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Designing a Prime Cost Pattern for the Cement Content 350 in the Bonyad Boton Corporation

Khosro Barzegarnezhad *
Yong Researchers and Elite Club, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.

***Corresponding Author**

Abstract: *Collecting, correct and rational classifying, as well as regular reporting of financial information in every production unit requires an accounting information system for appropriate and codified accounting of the prime cost, to allow product managers to make necessary decisions for planning, controlling production, and reducing costs, based on those reports. Therefore, with this view, the purpose of this study is to design a prime cost pattern for the cement content 350 in Bonyad Boton Corporation. The existence of information on the prime cost of concrete products is essential for the management in making decisions. The provision of the aforementioned information requires the establishment of an accounting system for the prime cost. The final goal of the present study is to provide a suitable model for the prime cost of concrete products after ensuring the absence of such systems in the research prospect: to provide the information needed for the management of production units in this area more than ever. Data was collected through the library and field work studies, done by evaluating the production process; and the prime cost pattern of the product mentioned has been designed according to the theoretical basis of accounting. To validate the proposed model and research findings, the Delphi test method was used and the results were subject to the judgment of 30 experts. In order to gather experts' opinions, an appropriate survey form was used and its completion continued to achieve the necessary convergence. The findings of the research and the results of the Delphi test indicate that the proposed model in this study is validated.*

Key words*: Prime Cost, Concrete, Accounting Systems, Bonyad Boton Co*

INTRODUCTION

In recent years, information about the organization resources has been considered along with financial resources, manpower and fixed assets. Nowadays, with the expansion of organizational activities and the need for their flexibility against changes, the role of information in decision making has become especially important and it is called a strategic weapon to achieve excellence. Under the competitive conditions of the contemporary world, no corporation can continue to operate without having updated information of the world and the rivals. Any organization that has accurate, exact, up-to-date and comprehensive data and can access the data needed in the shortest time is more successful.

Simon believes that the manager has no responsibility but making decisions. Accepting this requires the adoption of information as a basis for decision making; hence, managers need systems that provide them with timely and relevant information for decision making (Simon, 2009: 111). In this regard, Peter F. Drucker states: "the emphasis on future management is on the decision-making process and understanding this process" (Moshabaki, 2014). Correct and timely decisions also require information. Information is, in fact, a management decision making tool, and the accuracy of management decisions also depends on the accuracy of the information that has been provided to it at the time of decision making. On the other hand, in the real world, there are a number of factors that create conditions with risk and uncertainty in decision making, and because of the uncertainty that has always been caused by lack of information and awareness (Churchman, 2016: 43), management will inevitably acquire information in order to make informed decisions, and to get out of the condition of uncertainty, or to approach the condition of confidence. In today's world, even very small economic units cannot be managed

without proper and up-to-date information. At the beginning of the 21st century, the value of information for all organizations is clarified, because the role of information in the decision making of managers is indisputable; so that the sustainability of the life cycle and the continuity of the organization activity are dependent on information and communication (Forghandoust Haghighi, 2009: 19). Therefore, the increasing need for managers of enterprises and organizations to use correct and up-to-date information in the decision-making process is addressed through the management information system (which is the main source of information).

The accounting system undoubtedly plays a pivotal role in the institutional information systems of the institute and is like a management arm, and the information management systems are at the head of the pyramid. The accounting system does not directly generate profits. But maximizes the use of activities and performances of the institute and it is so important that some believe that without proper systems, institutions cannot continue to operate and managers will not be able to control and coordinate the operations of the institution. Therefore, in order to expand the level of services, managers intend to change the management approaches, especially the program and budget systems, and use the financial reports so that in addition to reducing the pressure on the companies, they can expand their activities (Hirsch, 2013: 266-268). To investigate these goals, direct costs should be analyzed to determine the cost of each material component used in the production, the cost of the salary of each production operation, and public expenditure. All these costs, together with their full details, must be thoroughly investigated and then the production costs of the commodity must be realistically determined based on them. Without doing this, the manufacturer will not be informed of his costs and will not be able to advance the Corporation strategy by controlling and reducing them. Extremely high costs may reflect a wide range of basic physical problems, such as waste of raw materials, low productivity (due to unskilled labor, too much break hours, poor management, inappropriate production plan, inefficiency of maintenance and so on), and undesirable exploitation of capacities (which increases the public expenditure per unit of goods) (Janafzayee & Nikbakht, 2015: 57). Finally, determining the production cost of each unit of a variety of products, especially in the industry, cannot answer managers' questions for production planning, controlling, product pricing and identifying appropriate policies to compete with other manufacturers, without relying on (financial and prime cost) accounting information systems eligible for such activities (Pakmaram & et al, 2007).

Today, one of the most important products in the field of construction is concrete because in the construction industry, concrete can be named as the most extensive construction material without exaggeration. Consumption of this building material can be observed in most buildings of our country. But unlike steel, whose quality control is continuously carried out by the manufacturer, concrete quality control is carried out independently in the workshops (Lajevardi & Mohaddes, 2009). Therefore, the quality of the concrete is subject to the control level in the workshops. This has caused the quality of concrete in many workshops not to be as expected due to the insufficient information. Concrete quality is especially important in our country because, unfortunately, our country has different climates and also exposed to earthquakes. Although, the control of concrete quality and the importance of optimal concrete construction will increase the cost of construction, possible huge damages and the reduction of useful life of structures will surely be avoided. This is especially important when an earthquake occurs. Therefore, this research has been developed with a view to designing an applied model for determining the price of concrete and thus improving the condition of concrete production in workshops and companies. Therefore, this research has been developed with respect to designing a functional model for determining the prime cost of concrete and thus improving the condition of concrete production in workshops and companies. Accordingly, without reducing the scientific load of the material, it is also useful for workshops with limited facilities.

An Overview of the Background and Theoretical Foundations

Iindustrial accounting is a branch of accounting science and technology that is accounted for collecting information about cost factors and calculating the prime cost of products and services, and analyzing reports and examining ways to reduce the prime cost methods of productions. Industrial accounting or accounting the prime cost is a very important tool at the disposal of management to assist managers for planning, controlling, and monitoring the results of activities. Using the industrial accounting, management can calculate the prime cost of productions and control the material costs, wages and other production costs (Papadopoulos & Gosselin, 2007: 26).

Yuan Ding (2007) believes that if managers do not have accurate reports of cost factors, they will have difficulty in deciding whether to increase production or other decisions and the way of making their decisions. For example, for the purpose of changing the product type or increasing production, there should be precise information on the cost of production, so that it can be decided that if purchasing new machines is cost-effective, or replacing or renting them would be better, or the staff salaries should be increased, or the number of staffs should be reduced or increased; and various types of decisions in the above mentioned cases are based on the prime cost accounting information (Ding et al., 2007). Therefore, costing is determining the prime price of the product being made and the inventory of the product being constructed. And the purpose of costing is the responsible for maintenance of the documents related to the accounting of the manufacturing and non- manufacturing operations, and it is also responsible for analyzing all production costs, distribution and sales for the presentation and use of management (Nouravesh, 2014: 74).

- **Components and Factors of Prime Cost**

The main factors of prime cost generally fall into three categories: 1. raw materials, 2. wages, 3. overheads (other production costs).

- **Raw materials:**

The raw material is the main pillar of the production of goods and products; meanwhile, it is clear that the raw materials of production are divided into two parts:

1) Direct raw materials: that part of the materials that are inseparable from the manufactured goods and are directly involved in manufacturing goods.
2) Indirect raw materials: the part of the consumables required to complete the goods, but due to its negligible use it cannot be considered as direct consumable.

- **Wage**

The salaries and remuneration paid to the workers during the production and construction for the conversion of materials into goods are recognized as production wages. The wage is divided into two parts. (A) Direct wage: the wage is paid for the work done directly to convert the raw material into the manufactured goods. (B) Indirect wages: the wage paid for work that does not directly contribute to the construction and composition of the goods, such as the salaries of the guards and factory workers, etc. (Josep, 2001: 77).

- **Other costs (overhead):**

All expenses incurred in the production process but cannot be directly and specifically assigned to items of a particular product or good are identified as factory overheads or other costs (Josep, 2001: 79).

According to Habit (2011), in accounting, the manufacturing companies use a commodity account in the process of production to show financial events in the production process, and take the material expenses, wages, overhead, and goods in the first generation of the course into account as the debtor to this account. This account has a creditor nature, and if the goods were built and the process of storage was started, the warehouse accounting operations of the produced goods will be shown in the commodity account of those goods. That is, the commodity account of the produced good becomes creditor, and the account of the goods made which is debtor of this account is also debtor in nature, and it will be debited for the inventory of the first-time good, and the good made during the course, and if the goods are sold, it will be creditor of the price of the sold goods (Habit, 2011: 142).

- **Concrete Industry**

Concrete (in French Béton), from the Latin root (Bitume), in the broad sense refers to any material or combination composed of a cementitious adhesive material. Concrete may be made of different types of cement and pozzolans, slag of furnaces, added materials, sulfur, additives, polymers, fibers, etc. It can also be prepared by heat, steam, autoclave, vacuum, hydraulic pressures, and various compressors (Management and Planning Organization, 2016). Due to the development of science and the emergence of many technologies in the last century, the recognition of concrete and its properties has also developed remarkably, so today, we see the use of different types of concrete with different materials, each with its own properties and uses. Currently, various types of cements, including pozzolans, sulfurs, polymers, various fibers and various additives, are produced. Concrete is the most used building material. The main feature of concrete is the cheapness and availability of its raw materials. It can also be noted that the production of all kinds of concrete is done by using heat, steam, autoclave, air discharge, vibration hydraulic pressure and molding. Concrete is generally a product that is produced by a mixture of water with hydraulic cement and various aggregates by the reaction of water with cement under certain environmental conditions and has special characteristics (Laber, 2008: 147).

- **Bonyad Boton Corporation**

Bonyad Boton Corporation of Iran is one of the companies affiliated to the Housing Foundation, which has been separated from the main body of the Foundation since 1991 with the following objectives: 1. extension and improvement of methods of building material production and the development of the capacity of concrete production and its products, as well as creating new capacities for the production of granular sand, concrete, brick and other construction products in different parts of the country; 2. establishment, management and participation in the creation of companies and factories for the construction of building materials and equipment and construction facilities; 3. implementation of major construction projects such as construction of townships, mass production of housing, and other urban and rural projects (roads, bridges, roads, etc.); 4. transacting and contracting and selling the products in the mentioned areas; 5. conducting the engineering, and industrial management studies on the subject of corporation activities or to purchase services from other specialized institutions.

Currently, owning 11 affiliated companies in the country and more than 50 workshops and building materials manufacturing plants, besides producing and supplying some standard building materials in the country using experienced engineers, technicians and staff over twenty years in the initial studies of the design, construction, commissioning and management of building materials manufacturing plants, the corporation has the ability to provide services to other centers too. Also considering the availability of suitable machinery and equipment and experienced technical staff, it is able to implement, manage and execute the major construction projects in the shortest possible time, by organizing and equipping the facilities and transmission of mobile devices to produce building materials required for the design, and perform them with the desired quality.

Research Methodology

In order to collect information in this research, the library and field work methods were used. So first, the concrete production stages at the Bonyad Boton Corporation were studied and then, based on the available resources and the principles of accounting, a proposed model for calculating the prime cost, including how to identify the items, their registration and classification, and the way in which nonproduction costs are apportioned to production costs was proposed. Finally, regarding the constraints, including lack of a financial accounting system in the selected sample unit, the Delphi test method was used to achieve the research goal and approve the proposed model. Based on this, the proposed and prepared system was provided to experts and financial, accounting, and industrial experts (in the field of concrete and concrete structures) to express their views on the proposed model.

In this research, in order to be able to justify the necessity of using the institutions' information and codified systems of prime cost, how to calculate the prime cost and provide a suitable model for the prime cost of concrete at the Bonyad Boton Corporation has been considered; therefore, the scope of this research

includes large and medium enterprises. The study also focuses on existing accounting systems and other evidence associated to 2017.
Regarding the final issue of the research and the way of conducting it which is fieldwork and, at the same time, systemic (research through studying the problem directly), it is necessary to investigate the entry into the system and involvement with it. Hence, the community and the statistical sample have two stages. At the initial stage, by examining the collected documents (financial and non-financial) in the field of production of the cement content 350 and analyzing them, a proposed model of prime cost to the concrete was presented. In the second step, the Delphi test was used to achieve the research goals and confirm the proposed model. This method is used when a consensus by commentators about a particular subject is required. Therefore, at this stage, the research data are collected using the Delphi method, and the opinions of experts in the area of prime cost and concrete are collected.
Reasons to choose the cement content 350:

- The cement content 350 has the most application in the construction industry.
- In the concrete sector, this product has the highest demand among concrete products.

- **Research plan type and the designing steps of the proposed model**

The current research is the applied research based on the purpose, and descriptive based on the nature and methodology of the research. The design steps for the proposed model are as follows:

1. Identification of the stages of production operations: at this stage, all operations and related activities that directly or indirectly contribute to the production of the final product are identified in detail.
2. Account structure design for accounting books: at this stage, for the production and non-production activities, according to their nature, a title and an accounting code is allocated. Then, all direct costs such as direct taxes, direct wages and direct overheads, as well as indirect costs, such as indirect materials, indirect wages and indirect overheads are numbered according to their association with the headings of the account book.
3. Identification of cost centers: at this stage, the cost centers are created.
4. Calculation and allocation of the prime cost; this phase consists of three parts: a) first stage of allocation: at this stage, the direct prime costs are allotted to all cost centers; B) second stage of allocation: at this stage, all the remaining of the cost centers that have been derived from the first stage is allocated to the direct production centers based on the principles of good sharing; (C) third stage of allocation: during this stage, the prime cost of production centers will be allocated to the products separately. After this step, the prime cost of the products is obtained.

Expense and Cost Recovery System

The production of concrete products is heavily influenced by the market demand and conditions of the construction industry. But most of the demand for ready-mixed concrete in various concrete industries is for 300-400 grade concrete, and in the meantime, cement content 350 has the highest rate of production in the corporate. Therefore, given the above and the features of the stage cost-recovery system, which is proportional to products that are substantially the same in terms of resources and production time, the nature of the cement content 350 is such that it has the most adaptation to the stage cost recovery system. Therefore, it is appropriate to use a stage costing system in those units to collect the prime cost of production.

Presentation of the proposed model for calculating the prime cost of concrete

In designing and choosing information systems, recognition of the organization and its processes is very important. Therefore, based on the studies carried out and recognition of the concrete production process at "Bonyad Boton Corporation", the following results are briefly presented:

- **Production process**

In general, the production process of cement content 350 is divided into three main activities of the pre-production, production and maintenance and delivery (sale) phases. These activities include separate operations and processes which will be subsequently reviewed.
In chart 1, the stages of producing cement content 350 are briefly illustrated:

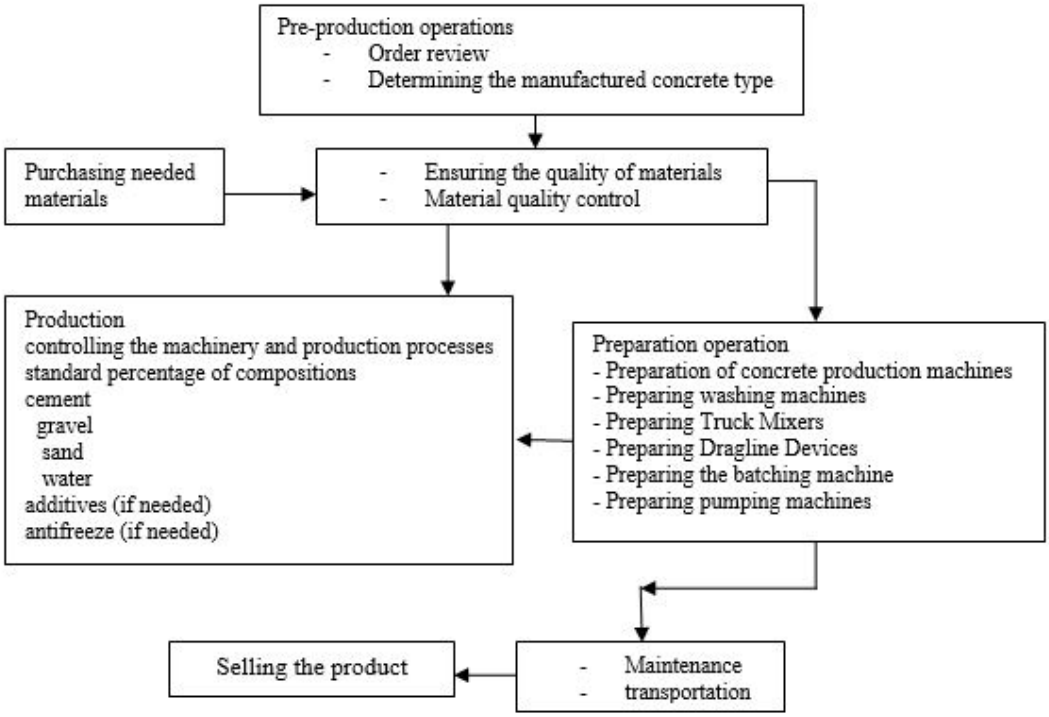

Chart 1: stages of production

- **Classification of accounts**

All information systems use a coding system, which is a means to identify data introduced and entered into the system by one number (numeric code), one or several letters (alphanumeric code), or a combination of numbers and letters (alphanumeric code). The codes are often composed of several parts called multi-part codes. Each part of the code has a special meaning and use. The titles corresponding to the codes used in accounting information systems are called account headers. The account headings determine the accounts of financial statements (balance sheets and profit and loss account) in the general ledger; based on the headings of the accounts and the balances of each one, the balance sheet and profit and loss accounts are prepared. Therefore, the list of accounts is divided into two parts: balance sheet accounts, and profit and loss account statements. Thus, according to what was mentioned above, the classification and numbering of total accounts is presented in Table 1. The classification is conducted in such a way that the necessary coordination between financial accounting and prime cost accounting can be observed.

Table 1: Classification and numbering of total accounts of the currency (in Rials)

Balance sheet accounts							Profit and loss accounts		
Group number	1	2	3	4	5	6	7	8	9
Account group	Current assets	Non-Current assets	Current liabilities	Non-current liabilities	Special value	Control accounts	Revenues	Expenses	Profits and losses of the current year

0	Cash inventory and bank	Evident fixed assets	Business accounts and documents payable	Long-term payables and accounts	Equity stocks	Material control	Domestic sales of products	Cost of consumables	Prime cost of inventory in the production process
1	Short-term investment	Long term investment	Accounts and vouchers payable	Long-term accounts and vouchers payable	Legal reserve	Wage control	Foreign sales of products	Direct wage cost	Prime cost of production inventory
2	Commercial receivables and accounts	Intangible assets	prepayments	Long term financial Facilities received	Other reserves	Overhead control	Other operating revenues	Overhead cost	Prime cost of sales
3	Orders and prepayments	Other assets	Current portion of long-term facilities	-	Retained earnings	Disciplinary accounts	Other non-operational incomes	Administrative and organizational costs	-
4	Inventory of produced product	-	Proposed and paid dividends	-	-	Disciplinary accounts' counterparty	-	distribution and sales	-
5	Current product inventory	-	-	-	-	-	-	Other operating costs	-
6	Fertilizer and chemicals inventory	-	-	-	-	-	-	Financial costs	-
7	Inventory of spare parts	-	-	End-of-service reserves	-	-	-	Other non-operational costs	-
8	Reserves	Non-current stockpile	Current stockpile	Long term stockpile	-	Opening and closing balances	-	-	Profits and losses of the current year

Source: Researcher Findings

- **Definition and identification of cost absorbing centers**

Cost centers typically control the inputs to the products and service activities of the business unit. In other words, the cost center is: to identify and determine the range of activities, both productive and non-productive, the costs incurred in these domains are, due to the specific tasks that they perform, necessary to be separately calculated and controlled and analyzed. Hence, the cost centers can be divided into two main departments of production (Tables 2 and 3) and non-production (production backup centers and administrative-organizational centers and distribution-sales) (Table 4) cost-absorbing centers.

Table 2: Production costs centers

Description	Cost-absorbing center code
Pre-production	101
Production	102
Maintenance and delivery (sale)	103

Table 3: Nonproduction cost-absorbing centers – cost centers for production backup

Description	Cost-absorbing center code
Environmental control	201
Manufacturing machinery services	202
Vehicles	203
Laboratory	204
Product quality control	205
Product maintenance	206
Traffic	207
Health and security	208

Source: Researcher Findings

Table 4: nonproduction cost-absorbing centers - administrative - organizational and distributing – sales costs centers

Description	Cost-absorbing center code
Administrative - organizational	
Staff affairs	301
Training	302
Informatics	303
Financial affairs	304
Procurement	305
Public relations	306
Board of directors	307
Distribution - Sales:	
Domestic sales	401
Foreign sales	402
Facilities	403

Source: Researcher Findings

- **Allocation of the prime cost**
  - **Initial allocation (allocation of direct prime cost to the cost centers)**

At this stage of allocation, shown in Table 5, direct prime costs are assigned to each cost center. Finally, the prime cost of production centers and production backup centers will be determined.

Table 5: initial allocation (allocation of direct prime costs to the cost centers) currency: Rials

Description	Direct materials	Wage	Overhead	Total
Cost centers for direct production and production backup	*	*	*	*

Source: Researcher Findings

- **Secondary allocation (allocation of production backup centers to direct production centers)**

After allocating the first stage, the remaining balances of the backup centers are allocated to the direct production centers based on the pre-determined share using the direct allocation method. The second stage of allocation is shown in Table 6.

Table 6: secondary allocation (allocation of production backup centers to direct production centers) currency:

Description of production backup centers	basis of sharing	Pre-production	Production	Maintenance and delivery
Production control	Number of employees	*	*	*
Machinery services, and vehicles	Production amount	*	*	*
Facilities	Area	*	*	*
Laboratory and product quality control	Production amount	-	*	*
Warehousing and supplying parts	Issuance	*	*	-
Traffic	Number of employees	*	*	*
Health and security	Number of employees	*	*	*

Source: Researcher Findings

- **Third allocation (allocation of production centers to the product)**

During this allocation phase, summarized briefly in Table 7, the prime cost of production centers (the derivative of the direct allocated items from the first phase of the allocation and the contribution received from the production backup centers resulted from the second stage of allocation), is separately allocated to the products.

Table 7: third stage of allocation (allocation of production centers to the product) currency: Rials

Reference	1	2	3	4	5	6
Product description	The prime cost of the product after the production stages			Total cost of the whole product produced	Production amount	The cost of each product unit produced
	Pre-production	Production	Maintenance and delivery	1+2+3		4.5
The cement content 350	*	*	*	*	*	*

Source: Researcher Findings

Testing the Proposed Model

The template test was in Delphi method and as follows. At first, a complete understanding of the industry and related processes was undertaken and the proposed pattern was prepared based on which. Parallel to the process of recognizing and preparing the proposed model, according to the necessary qualifications, the qualified experts for evaluating the target system were identified and selected. In the next step, the required forms were prepared and analyzed. Then experts were consulted. In the next step, it was examined whether the experts' answers were sufficiently stable. If the experts' ideas did not get stable, group responses in the second poll form were received. Similarly, this method was repeated to reach the consensus of the experts.

Features of Experts in This Research

In this research, the experts were selected from among the experts who had enough knowledge and experience in the subject, willingness and time. In this way, the experts were among the university professors in the field of accounting (who had sufficient experience in the field of accounting the prime cost), and professors and experts in the field of production (familiar with the financial and economic aspects of manufacturing and industrial companies); the descriptive statistics relating to the respondents' information are described in Tables 8 to 11 below by field of study, academic degree, and period of professional experience.

Table 8: field of study

Row	Field of study	NO.	Percentage
1	Accounting	15	50
2	Production expert	9	30
3	Industrial management	3	10
4	Industry expert	3	10
5	Others	0	0
Total		30	100

Source: Researcher Findings

Table 9: academic degree

Row	academic degree	NO.	Percentage
1	Ph.D	10	33
2	Master	15	50
3	Bachelor	5	17
4	Others	0	0
Total		30	100

Source: Researcher Findings

Table 10: Experience

Row	Experience period	NO.	Percentage
1	Fewer than 5 years	7	23
2	5-10 years	8	27
3	10-15 years	8	27

4	Over 15 years	7	23
Total		30	100

Source: Researcher Findings

Table 11: occupational position

Row	Occupational position	NO.	Percentage
1	Faculty member	20	67
2	Deputy Director and Head of Financial and Industrial Accounting	2	7
3	Financial supervisor	4	13
4	Production supervisor and expert	4	13
Total		30	100

Source: Researcher Findings

Summary of the proven expert opinions about the proposed prime cost model is as described in Table 12 below.

Table 12: The results of experts' responses to the questions raised in the survey form

NO.	Questions	Yes			No			Test results
		NO	percentage	Average score	NO	percentage	Average score	
1	Are the appropriate methods used in the company to collect and store information?	0	0	0	30	100	87.5	Quite significant
2	Are the assets of the company properly classified and optimally reported?	0	0	0	30	100	87.5	Quite significant
3	Does the company use a coded cost system for the prime price?	0	0	0	30	100	87.5	Quite significant
4	Is the prime cost per ton of the cement content 350 is accurately calculated at the company?	0	0	0	30	100	87.5	Quite significant
5	Do the company managers understand the importance of deploying the right system of the prime cost?	4	13.2	43.75	26	86.8	87.5	Quite significant
6	Is it logical and correct to identify and classify the following items as the direct material and the items forming the prime cost of concrete?							
A	Cement	30	100	87.5	0	0	0	Quite significant
B	Sand	30	100	87.5	0	0	0	Quite significant
C	Gravel	27	90.10	87.5	3	9.9	20.83	Quite significant
D	Preservatives	26	86.80	87.5	4	13.2	43.75	Quite significant
7	Is the identification and categorization of the following cost absorbing centers, as the cost absorbing production centers, in the proposed model correct and logical?							
A	Pre-production	30	100	87.5	0	0	0	Quite significant
B	Production	30	100	87.5	0	0	0	Quite significant
C	Maintenance and delivery (sales)	30	100	87.5	0	0	0	Quite significant
8	Is the identification and categorization of the following cost-absorbing centers as the production backup centers in the proposed model correct and reasonable? production control							

A	Servicing the manufacturing machinery, and vehicles Facilities Laboratory and product quality control	30	100	87.5	0	0	0	Quite significant
B	Warehousing and supplying parts	30	100	87.5	0	0	0	Quite significant
C	Traffic	30	100	87.5	0	0	0	Quite significant
D	Health and security	30	100	87.5	0	0		Quite significant
E		30	100	87.5	0	0		Quite significant
F		30	100	87.5	0	0		Quite significant
9	Is the allocation of costs of the production backup center to the costs of direct production centers, correct and reasonable?	30	100	87.5	0	0	0	Quite significant
10	Is the use of the direct cost-sharing method for allocating the prime cost of the production backup centers to the direct centers, fair and reasonable?	30	100	87.5	0	0	0	Quite significant
11	Is the use of sharing basis (production amount) in allocating the prime cost of the production backup centers to the direct production centers is correct and reasonable for the centers referred to below?							
A	Servicing the manufacturing machinery, and vehicles Product quality control	30	100	87.5	0	0	0	Quite significant
B		30	100	87.5	0	0	0	Quite significant
12	Is the use of cost-sharing (remittance) for allocation of the prime cost of the production backup center to the direct production centers correct for the center referred to below?							
A	Raw material storage warehouse	30	100	87.5	0	0	0	Quite significant
13	Is the use of sharing basis (number of employees) about the prime cost allocation of the production backup center to the direct production centers correct for the centers referred to below?							
A	Traffic Health and security	30	100	87.5	0	0	0	Quite significant
B		30	100	87.5	0	0	0	Quite significant
14	Is it logical to use a cost estimating system for calculating the prime cost in the following centers? According to the operating results of production, with the same production conditions and inputs:							
A	Preproduction Production Maintenance and delivery (sale)	30	100	87.5	0	0	0	Quite significant
B		30	100	87.5	0	0	0	Quite significant
C		30	100	87.5	0	0	0	Quite significant

15	Is the overall proposed prime cost model appropriate and reasonable?	30	100	87.5	0	0	0	Quite significant
16	Is the use of adjusted direct cost production appropriate to obtain the prime cost of the product?	30	100	87.5	0	0	0	Quite significant

Source: Researcher Findings

Discussion and Results

Table 12 shows the final results of the responses to the questions posed in the survey form. According to the table, the percentage of positive responses to the questions asked in the survey form in relation to the topics associated with the proposed model, which considered the details and generality of the proposed model, regarding the research constraints (the lack of financial accounting systems and the determined prime cost pertaining to concrete production companies, especially in the sample business unit for collecting the costs), affirms that the proposed model is capable to be implemented in the units producing concrete and concrete products (which have the features mentioned in subject area and spatial scope of this research). Applicative advantages of the proposed model are as follows:

- Controlling the prime cost and expenses through accountability accounting.
- Providing information on determining sale prices through knowledge of the prime cost information of the product.
- Measurement of profit through inventory costing and matching of the period costs with the same period revenues (compliance principle).
- Planning the profit through budgeting the cost of production factors and comparing it with the final profit resulting from these costs.

With the ever-increasing development of productive-industrial units and because of the management's use of prime cost information in planning, controlling and decision-making, the need for information from prime cost accounting systems in the ready-mixed concrete production sector is undeniable. On the other hand, with the establishment of cost accounting systems, an important tool for controlling and reducing the cost of the product and creating value added and providing information on obtaining and consuming the resources for production units of concrete products is in the hands of management. Considering the results obtained from testing the issues related to the proposed model confirms that the proposed model has the capability to be implemented in ready- mixed concrete production units as well as concrete manufacturing companies.

The following suggestions are presented according to the research findings:

- Establishment of a financial accounting system and the prime cost, in order to provide the required data for the financial system and financial information required for management.
- Recruitment and training of expert human resources for optimal use of the system.
- Use of computer systems to create automated controls.

Suggestions for future research are:

- Research on the presentation of the prime cost model for other concrete products.
- Research on the prime cost pattern of concrete products in other parts of the country and comparison of research results with other similar studies.

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