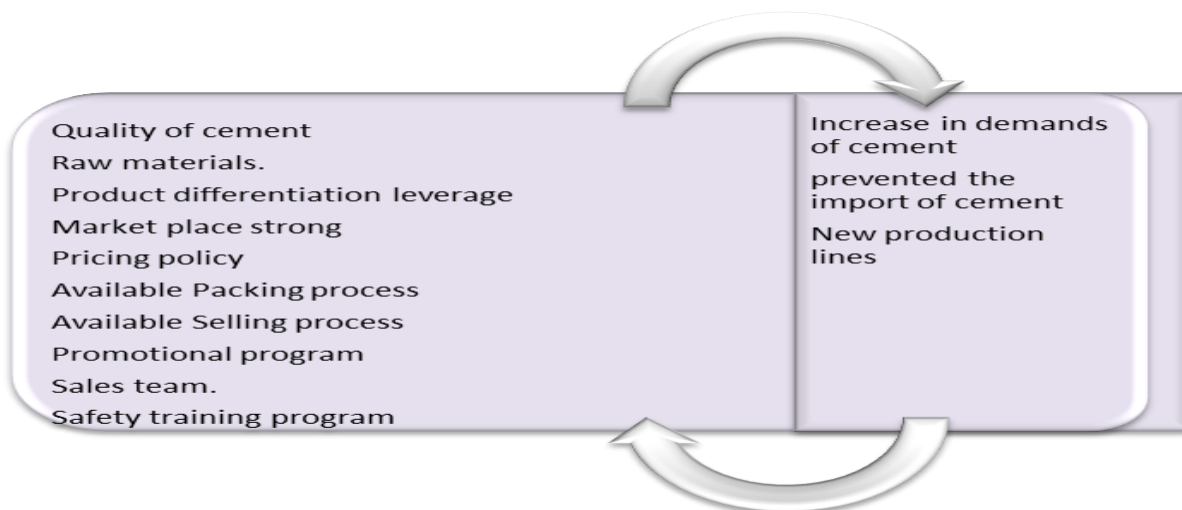


Fig. 5. Strength Opportunities Strategy (SOS).

5.3.1.3 Strength Threats strategy (STS)

Strength threats strategy (confrontation strategy) uses the organization's internal strengths that can counteract threats from competitors, the industry, and the greater environment. However, a company with strong market power would have to address threats in the external environment with caution. It is taking advantage of internal strengths to prevent environmental threats. In this strategy, GCC has to maximize its internal strengths as mentioned before in

SO strategy, by maximizing the internal strengths the organization could confront and/or overcome its environmental threats, though GCC must address all environmental threats with caution. First, the political situation is immeasurable, but the organization must always be aware of the upcoming political threat and deal with each one of them seriously; and then apply this to all other environmental threats separately.

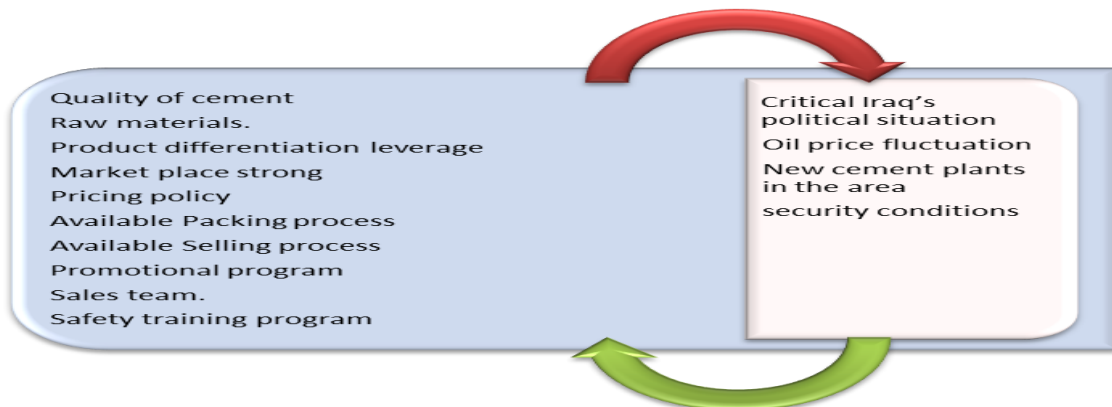


Fig. 6. Strength Threats Strategy (STS).

5.3.1.4 Weaknesses Threats strategy (WTS)

Weaknesses threats strategy (Avoiding strategy) in the fourth quadrant is the worst-case scenario when an organization has to minimize both its weaknesses and its threats. It is minimizing internal weaknesses and avoiding environmental threats.

In this strategy the organization must decrease its internal weaknesses, so GCC must consider eliminating (or reducing as much as it is possible) the internal weaknesses of the organization especially when it comes to supervising the constructor's works (SINOMA's operators,

maintenance team, sampling employees), next a new salary program is needed with considering financial and managerial incentive and award, and an upgrading policy, then a sufficient technical training program is needed, after that reducing the energy consumption, and finally widening the road from the highway to the plant. Also dealing with the environmental threats, first the political situation is immeasurable, but the organization must always be aware of the upcoming political threat and deal with each one of them seriously; and then apply this to all other environmental threats separately.



Fig. 7. Strength threats strategy (WTS).

6. CONCLUSION

In this study the reality of cement production in Iraq and the Kurdistan Region of Iraq has been demonstrated, the research sample was Gasin Cement Company located in Sulaimaniya Governorate, SWOT analysis has been conducted to study the reality in Gasin cement plant, a number of strength points, weakness points, opportunities, and threats have been founded, along with four multidimensional strategies were suggested for the organization. First as a strong point; the quality of cement in GCC is high, plus Packing process is available at all times, then as a weakness point Absence supervision on contractor's work, plus Different salaries for employees doing the same job, after that as an opportunity Iraqi government has prevented the importation of cement since 2016, plus increase demand of cement after the rain season, finally, as a threat, the fluctuation of oil price does have dangerous effects on the cement market plus the unstable security condition also has a considerable effect on cement market.

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