

## The influence of intangible assets disclosures on businesses' performance



 Husni Samara<sup>1</sup>

<sup>1</sup>The University of Jordan, Jordan.

Email: [Husni-al-atrash@hotmail.com](mailto:Husni-al-atrash@hotmail.com)

 Mohammad

Aladwan<sup>2</sup>

<sup>2</sup>Department of Accounting, Business School, the University of Jordan, Amman, Jordan.

Email: [msm\\_Aldwan@ju.edu.jo](mailto:msm_Aldwan@ju.edu.jo)

 Montaser Hamdan<sup>3</sup>

<sup>3</sup>Department of Accounting, Quds Open University, Palestine.

Email: [monhammadan@qou.edu.ps](mailto:monhammadan@qou.edu.ps)

 Anas Ahmad Bani

Atta<sup>4\*</sup>

<sup>4</sup>Financial and Accounting Department, Faculty of Business, Middle East University, Amman, Jordan.

Email: [Abaniattah@meu.edu.jo](mailto:Abaniattah@meu.edu.jo)



(+ Corresponding author)

### ABSTRACT

#### Article History

Received: 20 July 2023

Revised: 31 August 2023

Accepted: 25 October 2023

Published: 15 November 2023

#### Keywords

Firm size

Industrial companies

Intangible assets

Leverage

Performance

Return on assets.

The purpose of this research is to determine how intangible asset declarations affected manufacturing companies listed on the Palestine Exchange in terms of performance throughout the years [2017-2021]. The study sample consisted of 13 industrial companies listed on the Palestinian Stock Exchange, and in order to verify the study hypotheses, a descriptive analytical approach was followed. Several statistical methods were used, such as random effect analysis. After conducting the required tests, the results of the tests showed that the intangible assets do not have an effective impact on the performance of the companies that were studied, as the relationship was negative and it was not proven that the intangibility of assets had any positive results. However, it was found that leverage has a positive effect on the performance of these companies. The study recommended that the approaches for service and industrial companies should be improved and developed to enhance the level of performance in accordance with developments that occurred in the financial market.

**Contribution/ Originality:** The findings of this study support businesses in all economic sectors in demonstrating the added value that asset diversification, particularly with regard to intangible assets, provides. The originality of this study stems from the fact that it reflects the development of the harnessing of resources in developing countries to achieve good financial performance.

## 1. INTRODUCTION

Most businesses have changed the structure of their resources and investment assets as a result of the numerous advancements and developments brought about by competition in the investment business environment. This has increased the benefit of sharing intangible assets in terms of boosting return and enhancing financial performance. Businesses all over the world have begun to include new types of assets in their financial statements, such as franchises, goodwill, branding, e-marketing, and other intangible assets. Because of the speed at which technology is developing, businesses are being forced to use more automated processes to do their duties. Furthermore, many businesses have reaped significant material gains from the ongoing expansion of the use of intangible assets in product and service marketing and electronic advertising. Consequently, in an effort to maintain market competitiveness,

businesses now have a greater understanding of investing and adhere to a standard approach when taking advantage of investment possibilities, including diversifying their asset portfolio.

Nowadays, the introduction of more developed techniques in sales and providing service results in less usage of traditional working methods; therefore, more attention is directed towards more efficient and less costly means for operating the functions of the facility. The current new perceptions regarding intangible assets obligate firms to further accumulate medium- or long-term intangible assets that serve their planned aims. Accordingly, the majority of firms initialized additional emphasize on the importance of intangible assets as one of the key sources of revenues and growth in market value and, moreover, to provide extra benefits for shareholders (Al-Tahat, Abu Nqira, & Moneim, 2021).

The accounting standards' fair value estimation for intangible assets undoubtedly encouraged managers to engage in opportunistic behavior and manipulate earnings. With all of these details in mind, one could argue that fair value measurement for intangible assets is a justification for managers to influence earnings and thus performance (Al-Dweik & Al-Thuneibat, 2022). For all kinds of business entities, the value-creation processes of employing intangible assets are becoming increasingly essential; therefore, many financial decisions are severely impacted, which correspondingly impacts the internal and external reporting. Due to this fact, the deployment and distribution of intangibles should thereafter be done in accordance with "objective" standards and accepted economic criteria (Alexandra & Mihaela, 2013). However, because many firms rely on tangible investments, the traditional measure of dependency on external financing has evolved into an unreliable indicator of vulnerability to financial frictions, particularly for sectors reliant on intangible assets (Demmou, Stefanescu, & Arquie, 2019).

Due to the growing interest in the elements of intangible assets, such as goodwill and intellectual capital, the question of the value and relevance of intangibles is becoming more prevalent in the financial reporting literature. Knowledge, information, intellectual property, goodwill, and expertise are all examples of intangible assets that can be exploited to generate value; thus, there is a claim that the misuse of intangible assets that are reported in financial statements causes poor quality reports, which is steadily destroying users' trust in them.

In the present evolved environment with continuous modification of accounting standards, it has become compulsory to attest to the high quality traits of accounting reports in order to ensure integrity, transparency, appropriateness of such reports, and their effects on performance. Consequentially, this study is initiated as a supplement to other studies on this concern about the influence of intangible asset disclosures on financial performance. Also, the present study is regarded as an effort to shed more light on the benefits accomplished by modern accounting practices, such as the measurement of intangibles. The originality of this research is upheld because it is one of the few studies that measured intangible disclosures on financial performance in our area. Furthermore, the study is likely to add new information to the accounting literature on intangibles, accounting, and financial performance, and thus the findings are expected to be valuable for a variety of concerned clusters, such as accountants, auditors, financial analysts, decision-makers, and financial and accounting policymakers.

Following the objectives and hypotheses, the second section of the study will be devoted to the theoretical framework and prior research; the third section will discuss the study's methodology and models; the fourth section will discuss the results and their interpretation; and the final section will contain the conclusions.

## 2. OBJECTIVES OF THE STUDY

The current study aims to:

1. Investigate the impact of intangible assets on the financial performance of listed industrial firms in Palestine.
2. Identify the effects of control variables such as firm leverage and size on the correlation among intangible assets and financial performance.

### 3. RESEARCH HYPOTHESES

As such, the following hypotheses are proposed:

*H1: Intangible assets have a substantial positive relationship with the performance of industrial firms listed in Palestine.*

*H2: Size has a substantial positive correlation with the performance of industrial firms listed in Palestine.*

*H3: Leverage has a substantial positive correlation with the performance of industrial firms listed in Palestine.*

### 4. LITERATURE REVIEW

Despite the lack of the actual substance of cash or equipment, intangible assets are still regarded as a major long-term asset for an organization or business (Opu & Dewi, 2021). Some of the previous studies reported that fair value measurement of the independent variables at levels one and two had no appreciable influence on earning management in banks. This is probably attributable to the banking sector's sound and reliable controls, which have advanced internal controls, improved corporate governance policies and practices, transparent financial reporting systems, and banks' regulatory framework without removing the role of the Central bank (Al-Dweik & Al-Thuneibat, 2022). Therefore, an intangible asset in other sectors, particularly the manufacturing sector, must be identified properly in order to meet the definition of an intangible asset. According to recent guidelines of accounting standards, entities have to distinguish between intangible assets governed by International Accounting Standard 38 "IAS 38" and goodwill, since goodwill, which comes from an amalgamation in the nature of a transaction, is a payment made by the acquirer in anticipation of future financial gains. Abu Nassar and Hamidat (2018), IFRS Foundation (2017), and IASB (2010) viewed the other characteristics of intangible assets as follows:

- 1) They lack a definite physical existence.
- 2) Non-monetary assets, often known as non-financial assets.
- 3) Its useful life or duration of usage typically spans multiple times.
- 4) It can either be made locally or imported.
- 5) The challenge of estimating its worth and the degree of its growth or decline in the absence of a viable market.

Goodwill, patents, trademarks, trade names, copyrights, franchises, and the ability to extract natural resources are typical examples of intangible assets.

Many companies worldwide have started using intangible asset disclosures based on fair value in order to increase their degree of profitability. For example, in the Turkish banking sector, banks must make use of both their financial and physical capital, but studies such as Ozkan, Cakan, and Kayacan (2017) failed to confirm the effect of intangible asset gains on banks' financial. Contradictory results were approved for the effect of intangible assets on financial results, such as those reported by Innocent, Nwannebuike, and Effiong (2022), who found a favorable impact on the listed Nigerian oil and gas industry's return on assets (ROA); their results suggest that any growth in intangible assets will also result in an increase in the return on assets and vice versa. Moreover, other results found in the same study also supported the significant impact of intangible assets on an industry's return on equity (ROE). According to results reported by Al-Tahat et al. (2021) on the effect of intangible assets on insurance companies' performance for Jordanian companies, both total assets and intangible assets have a significant impact on market value. They also asserted that the total assets of the company had a statistically significant impact on dividends paid per share, whereas the intangible assets did not.

Intangible assets are viewed as one of the key success factors that help a company maintain its competitive advantage; thus, the current trends in the market motivate entities to realize to the benefits of acquiring such assets (Seo & Kim, 2020). de Almeida Aguiar, Tortoli, Figari, and Junior (2021) affirmed in their findings that intangibles inspire businesses to perform more economically, as appeared in the majority of performance metrics; such results provide credence to the premise that intangible assets have a significant and beneficial impact on dividends. Similarly, Mohanlingam, Nguyen, and Mom (2021) found that entities that hold greater amounts of intangible assets tend to pay more dividends. Everyone agrees that efficiency and effectiveness should be considered when defining

performance, whereas efficiency is defined as performing appropriately while effectiveness refers to the degree to which the desired income or accurate actions have been fulfilled by the actual results; hence, in some researcher's opinions, intangible assets work as accelerators for both internal (efficiency) and external (effectiveness), so it is recommended that companies utilize intangible assets beside tangible ones for better comprehending a firm's performance (Arianpoor, 2021).

It is taken for granted in the financial environment that companies with large intangible assets have a greater impact on the company's debt management strategy; therefore, owners of businesses with strong intangible assets can reduce the quantity of hazardous debt and hence reduce the agency cost of debt. When there is a conflict of interest between management and debt holders, managers frequently are more concerned with shareholders than debt holders; thus, when a company invests more in intangible assets, the agency's cost of debt will increase (Abebe Zelalem & Ali Abebe, 2022). So, in order to provide investors with a high-quality signal, businesses with significant intangible assets must pay substantial dividends, and this act contrasts with the agency theory and the pecking order theory in terms of dividend policy (Nagaraja & Vinay, 2016). The basis for reporting the results of the usage of intangible assets on the market impacts the market value as an entry price, which is laid out by fundamentals of financial economics theories such as efficient market theory, agency theory, and signaling theory. In efficient market theory, the key is that intangible assets must accurately reflect fair value, as the behaviors of the market that players are assessing are dedicated to the data obtained. Additionally, in an efficient market, the price already accounts for everything that has happened up to that moment, as well as changes in behavior due to new information and market players' reactions since capital markets are prone to completely unforeseen price movements by nature and it is impossible to prefigure events that might have an impact on price adjustments (Buzinskiene & Rudyte, 2021).

According to Barker, Lennard, Penman, and Teixeira (2022), the present adoption of intangible assets raises some remarks about their use: First, since assets are frequently employed to produce value, there is no independent assessment for an asset in that context, and a firm's value does not state the sum of operating asset values on its statement of financial position. The idea that including non-physical assets in the statement of financial position will reveal information about their value is thus entitled to question. Second, in the statement of financial position, the cost of investments may be listed as an expense. Therefore, the issue is whether intangible asset costs should be included on the statement of financial position or not; third, when investment costs are added to continuing operating costs, tracking them becomes difficult, this problem affects intangible assets regularly, which limits how extensively they may be acknowledged in daily life; fourth, in addition to producing a statement of financial position and cash flows, the regular statements also include the income statement, which can provide the necessary information even when an expenditure cost by itself is insufficient to demonstrate value and accomplish the goals due to estimates of intangible assets, so companies while capitalizing intangible assets on the statement of financial position, the effect on the income statement must be considered via spreading out the investment's cost over the intervals when investment earnings are received, as well as any potential impairments. Fifth, the degree of uncertainty around investment results is a crucial element impacting these effects on the income statement because of amortization uncertainty, which unavoidably includes mismatching mistakes and impairments and distorts income reported from current sales. Finally, the earnings from current revenues may be distorted by both the expense of investments to the income statement and the recording of comparable investments to the statement of financial position, because when comparing these two impacts to one another in order to come up with an insightful answer, the level of uncertainty is what ultimately determines the outcome.

According to "International Accounting Standard No. (38)," any intangible resource is an identified non-financial item that does not exist physically and that meets the following two requirements: first, that the entity has control over it because of earlier occurrences like the purchase or internal growth. Second, it is anticipated that the facility would experience financial gains because of purchasing or using the asset indicated by the projected cash flows (IFRS Foundation, 2017).

People who want to classify all costs related to internally generate intangible assets as expenses, including development costs, say that this is because internally generated intangible assets don't meet the Framework's criteria for asset recognition. This is because it's impossible to tell the difference between the future financial gains from internally created intangible assets and those from internally created goodwill. Another problem that appears with such capitalization is related to financial statement comparability, which has become impossible. The reason for this is that identical accounting under similar conditions cannot be achieved because the judgment required to determine whether it is likely that future economic advantages will result from internally generated intangible assets is too subjective. It is hard to know for sure how much can be recovered from an internally generated intangible asset unless its fair value can be established by an active market. This means that giving an internally generated intangible asset a value other than zero when there is no active market could mislead investors (Ozkan et al., 2017; Thao, 2022).

According to Benyarisawat and Basiruddin (2012), there is little, if any, decision-usefulness or predictive information produced by the recognition of internally generated intangible assets at fair value rather than cost due to these complications; firstly, in general, the demonstration of technological viability or commercial success necessary to satisfy the recognition criteria won't be realized until a sizable expense has been recognized as an expense; as a result, the cost recognized for an intangible asset that was created internally will not accurately reflect the item's entire cost. Secondly, an internally produced intangible asset's cost might not be related to the asset's value. Thirdly, in some nations, users of financial statements are wary of businesses that acknowledge internally created intangible assets. Finally, the benefits are not outweighed by the additional costs of keeping the documents required to support and justify the recognition of internally generated intangible assets.

Recently, there has been renewed interest in the association between non-physical assets and business financial performance, which has not received a great deal of research in the past. According to Salamudin, Bakar, Kamil Ibrahim, and Haji Hassan (2010), intangible assets are expanding more quickly in Malaysian markets, indicating that an ongoing pattern of intangible asset development exists. A considerable amount of literature has been published on this relationship. Sveiby (2010) affirmed that intangible assets have a major impact on an organization's competitiveness and are an essential component of assets that achieve earnings; likewise, Abebe Zelalem and Ali Abebe (2022) also suggested that intangible assets from prior years have a favorable impact on financial performance in the following years. With the same conclusion, Maditinos, Chatzoudes, Tsairidis, and Theriou (2011) concluded that intangible assets highly contribute to financial success.

According to Dumay (2012), tangible assets are vital in the current economy and play an important role in the value underpinning of businesses, while intangible assets are crucial in the modern economy and perform a vital part in both. Giuliani (2013) equally pointed out that the value of businesses is positively driving the current economy and its achievements. Marzo (2014) determined that intangible assets can affect a company's performance, and various companies in the same sector may experience varied financial outcomes based on the amount of asset tangibility. According to Warusawitharana and Whited (2016), the definition of an investment is "an asset, a substance, or an item that is bought for the generation of income, or an asset that is obtained to generate income and support the future, in every respect, such as in business", This definition comprises both physical and non-physical assets; they argued that performance is the total addition to wealth that comes from both types.

Many previous studies have tested the relationship between intangible assets and financial performance and found remarkable results. In a study by Qureshi and Siddiqui (2020), the study methodology examined the expected impact of intangible assets on financial performance, financial policies, and the market value of the company. The study was conducted on technology companies from 14 countries. His findings revealed that there is a real negative influence of intangibles on asset returns (ROA) and equity returns (ROE). There were general findings from the research that the greater the intangibility of assets, the lower the earnings ratios, and vice versa, so the study did not prove the positive expected impact of intangible assets on the performance of companies. Similar to the results of this study, the results of Vanderpal (2019), after verifying the relationship between intangible assets and financial

performance, displayed that there is non-linkage between intangibles and financial effectiveness. These results have been reported after examination in several economic sectors, not one. The study showed that shareholders have a great fear of increasing investment in intangible assets instead of tangible assets due to the high risk that this type of investment carries.

Despite these results, which are not in favor of intangible assets, there are other studies that have accumulated empirical evidence of the important weight of intangible investments on financial performance, such as Gamayuni (2015), Zhang (2017), and Kaymaz, Yilmaz, and Kaymaz (2019). A combination of multiple studies has also shown that profitability metrics in companies, such as return on assets and return on equity, have changed after companies adopt asset diversification policies by increasing the share of intangible assets (Felix, Okwo, & Obinabo, 2020; Li & Wang, 2014). Other studies (Ferdaous & Rahman, 2019; Haji & Mohd Ghazali, 2018) have shown that as companies increase their intangible assets, the company's performance and effectiveness improve, especially in active markets where intangible assets are valued at realistic values.

A number of researchers have argued that the performance of companies is not determined only by one factor or two factors; there is a multiple set of variables that affect the level of financial performance, and these variables may be non-financial or financial, such as the size of the company, the ratio of debt, liquidity, and operating profit. Some of the studies that have been referred to previously discussed the impact of additional variables that control the level of financial performance in addition to intangible assets (Atta & Marzuki, 2020). The study by Gamayuni (2015) tested the impact of debt size on the association between the intangibility of assets and financial adequacy. The inquiry originated from the idea that intangible properties have a negative relationship with profitability and that the size of indebtedness has a positive impact on financial performance. Qureshi and Siddiqui (2020) asserted the positive impact of leverage on financial performance and also established clues for the negative influence of the intangibility of assets on performance.

Company size, or asset size, has always been one of the main drivers of corporate financial achievements, and borrowing to consolidate assets leads to an increase in corporate growth. For example, the Malikova, Brabec, and Rozkovec (2018) study that was conducted in Europe showed that financial performance is positively affected by the ideal composition of assets; furthermore, companies can also increase their financial performance through external investment support represented by borrowing. The results of this study proved that the ideal ratio of the composition of current, fixed, and intangible assets is dynamic for the company's financial success. Lim, Macias, and Moeller (2020) also stressed that borrowing at high levels poses a significant risk to the company's viability, and although reasonable borrowing at low risk ratios has benefits to financial performance, if the company fails to achieve an appropriate investment for this indebtedness, it risks bankruptcy, which the owners do not accept. Nowadays, in rational investment markets, companies with investment experience adopt modern and reasonable models in the formation of their assets between tangible fixed assets and intangible ones. Some studies have shown that the presence of intangible assets will undoubtedly deliver new opportunities for growth in company size and sales growth (Ocak & Fındık, 2019).

Although a weighty number of previous studies have proven the positive relationship of intangible assets on financial performance, there are other studies that have also reached negative conclusions or mixed or neutral results. However, scientific research is still investigating and exploring this relationship, especially in emerging markets where the efficiency of financial markets or investments has not reached the desired level. Due to the poetry's ambiguous conclusions, this study aims to investigate the relationship between intangible assets and financial performance, which may also depend on control variables like entity size and financial leverage in Palestine's listed industrial firms.

## 5. METHODOLOGY

The present study follows a quantitative diagnostic approach by using time series data. Figures were assembled from a group of industrial companies for several years and joined with the aim of using the relationships between these data to reach real statistical results about intangible assets, leverage, and financial performance.

### 5.1. Sample of the Study

One of the essential features for the realization of suitable results for any investigation is frequently determined by selecting the proper and dependable sample. Many researchers, investigators, and users of the study have stated that market research that is conducted on real past facts is one of the finest types of research due to the absence of human intervention in the data; moreover, such investigations bring more generalizability to the results obtained from the study. With the intention of comprehending the purpose of the study by picking a fitting sample, data were gathered from industrial companies listed in the Palestine Financial Market and set according to the outlined study framework. The motive for nominating this type of company is that such companies apply the common financial accounting standards, which involve several measurement methods such as historical cost and fair value; thus, these types of companies are permitted within standards to deviate from traditional measures such as historical cost to more optimistic ones like fair value. After a broad valuation of the data available concerning the study that was published in industrial companies' annual reports, the community of the study consisted of 13 industrial companies that met the requirements of the study for a period of 5 years, from 2017 to 2021, with a total of 65 observations.

### 5.2. Measurement of Variables and Models

The study consisted of several variables, and the following is an explanation of each of them:

Return on assets (ROA): is donated as Dependent Variable that measure Firms Performance, [Dechow, Sloan, and Sweeney \(1995\)](#) suggested that a business's success is allied with income management, it is crucial to account for ROA while testing earnings management. Using this data, the control variable known as ROA will be determined by:

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

is the Independent Variable, Intangible assets are described by [Nnado Ifeanyi and Ozouli Caroline \(2016\)](#) as "bought goodwill and intangibles," which are reported using the "fair value" technique and should not be amortized any longer given how volatile their values can be. In order to account for the unstable value degradation of intangible assets, the IASB made the decision to introduce a mandated yearly impairment test.

$$\text{Intangible Assets} = \text{Intangible Assets Average}$$

### 5.3. Control Variables

Leverage (LEV): According to earlier studies, there is a considerable negative correlation between leverage and earnings management. Leveraged businesses have worse levels of actual earnings management ([Zamria, Rahmanb, & Isac, 2013](#)). Also, [Becker, DeFond, Jiambalvo, and Subramanyam \(1998\)](#) pointed out that businesses with high debt loads are subject to greater institutional oversight, which would impair their capacity to control profitability. Leverage will therefore be employed as a control variable. The sum of the obtained debt compared to the sum of total assets will be used to get this variable's value.

$$LEV = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Firm size (TA): some studies have looked into how a firm's size affects its earnings. There are two conflicting points of view. For instance, research by Barton and Simko (2002) revealed that large companies are under more pressure to meet or exceed analysts' predictions. But according to previous findings of related poetry (Atta & Marzuki, 2021; Beasley, Carcello, Hermanson, & Lapides, 2000; Warfield, Wild, & Wild, 1995), directors of large-sized firms with an effective internal control system have successfully minimized the capability for management profit policy. As a result, size will be measured using the natural log of all assets and used as a control variable.

Therefore, the model that represent the study is as follows:

$$ROA_{it} = \alpha + \beta_1 ITA_{it} + \beta_2 SIZE_{it} + \beta_3 Lev_{it} + \varepsilon$$

#### 5.4. Statistics Methods

The data were analyzed by (E-Views) program in order to find the statistical results, such as descriptive statistics that calculate the "arithmetic means and standard deviations" of the variables, the Pearson correlation test to discover the level of correlation between the variables, and the regression test in order to validate the study hypotheses.

## 6. RESULTS, ANALYSIS AND DISCUSSION

### 6.1. Descriptive Statistics

The descriptive statistics are variables is shown in Table 1, including means, standard deviations, and minimum and maximum values for all variables.

Table 1. Statistics descriptive.

Variables	Mean	Median	Maximum	Minimum	Std. dev.
ROA	0.0465	0.0289	0.1691	-0.0904	0.0563
Intangible assets	0.2000	0.0000	1	0	0.4031
Size (Ln)	16.778	17.112	18.533	13.561	1.3132
Leverage	0.5885	0.4106	1.7913	0.1005	0.4548

As the table shows, the mean of the "ROA" variable was (0.0465) and the standard deviation was (0.0563), while the lowest value was (-0.0904) and the highest value was (0.1691), which indicates that the level of financial performance of industrial companies is adequate, as there was a variation in the level of profitability among industrial companies, which positively affects improving their level of performance. The mean of the "Intangible Assets" variable was (0.2000), with a standard deviation of (0.4031) and a lowest value of (0) and a highest value of (1). This specifies that the intangible assets are diverse among companies; one of the contributing aspects in determining the degree of difference between the firm value as shown by its accounting records and the firm value as indicated by its market value is the number of intangible assets.

The mean of the "Size-Ln" variable was (16.778), and the standard deviation (1.3132) with a maximum value of (18.533) and a minimum value of (13.561). Such figures show that industrial companies all possess valuable resources and everything that represents the rights or property of the company. As for leverage, the results show that the mean of the "Leverage" is (0.5885), the standard deviation is (0.4548), and the highest value is (1.7913), and the lowest value is (0.1005). These results reflect the level of the company's dependency on debt in its financing structure, i.e., how much the debt ratio is compared to the equity ratio of shareholders, and leverage increases the financing risk facing the company.

### 6.2. Correlation Test

To verify the correlation between variables in the study and if there are any signs of Multicollinearity, we tested the correlation amongst variables, and the results are screened in Table 2.



**Table 2.** Correlation level between variables.

Variables	Intangible assets	Size (Ln)	Leverage
Intangible assets	1		
Size (Ln)	0.3399*	1	
Leverage	0.1122	0.2327**	1

Note: (\*\*) At the significance level (0.01).  
 (\*) At the significance level (0.05).

The results for correlation show that the two variables (Leverage and Size (Ln)) had a correlation coefficient less than (0.80), indicating the absence of the problem of Multicollinearity. To confirm if there was a multiple linear correlation, the Variance Inflation Factor (VIF) was calculated for all independent variables to support the previous finding. The value of the correlation coefficient that exceeds (0.80) is an indication of the existence of the problem of high multiple linear associations. The results were as follows in [Table 3](#):

**Table 3.** Results of VIF.

Variables	VIF	Tolerance
Intangible assets	1.077	0.928
Size (Ln)	1.153	0.867
Leverage	1.149	0.870

The results for VIF reveal that the variance inflation coefficient values were all greater than 1 and less than 10, and the tolerance value was restricted to the range of (0.1-1); this ascertains that there is no issue with multiple linear correlations between all of the study's variables, allowing the study's hypotheses to be tested.

### 6.3. Regression Results and Hypotheses Validation

[Table 4](#) demonstrates the regression valuation that was performed to inspect all of the premises related to the study. All variables were examined by the Hausman test, and then regression analysis was made for each of them.

When testing statistical models, particularly meta-analyses, the most common models are the fixed effect model and the random effect model. Despite the fact that the two models follow similar sets of formulas for testing data, the achieved outcomes for the two models differ in the reliability of their estimations. Therefore, selecting the appropriate model is vital for accurate estimations. The most popular criticism of the fixed effect model is that the unobserved variables are correlated with the observed ones. Hence, what distinguishes this study from previous similar studies is that it employs the random effect model to obtain a better estimation of coefficients that provides dependable justifications for the results.

The results of the (Hausman Test) assessment exposed that using the "Fixed Effect Model" rather than the "Random Effect Model" is preferable for estimating study coefficients, as can be seen from [Table 4](#). The (Hausman Test) test was also found to be statistically significant above the level of significance (1%). Thus, to get precise and effective outcomes, the random effect model, as it is superior to the fixed effect model, was also conducted. It can also be used to test the research premises, and for the purposes of analysis, the discussion of the findings is based on the findings of the "Random Effect Model", which was the most suitable and effective method for evaluating the study's data.

The results in the same [Table 4](#) show the validation of the pre-assumed hypotheses. The value of ( $R^2 = 0.8184$ ), which reflects the level of variation in the dependent variable "performance" according to the independent variable; this means that the three independent variables explained approximately about (82%) of the variation in performance, and the value was ( $F = 14.376$ ), at the level of significance (0.000).

Table 4. Results of model estimation of the impact of intangible assets on performance.

Independent variable	Fixed effects model	Random effects model
Intercept	0.2790 0.3174	-0.0470 0.7398
Intangible assets	0.0026 0.9162	-0.0089 0.6579
Size (Ln)	-0.0118 0.4768	0.0077 0.3528
Leverage	-0.0581 (0.0386)	0.0596 (0.0032)
R <sup>2</sup>	0.1564	0.8148
Adj R <sup>2</sup>	0.1149	0.7581
F-statistic	3.7697 (0.0150)	14.376 (0.000)
Hausman test	Chi <sup>2</sup> statistic = 2.7038 Prob > Chi <sup>2</sup> = 0.4396	
VIF-means	1.126	
Dependent variable	Performance	

The value of (Coefficient= -0.0089) for the (Intangible Assets) variable is at a significance level (0.6579) which is greater than the recognized significance level (5%). Accordingly, it is obvious that the intangible asset disclosures of industrial companies have no impact on the performance; the greater or less the intangible assets, the greater the inexhaustible change in performance. These results agree with the finding of [Ferdaous and Rahman \(2019\)](#) who asserted that the positive effect of intangible assets is only attainable in active markets and is unavailable in emerging markets. Also, our results are consistent with the conclusions of [Buzinskiene and Rudyte \(2021\)](#), [Barker et al. \(2022\)](#), and [Vanderpal \(2019\)](#), who did not support the association between intangible assets and financial performance. On the other hand, our results contradicted the findings of [Innocent et al. \(2022\)](#); [Al-Tahat et al. \(2021\)](#); [de Almeida Aguiar et al. \(2021\)](#); [Mohanlingam et al. \(2021\)](#); [Arianpoor \(2021\)](#); [Abebe Zelalem and Ali Abebe \(2022\)](#) and [Qureshi and Siddiqui \(2020\)](#), who all suggested the positive impact of intangibles on performance. Accordingly, based on our results discussion, the first assumption is rejected and the alternate is recognized: intangible assets have no substantial positive relationship with the performance of industrial firms in the Palestinian context.

By reference to the table results concerning the size effect on performance, as noticed, the value of (Coefficient= 0.0077) for the (Size-Ln) variable, at a significance level (0.3528) which is greater than the recognized significance level (5%). Hence, it is also apparent that there is no impact of the company size on the performance; the greater or less the size, the inexhaustible leads to change in performance; such results are in line with the findings of [Lim et al. \(2020\)](#) and [Abebe Zelalem and Ali Abebe \(2022\)](#), for the absence of association among size of company and performance; conversely, our results opposed the results of [Qureshi and Siddiqui \(2020\)](#), [Innocent et al. \(2022\)](#), and [Al-Tahat et al. \(2021\)](#) where their results confirmed the size effect on financial performance. Therefore, referring to our findings, the second assumption is rejected, and the alternative is established that the size effect is not significant to performance.

As for the third variable that is leverage, the value of (Coefficient= 0.0596) for the (Leverage), at significance level (0.0032), is less than the recognized significance level (5%). Thus, it is accepted that there is an influence of the leverage of industrial companies on performance; the greater the leverage, the greater the change in performance. Such outcomes approved the results of both [Qureshi and Siddiqui \(2020\)](#) and [Lim et al. \(2020\)](#) but opposed the findings of [Abebe Zelalem and Ali Abebe \(2022\)](#) and [Ocak and Fındık \(2019\)](#) for the negative impact of leverage on business performance. As a result, the third hypothesis is recognized; that there is a substantial positive influence of leverage on performance for the industrial companies under study.

## 7. CONCLUSION

The great development that has occurred in the competitive investment environment since the end of the last century until now has motivated most companies to exploit any investment opportunities through the composition of their assets. Traditionally, the focus was on current assets and tangible assets, with little attention paid to intangible assets. After the emergence of electronic sales methods, computer systems, and e-marketing, many companies employed these methods and considered them intangible assets that could be added to traditional assets and exploited to increase their profitability and thus improve their financial performance. The need for additional research to confirm the impact of intangible assets on return on assets (ROA) measures of financial performance supports the current study. The study was conducted on Palestinian-listed industrial companies for the years 2017–2021. In order to realize the aims of the study and verify the proposed hypotheses, several statistical methods, such as correlation and multiple regression tests, were employed. The results of the study provided empirical evidence for the negative statistical impact of intangible assets on financial performance. They also failed to prove any effect of the size of the company, measured by total assets, on financial performance. Moreover, the results confirmed the impact of financial leverage on financial performance. This study's results propose several implications, first emphasizing the importance of continuous improvement for the usage of intangible assets as an essential part of total assets. Second: emphasizing the role of leverage in enhancing the efficiency of a company's performance. Third: highlighting the importance of using profitability, indebtedness, and company size measures to track the real financial conditions of companies.

Rarely does any research encounter limitations that might decrease the opportunity for better generalizability of results; thus, similar to similar studies, some limits provoked this study. The first limitation is related to community and sample; this study was directed only at one economic sector, which is the industrial sector, and the study outcomes could vary if the study comprised other sectors. Due to the challenge of obtaining data for all companies, the study could only include 13 companies, which is a very small sample size in comparison to other studies. A further limitation is concerned with the nature of the environment; the setting was a developing country, and the fallouts could differ in other settings. The last limitation is linked to the study variables; the study engaged certain variables in the study model to measure performance, company size, and leverage; the use of other variables could reveal dissimilar results.

In the future, researchers may look into other ways to measure the impact of intangible assets and possibly use methods that have already been shown to be useful for figuring out how intangibility affects financial performance. Scholars may also relate the study to other economic segments or comprise a larger number of economic sectors in order to increase the capability for generalizability of outcomes. Furthermore, researchers may also enlarge the sample to ensure better results and compare it with more developed environments. Financial performance measures can be equally enriched by using other measures.

**Funding:** This study received no specific financial support.

**Institutional Review Board Statement:** Not applicable.

**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

**Data Availability Statement:** Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

**Competing Interests:** The authors declare that they have no competing interests.

**Authors' Contributions:** All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

## REFERENCES

- Abebe Zelalem, B., & Ali Abebe, A. (2022). Does intangible assets affect the financial performance and policy of commercial banks' in the emerging market? *Plos One*, 17(8), 1-19. <https://doi.org/10.1371/journal.pone.0272018>
- Abu Nassar, N., & Hamidat, J. (2018). *International accounting and financial reporting standards* (3rd ed.). Amman, Jordan: Wail House Publications.

- Al-Dweik, H., & Al-Thuneibat, A. (2022). The impact of intangible assets and fair value measurement on earnings management: Empirical evidence from Jordanian banking sector. *Academy of Accounting and Financial Studies Journal*, 26(2), 1-19.
- Al-Tahat, S., Abu Nqira, N., & Moneim, O. (2021). The effect of investing in intangible assets on the market value and dividends per share, an applied study on insurance companies with listed shares in Amman stock exchange. *Journal of Management Information and Decision Sciences*, 24(6), 1-7.
- Alexandra, S., & Mihaela, P. (2013). Main approaches in measuring intangible assets. *International Journal of Education and Research*, 1(7), 1-16.
- Arianpoor, A. (2021). The impact of intangible assets on firm performance: Evidence from an emerging economy. *Iranian Journal of Accounting, Auditing and Finance*, 5(2), 61-77. <https://doi.org/10.22067/IJAAF.2021.40337>
- Atta, A. A. B., & Marzuki, A. (2020). Islamic vs conventional funds within the family: Selectivity skills and market timing ability. *Journal of Islamic Monetary Economics and Finance*, 6(2), 439-462. <https://doi.org/10.21098/jimf.v6i2.1091>
- Atta, A. A. B., & Marzuki, A. (2021). Star and poor fund phenomena in Islamic-and conventional-focused families: Emerging country evidence. *Journal of Islamic Monetary Economics and Finance*, 7(2), 263-284. <https://doi.org/10.21098/jimf.v7i2.1349>
- Barker, R., Lennard, A., Penman, S., & Teixeira, A. (2022). Accounting for intangible assets: Suggested solutions. *Accounting and Business Research*, 52(6), 601-630. <https://doi.org/10.1080/00014788.2021.1938963>
- Barton, J., & Simko, P. J. (2002). The balance sheet as an earnings management constraint. *The Accounting Review*, 77(Supplement), 1-27. <https://www.jstor.org/stable/3203322>
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons*, 14(4), 441-454. <https://doi.org/10.2308/acch.2000.14.4.441>
- Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research*, 15(1), 1-24.
- Benyasrisawat, P., & Basiruddin, R. (2012). Debt, equity and dividend. *Executive Journal*, 32(3), 61-69.
- Buzinskiene, R., & Rudyte, D. (2021). The impact of intangible assets on the company's market value. *Montenegrin Journal of Economics*, 17(2), 59-73. <https://doi.org/10.14254/1800-5845/2021.17-2.5>
- de Almeida Aguiar, G., Tortoli, J. P., Figari, A. K. P., & Junior, T. P. (2021). Analysis of the influence of intangible assets on the performance of Brazilian companies. *Revista de Administração da UFSM*, 14(4), 907-931. <https://doi.org/10.5902/1983465944075>
- Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *Accounting Review*, 70(2), 193-225.
- Demmou, L., Stefanescu, I., & Arquí, A. (2019). Productivity growth and finance: The role of intangible assets - a sector level analysis. *Economics Department Working Papers*, 1547(16), 1-48.
- Dumay, J. C. (2012). Grand theories as barriers to using IC concepts. *Journal of Intellectual Capital*, 13(1), 4-15. <https://doi.org/10.1108/14691931211196187>
- Felix, N. A., Okwo, M. I., & Obinabo, C. R. (2020). Effect of intangible assets on corporate performance of selected commercial banks in Nigeria (2012-2018). *Journal of Economics and Finance*, 11(3), 18-25.
- Ferdaous, J., & Rahman, M. M. (2019). The effects of intangible assets on firm performance: An empirical investigation on selective listed manufacturing firms in DSE, Bangladesh. *American Journal of Business*, 34(3/4), 148-168. <https://doi.org/10.1108/ajb-11-2018-0065>
- Gamayuni, R. R. (2015). The effect of intangible asset, financial performance and financial policies on the firm value. *International Journal of Scientific and Technology Research*, 4(1), 202-212.
- Giuliani, M. (2013). Not all sunshine and roses: Discovering intellectual liabilities "in action". *Journal of Intellectual Capital*, 14(1), 127-144. <https://doi.org/10.1108/14691931311289057>
- Haji, A. A., & Mohd Ghazali, N. A. (2018). The role of intangible assets and liabilities in firm performance: Empirical evidence. *Journal of Applied Accounting Research*, 19(1), 42-59. <https://doi.org/10.1108/jaar-12-2015-0108>

- IASB. (2010). *International public sector accounting standard board, 2010 intangible assets international federation of accountant*. Retrieved from <https://www.ifac.org/system/files/publications/files/ipsas-31-intangible-assets.pdf>
- IFRS Foundation. (2017). *IAS 38 intangible asset IFRS foundation*. Retrieved from <https://www.ifrs.org/issued-standards/list-of-standards/ias-38-intangible-assets>
- Innocent, E., Nwannebuikwe, U., & Effiong, A. (2022). Empirical review of intangible assets on financial performance of listed oil and gas sector in Nigeria. *Advance Journal of Management, Accounting and Finance*, 7(5), 32-48.
- Kaymaz, M. O., Yilmaz, I., & Kaymaz, O. (2019). The impact of intangible factors on profitability: Evidence from corporations traded at muscat securities market in Oman. *Copernican Journal of Finance & Accounting*, 8(2), 25-47. <https://doi.org/10.12775/cjfa.2019.007>
- Li, H., & Wang, W. (2014). Impact of intangible assets on profitability of Hong Kong listed information technology companies. *Business and Economic Research*, 4(2), 99-110. <https://doi.org/10.5296/ber.v4i2.6009>
- Lim, S. C., Macias, A. J., & Moeller, T. (2020). Intangible assets and capital structure. *Journal of Banking & Finance*, 118(C), 105873. <https://doi.org/10.1016/j.jbankfin.2020.105873>
- Maditinos, D., Chatzoudes, D., Tsairidis, C., & Theriou, G. (2011). The impact of intellectual capital on firms' market value and financial performance. *Journal of Intellectual Capital*, 12(1), 132-151. <https://doi.org/10.1108/14691931111097944>
- Malikova, O., Brabec, Z., & Rozkovec, J. (2018). Financial reporting of intangible assets – evidence on information and communication companies in Czech Republic. *Journal of International Studies*, 11(2), 327-340. <https://doi.org/10.14254/2071-8330.2018/11-2/22>
- Marzo, G. (2014). Improving internal consistency in IC research and practice: IC and the theory of the firm. *Journal of Intellectual Capital*, 15(1), 38-64. <https://doi.org/10.1108/jic-03-2013-0026>
- Mohanlingam, S., Nguyen, L., & Mom, R. (2021). The effects of intangible assets on financial performance and financial policies of listed technology firms in Thailand. *APHEIT International Journal*, 10(1), 1-17.
- Nagaraja, N., & Vinay, N. (2016). The effect of intangible assets on the firm value. *International Journal of Engineering and Management Research*, 6(1), 307-315.
- Nnado Ifeanyi, C., & Ozouli Caroline, N. (2016). Evaluating the effect of intangible assets on economic value added of selected manufacturing firms in Nigeria. *European Journal of Business and Management*, 8(15), 174-181.
- Ocak, M., & Findik, D. (2019). The impact of intangible assets and sub-components of intangible assets on sustainable growth and firm value: Evidence from Turkish listed firms. *Sustainability*, 11(19), 1-23. <https://doi.org/10.3390/su11195359>
- Opu, N. V., & Dewi, R. (2021). The effect of intangible asset, capacity of financial resource and regulation evidence from financial performance of small business firms. *European Journal of Business and Management Research*, 6(6), 162-167. <https://doi.org/10.24018/ejbmr.2021.6.6.1167>
- Ozkan, N., Cakan, S., & Kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish banking sector. *Borsa Istanbul Review*, 17(3), 190-198. <https://doi.org/10.1016/j.bir.2016.03.001>
- Qureshi, M. J., & Siddiqui, D. A. (2020). The effect of intangible assets on financial performance, financial policies, and market value of technology firms: A global comparative analysis. *Asian Journal of Finance & Accounting*, 12(1), 26-57. <https://doi.org/10.5296/ajfa.v12i1.16655>
- Salamudin, N., Bakar, R., Kamil Ibrahim, M., & Haji Hassan, F. (2010). Intangible assets valuation in the Malaysian capital market. *Journal of Intellectual Capital*, 11(3), 391-405. <https://doi.org/10.1108/14691931011064608>
- Seo, H. S., & Kim, Y. (2020). Intangible assets investment and firms' performance: Evidence from small and medium-sized enterprises in Korea. *Journal of Business Economics and Management*, 21(2), 421-445. <https://doi.org/10.3846/jbem.2020.12022>
- Sveiby, K. (2010). *Methods for measuring intangible assets*. Retrieved from [www.sveiby.com/articles/IntangibleMethods.htm](http://www.sveiby.com/articles/IntangibleMethods.htm)
- Thao, P. X. (2022). Implications of financial liberalization for Vietnam's long-term growth prospects. *Edekwais Applied Science and Technology*, 6(2), 43-51. <https://doi.org/10.55214/25768484.v6i2.306>

- Vanderpal, G. (2019). How intangible assets affect the corporate financial performances and how it varies from sector -to -sector? *Journal of Accounting and Finance*, 19(8), 189-208. <https://doi.org/10.33423/jaf.v19i8.2624>
- Warfield, T. D., Wild, J. J., & Wild, K. L. (1995). Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics*, 20(1), 61-91. [https://doi.org/10.1016/0165-4101\(94\)00393-j](https://doi.org/10.1016/0165-4101(94)00393-j)
- Warusawitharana, M., & Whited, T. M. (2016). Equity market misvaluation, financing, and investment. *The Review of Financial Studies*, 29(3), 603-654. <https://www.jstor.org/stable/43866021>
- Zamria, N., Rahmanb, R. A., & Isac, N. S. M. (2013). The impact of leverage on real earnings management. *Procedia Economics and Finance*, 7, 86-95. [https://doi.org/10.1016/s2212-5671\(13\)00222-0](https://doi.org/10.1016/s2212-5671(13)00222-0)
- Zhang, N. (2017). Relationship between intangible assets and financial performance of listed telecommunication firms in China, based on empirical analysis. *African Journal of Business Management*, 11(24), 751-757.

*Views and opinions expressed in this article are the views and opinions of the author(s), Asian Development Policy Review shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.*