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EFFECT OF PHYSICAL SECURITY INITIATIVES ON SUPPLY CHAIN PERFORMANCE

Professor Mohamed Shohaieb[1], Dr. Abd`elaziz Hashem (PhD)[2] and Hossam Hanafy[3]

[1]Professor of Business Administration, Cairo University, Egypt.
[2]Associate Professor, Cairo University, Egypt.
[3]Teaching Assistant, Cairo University, Egypt.

ABSTRACT: *Physical security is often a second thought when it comes to information security. Since physical security has technical and administrative elements, it is often overlooked because most organizations focus on "technology-oriented security countermeasures" (Harris, 2013) to prevent hacking attacks. Hacking into network systems is not the only way that sensitive information can be stolen or used against an organization. Physical security must be implemented correctly to prevent attackers from gaining physical access and take what they want. All the firewalls, cryptography and other security measures would be useless if that were to occur. The challenges of implementing physical security are much more problematic now than in previous decades. Laptops, USB drives, tablets, flash drives and smartphones all have the ability to store sensitive data that can be lost or stolen. Organizations have the daunting task of trying to safeguard data, equipment, people, facilities, systems, and company assets.*

KEYWORDS: Physical Security, Supply Chain Performance, Egyptian Automotive Industry.

INTRODUCTION

Today, increasing and full dependence on ICTs and the emergence of virtual organizations that rely on the electronic exchange of information with supply chain partners and the lack of space and time constraints in exposing organizations to more breaches and cyber-attacks which have affected the continuity of many organizations' caused Exiting from competition and influencing the organization's reputation and losing its customers.

Physical security means keeping information out of the reach of others who are authorized to access and use it by preventing information thieves and hackers from accessing important information and storage disks, disconnecting network connections, or disconnecting the system (Hutter, 2016)

"Physical security protects people, data, equipment, systems, facilities and company assets" (Harris, 2013). Methods that physical security protects these assets is through "site design and layout, environmental components, emergency response readiness, training, access control, intrusion detection, and power and fire protection" (Harris, 2013). Business continuity or disaster recovery plans are required to reduce business interruption in times of natural disaster, explosion or sabotage.

Physical security must plan how to protect employee lives and facilities. The first priority of physical security is to ensure that all personnel is safe. The second is to secure company assets and restore IT operations if a natural disaster happens.

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LITERATURE REVIEW

The following are the most important previous studies related to the subject of study. Studies related to Physical security, Logical security, Supply chain performance and Egyptian automotive industry.

Physical Security:

Physical security means keeping information out of the reach of others who are authorized to access and use it by preventing information thieves and hackers from accessing important information and storage disks, disconnecting network connections, or disconnecting the system (Hutter, 2016)

There are many reasons for difficulty in maintaining physical security:

Over the past decades, organizations have faced considerable difficulty in applying physical security (Hutter, 2016), due to:

1. The rapid development of the technological environment (Hutter, 2016).

Harris, (2013a) explained that it is difficult to protect corporate data, networks and systems, with the increasing use of computers and smart mobile phones, with nearly 74,000 employees, suppliers and contractors exposed to data penetration in 2014, During the theft of laptops that carry important and sensitive data about their companies (Scott, 2014).

3. The dynamic nature of the ever-changing environment has helped to increase the costs that companies incur because of fraud, sabotage and theft (Hutter, 2016).

Organizations are now more than ever concerned about the physical security of hardware and equipment because of the increased use of mobile devices, including computers, phones, hard drives and USB, which makes them more likely to be stolen (Carney, 2012; Scott, 2014)

Mobile device theft is not the only way hackers and attackers can get the data they want. Hackers can get important and sensitive data by connecting a USB or a small memory card to computers without having to go into the corporate data theft facility (Scott 2014).

Examples of threats to implementing physical security initiatives include:

1. Unauthorized access to and theft of computers.

2. Access to secured areas through the penetration of smart cards and access to devices that carry important data and sensitive to companies.

Threats of physical security initiatives:

First: Internal Threats:

1. Human Threats: Hutter (2016) has made these threats more dangerous when an FAO staff member has access to information systems, but abuses his powers. In general, the most important sources of human threats to information systems can be summarized as follows:

- Employee who deliberately harms the assets of the organization.

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- Employee who is not aware of the security risks (harms the assets of the organization inadvertently).

Collusion: is one of the types of internal threats caused by two or more workers.

It is difficult to expect attacks and infiltration by staff of important resources and information of the organization because they obtain permission / permission to access data and information (Al-Qahtani, 2015), for example, the security guard who works for the organization and has permission to enter all sections and departments of the organization and can commit breaches and security crimes Without observing the rest of the workers, so it is necessary to have a security awareness to protect the assets of the organizations.

Second: External threats:

1. Natural disasters: Disasters that are not intended for humans or technical equipment such as earthquakes, volcanoes, floods, lightning, fire or dust waves. (Al-Qahtani, 2015). Such disasters could cause serious damage to information systems and could lead to the interruption of electronic services altogether (Hutter, 2016).

2. Humans: People who have nothing to do with the organization threaten the premises through protests, riots and robberies (Hutter, 2016). The human element may intentionally cause harm, access to information and access to it without the authority to do so, destroy it, or Leaked to third parties (Al-Qahtani, 2015).

Objectives of physical security initiatives:

Physical security helps maintain the security of the organization and the security of the computer operating room. (Harris, 2013a) The Hutter study (2016) adds that physical security can be maintained by maintaining the security of devices, storage media, and security of individuals. Limit:

1) Maintaining the security of the organization:

The security of the organization is achieved through the external control and control of the building as well as the choice of the appropriate building for the nature of the activities and objectives of the organization with the need to take the necessary safety and prevention measures, and to ensure the continuity of the basic services provided by the organization and not interrupted.

2) Maintain the security of the computer operating room:

There are several methods to help secure the computer operating room (Harris, 2013 b), including:

1. Keeping the computer operating room closed continuously and not entering it unless authorized to do so only.

2. Reducing the number of ports and doors and securing them with intrusion alarms.

3. Use cameras to monitor the computer room.

3) Maintaining the security of the devices and the storage media: The two stages are the security

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and maintenance of the devices will be clarified as follows: (Hutter, 2016)

a. Device security: Security of devices and storage media is maintained through:

- Prevention of theft, damage or alterations in the assets of organizational information systems, which may lead to the interruption of the operational activities of the institution.

- It is necessary to protect the equipment from environmental hazards and security threats to prevent the risk of unauthorized access to data and to protect against theft or damage.

- It is necessary to follow the controls for protection against risks or unauthorized access.

- It is necessary to properly identify and protect device sites to reduce risks from environmental threats and hazards and access to unauthorized access.

b. devices maintenance:

Organizations are given high priority to maintain and maintain computers properly, in order to ensure that they do not stop working and lose the information inside them, as explained (Al-Qahtani, 2015).

4) Maintaining the security of individuals:

The security of individuals can be maintained by following (Hutter, 2016):

1. Registration and entry of employees in a special register.

2. Log in and exit visitors and accompany them inside the building.

3. Cancellation of accounts of those who have terminated their service or left the organization for any reason from the system users list.

4. Granting the limits and powers of employment according to the needs and the function of each individual in the organization.

Implementation of organizations' interest in implementing physical security initiatives:

Physical security initiatives are the top priorities of organizations. Many organizations are concerned with formal and aesthetic aspects at the expense of attention to security aspects and standards, which may result in a lack of attention to security procedures when designing physical facilities and environments (Harris, 2013a). Organizations should therefore be concerned with physical security in the early stages of the project, resulting in:

- Reduction / reduction of losses resulting from security breaches (Scott, 2014).

- Reducing the exposure of companies to civil and criminal prosecutions for failure to practice and applying them to the necessary security standards (Hutter, 2016)

- Sense of safety and increase their focus on the achievement of what is required of them (Hutter, 2016).

- The difficulty of hackers' access to important company resources (Harris, 2013a).

- Securing corporate assets and quickly returning to work when exposed to any natural

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disaster (Scott, 2014).

Allocation of resources to address threats:

The resource security program is used in a balanced manner to achieve each objective so that no greater or lesser resources are allocated compared to the threat facing the organization. (Hutter, 2016) The organization achieves the proper allocation of resources by monitoring and monitoring the consistency of standards. For example, if a company has seven security guards: four guards work daily from 4 pm to 1 am, and two guards from 1 am to 9 am, and at least one security guard is required to work on the security gate. When submitting a security report it turns out that an intrusion and theft event occurred at the stores between (1:34) to (4:13) AM. Therefore, a decision is made on the status of guard from the evening on the stores in the morning. Two months later, the security report showed that the rate of warehouse break-ups dropped to nearly 95%. That is, theft rates decrease when resources are allocated correctly. (Harris, 2013 c)

The threat profile of the organization depends on the nature of the work. Each organization identifies acceptable and movable types and levels of risk that must be avoided or minimized. Threats include threat factors, threat scenarios and vulnerabilities (Harris, 2013 c). The organization must have a clear understanding of the importance of preparing a threat profile to study the causes that have occurred to prevent it from occurring in the future (Irwin, 2014).

Tasks to be performed before the implementation of the security program:

There are several tasks that must be done before the implementation of the Hutter (2016) program, which can be explained as follows:

- Conduct risk assessments to identify vulnerabilities and threats, and then analyze all threats (ie, determine the impact of threats on business continuity).

- The need to involve the Department of Legal Affairs in the implementation of the security program to ensure the application of regulations and laws.

- Management determines the level of acceptable risk for the security program.

- The need to sensitize employees to security directives and guidelines.

- Use performance measures to track controls and security measures against security breaches.

- Identification of performance requirements and required levels of security protection, through the detection and evaluation of security incidents.

- Identify and apply countermeasures that are used to deal with security threats.

- Countermeasures should be regularly assessed to ensure that acceptable risk levels are not exceeded. Al-Qahtani explained (2015) that countermeasures taken by establishments when the risk occurs vary from one establishment to another depending on the importance of the information. The facility may take the appropriate action before the occurrence of the hazard and is called the Proactive model, and the intervention of the facility after the occurrence of the risk may be called Reactive model. The following are examples of countermeasures:

- Use Firewalls.

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- Use of antivirus software.

- Access control.

- Good staff training.

Supply Chain Performance:

Anand and Gvover (2015) defined supply chain performance as an organized and systematic process for measuring the effectiveness and efficiency of supply chain operations. Chia et al., (2009) considered the performance of the supply chain to be an integral part of any business strategy.

Kajuter, (2002) believes that the main objective of the supply chain is to improve the efficiency of supply chain members in order to support the competitive position.

Importance of Measuring Supply Chain Performance:

Measuring the performance of the supply chain helps:

- Improved integration and collaboration among supply chain partners (Garango and Bititci, 2007)
- Ensure that the supply chain partners are distinguished in providing a service that satisfies the customer (Whalen, 2002).
- Financial stability (Whalen, 2002).
- Ensure continuous improvement of supply chain operations (Milliken, 2001)
- Successful Business and Projects (Cooke, 2003)
- The possibility of using performance measurement results to develop the appropriate organizational structure, and to bring about real change in organizations (Hervani, 2005).
- Performance measurement has many uses, including determining the efficiency and effectiveness of the current system or comparison with proposed alternative systems (Hervani, 2005).
- Performance measurement helps decision makers by providing information for decision making (Chen, 2002).
- Performance measurement provides a proactive approach that helps determine the success of existing strategies (Chen, 2002).
- Performance measurement helps improve supply chain management, achieve corporate goals, and improve the overall performance of the industry (Chen, 2002).

Basic functions of performance measures:

Melnyk et al., (2004) presented three basic functions for performance measures that can be illustrated as follows:

1. Oversight: means that performance measures enable managers to assess the current

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performance of the organization.

2. Communication: Achieving internal communication between the departments / departments of the functional organization, and external between the organization and its external partners.

3. Optimization and development: Performance measures help:

   • Define the gap between actual performance and expected performance.

   • Identify the causes of that gap.

   • Take the correct measures necessary to reduce or prevent deviation from actual performance.

Several previous studies have addressed a variety of supply chain performance measures. Various researchers have attempted to measure the performance of the supply chain using a variety of methods and developed a variety of performance measurement models that will be illustrated as follows:

Lembert and Pohlen, (2001) presented a model to measure the performance of the supply chain called "Map Model-Framework" map measuring supply chain performance, this sample consists of the following steps:

1. Draw a map illustrating the key relationships between supply chain partners.

2. Effective management of relationships with both suppliers and customers and clarifying ways of utilizing those relationships in creating value added to the supply chain in general.

3. Determine the impact of relationships with suppliers and customers on the profitability of the supply chain.

4. Reorganize the processes and activities of the supply chain to become more integrated (supply chain integration processes).

5. Balancing financial and non-financial performance measures.

Hale and Moberg, (2005) carried out in a case study on the supply chain in North America. It was applied in the form of a case study on Ford Motor Company which developed an integrated system for the implementation of the supply chain management and measuring its performance through the establishment of partial measures of chain activities and control through the following:

- Establishment of new systems for forecasting and inventory planning.
- Establish a system for selecting suppliers and contacting them.
- Reduce the stock size.
- Registration of customer service levels.
- Implement a system to monitor the performance of suppliers.

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Prior to considering the proposed system to measure the performance of the supply chain, Ford faced major problems, including the lack of integration and integration of data and decision-making information in the areas of procurement, supply, distribution and termination of customer orders.

The results of the study were to reach specific measures in the fields of supply chain:

- Measures related to delivery performance.
- Inventory reduction measures.
- Delivery time standards.
- Measures related to productivity and cost of operations within the supply chain.

Thakkar et al., (2009) presented some of the characteristics of the performance measures used in measuring the performance of the supply chain, including:

- The measurement system should have the ability to allocate appropriate measures to the supply chain strategy.
- There should be no deviation between supply chain objectives and measurement objectives.
- Performance measures should reflect a sufficient balance between financial measures and non-financial measures.
- Standards should reflect the relationship between different levels of strategic decision-making, tactical and operational.

Thakkar et al., (2009) described the process of measuring the performance of the supply chain as a difficult process, as it affected many aspects of the organization and the environment.

The study pointed to the importance of measurement clarity for supply chain partners. The study presented several measures to measure the performance of the supply chain, including:

1. Supply chain costs.
2. Level of services provided to customers.
3. Efficiency in asset management.

Bigliardi and Bottani, (2010**)** used the Balanced Score Card methodology in measuring supply chain performance. This study pointed out that:

- Balanced Scorecard is one of the modern administrative methods and techniques that contribute to performance control. It is an administrative system and a strategic plan to evaluate the activities and performance of organizations according to their vision and strategy.
- Balanced Scorecard aims at balancing financial and non-financial measures, short-term objectives, long-term goals, and internal and external perspectives

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- Balanced Scorecard is a way to link performance indicators with the organization's strategy. Therefore, if there is no clear strategy, a balanced performance card will not work.
- This card is considered a means to set balanced goals only and therefore if not accompanied by the application of management policies for development will fail.

Leuschner et al., (2013) showed that there are three components of organizational performance:

1. Financial performance: includes the return on investment, return on assets and market share.
2. Non-financial performance: It relates to meeting customer needs and expectations.
3. Operational Performance: It focuses on discovering the evolution of the organization's capabilities in terms of quality, flexibility and delivery.

Several studies have addressed the measurement of supply chain performance. Many researchers have tried to measure supply chain performance in multiple ways and have developed a variety of performance measures. The Kurien and Qureshi (2011) study gave a detailed account of previous studies that measured the performance of the supply chain and presented performance measures used in supply chain models. The Supply Chain Operations Reference (SCOR) model developed by Supply Chain Council (1996) is among the most widely used supply chain performance metrics among all models developed to measure performance Supply chain, where: (Mentzer and Konrad, 1991; Ren, 2008; Theeranuphattana and Tang, 2008; Kurien and Qureshi, 2011; Sindhuja, 2014)

1. Provide a scientific framework that takes into consideration the performance requirements of the member organizations in the supply chain.
2. It considers supply chain activities as a set of joint and inter-organizational processes.
3. Interested in the integration and communication between the members of the supply chain.
4. It provides management practices that produce the best performance.
5. concerned with measuring the performance of the supply chain through the use of multiple dimensions including (Sindhuja, 2014):
    a. SC reliability: produced by delivering the right product in place and at the right time, packaged and packaged in the right quantity and presented to the right customer.
    b. SC Responsiveness: means the rapid delivery of products to customers.
    c. SC Flexibility: The supply chain response to market changes in order to achieve competitive advantage and maintain.
    d. SC costs: Include the costs associated with the work of the supply chain.

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e. Efficient Utilization: Means the effectiveness of organizations in asset management to achieve customer satisfaction.

6. It considers the performance of the supply chain as efficient in terms of optimal utilization of resources, and effective in terms of achieving supply chain objectives (Ren, 2008).

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Depending on Russell and Saldanha, (2003), study has considered Information security initiatives dimensions which include physical security. This study used the framework developed by SCOR (Stephan, 2001; Stewart, 1995) for measuring supply chain performance as it is found more relevant for study. The conceptual model is represented in Figure: 4**.**

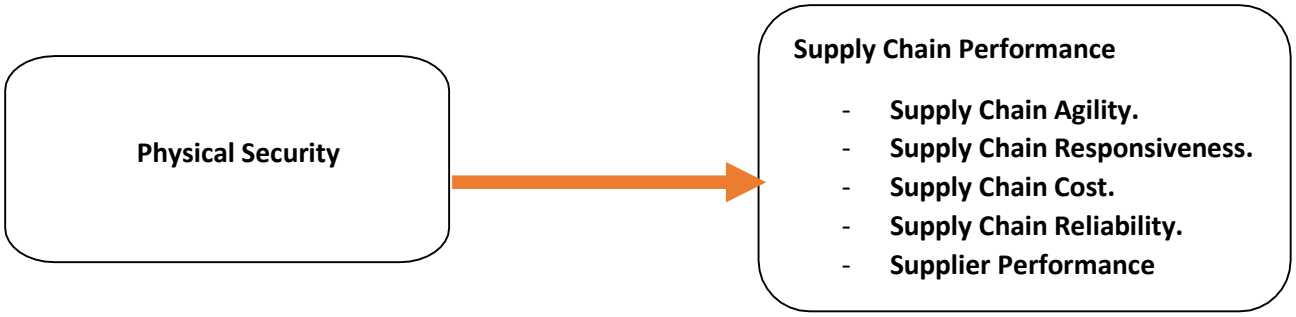

Fig. 1. The conceptual model

Hypothesis:

In the light of study model described in Figure 1, we can identify relationship to be tested, which was formulated in the following hypothesis:

The main hypothesis: Physical security has a positive impact on supply chain performance.

Research Limitations/ Implications

The limits of research include both the scientific boundaries "which are related to the methodology of research and its variables" and the practical limits "which are specific to the practical field of study," as can be seen in the following detail:

Scientific Limits of research:

Research focused on study the impact of supply chain robustness on supply chain performance Which includes supply chain agility - supply chain reliability - supply chain costs - supply chain responsiveness - supplier performance).

Practical Limits of research: research was limited to companies that are located in different nodes along the supply chain of the Egyptian automotive industry. These companies are represented in:

- Manufacturers and assemblers of automotive.

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- First and second tier suppliers.
- Distributors (agents i.e.: sales - spare parts).

The Egyptian Automotive Industry and its Supply Chain:

The automotive industry is one of the pillars of industrial development as it is one of the largest assembly industries that rely on a wide range of feed industries belonging to several different types of industrial activities. The automotive industry is one of the most influential industries in supporting the economies of countries, especially the countries that export abroad, whether in the form of full-fledged cars or in the form of components, parts and spare parts. The last decades of the last century witnessed an unprecedented increase in the number of vehicles worldwide, Statistics indicate that the number of cars in all countries of the world reached the end of the last century (641) million cars and is expected to reach this number to about one billion cars by 2020 (Report of the Egyptian Association of Automotive Feeding Industries, 2014).

Success of the automotive industry in any country depends mainly on its success in providing the right environment for feed industries. Feeding industries are the backbone of the automotive industry and are a small industry that serves a large industry. Creating demand for both production and spare parts. The automotive industry as a manufacturing industry depends on a wide range of feeder industries that belong to all types of industries (metal, chemical, engineering, electrical, electronic, textile and leather). The industries that feed the automotive industry in Egypt include a wde industrial base and the state is keen to develop nutritious industries The creation of new jobs, the provision of foreign exchange and the formation of a strong industrial base that contributes to the increase of national output (Report of the Egyptian Association of Automotive Feeding Industries, 2014).

The number of companies producing cars of different types in Egypt (21) companies other than the processing of cars and the construction of the external structure, which produces different types of cars, including cars of various capacities, and buses and ordinary and tourist, minibuses and light, medium and heavy transport vehicles (Report of the Egyptian Association of industries feeder cars, 2014).

The automotive industry in Egypt began in the fifties of the last century through Al-Nasr Automotive Company, which was owned during that period of the state within the framework of the socialist system based on customs and legislative protection to protect the fledgling domestic industry that is to support the Egyptian national economy. (Industrial Modernization Program IMC, 2005)

Al-Nasr Automotive Company was established in 1957 by a ministerial committee which included the formation of a committee comprising the Ministry of War and the Ministry of Industry to establish the industry of lorries and buses in Egypt. International companies were invited to complete this project. Deutsche Bank, now known as Dietz AG, has successfully assembled Fiat in Egypt and produced several locally assembled models with a total of 19 models. (Industrial Modernization Program IMC, 2005)

With the transformation of the Egyptian economy into a free market and dependence on the private sector to build modern industry, the government shifted from a full protection system to a policy of privatization by relying on private companies and encouraging investment to

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advance and develop the Egyptian economy and local industry (IMC, 2005).

The new strategy for cars is to shift from assembly to full car manufacturing and to increase the local component ratio and reach the domestic manufacturing rate within cars from 45% to 60%. And the start of large factories and production units and the exploitation of large production savings for export, especially in the automotive component sector, which can compete strongly in many foreign markets. (Adel, 2015)

Egyptian engineering industries have the potential and capabilities to achieve successes at the local and global levels.

RESEARCH METHODOLOGY

Research Sampling

The target population of this research was: All organizations working in the automotive industry–throughout its three main sub-sectors – in Egypt (i.e., an example of a manufacturing industry); namely manufacturers/assemblers of the auto feeding and automotive industries and CBU importers and distributors. A total of 101 automotive firms were contacted of which 90 accepted to participate).

Unit of Analysis

All the auto-feeding and automotive organizations which working in Egypt and implementing or partially implementing SCM practices– represented by individuals (e.g., leaders, managers and specialists) that are responsible in the area of study (e.g., SCM, ICT, and research and development (R&D) activities in these companies).

With respect to the first sector (i.e., automotive industry), random sampling technique was used as this study targeted the entire population (i.e., 101 automotive firms were contacted through email and/or phone) of which 84 accepted to participate through face-to-face depth interviews, resulting in a response rate of 89.16%. Despite being characterized by a small population size, the companies of this industry are physically dispersed at various governorates in Egypt and virtually located at different positions (i.e., multiple nodes/heterogeneous) across the same SC, which made the data collection process an extremely difficult yet value-adding one.

Data Collection

Primary data collected based in part on direct/personal semi-structured in-depth interviews (qualitative data) and in part on questionnaires (quantitative data). A mixed methods approach was used in the data-collection phase to understand, map out and investigate from different standpoints

(a) the research problem and proposed relationships.

(b) the nature of the Egyptian automotive industry. Study combines qualitative and quantitative approaches:

First, the researcher began to follow the qualitative approach, which depends on study and reading of data and events in a non-quantitative manner, where the data is not converted to

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numbers as in the case of quantitative research, but the results are obtained from the observation and analysis of events and attitudes and documents and verbal and nonverbal communication in the search, The qualitative research depends on the use of the inductive method, which is based on starting or thinking of the finished part to the whole, where the researcher starts from the data collected or observations that he observed to reach certain results (Zikmund and William, 2000). This means that hypotheses and theories are derived from the data set Praised the process of data collection and after analysis, researcher examines the data here for the purpose of description and knowledge of virtual relationships between phenomena, and then returns to the community of study or place their application to collect data to test hypotheses. The qualitative research was carried out through five in-depth interviews, which helped the researcher to gain an in-depth understanding of the underlying causes of the research problem and to discover the nature of the automotive industry in the Arab Republic of Egypt.

Secondly, the quantitative part of the survey was conducted in order to measure the data collected through the questionnaire lists and then to perform quantitative statistical analysis in order to analyse and interpret quantitative data and prepare recommendations. Quantitative research aims to test the theories in a standard way, through the identification of the theory already existing in the previous literature, obtaining the necessary concepts and definitions, and then assuming the relationships between variables and data collection and analysis statistically, and in the light of the results reached by the researcher is accepted or Refusal or modification of the theory.

Questionnaire Development

The questionnaire list, which includes a set of terms that measure the variables of study based on the five-dimensional Likert scale, is designed to identify the impact of effective implementation of information security initiatives on both supply chain operations and performance. The required data have been translated into questions that help answer them in providing the necessary data for study

Measurement items used in this study were either developed from literature or adopted from previous studies. Identification and validation of newly generated items were done in two stages:

Item generation through literature review Pilot testing using Q-sort methodology

In the first stage, potential items were generated through an extensive literature review which helped in identifying the content domain of the major constructs. This also helped in the generation of initial items and the definition of the constructs. The initial pool of items was reviewed by academic and industry experts.

During the second phase, the items were pilot tested using Q-sort methodology (Nahm et al., 2004). The pool of items was subjected to three sorting rounds to ensure that each item was placed under right constructs.

Survey Administration and Sample Demographics

Transactions of credibility and consistency: The Cronbach alpha coefficient was used to measure the stability coefficient (reliability score) at the level of all variables related to the impact of the effective implementation of information security initiatives on the performance of the supply chain. The internal consistency coefficient of the data was also measured.

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Results of stability and validity tests for the dimensions of effective implementation of information security initiatives:

The results of the following table indicate the following:

The validity of all items at the level of the total dimensions where the internal consistency coefficients at the level of (0.01) These ranged between (0.52 to 0.91), which reflects the strength of the values of the transactions and their proximity to the correct one, the relationship between the different dimensions and the extent to which they represent the dimensions of the supply chain robustness, which greatly reflects the degree of credibility of these dimensions.

Based on 90 responses, all the constructs were tested for reliability and validity.

Table 1: The validity and reliability results of the variables (supply chain robustness) as a dependent variable using the Cronbach alpha coefficient and Pearson correlation

sentences	Internal consistency coefficient	Cronbach alpha
Our organization has proper physical controls to protect data centers and servers from unauthorized access, destruction and destruction.	0.70**	0.881
Good security practices maintain employees' safety and enable them to focus on their tasks	0.57*	
Our partners have proper physical controls to protect data centers and servers from unauthorized access, damage and destruction.	0.78**	
Good security practices for supply chain partners maintain the security of their employees and enable them to focus on their tasks.	0.86**	

** Indicates a significant level of 0.01

* Indicates a significant level of 0.5

Table 2: The validity and reliability results of the variables (supply chain performance) as a dependent variable using the Cronbach alpha coefficient and Pearson correlation

sentences	Internal consistency coefficient	Cronbach alpha
Our supply chain is able to respond to changes in market demand without overstocks or lost sales.	0.88**	0.860
Our supply chain is able to leverage the competencies of our partners to respond to market.	00.54*	
Our supply chain is able to forecast market demand.	0.60**	
Our supply chain has reduced in-bound lead-times.	0.76**	
Our supply chain ensures non-value added time reduction in the pipeline	0.75**	

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Our supply chain ensures that processes are streamlined throughout the supply chain.	0.69**	
Our supply chain system increases our order fill rate.	0.89**	
Our supply chain system increases our inventory turns	0.69**	
Our supply chain system reduces our safety stocks.	0.92**	
Our supply chain system reduces our inventory obsolesces.	0.59*	

We receive timely delivery of materials/components/products from our partners.	0.67**	
We receive speedy delivery from our partners.	0.60**	
We receive quality delivery from our partners.	0.73**	
Our supply chain system reduces warehousing costs.	0.88**	
Our supply chain system reduces our product warranty claims.	0.87**	
Our supply chain system reduces inventory-holding cost.	0.60**	
Our supply chain system reduces inbound and outbound costs.	0.61**	
Our supply chain has short order fulfilment lead times.	0.79**	
Our supply chain has short order-to-delivery cycle time.	0.77**	
Our supply chain has fast customer response time	0.80**	

** Indicates a significant level of 0.01

* Indicates a significant level of 0.5

Hypothesis:

The major hypothesis, which states that physical security have a positive impact on supply chain performance" is accepted.

Results of Hypothesis:

There was no direct positive correlation between the physical security and the performance of the supply chain, where the coefficient of correlation (0.196) with a significant level greater than (0.05).

This indicates a direct lack of direct impact between physical security and supply chain performance.

The result of this hypothesis is consistent with the results of some previous studies such as Sindhuja (2014), which concluded that security can directly affect supply chain performance, and that other factors such as supply chain operations and collaboration among supply chain partners help improve Supply chain performance.

Another logical reason for this conclusion is that physical security is only part of the solution for the effective implementation of supply chain operations, which in turn affects the performance of the supply chain.

- Proof of Hypothesis:

We reject the third major premise that "physical security has a positive impact on supply chain performance."

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CONCLUSION

By using a common identity manager, you can trust that you know the person presenting credentials across the organization. By deploying an identity validation solution that includes network admission control, you create a multi-factor authentication deployment with minimal impact on the current

work habits of your workers.

In summary, the integration of physical and logical security can provide the following tangible benefits:

• Creates operational efficiencies

• Reduces risks and improves risk management

• Provides better, more streamlined incident management when breaches occur

• Maximizes existing investments

• Reduces operation and management costs

There are many more opportunities to integrate physical and logical security than presented in this document. Once you start looking, you will very likely see administrative redundancy as well as security opportunities that can be enhanced by combining these two sets of technologies.

RECOMMENDATIONS

Based on the prior research literature and the conducted qualitative/quantitative data analysis for the current research, the findings of this thesis have different implications for the leaders of various Automotive supply chain nodes/stakeholders in Egypt:

a. Combining your logical and physical security processes and infrastructures simplifies the manageability of the security infrastructure and increases visibility to your resources, which makes it easier to detect and prevent security incidents, and provides a platform to manage the response and recovery after an incident occurs.

b. Egyptian automotive supply chain managers can take care of implementing an integrated portal that combines physical and technical security to protect information assets from unauthorized access, disclosure, data modification or destruction by setting up the correct password mechanisms and keeping copies Additional and maintain network security.

c. The supply chain needs to benefit from the different competencies of partners in orderto achieve rapid response to changes in the market.

d. The importance of supplying the automotive industry partners with high quality delivery.

e. The need to reduce the supply chain system for both incoming and outgoing costs.

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