



APPROPRIATE MODELS FOR MEASURING INTANGIBLE ASSETS AND THEIR IMPACT ON THE FINANCIAL STATEMENTS AND MANAGEMENT DECISIONS: AN APPLIED STUDY IN AL-MANSOUR PHARMACEUTICAL INDUSTRIES

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Abstract

The research aims to focus on two important aspects, namely measuring intangible assets and showing their impact on the financial statements and management decisions. The objectives of the research can be clarified by presenting and discussing the concept of intangible assets and methods of measuring them, presenting and discussing the concept of financial statements and management decisions, and indicating the extent of interest of listed Iraqi companies. In the Iraq Stock Exchange by measuring the intangible assets, in addition to measuring the value of the intangible assets of the Iraqi companies listed in the Iraq Stock Exchange. The research was applied in Al-Mansour Pharmaceutical Industries Company for the period (2016-2020). The research reached a set of conclusions, the most important of which was that (Tobin's Q) model is one of the best models for measuring intangible assets because this model moves away from diligence and personal appreciation, in addition to that this model enhances the principle of comprehensive disclosure, as the current financial disclosure process neglects disclosure For internally formed intangible assets that constitute a large part of the company's assets.

Introduction

The emergence of information technology has led to a significant change in the pattern of the global economy in recent years, as knowledge has become seen as an essential element of capital instead of physical capital, which has led to an increasing interest in the value of intangible assets of companies for the purpose of achieving wealth and income, as well as enhancing the advantage The competitiveness of companies, which contributed to raising their market value, so knowledge and the use of information technology were relied upon, and accordingly, the company's intangible assets are among the main factors to maintain the competitive advantage of companies. Based on this awareness, issues related to intangible



assets become a preoccupation for many industries, however, many companies did not care about the development of intangible assets, although identifying and measuring these assets is an absolute necessity, in light of what companies suffer from intense competition from side of imported products as well as the lack of economic resources.

The first topic: research methodology and previous studies

1-1 Research problem:

The problem of the study is concentrated in the failure of Iraqi companies listed in the Iraq Stock Exchange to measure intangible assets, and thus not to exploit intangible assets in the growth of cash flows of these companies in a way that enables them to achieve profits and growth and enhance their competitive advantage, where the research problem is represented in the following question: Does the measurement of intangible assets affect the financial statements and management decisions in the industrial units?

1-2 Research importance:

The importance of the study comes from the importance of the issue of measuring intangible assets and showing their impact on net cash flows in order to ensure the survival and continuity of companies and achieve competitive advantage, as these companies need to understand the factors and challenges that contribute to their failure to continue in the market as a result of the impact on the financial statements and management decisions.

1-3 Research objectives:

The research aims to focus on two important aspects, namely measuring intangible assets and showing their impact on the financial statements and management decisions. The objectives of the research can be clarified by presenting and discussing the concept of intangible assets and methods of measuring them, presenting and discussing the concept of financial statements and management decisions, and indicating the extent of interest of listed Iraqi companies. In the Iraq Stock Exchange by measuring the intangible assets, in addition to measuring the value of the intangible assets of the Iraqi companies listed in the Iraq Stock Exchange.

1-4 Research hypothesis:

The research is based on the following hypothesis: The measurement of intangible assets can help improve the quality of financial statements and help rationalize management decisions.

1-5 Research community and sample:

The research community is represented by the Iraqi industrial companies, while the research sample is represented by Al-Mansour Company for Pharmaceutical Industries for the period (2016-2020).



The second topic: the theoretical side of the research

2-1 The concept of intangible assets:

Intangible assets are among the things that have attracted the attention of researchers since a long period of time, as Senior Tom indicated in 1836 that the term intangible assets includes a wide range of ideas and perceptions of the intangible components of assets, and intangible assets are considered an economic and administrative concept. Commonly believed to be associated with "human capital" or "knowledge", the terms intangible assets or intellectual capital are often used synonymously (Falzagic, 2005:2).

Intangible assets are viewed as intellectual property, including intellectual property rights such as trademarks, fame, personal and organizational relationships, knowledge, experience, and employee skills. Thus, they are information-based assets that include technology, customer trust, branding, corporate culture, and administrative skills (Bontis, 1998:63).

Intangible assets are the knowledge of the company and are presented at both the individual and organizational levels. At the individual level, it includes individual knowledge, skills and talent, while the organizational level includes elements such as the specific database for each customer, technology, organizational methods and processes, culture, etc. (Johanson, et.al. ,2000:416).

Intangible assets were defined as any form of intellectual property that can be formulated and collected so that they can be used to create more valuable assets, which has increased interest in intangible assets today, especially in determining the discrepancy between the book value of the company according to the accounting records and the market value of the company. An increase in the value of intangible assets and the size of their contribution to the growth of companies has been observed during the past two decades, as intangible assets are seen as a result of companies making the best investment of their human resources, which manage other resources in those companies (Obrien, 2010:22).

Intangible assets exist in economic units in the form of human capital, technological capital and knowledge capital, and it is not possible for companies to continue or compete in the business environment in the long term without looking closely at them despite their great importance in the contemporary business environment (Sharma & Kaur, 2019:102).

2-2 The importance of intangible assets:

Intangible assets have received great attention in recent years for many reasons, including social, economic, political and technological changes that have had an important impact in changing the environment surrounding the work of companies. Due to these changes, it has become imperative for companies to shift from relying on tangible assets to create value for the company to rely also on assets Intangibles, as intangible assets have a major role in achieving company gains, and then intangible assets work to achieve growth in corporate performance (Al-Shamaila, 2015: 18).

Intangible assets are important in generating shareholder value. Moreover, even if investments in intangible assets may negatively affect short-term earnings, they can create actual value in the company and stimulate its growth, as well as contribute positively to increasing wealth. Corporate shareholders (Arslan & Kizil, 2019:101).



Intangible assets are a source of sustainable competitive advantage for companies. In addition, interest in intangible assets will improve investment decisions, negotiations with lenders, and raise investors' capital. The interest in intangible assets such as knowledge and skill, the brand, the reputation of the store, strong relations with suppliers and companies concerned with information technology and concerned with developing means of producing and marketing goods, which provides economic units with a competitive advantage, in addition to that intangible assets enable economic units to increase their resources (Marr et al. 2002:449).

Failure to measure and disclose intangible assets correctly and accurately leads to manipulation of the company's financial statements, which leads to failure to communicate information that reflects the true state of the company's financial information to investors and other parties in the market, and thus this will affect the external dimension of competitive advantage (Buzinskiene, 2017). :15).

In addition to the foregoing, the importance of intangible assets can be clarified through a set of points, as follows: (Johanson, et.al., 2001:410)

1. It provides the company with the ability and competence that contribute to its success.
2. Enables the company's management to make its strategic choices through the optimal use of intangible assets in light of the opportunities available to it and its external environment.

2-3 Appropriate models for measuring intangible assets:

There are many different models presented by accounting thought for measuring intangible assets. Quantitative models for measuring intangible assets can be clarified through the following:

First: The market value to book value ratio model: This model is based on the idea that intangible assets can be measured by making a comparison between the market value and the book value of the company's shares, and that this approach is one of the simplest approaches to measuring the company's intangible assets. The value of intangible assets is calculated according to this model by dividing the market value to the book value of the company's shares (Zambon, 2002:15).

Second: The calculated intangible value model: Under this model, a monetary value of intangible assets is reached, as that value is calculated by comparing the company's performance with the performance of competing companies that own similar tangible assets (Stewart, 2017:26).

Third: The market value model determined by the investor: This model was introduced by Standfield, 1998, which determines the real value of the company from the market value of its shares, which results from four components, which are the real value of the company, tangible capital, perceived intellectual capital, and intellectual capital subject to gradual demise (Malhotra, 2013:98).



Fourth: Return on Assets Model: This model is considered one of the monetary evaluation models that are useful in the case of acquiring intangible assets. The return on assets model shows the relationship of the company's profit to its total assets. Nurnberg, 2016:123).

Fifth: The rate of return on invested capital model: This model is based on the idea that an increase in the rate of return on the invested capital of the company over the corresponding companies in the same economic sector in which it operates indicates that the company has intangible assets, as these assets are not Presentation in financial statements (Osinski et al. 2017:474).

Sixth: The Invisible Balance Sheet Model: This model is considered one of the overall models for measuring intangible assets, and this model does not take into account changes in prices on the value of intangible assets, and it assumes that the total value of intangible assets is due to the increase in the current value of the company's assets for their book value, calculated as the difference between the current value of the net assets and the book value (Osinski et al. 2017:474)

Seventh: The value-added model: This model is based on the concept of the value chain. According to this model, the production process in the company takes place through the value chain links. Raw materials are transformed into products that are marketed and sold, which results in the company achieving added value. According to this approach, the job Productivity is not the only process that takes place when producing the final product in the company (Malhotra, 2013:98).

Eighth: Tobin's Q model: This economic model was proposed by Tobin Games and it relies on defining an indicator used to identify the presence or absence of intangible assets called Q, and this indicator is the ratio between the market value of the company's net assets and the replacement cost or replacement cost of this market value for the net assets of the economic unit, and in the event that this ratio is greater than the correct one, this means that the company achieves a large return on its assets that exceeds the normal rate of return, which indicates the presence of internally generated intangible assets that led to this increase (Talab, 2018:56)), so the basic model for calculating Q is:

$$\text{Tobin's Q} = \frac{\text{The Market Value of Assets}}{\text{The Replacement Value of the Assets}}$$

The Tobin Q model is a development of models for measuring intangible assets, as relying on the replacement cost approach instead of the historical cost approach means introducing the effects of price changes on the company's assets. Intangible assets can be calculated according to this model, by relying on the following equation: (rare, 2016: 35)

$$\text{Tobin's Q} = \frac{\text{MVE} + \text{PS} + \text{DEBT}}{\text{TA}}$$



whereas:

MVE: closing price multiplied by the number of ordinary shares subscribed.

PS: cash value of preference shares.

DEBT: The value of short-term liabilities minus short-term assets and plus the book value of long-term liabilities.

TA: book value of total assets.

2-4 The role of measuring intangible assets in improving the quality of financial statements and rationalizing management decisions:

Intangible assets are important for many companies, and these assets consist of two types, as the first type includes assets that can be distinguished independently, such as copyright and others, while the second type represents those assets that cannot be distinguished from the company, from each other, or even from other assets Such as the expertise and skills of the employees and the administrative competence enjoyed by the company's management, and the importance of this type of assets has encouraged many bodies related to the accounting profession in all countries, such as FASB and IASB, to set standards that deal extensively with the study and determination of the nature and types of those assets, In addition to setting high-quality measurement and disclosure requirements for accounting for intangible assets in companies (Buzinskiene, 2017:56).

Several studies indicated that there is a positive impact relationship between intangible assets and the quality of the financial statements, as the increase in intangible assets leads to an increase in operating cash flows, due to the ability of these assets to generate cash for the main and continuous operations of the company, and the intangible assets are among the assets Which contribute significantly to the generation of economic benefits for the company (Al-Shabil and Ahmed, 2018: 477).

Intangible assets can affect the company's financial statements, through the ability of these assets to generate cash and thus help in increasing these flows and improving the company's performance in general, as well as generating economic benefits for the company, whether these benefits are at the present time or in the future. Which can help increase net income and thus have a positive impact on cash flows from operating activities. Accordingly, intangible assets will have a positive and direct impact on operating cash flows (Al-Amin, 2015: 43).

The accounting measurement and disclosure of intangible assets can help the company's management in making appropriate administrative decisions, as the administrative decision, especially the investment decision, is certainly one of the most important and dangerous decisions that can be taken by the company's management. Therefore, this unit seeks to carry out a process of continuous development of In order to build a database that can help them achieve a sustainable competitive advantage through which they can be distinguished and outperform other companies by making appropriate investment decisions (Gleason & Block, 2006: 303).

Intangible assets also have a significant impact on determining the value of the company, and then their impact on the rationalization and judgment of investors' decisions and



management decisions, so the company is required to take appropriate decisions related to its investments in order to sell or buy these investments or sell or buy assets in order to improve the situation market and support the continuity of the company (Kishko, 2016: 47).

The third topic: the applied side of the research

3-1 An introductory summary of the research sample (Al-Mansour Company for Pharmaceutical Industries)

Al Mansour Pharmaceutical Industries is a public company, listed on Iraq Stock Exchange since November 2004. It operates within the pharmaceutical, biotechnology and life sciences sector focusing on pharmaceuticals. The headquarters of Al-Mansour Pharmaceutical Company is located in Baghdad, Iraq, and it was established in April 1989. The company aims to contribute to supporting the national economy in the field of pharmaceutical industries, cosmetics, and sterilization, to achieve the highest level of growth in work and production, and to adopt the principle of economic calculation and efficient investment of public funds. and its effectiveness in achieving the goals of the state and raising the levels of performance of the national economy in order to achieve the goals of development plans. The company works to develop and expand existing factories and production lines, establish projects and complementary and new lines, purchase and import production requirements or any materials that fall within its production or need, and provide related advisory services. It is active in various departments of the state and the mixed and private sectors, and it markets its production inside and outside Iraq.

3-2 Measurement of intangible assets in Al-Mansour Pharmaceutical Industries Company:

For the purpose of measuring intangible assets in Al-Mansour Pharmaceutical Industries, the (Tobin's Q) model can be used, so the data collected from the research sample company for the period from 2016 to 2020 will be relied upon, and the independent variable represented by intangible assets can be described through the use of the test (Tobin's Q), which represents the ratio of the market value of the company's shares to the replacement value of net assets, The higher this ratio, the more it indicates the presence of intangible assets in the company, even if they are intangible assets formed internally, and thus the matter requires determining the market value of the shares of the research sample company (the number of shares multiplied by the market value of one share) in addition to determining the replacement value of the net Its assets by subtracting extinction from the total assets during the years in question.

The market value of the shares of Al-Mansour Pharmaceutical Industries Company for the period from 2016 to 2020 amounted to (5618), (6433), (5883), (6214) (6553) dinars, respectively, and it is noted that the market value of the shares changes continuously with investors trading shares, It is difficult to predict the actual value because it is affected by the developments of unknown companies, industry trends and economic changes, and the relationship of the share price in trading with the result of the activity of the company whose profits and earnings per share were affected by the high production costs in the company,



weak production capacity, administrative violations and non-disclosure, in addition to the disguised unemployment in this Companies and the failure to improve the type of service and product provided by them in light of the inflation of the capital of some of these companies and the failure to address the observations shown in the reports of the auditors of a number of other companies was another reason for this decrease.

The replacement value of the assets of Al-Mansour Pharmaceutical Industries Company for the period from 2016 to 2020 amounted to (3218), (4532), (4229), (3543) (5341) dinars, respectively, and this cost represents the purchase of the asset or its equivalent in its production capacity in an organized market. For used assets, prices for used assets can be obtained by contacting local and external suppliers, or by offering companies producing such assets, which undoubtedly include the prices of their products from different machines, as they represent the cost of purchasing a new similar asset with a reduction in its price by the difference between the condition of the original subject Evaluation and what distinguishes the new asset from technological progress and advanced production capabilities.

After determining the market value of the shares of the research sample companies and the replacement value of their assets, the (Tobin's Q) test will be used in order to measure whether there are intangible assets or not, as shown in the following table:

Table (1): Measurement of intangible assets using Tobin's Q model for Al-Mansour Pharmaceutical Industries for the period (2016-2020)

Year	Market Value	Replacement Value	Tobin's Q
2016	5618	3218	1.746
2017	6433	4532	1.419
2018	5883	4229	1.391
2019	6214	3543	1.754
2020	6553	5341	1.227
Average	6140	4173	1.507

Source: Prepared by the researcher based on company data.

It can be seen from the above table that all research years have exceeded the (Tobin's Q) test index of the correct one, which indicates the presence of intangible assets formed internally, and the value of this indicator for the period from 2016 to 2020 was (1.746), (1.419), (1.391), (1.754), (1.227) respectively, and thus it can be said that there is a possibility to measure the intangible assets in the Al-Mansour Pharmaceutical Industries Company, the research sample, by dividing the market value of the company's shares by the replacement value of its assets, and the company achieved the highest index in a year 2019, amounting to (1.754), and the average index during the five years of research was (1.507), and this indicates that the research sample company owns internally formed intangible assets.



3-3 Improving the quality of the financial statements and rationalizing management decisions by using the appropriate model for measuring intangible assets in Al-Mansour Pharmaceutical Industries:

Before measuring the impact of intangible assets on the quality of financial statements and decision-making processes in the research sample company, the research variables must be described as follows:

1. The independent variable: The independent variable is the intangible assets of the research sample company, and this variable can be measured using the Tobin Q test.
2. Controlling variables: By extrapolating previous studies, the controlling variables that may be related to the quality of the financial statements and decision-making processes of the company during a certain period can be identified, as follows:
 - a. Company size: This variable is measured by the natural logarithm of the company's total assets at the end of the fiscal year.
 - b. Return on Assets Ratio (ROA): It is the ratio of earnings before interest and taxes to total assets.
 - c. Fixed assets ratio to total assets: It is the ratio of fixed assets of the company to its total assets.
 - d. Net cash flows: It is measured by the difference between the cash inflows and outflows of the company during the research period.
3. The dependent variable: The dependent variable is the quality of the financial statements and decision-making processes, and it is measured by the completion and timely submission of the financial statements, in addition to making decisions that lead to improving the company's operations.

The variables of the model for measuring the impact of intangible assets on the quality of financial statements and management decisions in Al-Mansour Pharmaceutical Industries can be clarified through the following table:

Table (2): Variables of the model for measuring the impact of intangible assets on the quality of financial statements and management decisions in Al-Mansour Pharmaceutical Industries

Year	Log. TA	ROA (%)	Ratio of FA on TA (%)	Net of Cash Flow
2016	0.518	16.801	56.413	6234
2017	0.644	20.324	48.266	8954
2018	0.589	15.898	52.112	126743
2019	0.644	18.354	55.672	7832
2020	0.692	19.044	54.982	9024
Average	0.6174	18.0842	53.489	31757.4

Source: Prepared by the researcher based on company data.

In order to achieve the objectives of the research and test its hypothesis, the following standard model can be adopted to conduct the standard analysis in a manner that is commensurate with the requirements of the current research, as follows:



$$QFS = a_0 + B_1 \text{Tobin's } Q + B_2 \text{Log. TA} + B_3 \text{ROA} + B_4 \text{FA on TA} + B_5 \text{NCF} + e$$

Whereas: QFS: the quality of financial reports followed by the rationalization of administrative decisions in the company, Tobin's Q: the independent variable of intangible assets measured by (Tobin's Q) model, Size: the independent variable related to the size of the company measured by the total assets. ROA: the independent variable of return on assets measured as the ratio of earnings before interest and taxes to total assets. FA on TA: the independent variable for the ratio of fixed assets to total assets, NCF: the independent variable for net cash flows. a_0 : the constant segment. $b_1, 2, \dots, n$: the parameters that were estimated. e : the random error limit. After defining the study model, the descriptive statistics will be explained through the following table:

Table (3): Descriptive statistics for the research variables

Details	Lowest value	Highest value	Arithmetic Mean	Standard Deviation
QFS	0	1	0.600	0.216
Tobin's Q	1.227	1.754	1.507	0.778
Log. TA	0.518	0.692	0.6174	0.215
ROA	15.898	20.324	18.0842	0.324
Ratio of FA to TA	48.266	56.413	53.489	0.227
Net of Cash Flow	6234	126743	31757.4	0.894

Source: prepared by the researcher based on the statistical program (SPSS-24)

It is noted from the above table that the descriptive statistics of the QFS variable were the lowest value (0) and the highest value (1) and the arithmetic mean (0.600) with a standard deviation (0.216), while the Tobin's Q variable had the lowest value (1.227) and the highest value (1.754) and the arithmetic mean (1.507) with a standard deviation (0.778), while the variable Log. TA had the lowest value (0.518), the highest value (0.692), the arithmetic mean (0.6174) with a standard deviation (0.215), and for the ROA variable, the lowest value was (15.898), the highest value (20.324), and the arithmetic mean (18.0842) with a standard deviation (0.324). Ratio of FA to TA, the lowest value was (48.266), the highest value was (56.413), and the arithmetic mean was (53.489), with a standard deviation of (0.227). While the Net of Cash Flow variable had the lowest value (6234), the highest value (126743), and the arithmetic mean (31757.4) with a standard deviation of (0.894). The research hypothesis can be tested by using the standard model that was referred to previously and as shown in the following table:

Table (4): Results of testing the research hypothesis

Independent Variables	R	R ²	F	Sig.F	β_i	T	Sig.T	Dependent Variables
Tobin's Q.	0.812	0.659	5.104	0.05	4.652	2.676	0.05	Financial Statements & Management Decisions
Log. TA	0.635	0.403	4.215	0.05	3.864	2.892	0.05	
ROA	0.564	0.318	4.007	0.05	4.119	3.116	0.05	
Ratio of FA to TA	0.513	0.263	3.144	0.05	3.266	2.431	0.05	
Net of Cash Flow	0.442	0.195	3.513	0.05	4.428	2.554	0.05	

Source: prepared by the researcher based on the statistical program (SPSS-24)



Through the above table, it is noted that the value of the correlation coefficient R between intangible assets and the quality of financial statements and management decisions has reached (0.812), and this indicates that the relationship between these two variables is a positive correlation, and the value of the coefficient of determination R^2 is (0.659), and this explains its value (65.9%) of the variation in the quality of the financial statements and management decisions, as the value of F reached (5.104) at the level of (0.05), and this confirms the significance of the regression, meaning that the increase in intangible assets by (1%) will lead to improving the quality of the financial statements and improving management decisions by (4.652%), Increasing the size of the company by (1%) will lead to improving the quality of the financial statements and improving management decisions by (3.864%). Likewise, increasing the return on assets by (1%) will lead to improving the quality of the financial statements and improving management decisions by (4.119%).), and that an increase in the ratio of fixed assets to total assets by (1%) will improve the quality of the financial statements and improve management decisions by (3.266%), while an increase in net cash flows by (1%) will lead to improving the quality of the financial statements and improving decisions management by (4.428)

The fourth topic: conclusions and recommendations

4-1 Conclusions:

The research reached the following conclusions:

1. Intangible assets are the result of the optimal investment of the human and material resources available to the company and do not have a physical existence. They also contribute to achieving future cash flows for the company, which contributes to increasing the market value as well as improving the competitive advantage of the company.
2. Intangible assets are important for many companies, and these assets consist of assets that can be distinguished independently, such as copyright and others, and assets that cannot be distinguished from the company or from each other, not even from other assets such as the expertise and skills of employees and administrative competence that it enjoys company management .
3. There is a positive impact relationship between intangible assets and the quality of the financial statements, as an increase in intangible assets leads to an increase in operating cash flows, due to the ability of these assets to generate cash for the main and continuous operations of the company, and intangible assets are among the assets that contribute significantly in generating economic benefits for the company.
4. Intangible assets can affect the company's financial statements, through the ability of these assets to generate cash and thus help increase these flows and improve the company's performance in general.
5. The accounting measurement and disclosure of intangible assets can help the company's management in making appropriate decisions, as the administrative decision, especially the investment decision, is certainly one of the most important and dangerous decisions that can be taken by the company's management.



4-2 Recommendations:

The research recommends the following:

1. Using the (Tobin's Q) model to measure intangible assets because this model moves away from diligence and personal appreciation, in addition to that this model enhances the principle of comprehensive disclosure, as the current financial disclosure process neglects the disclosure of internally formed intangible assets that constitute a large part of the company's assets.
2. Evaluate intangible assets continuously from one period to another, with the need to determine the impact of these assets on each of the total cash flows from one period to another, and work to take actions and measures that will improve the net cash flows of the company.
3. The necessity of measuring and disclosing the intangible assets formed internally, because these assets are among the basic pillars for building economic progress and the success of companies, and thus transforming these resources into added value for these companies.
4. The need for companies listed in the Iraq Stock Exchange to pay attention to the issue of measuring intangible assets and to disclose these assets in the quarterly and annual reports prepared by these companies.
5. The dependence of the joint-stock companies listed in the Iraq Stock Exchange on the data of this study and the adoption of the specific methodology and preliminary steps for measuring intangible assets and indicating their impact on the financial statements and administrative decisions.

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