"Evaluating the Effectiveness of Applying the Resources Consumption Accounting in Industrial Firms"

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Abstract

Despite the theoretical superiority of Activity-Based Costing system (ABC) over Traditional Costing System (TCS), but many studies have shown persistence of a large number of organizations in application of TCS and a lot of organizations shift from application of ABC and re-apply TCS (Cotton et al, 2003.) Because of ABC failure in the provision of effective and sustainable solutions for cost management, managerial accountants developed Resource Consumption Accounting approach (RCA) for cost management, which is the next generation of managerial costing approaches, where this approach has been designed to address weaknesses in other managerial costing approaches.

RCA has been developed as a managerial costing approach for use with comprehensive computer-based cost management approaches. It combines features of ABC and the well-known German cost management approach (GPK) that have strong ties to German social and legal environments. RCA can be viewed as an evolution of ABC in Enterprise Resource Planning system (ERP). The most important features that distinguish RCA from other cost management approaches are the recognition of idle resources in resource pools, and resource costs are allocated to cost objects only when resources are actually consumed.

Key Words: Resource Consumption Accounting, Activity-Based Costing, German Cost Management Approaches, and Traditional Costing System.

Introduction

The mapping of resources and expense accounts to activities (processes are implied) using the ABC model (Keys and Van der Merwe, 2001a,) though intrinsically sound for allocating costs, falls short of being the definitive method in eight significant ways regarding resource costing:

1- A homogeneous measure of capacity is not incorporated.
2- Interrelationships among resource elements (e.g., output quantities, utilization statistics) are only indirectly expressed.
3- The initial inherent nature of cost (i.e., the fixed and proportional characteristics of the costs given the capacity, skill, technology, and operating characteristics of the resources deployed) is not reflected.
4- Excess and idle capacity is not properly accounted for.
5- Interrelationships between resource pools (i.e., the grouping of related resource elements into a pool) are only indirectly expressed.
6- The changing nature of cost, as it relates to the cost model, is not reflected.
7- Fully burdened resource costs are not provided.
8- Inferior information is supplied for effective resource management and certain strategic decisions.

The proposed RCA solution is best illustrated by means of the strategic or organizational planning process, especially when considering a "green fields" organization or a new business plan. Vision, mission, and purpose objectives are converted into an investment in resources of the desired quantity, quality, technology, and skill.

This process similarly applies to an existing enterprise that requires a commitment of resources to achieve the goal. From a cost management perspective, this commitment assumes the following:

- Available capacity has been determined.
- Skills, technology, level of training, and operating characteristics of the resource base have been determined, which in turn are the primary determinants of:

- Interrelationships between resource elements,
- The initial inherent nature of cost for the resource base, and
- Resource pool interdependencies and how the nature of cost will change at the time of consumption.

One overall assumption is made with regard to the plan: no one plans for failure, the plan is as sound as can be, given knowledge and insight at the time. Adjustments to the plan are inevitable, these will be incremental, unless the plan or strategy—or the business—is abandoned. Until abandonment, the strengths, weaknesses, advantages, limitations, and characteristics of the invested resource base must be harnessed to achieve the strategic goals.

RCA's resource pools address the first three shortfalls of ABC as following (Kilger et al, 2007):

1- No homogeneous capacity measure exists. To address this shortfall, an output measure must be assigned to each resource pool, serving as a consistent measure of output to manage capacity. It provides insight into resource utilization, regardless of the mix of activities the resources perform. Although resource output measures are used in ABC and other models, RCA's insistence on closer attention to the nature and relationship of resources provides insights for a more accurate choice of output measures that had better mirror the differences and similarities between types of capacity.

2- The interrelationship of resource elements is not directly reflected. In RCA, resource elements are grouped into resource pools. The resource pool is the first discrete cost object in the cost model for the initial reclassification and collection of quantitative and monetary (expense) resource elements.

Thus, a resource's output quantity is associated with a monetary value. In addition, RCA's construction of more direct pathways between relationship-based resource pools and activities make cost relationships more visible for decision-making. It could be argued that such careful construction can be made within an ABC model. This is true; however, organizations can easily make the mistake of matching general-ledger accounts to activities on a one-to-one basis. The RCA-based construction thus can strengthen an ABC model's linkage methodology.

3- The initial inherent nature of cost is not reflected. Associating expense elements, under the umbrella of the resource output measure is the basis for reflecting the initial inherent nature of cost of the resources.

All of these expense elements are called primary expense elements, because expenses are initially incurred here for the resources. Primary expense elements reflect the initial inherent nature of the resource costs as dictated by the technology, skill, training, and operating characteristics in which the enterprise is invested.

Excess and Idle Capacity

Recognition of idle resources in cost model facilitates developments and maintenance of cost management systems through simplifying resource costs analysis. The identification and proper allocation of responsibility for excess/idle capacity is critically important to ensuring proper decision making. Managerial costing techniques' information helps managers to get a clear view of organizational costs flow, to be able to improve the efficiency and productivity of the work performed by the resources, and to reduce the demands for the services provided by the resources.

This step creates idle capacity in the resources, as idle resources do not make direct contributions to operating activities; their existence represents inefficiencies in an organization's operations. Management can improve operational efficiency by reducing quantities of idle resources. Idle resources can be safely eliminated by reducing the authorized supply of the resources, redeploying the resources elsewhere, or finding new and more profitable ways to use them. By providing information on idle resources in resource pools, RCA model enables management to improve an organization's efficiency in performing its value-added activities.

The proper allocation of responsibility for idle resources requires a managerial costing approach which:

- Supply information that highlights the problem (e.g., idle resources.)

- Supply information that gives unambiguous insight into the causes and effects of the excess and idle capacity—the downstream effects of the problem should be transparent. Excess and idle capacity costs should be allocated where they are visible and actionable.

- Supply information that is readily accessible and of sufficient quality and granularity to support the decision making process.

Information that satisfies these preceding criteria will enable management to understand the reasons for excess/idle capacity and to take corrective action. Under traditional volume-based costing models and the ABC model, allocation of resource costs is based on the assumption that all committed resources are fully utilized in an organization's operations. Therefore, resource costs are allocated to cost pools in full; and resource capacity is employed as a denominator in the calculation of monetary values allocated to cost pools.

By assuming full utilization of resources in operations, traditional volume-based costing models and the ABC model recognize all costs of committed resources as product costs. Any difference between total committed resource costs and allocated resource costs is regarded as an error of the allocation process and adjustments are subsequently made to eliminate the difference.

Improperly accounting for excess/idle capacity results in product cross-subsidization and fluctuating product margins between periods. A product can be profitable one month and unprofitable the next. This phenomenon is also prevalent with the ABC method of accounting for excess/idle capacity, where the lack of a resource output measure leads to the handling of such capacity in one of two ways:

1- Accommodate Excess and Idle Capacity on a Single Activity Method. But this method for handling idle capacity will result in resources distortion that fails to identify where the excess or idle resources are and causes will be difficult to pinpoint because the profitability of a number of products changes. The effect is the spread of excess capacity costs across products. Insight required for the decision-making process is therefore lost. Detailed decision support information will go unfulfilled since no detailed information on the resource pool is available. Quantities are not provided and the value of excess capacity has been lost in the indiscriminate spread among products.

2- Incorporate Excess Capacity into Every Activity/Process. Another ABC method is to update the model by reallocating the resources or expense accounts. This spreads the excess or idle capacity costs to all activities. To evaluate this method the following two problems hinder the identification of idle resources:

a) A resource can perform multiple activities. Excess capacity on one activity therefore does not necessarily indicate real excess capacity, because the resources might have been consumed by the other activities with higher output levels. In addition, an activity with excess capacity that requires input from multiple cost centers will not clearly indicate the idle resources.

b) Activities do not have homogeneous drivers. Activities would have to be aggregated under this method to reflect the utilization of resources. A problem arises when activity drivers have diverse units of measure (e.g., number of picking, packing, and shipping,) because these cannot be aggregated at will. Unless a way can be found to add activities or portions of activities that relate to a specific resource in a homogeneous unit of measure, the first criterion will go unfulfilled.

The causes will be difficult to pinpoint because the profitability of all products has changed. The true effects of excess capacity are misstated if the costs are allocated to products. Supplying adequate decision support information is largely unsupported, with respect to detailed resource information. Both ABC approaches fare poorly against the evaluation criteria, failing to fully satisfy even one. This indicates that activities are unsuitable to account for excess capacity—an observation that is confirmed by conceptual conflicts stemming from the accommodation of excess capacity on activities within ABC.

This analysis of two ABC solutions for excess capacity treatment helps illustrate the supportive and complementary role that RCA can play with ABC.

Resource Consumption Accounting and Excess/Idle Capacity

Recognition of idle resources in cost model facilitates developments and maintenance of cost management systems through simplifying resource costs analysis. The identification and proper allocation of responsibility for excess/idle capacity is critically important to ensuring proper decision making.

Managerial costing techniques' information helps managers to get a clear view of organizational costs flow, to be able to improve the efficiency and productivity of the work performed by the resources, and to reduce the demands for the services provided by the resources. This step creates idle capacity in the resources, as idle resources do not make direct contributions to operating activities; their existence represents inefficiencies in an organization's operations. Management can improve operational efficiency by reducing quantities of idle resources.

Idle resources can be safely eliminated by reducing the authorized supply of the resources, redeploying the resources elsewhere, or finding new and more profitable ways to use them. By providing information on idle resources in resource pools, RCA model enables management to improve an organization's efficiency in performing its value-added activities. The assumption of ABC system a full utilization of resources can be true for physical resources like materials, but is highly unlikely the case for intangible resources such as IT services. RCA model acknowledges the fact that idle resources may exist in an organization's normal course of business as committed resources may not be fully utilized.

Therefore, RCA model attaches resource costs to individual units of a resource. Resource costs are allocated to a cost pool only when resources are actually consumed by that cost pool. Resources that are not utilized in operations (idle resources) are recognized in RCA model and costs associated with idle resources are not allocated to any cost pool. Because of that, calculation of product costs in RCA model is based on quantities of resources consumed in operations rather than quantities of committed resources. Resource costs that are attributable to consumed resources are treated as product costs while idle resource costs are treated as period costs.

Resource Costs Analysis

RCA model simplifies resource cost analysis by changing from collective resource cost analysis to individual resource cost analysis. Under RCA model, the assumption of equality of available resources and consumed resources does not hold as existence of idle resources (difference between available resources and consumed resources) is allowed in RCA model.

The absence of this assumption removes the need of collective resource cost analysis. Quantities of resources consumed by cost pools are individually determined in the resource cost analysis and the objective of resource cost analysis is to determine quantity-based resource cost allocation rates based on multiple one-to-one relationships between resource pools and cost pools. Through individual resource cost analysis, cost pools can be added to or removed from a costing model without making any change in other cost pools. Thus, the modification of an organizational costing model is much simpler, as change in one resource cost allocation rate has no impact on other resource cost allocation rates.

In contrast, management cannot conceal quantities of idle resources in individual resource cost analysis by manipulating resource cost allocation rates. The concealment is prevented because the quantity of idle resources in a resource pool is determined by collective effects of all resource cost allocation rates that are linked to the resource pool. Effects of individual resource cost allocation rates to the allocation of resources in a resource pool are crystallized after the cost allocation process is performed, and are unknown to management when individual resource cost analyses are performed. The change from collective resource cost analysis to individual resource cost analysis in RCA model not only simplifies modifications of costing model but also ensures costs of idle resources to remain visible.

Resource Consumption Accounting and Resource Interrelationships

Interrelationships of resources refer to dependencies between resources that enable them to provide their respective services. Managers need to understand resource interrelationships and dependencies clearly, or they may make decisions that are more costly and less efficient than they at first appear. Four characteristics of these interrelationships are identified (Kilger, 1987):

- They are functions of the resources deployed.
- They are often reciprocal.
- They are resource-output quantity based.
- They affect the nature of cost.

Interrelationships are resource-output-quantity based as opposed to value based. For example, the number of hours a machine is used determines the number of kilowatt-hours it consumes, which in turn determines electricity expense. Hence, a causal relationship exists between the consuming resource pool output quantity (i.e., the number of machine hours) and the supporting resource pool output quantity (i.e., the number of kilowatt-hours.) This output-quantity-to-output-quantity relationship applies to all resource relationships, even those not traditionally viewed as quantity based. As activity-based practices developed, a range of approaches surfaced to assign and allocate costs to reflect resource interrelationships. Initially, these varied from simple to more advanced approaches during the late 1990s.

There are two extremes on this continuum (Keys and Van der Merwe, 2001a.) The first is a simple two-phase method that includes maps and traces resources to activities and charges cost objects for the activities consumed. The second is a four-phase method that transfers expenses between cost centers in which an activity adds no value (e.g., floor space,) assigns expenses to activities (i.e., mapping or tracing or quantities are used,) allocates costs between activities (i.e., either step down or simultaneous,) and charges primary activities to cost objects.

RCA expresses the resource interrelationships directly and indirectly to make up the fifth shortfall of ABC. For both methods of expressing the interrelationships, RCA is able to reflect all four characteristics of resource pool interrelationships effectively. It does so by reflecting the initial inherent nature of cost in unit output cost rates, using quantities to express the relationships, and accurately reflecting the changing nature of cost at the time of consumption in a simultaneous cost model. The implications of the current inability of ABC to reflect resource interrelationships fully have been demonstrated. In addition, RCA is more effective in reflecting the resource interrelationship as following (Keys and Van der Merwe, 2001b):

1- RCA requires fewer relationships to be defined. Use can be made of direct resource-to-resource relationships. Moreover, activities charge their consumers directly, one consumer per resource pool instead of many activities in ABC, thereby leading to a significantly reduced number of consumers and relationships to be defined and maintained. Because individual relationships are quantity based, however, they will be more complex.

2- Contrasting ABC, a RCA model does not depend on redefining relationships to keep the model current. Instead, relationships are based on unit quantity standards for output-to-output correlation. If maintenance output declines from 20,000 to 18,000 hours, for example, fewer proportional purchase orders are required and the demand for procurement output hours will likewise decrease.

Consequently, only one driver in a chain of events needs to be collected (e.g., maintenance output.) Other drivers (e.g., the number of purchase orders and procurement hours) can be imputed as needed. Moreover, to the extent that unit quantity standards are used throughout a cost model, one dependent variable leads to a series of related adjustments. A cost model based on RCA is therefore inherently more flexible and able to adapt to changes in environment without need for human intervention.

3- Because of reduced complexity and enhanced flexibility, RCA eliminates the ABC problems in keeping relationships current and dynamically assigning costs where they are consumed. From a systems perspective, it is possible to introduce a set-and-forget environment system, whereby the model is defined once and there after adapts to changes automatically, within certain parameters.

4- All four of the characteristics of resource pool interrelationships are reflected in a comprehensive simultaneous model, which provides more accurate data. Moreover, having eliminated the ABC compromise—balancing inflexibility and maintenance—RCA enables accurate ABC information on a perpetual basis. Highly relevant data is supplied and decision support is enhanced.

Evaluating the Nature of Cost

Processes (or other consumers) consume resource output units, each with a fixed cost component and a proportional cost component. Increased process output will require more resource output and thus more resource proportional costs (stepped fixed cost is ignored because it was assumed the original plan was not flawed) (Keys and Van der Merwe, 2001b.) In addition, interrelationships affect the nature of cost as quantities flow through the cost model. It should be noted that all consumers of resources, such as other resources, products, and profitability segments, could result in changes in the nature of cost at the time of consumption.

The principles inherent in RCA have two implications for activities and the nature of cost. First, the consuming resource pool alone determines the change in the nature of cost. Therefore, in relationships expressed in terms of activities, the nature of cost is not influenced by the activity. Activities serve as vessels for resource cost transmission, for both value and the nature of cost according to resource interrelationships.

Second, because the value chain does not influence the nature of cost, the resource output that activities consume is proportional quantity consumption. The costs of a process are not 100% proportional/variable. Instead, the resource output quantity being consumed carries inherent variability and proportionality. This is in accordance with the recognition that resources can be fungible.

RCA is an approach that makes up the sixth ABC's shortfall by expressing the changing nature of cost through:

- Correctly reflects the nature of cost on a process.

- Highlights the cost characteristics a company faces at any point in time to achieve its strategic objectives and provides insight into cost behavior required for operational, tactical, and strategic optimization.
- Enables the efficiency measurements and motivational drivers.
- Delineates costs that are affected by decisions at different levels in management.
- Consistently reflects cost characteristics over the strategic timeline.

The nuances of the nature of cost must be understood and incorporated in resource decisions. Perhaps most importantly, resource deployment and tracking need to be viewed within a valid strategic context.

The Process View of Costs and Fully Burdened Resource Costs

Attempts to mimic the causal consumption patterns that are the result of resource interrelationships within activities is cumbersome and, at best, results in an approximation. On the other hand, in RCA, more accurate fully burdened activity costs are obtained with interrelationships explicitly reflected between resources that complement the seventh shortfall of ABC.

Hence, not only is the process view of costs and causal relationships not synonymous, the accuracy of the former depends on not equating causal cost flows to perceived direct process interrelationships. Explicitly reflecting resource interrelationships results in fully burdened resource pool costs. These serve as the source of costs for their own activities. The resultant fully burdened activities have the following advantages:

- More accurate activity costs.
- More accurate product costs.
- More effective decision support.

More effective decision support is particularly crucial because it is closely related to the fixed cost death spiral and is an area in which ABC has been known to fail to supply adequate information.

Resource Consumption Accounting and Decision Support Information

In the RCA model, the premise is that a strategy is expressed in a plan (i.e., a business or strategic plan) and an investment in resources is subsequently made. This invested resource base determines the initial inherent nature of cost as well as how the nature of cost changes at the time of consumption. In addition, the RCA model reflects the variations and alterations in how an invested resource is used. With this principle as the foundation, more accurate costs flow through the value chain and processes more accurately transmit value and the nature of cost to final consumers.

The approach further unambiguously ties the view of time, as it relates to strategy and the nature of cost together. When the use of resources is changed to match strategic intent, RCA reflects the cost shifts. Conversely, as long as the plan remains in force, the nature of cost does not change just because time has elapsed.

Certain adjustments can be made to the plan that influences the nature of cost (e.g., investing in new technologies.) Within the overall strategic framework, decisions—whether for budgeting purposes or as corrective actions—are usually adjustments to the larger plan and, therefore, incremental RCA reflects these alterations and takes into account the initial inherent nature of cost and the changing nature of cost at the time of consumption.

As illustrated, excess capacity costs are to be considered fixed costs and required explicit management intervention to be reduced. This is a key differentiation for RCA because, more often than not, fixed costs demand management attention (i.e., they must be reduced to realize savings.) Although ABC recognizes the importance of these capacity issues, it often lacks sufficient detail for a fully informed decision. The objective is to measure and drive efficiency and accurately evaluate resource replacement.

Resource Consumption Accounting and Time-Driven Activity-Based Costing Systems

Unlike TDABC model, the RCA model allows for the separation of fixed and variable components in cost pools and the concurrent use of both activity-based and volume-based cost allocation methods (Van der Merwe and Keys, 2001b.) Therefore, the allocations of RCA-based costing models are likely to be significantly different from those based on other costing models. To construct a RCA-based costing model, additional information about variable and on organizational resources and cost behavior of all resources must be collected before the construction process begins. A resource pool in a RCA-based costing model can have fixed and variable components at the same time.

In addition to that, while TDABC model requires all resource pools to establish links to cost objects through activities at one of the four-levels (facility, product, batch and unit). In contrast, the RCA model allows for the direct allocation of resource costs from a resource pool to a cost object without identifying an activity between the two. As such, management can eliminate unnecessary facility-level activities in the costing model.

Although both TDABC and RCA models identify the idle resources in operation, there is a difference in the process of recognition of resources consumption between the two models. In the TDABC-based costing model, the consumption of resources is solely driven by time spent on operating activities. In contrast, the consumption of resources under the RCA-based costing model is driven by multiple drivers. When the resources employed in operations are heterogeneous, the RCA-based costing model can provide a better picture of the cost of idle resources.

Conclusion

This topic clarify that RCA effectively addresses all eight shortfalls of the ABC perspectives on resources by:

1- Providing the resource output measure as a consistent and uniform measure of resource capacity;

2- Reflecting resource element interrelationships in homogeneous resource pools;

3- Consistently accommodating the initial inherent nature of cost in primary cost elements and resource output cost rates and correctly reflecting the nature of cost within a process;

4- Accurately accounting for short-to medium-term fluctuations in capacity use and delineating the excess or idle capacity variance to ensure that it is visible and actionable by management;

5- Accurately expressing resource interrelationships by reflecting causal relationships in resource output quantities;

6- Accommodating the changing nature of cost at the time of consumption in secondary cost elements and in a quantity-based simultaneous model;

7- Providing fully burdened resource costs that are superior in product cost accuracy and in decision support for making outsourcing decisions; and

8- Unambiguously tying the nature of cost to the strategic timeframe and objectives of the enterprise and accommodating the different demands for operational, tactical, and strategic decision support effectively by using a single source of information.

Fortunately, there are new costing systems that do attempt to recognize proportional and fixed consumption in a manner that is as reflective of causes and effects as is feasible. RCA does this to achieve the most accurate reflection of quantity consumption and its costs.

RCA's modeling capabilities should not only be viewed within the context of problems that it corrects from the past but also for the potential that it holds for the future. In this regard, the RCA framework and cybernetics have been highlighted. RCA principles and practices are complementary in both instances. For once, there is not only an MA approach that corrects the errors of the past, but also one that is ready to integrate with leading edge business thinking and related technology tools of the future through a group of advantages that make RCA a fully integrated managerial costing approach.

RCA as a fully integrated managerial costing approach is a complex approach; this will be borne out as MA systems strive to more accurately reflect the real world with its capacities, activities, inactivity, and related costs. This complexity needs professional managerial accountants to be able to apply RCA concepts and principles and use its information in effective manner according to the enterprise's objectives. These elements, characteristics, advantages, and limitations of RCA are results of the required accuracy level to reflect the real operational model.

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The Impact of Intangible Assets on Firm-Specific Profit Persistence:

Empirical Evidence from Egypt

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ABSTRACT

This paper aims to investigate the relationship between intangible assets and firm-specific profit persistence. Intangible assets are measured using Tobin's q, while firm-specific profit is measured through the difference between return on assets (ROA) of the firm and the average ROA for the industry. The researcher depends on a sample consists of 112 Egyptian listed firms during the period from 2008 to 2015. The main finding of this paper shows that there is a positive relationship between intangible assets and firm-specific profit persistence after introducing industry type as a moderator variable. In other words, the impact of intangible assets on the persistence of firm-specific profit is stronger in manufacturing companies than in non-manufacturing companies.

Key words: Intangible Assets, Firm-specific profit, Persistence, Tobin's q, Return on Assets (ROA).

1. Introduction:

It is important that companies recognize the vital and pivotal role that intangible assets play in creating an ongoing competitive advantage. Managers must realize that long-term profit is due to competition in today's world, not to accounting management, and companies are focused on creating a competitive advantage and developing their level for the best in the world.

The major revolution in information technology has focused on the importance of corporate governance for knowledge-based assets, where knowledge has become an important resource that relies heavily on the success of the company's performance in the new economy. This is a shift from the age of industry to the information age and the emergence of so-called knowledge-based economy or knowledge economy. There are many terms related to the knowledge economy, including the Special Report prepared by the Financial Accounting Standards Board (FASB) entitled "Financial Report and Business Report, Challenges from the New Economy" such as Knowledge, Intellectual Capital, Internet, Technology, Intangible assets and globalization.

Intangible assets have been argued to be one possible contributor to the disparity between company value as per its accounting records, and company value as per its market capitalization (Lev and Daum, 2004). Considering this argument, it is important to understand what an intangible asset truly is in the eyes of an accountant. A number of attempts have been made to define intangible assets:

- International Accounting standard No.38 (IAS 38) defines an intangible asset as: "an identifiable non-monetary asset without physical substance." This definition is in addition to the standard definition of an asset which requires a *past event* that has given rise to a resource that the entity *controls* and from which *future economic benefits* are expected to flow. Thus, the extra requirement for an intangible asset under IAS 38 is *identifiability*. This criterion requires that an intangible asset is separable from the entity or that it arises from a contractual or legal right.

- The lack of physical substance would therefore seem to be a defining characteristic of an intangible asset. Both the IASB and FASB definitions specifically preclude monetary assets in their definition of an intangible asset. This is necessary in order to avoid the classification of items such as accounts receivable, derivatives and cash in bank as intangible assets.

The nature of intangible assets is based on value creation by developing and exploiting competitive advantages based on information faster and more efficiently than competing companies. Significant performance measures related to intangible assets have been developed in a guide called Value Creation Index (VCI)[1] such as: Innovation, Quality, Customer Relationship, Brand, Alliances, Technology, Management Capabilities, and Relationship with Employees, Environment and Community (Kalafut and Low, 2001; Low, 2000).

Intangible assets are what makes successful firms compete in today's economy (Saunders 2010). Governments have started highlighting the importance of intangibles as drivers for economic growth and encouraging firms to pay high attention to their intangible assets. The role of intangibles as value and growth creators is accepted among economists, investors and managers (Marr et al., 2003). There seems general agreement that traditional accounting information systems are not able to provide adequate information about the economic impact of intangible assets.

In this paper, the researcher depends on the theory that directly answers the question of what firm characteristics determine firm's value. *Resource-based view of the firm* (RBV) points to intangible resources as the main drivers of the sustainability of performance differences across firms. Different contributors to the RBV have been using different terms, such as "capabilities", "core competencies"[2], or "knowledge", to refer to these resources (Villalonga 2004). According to the researcher's best of knowledge, there are many papers that have used the term "intangible assets" in their terminology as defining the scope of intangible resources.

Resource-based view (RBV) suggests that resources and capabilities provide the fundamental basis to create a strategy. Strategy chosen should allow company to use its core competencies for opportunities in external environment. The problem is, not all companies have potential resources and capabilities as a basis for competitive advantage. Intangible resources are better to produce competitive advantage consistently (Hitt et al, 2011). A firm's competitive advantage (disadvantage) is the degree to which it outperforms (underperforms) its competitors. If performance is measured by profitability, the difference between a firm's profitability and the average profitability of its industry is thus a direct indicator of its competitive advantage. In value creation, the focus

[1] Value Creation Index (VCI) developed by Cap Gemini Ernst & Young Center for Business Innovation (CBI).

[2] King et al (2001) gave the definition of competencies that competencies join knowledge and skills, they signify both knowledge and skills required to perform useful actions. Competencies discriminate the firm and generate unique advantage.

shifted from the use of individual assets to a group of assets, namely intangible assets. Thus, intangible resources are a strategic asset that can create SCA (Sustainable Competitive Advantage), because it meets the criteria of Valuable, Rare, Perfectly imitable, non-substitutable (VRIN) (Barney 1991).

A fundamental question in corporate strategy and industrial organization is why profit differences exist across firms and industries (Villalonga 2004). RBV stresses the importance of intangible resources as the key to sustainability. As Itami observes: ".. intangible assets, such as a particular technology, accumulated consumer information, brand name, reputation and corporate culture, are invaluable to the firm's competitive power. In fact, these invisible assets are often the only real source of competitive edge that can be sustained over time." (1987, p.1)

Villalonga (2004) obtained evidence that the sustainability of competitive advantage can be defined as the degree to which firm-specific profits persists. There is a link between firm's profitability and competitive advantage persistence; where building and sustaining a competitive advantage requires a company to achieve superior profitability. Economic theory suggests that firms can gain competitive advantage through sustaining its profitability compared with industry. As Hill and Jones (2013) stated: "competitive advantage will occur when companies' profitability is greater than the average of all other companies in the same industry that compete for the same customers" (p.82)

The increasing gap observed between market value and book value of many companies has drawn attention towards investigating the value missing from financial statements (Maditinos et al, 2011). This gap has been interpreted by the conservative nature of accounting, which fails to account for most intangible assets (Sveiby, 2001). Then, it is expected that market value incorporate what book value fails to recognize.

The significance of this paper is that it is considered one of few researches that examine the association between intangible assets and superior profit persistence in the Egyptian environment. And the knowledge of this relation will highlight the importance of intangible investments and its role in achieving the firm's main objectives. Accordingly, the present paper will focus on measuring the impact of intangible assets on the firm specific profit, i.e., difference between a firm's profitability and the average profitability of its industry which is an indicator of the competitive advantage.

The main objective of this paper is to offer new insights and evidence about the benefits attained via the impact of intangible investments, by showing

how these investments affect the persistence of firms' specific profitability for firms listed in the Egyptian stock exchange. Thus, the main research problem will be addressed in the form of this question. **"What is the impact of intangible assets on Firm-specific profit persistence of the firm?**

2. Theoretical Background

This section provides a theoretical background about intangible assets, its importance, measurement, and its relation to firm specific profit persistence.

2.1. Intangible Assets

Tangible assets are assets that have physical evidence or substance and can be touched and constitute the backbone of the companies; few examples of such assets include equipment, land, building, machines, furniture, computer, stock, etc. Tangible assets may be exposed to risk of damage either from theft or accidents or through naturally occurring incidents.

While intangible assets, like any other asset is determined to be a source of future benefits and a source for obtaining super and abnormal profits, but in contrast with tangible assets, intangible assets lack a physical substance (Lev, 2005). Intangible assets cannot be touched or felt. A few examples of such assets include copyright, goodwill, patent, firm's brand name, trademark, franchise, customer list, trade name, research and development, reputation, software, permits, medical records, performance events, licensing agreements, relationship with suppliers and customers, service contracts, etc. Intangible assets can add to a company's probable future worth and can create much more value to the firm than its tangible assets.

There are many definitions for intangible assets in the accounting literature but the most important definition is the definition which is set by the standard setter itself. IAS 38 (IASC 1998) defines intangible assets as non-monetary assets without physical substance held for use in the supply or the production of goods or services, for rental to others, or for administrative purposes. Intangible assets are defined in three points: (a) identifiable; (b) controlled by a firm as a result of past transactions; and (c) from which economic future benefits are expected to flow to the firm.

Hendriksen 1982 defines intangibles as Separable identifiable non-monetary sources with a estimated future economic advantages and benefits to a firm that lack physical substance, have been developed internally in a firm or

acquired through identifiable costs, are owned or controlled by the firm as a result of past transactions or events, and have a limited life.

2.2. The importance of intangible assets

As intangible assets represent the group of elements available in the company that has a wide knowledge that makes it able to reach the global through the group of competencies, which is the process of creative and strategic development based on innovation and innovation. Intangible assets represent the knowledge and capabilities upon which to build value from the product of the interaction of its components combined with its interaction with other tangible assets and the more interaction has had a positive impact on the value achieved by the company and its share price in the market.

Intangible assets help to achieve value for the company, and the company must be able to meet its obligations to third parties, whether internal parties such as employees of the company and management or external parties, such as investors and government, which achieves the satisfaction of employees and customers and increases the firm's market share.

The statement issued by the Institute of Management Accountants (IMA 2010) also demonstrates the increasing importance of intangible assets to the value and sustainability of the company. Intangible assets also represent a factor of production that supports the Company's competitive position and enables the Company to continue to operate.

Intangible assets are a source of diversity in the company's value through the significant contribution of these assets to the following corporate-level objectives: acquisition of innovations before other companies, maximizing strategic position, maximizing market share, increasing customer loyalty, improving productivity, reducing costs, generating Profit.

Investment in intangible assets has become an effective role in the existence and sustainability of companies in their operations. Intangible assets have become the real capital that can be relied upon to create value added and to realize the competitive advantages of these companies (Kaplan 2004).

2.3. Measuring the Value of Intangible Assets

Although intangible assets don't have the obvious and clear physical value like tangibles (building or equipment), they can prove worthy for an enterprise and considered a significant factor that influence its long-term success or failure. As a factor of production, Intangible assets have an important role in the process of creation of the company's value in order to have a successful competition (Rumelt, 1984; Daum, 2005).

For a measuring purpose, intangibles are usually identified with goodwill and there is an agreement that it is the excess cost of an acquired enterprise above the value of its net tangible assets. White et al, (1994) state that intangible assets calculated as residuals in purchase method acquisitions, and represent the portion of the purchase price that cannot be allocated to tangible assets. Goodwill represents the premium paid for the brand name, target's reputation, or other factors that enable it to earn an abnormal or excess return on investment, in order to make a justification for the premium price paid (Canibano et al, 1999).

According to conservative accounting methods and standards, most intangibles are not reflected in the balance sheet and investments made on intangibles are usually expensed when incurred, this lead to understating both earnings and book value of equity. Thus, users of the financial statements (for example, investors) are provided with conservative and biased estimates of the firm's current value and of its capability for the creation of wealth in the future. As shown by Lev et al, (2005) as the difference between the growth rate of investments in intangibles and the firm's Return On Assets (ROA) or Return On Equity (ROE) becomes greater, the greater the biased estimates provided to users.

Consequently, Lev and Zarowin (1999) claim that it is essential to include in the financial statements more reliable, more comprehensive and more timely information on intangibles. This could be achieved by broadening and adjusting the current accounting model and encouraging voluntary disclosure by management, such as showing the effect that intangibles may have on the persistence of future profitability and competitive advantages of the firm (Canibano et al, 2000).

3. Literature review and hypotheses development

3.1. Literature review:

This section is subdivided into three groups: First group presents the previous studies that examine the relationship between intangible assets and the persistence of firm's abnormal profitability. While the second group presents the previous studies that investigate the impact of the intangible assets on firm's profitability and value. Third group presents the previous studies that examine the impact of specific items of intangible assets (Like R&D, reputation, and intellectual capital).

3.1.1. The relationship between intangible assets and the persistence of firm's abnormal profitability

Villalonga (2004) aimed at testing the association between intangibles and sustainability predicted by resource-based view (RBV) of the firm in a large sample of public US corporations. Using a sample initially composed of 1641 US public corporations, between 1981and 1997. She extracted two subsamples: the "advantaged firms" subsample included 3877 observations from 423 firms, and the "disadvantaged firms" subsample included 778 observations from 101 firms. She estimated two different econometric models: the hedonic regression of Tobin's Q, and a dynamic panel data model of the relationship between Q measure and the persistence of firm-specific profits. She found a positive relation between resource intangibility and the persistence of firm's specific profit. She showed that intangibles play an effective role in sustaining a firm's competitive advantage, as predicted by the resource-based view of the firm. Also, her results suggested that intangibles can lock firms into persistent disadvantages.

Carvalho et al. (2010) aimed at analyzing whether the firm's persistent performance is related to the intangibility or tangibility of their resources. Using a sample comprised 228 Brazilian public companies listed on the São Paulo Stock Exchange for the period between 1996 and 2006. The statistical technique employed was the dynamic panel data, with estimates obtained by the generalized method of moments. They found a negative relation between intangible resources and superior and sustained performance. In other words, the intangibility of resources was not a sustainable competitive advantage because these resources do not persistently contribute to the higher performance of firms. On the other hand, the tangibility of resources played a significant contribution to the persistent performance of firm operating in different industries.

De luca et al. (2014) studied the relation between the composition of investments in intangible assets of innovative firms and corporate performance, by investigating whether innovative firms with superior and sustained performance and firms without superior and sustained performance differ with regard to investments in intangible assets. Using a sample consisted of 137 firms listed on Brazilian stock exchange for a period of four years from 2007 to 2010. Using two main regression models, the first regression model yielded that there was no significant correlation between corporate performance and total investment in intangible assets. When assets were segregated according to Brooking's classification (1997) the second regression model showed a positive correlation between corporate performance and investment in intellectual property, and there were a negative correlation between corporate performance and investment in market assets and infrastructure assets.

Kohlbeck and Warfield (2007) investigated the persistence of abnormal earnings conditional on the level of unrecorded intangible assets. Also, considered the pricing implications of the differential persistence levels by estimating a valuation model for banks conditional on the magnitude of unrecorded intangible assets. Using financial data from 1992 to 1998 for publicly traded bank holding companies that were gathered from annual financial reports, annual regulatory reports, and the centre for search in security prices (CRSP) research tapes. The final sample used consisted of 1,065 bank – year observations over seven years. Using a pooled regression, they found a positive relation between the persistence of earnings of a firm and levels of unrecorded intangible assets, and provide evidence that the pricing multiples for abnormal earnings increase from lower to higher levels of unrecorded intangible assets. Also, they demonstrate that the analysis framework introduced in their research could be used to examine the valuation impacts of intangible assets in other industries.

Reynoso (2008) tested empirically if intangible assets are the determining factor in a sustainable competitive advantage, and if organizational learning is the principal source of intangible assets through which the small and medium-sized business (SMB) can sustain its competitive advantage. He used a case study which was undertaken of five companies defined as SMB which possess a competitive advantage. Two of them are located in Catalonia, Spain and three more in Jalisco, Mexico. Of these, three correspond to the service sector and two to the industrial sector. His results confirmed the relevance of intangible assets in the establishment and maintenance of a competitive advantage, and also suggest that such assets are a consequence of organizational learning.

3.1.2. The impact of the intangible assets on firm's profitability and value

Mantoh (2015) investigated empirically the intangible assets contribution to performance of firms and value creation. The data source was five year financial statements from 189 German public limited companies for the period from 2009 to 2013. He used Value Added Intellectual Capital (VAIC) and Calculated Intangible Value (CIV) as measures of the efficiency and value of intangible assets. It applied multiple regressions and correlation analysis to test the impact of intangible assets on selected traditional financial performance measures. The results showed that the relationship between intangible assets and firm value can be best observed using the CIV as a measure of intellectual capital and balance sheet recorded net fixed assets (PPE). He observed that intangible assets do contribute to value creation and performance of firms.

Widiantoro (2012) studied the effect of intangible assets to market value appreciation, and the role of intangible assets to company financial health (financial performance and solvency ratio). Using a sample consisted of 30 companies taken from Indonesian stock exchange (IDX) from 2006 until 2011. They used a panel data analysis by using pooled regression model, fixed effect model, random effect model and linear regression model. They found a positive and significant influence of intangible assets toward market value index, in other words, market of Indonesia reacts positively toward the increase of intangible assets. Also they couldn't prove the hypothesis related to the role of intangible assets on company's financial health, which means the performance of the company didn't have any relation with investment in intangible assets.

Brown & Kimbrough (2011) aimed at examining the effect of intangible investment on earnings noncommonality, defined as the extent to which a firm's earnings performance is determined by firm-specific factors versus market and industry factors. They used a sample of US firms over the 1980–2006 period consisted of 119,436 firm-years for 13,685 unique firms. They found that earnings noncommonality is positively associated with intangible asset intensity. There finding are consistent with the resource-based view of the firm, which posits that intangible investments allow firms to differentiate themselves economically from their rivals. They also found that separable recognized intangibles contribute more to earnings noncommonality than do either goodwill or Research and Development (R&D). Also, they found that the positive impact of R&D on earnings noncommonality is significantly greater for those industries where patents and other legal mechanisms are most effective in protecting R&D.

Li and Wang (2014) examined the relation between intangible assets and financial performance of listed information technology firms in Hong Kong exchange market. They constructed an integrated model of how different intangible assets affect return on assets (ROA). Using a sample of 92 companies related to information technology industry for five years period from 2008 to 2012. They used the pooled ordinary least square (POLS) method to estimate the impact of intangibles on ROA. They studied three kinds of intangible assets, which are research and development cost, employee benefit expense, and sales training. They used total assets and net profit as control variables in analyzing the relationship between intangible assets and financial performance, represented by return on assets (ROA) of firms. The result of their regression model demonstrates that both R&D expenditure and sales training have a positive relationship to ROA, which means that research and development investment and sales training are beneficial to firms' financial performance while employee benefit expense is not.

3.1.3. The impact of specific items of intangible assets

Maditinos et al. (2011) attempted to investigate the relationship between intellectual capital (IC), market value and financial performance. Using a sample of 96 Greek companies listed in the Athens stock exchange (ASE) from four different major economic sectors of the country observed over the three-year period of 2006 to 2008. They used various regression models. They failed to support most of the hypotheses; only concluded statistically a significant relationship between human capital efficiency and financial performance. However, IC was increasingly recognized as an important strategic asset for sustainable corporate competitive advantage.

Riahi-Belkaoui (2003) aimed at examining the relationship between intellectual capital and financial performance to test the resource-based view of the firm. Using a sample consisted of 81 US multinational firms for the period 1992 to 1996. He used two regression models to investigate his hypothesis. He found a positive and significant results that pointed to both the usefulness of intangibles in general and intellectual capital in particular as a sustainable source of superior wealth creation; and the relevance of net value added as a measure of wealth creation. His results are statistically significant in support of both the resource-based and stakeholder views.

Bosworth & Rogers (2001) showed how R&D and intellectual property activity influences the market value of firms, using a tobin's q approach. Using a sample consisted of 60 listed Australian firms over the period of 1994 – 1996. They used various regression models and found a positive and significant association between R&D and patent activity with market value (share market price).

Roberts & Dowling (2002) aimed at studying the impact of corporate reputation on the path of future financial performance, in other words, they aimed at examining the relation between reputation and the persistence of superior profit outcomes over time. Using two samples: Overall sample which consisted of 3,141 observations, and reduced sample consisted of 1,849 observations selected from USA most admired corporations for the period from 1984 to 1998. Using two complementary dynamic models, they showed that firms with relatively good reputations are better able to sustain superior profit outcomes over time.

According to the previous review, it can be shown that the majority or even all of the studies found a positive relationship between intangible assets (or specific items of intangible assets) and firm's performance.

This paper is similar to literature review in measuring the effect of intangible assets measured using Tobin's q (Villalonga 2004) on the firm-specific profit persistence which is measured as the difference between firm's profitability and average profitability of industry in any given year (Villalonga 2004). While it is different in providing empirical evidence from an emerging market (Egyptian Stock Exchange). Also, this research makes a sectoral analysis which is more controllable by arbitrage sectoring according to actual activity of the firm, not to stock exchange classification.

3.2. Hypotheses development

According to the Resource - based view (RBV), intangible assets by nature are difficult to acquire or develop, and to replicate and accumulate within a firm, also they are difficult to be understood or imitated by other firms (Nelson, 1991). These characteristics make intangible assets valuable and qualified as sustainable competitive advantage for a firm (Lippman and Rumelt, 1982). In other words, intangible assets, because of their lower tradability and higher stickiness, are particularly become a source of commitment, defined as

the tendency of strategies to persist over time. Commitment, in turn, as proposed by Ghemawat (1991, p.25) is "the only general explanation for sustained differences in the performance of organizations".

Belem and Marques (2012) analyzed market expectations that are not explained by intangible assets recognized in the balance sheet and observed that the degree of intangibility of the companies has a positive impact on the return on equity. Fama & Pērez (2006) found a positive relationship between intangible assets and financial variables in companies, and found that investment in intangible assets provided increased revenue and share valuation. Also, Villalonga (2004) found that resource intangibility is positively related to the persistence of firm-specific profits or losses. According to the previous presentation, the first hypothesis could be expressed as follows:

H_1 : The greater the degree of intangiblity of assets, the greater the persistence of firm-specific profit.

Recent work at the industry/sector level in Japan (Fukao et al. 2008), the Netherlands (Rooijen-Horsten et al. 2008), the United Kingdom (Gil and Haskel 2008, Clayton et al. 2009), and Canada (Baldwin et al. 2009) suggests that intangibles are likely to be relatively more effective in some industries than others. And the type of intangible investment also varies across industries. These studies have found that investment in total intangibles is generally more intensive in manufacturing firms than in service firms.

Villalonga (2004) provided two reasons explaining the probable impact of industry type on the relation of intangible resources and the sustainability of performance, which means the impact of intangible assets on firm-specific profit persistence will differ according to industry type.

First, intangible resources which are a key of success and a source of advantage are of a different nature in different industries and sectors. For example, a firm's knowledge through research and development in technology is considered to be more important and having a high impact on competitive advantage in the manufacturing companies than it is in the non-manufacturing companies (lodging and entertainment industries). Amit and Schoemaker (1993) note that in order for the firm to create and protect its competitive advantage and achieve a persistence in its profits, it must depends on resources with unique

characteristics over and above the extent to which they overlap with industry-determined strategic industry factors.

Second, types of intangible resources and the appropriation of companies' resources for intangibles differ across industries. Each firm has its own mechanism in allocating intangibles. Intangible resources may be appropriated by different ways within the firm. It may be allocated to human resources, functions, processes, teams, projects, or the organization as a whole. (Nelson and Winter, 1982).

Mardijuwono et al (2012) found that the impact of intangible assets on firm's competitive advantage is more intensive in manufacturing companies. While Villalonga (2004) provided evidence that sectoral differences have impact on the effect of resource intangibility on sustainability of firm- specific profit, he was unable to explain the differences across sectors. Also Barnes (2010) shows that the investment in total intangibles is generally more intensive in manufacturing Australian companies than in service companies. In this paper, the researcher will examine the effect of intangibles in the Egyptian manufacturing and non-manufacturing companies. The next hypothesis could be expressed as follows:

H_2: The impact of intangible assets on the persistence of firm- specific profit will be stronger in manufacturing companies than in non-manufacturing companies.

4. Methodology

4.1. Population and Sample

The population of this paper includes all Egyptian corporations listed in the Egyptian stock exchanges. A sample comprised of 112 firms is drawn for a time series from 2008 to 2015 for the purpose of measuring Firm-Specific Profit (FSP) persistence from 16 sectors to conclude with 101 observations to test the impact of intangible assets on FSP (cross sectional).

Table (1) shows the proportional distribution of the sample in each sector; also Appendix (A) shows the firms listed in the sample from each sector.

Table (1): The sample

	Sector	Firms selected	Number of firms selected to all firms in the research
1.	Basic resources	7	6.14%
2.	Chemicals	7	6.14%
3.	Construction and material (Cement)	8	7.02%
4.	Construction and material (Contracting)	5	4.39%
5.	food and beverage (Mills)	7	6.14%
6.	food and beverage (Poultry)	4	3.51%
7.	food and beverage (Food Industry)	8	7.02%
8.	Healthcare and Pharmaceuticals	9	7.90%
9.	Industrial goods , services and automobiles (Printing and Packaging)	5	4.39%
10.	Industrial goods , services and automobiles (Transformers and cables)	5	4.39%
11.	Oil and Gas	3	2.63%
12.	Personal and Household Products	8	7.02%
13.	Real Estate	19	16.67%
14.	Travel & Leisure	13	11.4%
15.	Technology	3	2.63%
16.	Telecommunications	3	2.63%
Total		114	100%

4.2. Models

The following model is used to measure the impact of intangible assets on firm-specific profit persistence to test H_1 and H_2

$$FSP_{it} = \alpha_i + \mu_{it} * FSP_{it-1} + \varepsilon_{it} \quad (1)$$

$$\mu_{it} = \beta_0 + \beta_1 q_{it} + \beta_2 D_j + \beta_3 FSP_{it-1} + \beta_4 FSP_{it-1} * q_{it} * D_j + \varepsilon_{it} \quad (2)$$

Where:

μ_{it} : firm-specific profit persistence form firm i year t

q_{it} : Tobin's q

D_j : Industry type

FSP_{it-1} : firm-specific profit for year t-1

β_1 : The effect of intangible assets on level of FSP for period t

β_2 : The effect of industry type on level of FSP

β_3 : The persistence of firm's specific profit coefficient after controlling for other regressors for period t-1.

β_4 : Captures the effect of intangible assets on the persistence of FSP interacted with industry type (for testing hypothesis 3)

In regression (1), the persistence of firm-specific profits can be formally measured by μ coefficient. The μ coefficient indicates the percentage of firm-specific profits in any period before t that remains in period t, then μ will be used in regression (2) as FSP persistence.

4.3. Variables definitions and operational measures

4.3.1. Dependent variable: Firm-specific profit

Firm-specific profit means the difference between firm's profitability and average profitability of industry in any given year (Villalonga, 2004).

Firm specific profits are computed as follows:

$$FSP_{it} = ROA_{it} - \left(\sum_{i=1}^{Ijt} \frac{ROA_{ijt}}{I_{jt}}\right), \quad \forall i = 1, \ldots, I_{jt}, \quad t = 1, \ldots, T_i$$

Where:

FSP_{it} : the firm specific profit for firm i in year t

ROA_{it} : Is return on assets of firm i in year t

ROA_{ijt} :The return on assets of firm i's operations in industry j in year t

I_{jt} : The number of firms with operations in industry j in year t

4.3.2. Independent variable: Intangible assets

Identifiable nonmonetary assets without physical substance result from the past transactions and give probable future benefits for companies; they will be proxied by Tobin's *q* as follows:

$$q_{it} = \frac{MVE+BVL}{BVTA}$$

Where:

MVE is the year-end market value of firm's common equity

BVL is the year-end book value of firm's total liabilities (total debts)

BVTA is the book value of firm's total assets

4.3.3. Moderator variable: Industry type (Dj)

Dummy variable, is 1 for manufacturing company and 0 for non-manufacturing company.

5. Findings

This section presents evidence on the effect of intangible assets on firm-specific profit persistence using data from Egyptian manufacturing and nonmanufacturing firms. Descriptive statistics for testing the sample and the findings are presented.

5.1. Descriptive Statistics

Descriptive Statistics for the main model are presented below in table 2 as follows:

Table 2: Model (1) Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Firm-specific profit persistence (μit)	101	-.5671	.9973	.203338	.3563789
Intangible assets (qit)	101	.0660	5.3406	1.094569	.7807458
Industry type (Dj)	101	0	1	.75	.434
Firm specific profit *t-1*	101	-.35	.28	-.0005	.09160
FSPit-1*qit*Dj	101	-.91	.52	.0085	.17272

Values of firm-specific profit persistence (the dependent variable) are between minimum value -0.5671 and maximum value 0.9973. It has a mean value of 0.203338, and standard deviation 0.3563789.

Intangible assets values (measured by tobin's q) are between minimum value -0.0660 and maximum value 5.3406. It has a mean value of 1.094569 and standard deviation 0.7807458.

The minimum value of Industry type (Moderator value) is 0, while the maximum value is 1. The mean is 0.75 and standard deviation is 0.434.

The minimum and maximum values of firm-specific profit for year t-1 are -0.35 and 0.28 respectively. It has a mean value of -0.0005, and standard deviation 0.09160.

Values of the interaction between Firm-specific profit for year t-1, intangible assets and industry type are between minimum value -0.91 and maximum value 0.52. It has a mean value of 0.0085, and standard deviation 0.17272.

Table 3 shows the correlations among the variables used in the analysis of model (1). There is no significant correlation between the independent variables.

Table 3: Correlations for model (1)

		μit	qit	Dj	FSPit-1	FSPit-1*qit*Dj
μit	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	101				
Qit	Pearson Correlation	.063	1			
	Sig. (2-tailed)	.533				
	N	101	101			
Dj	Pearson Correlation	.268**	.142	1		
	Sig. (2-tailed)	.007	.156			
	N	101	101	101		
FSPit-1	Pearson Correlation	.066	.023	.092	1	
	Sig. (2-tailed)	.515	.819	.359		
	N	101	101	101	101	
FSPit-1*qit*Dj	Pearson Correlation	.159	-.045	.029	.777**	1
	Sig. (2-tailed)	.113	.653	.777	.000	
	N	101	101	101	101	101

**. Correlation is significant at the 0.01 level (2-tailed).

5.2. Hypotheses Tests

To test the effect of intangible assets on firm-specific profit persistence, the following model is used:

$$FSP_{it} = \alpha_i + \mu_{it} * FSP_{it-1} + \varepsilon_{it} \quad (1)$$

$$\mu_{it} = \beta_0 + \beta_1 q_{it} + \beta_2 D_j + \beta_3 FSP_{it-1} + \beta_4 FSP_{it-1} * q_{it} * D_j + \varepsilon_{it} \quad (2)$$

Table 4 presents summary statistics and the estimates for the first model. $\widehat{\beta_1}$ is insignificant because P-value equals 0.662 (P-value > 0.05), which means the intangible assets alone has no effect on firm-specific profit persistence. While $\widehat{\beta_4}$ is significant (P-value = 0.048), which means that the impact of intangible assets on the persistence of firm-specific profit after introducing the industry type as a moderator variable. In addition, the coefficient has a positive sign (0.635) which support H_3 that the impact will be stronger in the manufacturing firms than in non-manufacturing firms.

Adjusted R square = 0.074, which means that 7.4% of the variation in the dependent variable (firm-specific profit persistence) is explained by the variation in the independent variables in the right side of the model. This percentage is usual in accounting research.

Table 4: Results of testing H_1 and H_2

The main model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Constant	.009	.080		.107	.915
Intangible Assets	.020	.045	.043	.438	.662
Industry Type	.223	.080	.271	2.773	.007
Firm-specific profit (t-1)	-.776	.600	-.200	-1.294	.199
Interaction	.635	.317	.308	2.002	.048
Summary Statistics:					
N			101		
R^2			0.111		
Adjusted R^2			0.074		
Durbin-Watson			1.995		
Probability (F-Statistics)			0.022		

6. Conclusion

This paper aimed to offer empirical evidence about the benefits attained by the organizations via the investment in intangible assets, by showing the impact of these intangible resources on the persistence of abnormal profits (firm-specific profit) for Egyptian listed firms. The researcher compared the return on assets (ROA) of each company in a sample of Egyptian companies to the respective sector average and found intangible assets to have a significant impact on abnormal profits and superior performance after introducing industry type as a moderator variable, thereby concluding that the impact of intangible assets on firm-specific profit persistence will be stronger in the manufacturing firms than in non-manufacturing firms.

The finding of this paper is in consistent with Villalonga (2004), who concluded that intangibility was responsible for sustained performance difference and sustainable competitive advantage. Likewise, Fama and Perez (2006) who concluded that in US companies tangible assets were only responsible for regular earnings, while new and additional value was created by intangible assets.

Conversely, this paper is inconsistent with carvalho et al, 2010, who found a negative association between intangible assets and sustained and superior performance, using a sample of Brazilian firms, as a result of that rejecting the hypothesis of their study.

Few studies have examined and studied the impact of intangible assets on the persistence of superior and abnormal profits of firms. These studies provide conflicting results which provides opportunities for future research. The current study tries to resolve this contradiction by providing empirical evidence from different market which is the Egyptian market.

Several qualifications to these implications must be mentioned. First, Tobin's q measures the value of intangibles that the firm is able to specify, relative to its tangibles assets. However, this paper fails to explain and clarify the total value that the intangible investments creates for recipients other than the company, such as competitors who may get benefits and improvements from technological spreading, teams or employees who will gain some benefits from the firm's knowledge, or alliance partners who may share the benefits from the firm's brand name and goodwill.

Second, this paper uses Tobin's q as a proxy to intangible assets, which makes the definition of intangibles is overly broad. As a result, the researcher is unable to explain the differences in the effect of intangibles across sectors. This paper investigates the impact of intangibles on manufacturing and non-manufacturing companies. One promising direction for further research may use more accurate measures of intangible resources as well as with different mechanisms by which firms may calculate the value generated by the intangible resources and to show the difference in impact between sectors.

The findings of this paper also have substantial implications for managers; specifically, investment in intangible assets is a high-risk, high-return strategy for companies. Future researches might aid in determining whether specific items of intangible assets display a better risk-return trade-off than others, and why some companies get greater benefits and high return from intangible assets, while other companies suffered losses and competitive disadvantages from intangible investment.

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