

The misappropriation of the sugar supply chain in Egypt: causes and obstacles

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Abstract

Sugar is considered as one of the most important commodity to the Egyptian consumer, thus making the sugar industry one of the highly strategic industries in Egypt. Noticeably, the Egyptian sugar industry has recently been suffering from many complications. One main complication is the growing penetration of misappropriation of assets within the industry which is hindering the industry and subjecting it to major threats. This paper aims at identifying the main causes and obstacles of misappropriation in the supply chain of the sugar cane sugar in Egypt. The paper identifies the nature of the Egyptian sugar industry and the participants involved in the Egyptian sugar cane sugar supply chain. Semi structure interviews were conducted with parties from the business sector, governmental sector, market officials and consumers to shed light on the current situation of each participant involved, including the government, business, market, and consumers, up on which the paper clarifies the main causes and obstacles triggering misappropriation in the Egyptian sugar supply chain. Finally, the paper concludes with some concluding remarks and recommendations for possible solutions in addition to suggestions for further research.

1. Introduction

The Egyptian sugar industry is one of the oldest industries and the utmost essential as it produces a very vital strategic commodity. Its local production and self-sufficiency gives it an additional political weight. Additionally, sugar is one of the subsidized commodities provided by the government at low prices for people with limited income (El-Said and Lofgren, 2016), resulting in the eligibility of 70 million Egyptians to the subsidized sugar which represent more than 70% of the Egyptian population.

Although of its strategic importance, the Egyptian sugar industry currently faces a dramatic challenge to survive due to the misappropriation indorsed in the sugarcane sugar industry which is the primary source of sugar in Egypt. Another obstacle is the elevated destructive impact on the supply chain participants and activities involved in the sugar supply chain which hinder the way business carryout their necessary business activities. In addition, it becomes obvious to consumers that there is a deterioration which impacts the consumer's perspective towards the sugar. If the mistaken assumptions the consumers in Egypt have towards the sugarcane sugar gets resolved, this can be a tactic that would have a high positive impact on the Egyptian economy, since Egypt ranks as the fifth among the sugar consumed nations in the world in 2015(Nicol, 2015).

In respect to organizational actions playing a vital role in the consumer's buying decisions and misappropriation in the sugar industry clearly prevailing in Egypt, organizational misappropriation of assets could eventually lead customers to pull away and consider alternative buying possibilities. Bearing in mind asset misappropriation possess risks to all organizations, it encompasses the organization's ability to carry out its business efficiently and effectively (Albrecht and Kranacher,2008).

Asset misappropriation involves stealing an asset of a company for personal use at the company's expense or misuse of a company's resources. Asset misappropriation is often

accompanied by false or misleading records or documents to conceal the theft (Johnson and Rudesill, 2001; Wells, 2005; KPMG, 2006, 2007; Soltani, 2007; Lasko, 2009; Bayley and Eliff, 2009; ACFE, 2010). Thus, the definition of asset misappropriation is broader than simple theft as it also includes abuse of assets (Majid et al., 2010). Asset misappropriation which is a form of corruption is usually perpetrated by employees in relatively small and immaterial amounts. However, it can also involve management, who are usually more capable of disguising or concealing misappropriations in ways that are difficult to detect (Soltani, 2007; Elder et al., 2010; Jones, 2011). According to ACFE (2010, 2012), asset misappropriation is the most common form of fraud representing 90% of the fraud cases investigated in their study. Therefore, when asset misappropriation exists in an organization, this highly impacts the way consumers perceive such an institute.

As a result, this has put a major threat to one of the most strategic industrial sectors in Egypt, the Egyptian sugar industry, which is suffering from asset misappropriation. Appropriate control of this misappropriation will improve the welfare of the Egyptian consumer as well as the correlated stakeholders, and save the industry from deterioration. This research aims at investigating the misappropriation in the supply chain of the Egyptian sugar, through analyzing the Egyptian sugar cane industry and the consumer behavior towards it.

2. Literature Review

Asset misappropriation is a major problem for organizations throughout the world. Some research has even suggested that organizations lose as much as 7% of annual revenues to frauds such as asset misappropriation (ACFE, 2008). The misuse of assets does not only impact the organization alone but it impacts the whole market and might lead consumers to pull away or be forced to make the wrong purchasing decision.

According to a study on the Nation on Occupational Fraud and Abuse", asset misappropriation can be categorized according to different scheme types, including: skimming, cash larceny, fraudulent disbursements, and non-cash larceny and misuse of organizational assets and resources (ACFE, 2008). The type of misappropriation highly found in the Egyptian sugar industry is the misuse of assets and resources, not just by employees but by management as well. The misappropriation or the misuse of organizational assets has been an issue that many organizations and markets in Egypt suffer from. The case of Egypt was of particular interest to the current study due to the scarcity of research about misappropriation in general and the lack of research studies into asset misappropriation in particular in the Egyptian context. Dahawy et al. (2010) and Hassan and Power (2009) argued that Egypt is characterized by the secrecy culture and management tend to view information as a private asset owned by the firm, which is an act nowadays no longer accepted by the market. The Egyptian market has witnessed many organization's failures due to the misuse of their assets which made them lose their place in the market and gave the lead to foreign products to enter and dominate the Egyptian market (Kassem, 2014).

Nowadays with almost all companies being market driven and following a market orientated strategies, these organizations to rise and grow they must understand the current consumer behavior and the factors and drivers behind why consumers choose a product or service over the other. Through firms understanding the reasons that trigger consumer behaviors, this will help to find ways to shift consumers to their offerings that will satisfy their needs and wants. Since it has been found that customer retention is highly associated with customer satisfaction and customer satisfaction not only retains the customer with the company but also affects revenue, earning per share and stock price (Williams and Naumann, 2011). That is why the study of consumer behavior is very important in the marketing field as it forms the basis of marketing strategies.

Besides such understandings still many organizations fail to match their marketing strategies with the asset availability they acquire. Misusing of organizational assets or misappropriation of assets is a wrongdoing that many firms fall under and has caused many cases of self-destruction in several organizations. The strategic performance of an organization highly reflects on the way the

consumers view the organization as well as the decisions and sentiments they have towards it. Such sentiments are the ones that trigger the consumer's behaviors (Albrecht and Kranacher, 2008). Therefore, if the consumer senses that there are inaccuracies in the strategic implementation of an organization, this will cause hesitation. If the misappropriation of assets continues to occur in an organization, it could correspondingly cause consumers to cease their business transactions with organization due to the lack of reliance on such organization. Accordingly, with the subsequent variables of the influential factors, misappropriation of assets and consumer behavior being highly correlated, more investigation about the correlation between the three variables will be essential, as it was apprehended that there was a lack of previous study combining the three variables. Supportably, a conceptual framework clarifying the relationship between the influential factors misappropriation of assets and consumer behavior was derived from the conducted literature review to illustrate the impacting relationship among the three variables. Figure 1 illustrates a conceptual framework that presents the relationship between the 3 variables (influential factors, Asset misappropriation and consumer behavior). If influential factors (internal and external) are not premeditated sensibly they could impact the way the assets are appropriated. Consequently, any negative impacts from these factors if overlooked by any organization could result in misappropriation which in the long term has a negative impact on consumer behavior.



Figure 1: Conceptual framework of the impact of the internal and external factors on misappropriation and consumer behavior

The Egyptian sugar supply chain will be analyzed and premeditated from a perspective which likewise has not been covered beforehand as well in former researches causing a gap of research in vital strategic industries in Egypt, such as the sugar industry. The main research objective is to investigate the causes and obstacles triggering misappropriation of assets in the Egyptian sugar supply chain through analyzing the supply chain participants and activities affianced in the sugar industry in Egypt and the consumer behavior towards it. Mentzer et al. (2001, p.4) defined a supply chain as "a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances and/or information from a source to customer". Studying the supply chain assists in anticipating where deficiencies lie and eases the correction process to assimilate the desired purpose of the supply chain. Correspondingly, Harrison and Hock (2015) have stated that Strategic supply chain management (SCM) is said to improve the way processes are done and hence improves long-term performance. Moreover, the design of supply chains represents a distinct means by which companies innovate, differentiate, and create value (Longitudes 04,2004, p.8). Therefore, as a prerequisite to analyze any supply chain is to identify its partners and flows to aid in identifying the drawbacks and potency of the supply chain this will be reconnoitered in the descriptive phase of the research.

3. Methodology

The research draws an analytic study concerning the misappropriation in the Egyptian sugar industry from different perspectives. The research was conducted through two phases, descriptive phase and exploratory phase.

The descriptive phase of the research aimed at analyzing the sugar supply chain and its revolutions in Egypt and the Egyptian consumer behavior towards the Egyptian sugar. The research objects of the descriptive phase were shepherded through the gathering of statistical data and records and semi structure interviews with parties from the business sector, governmental sector, market officials and consumers.

Continuingly, the second research phase was the exploratory phase. The objective of the exploratory phase was to investigate the influential factors of the misappropriation of the Egyptian sugar supply chain, through conducting interview with three different segments in the supply chain; officials from the industry, officials from the government and customers. Derived from the interviews, the factors impacting misappropriation in the Egyptian sugar industry were identified.

4. Findings and Discussion

To understand the current complex situation of the sugar industry in Egypt, statistical data and records were gathered alongside conducting a semi structured interview with participants from the business sector, governmental sector, market official and consumers. The semi structured interview focused on identifying the supply chain participants involved in the Egyptian sugar industry, the current situation of the party being interviewed, identification of the main problems impacting them, challenges they are facing in overcoming their problems and finally their perspectives on potential solutions to their problems.

The Egyptian sugar supply chain has been defined and drawn based on the secondary data collected, then it was reviewed and verified by the interviewees. The supply chain of the sugar cane sugar in Egypt starts with the farmers from upper Egypt, then the sugar manufacturers. The Sugar and Integrated Industries Company (SIIC), which is one of 34 sister companies of the state-owned Food Industries Holding Company (FIHC) under the ministry of supply and internal trade, is considered the market leader in the industry of sugar production. It encompasses 70% of the production while three smaller supplementary companies produce the remaining 30%. After production, the sugarcane sugar is transferred to the wholesaler, most popularly Al Amma company for wholesale which is one of the Egyptian General Organization for food commodities companies covering twelve regions and Al-Masria for wholesale which covers thirteen regions and over 30,000 groceries. Further, downstream in the sugar supply chain; the sugar is then distributed to consumer complex retailers and other public groceries for the purpose of reaching the 70 million Egyptian consumers who are eligible to purchase the subsidized sugar, in addition to free market sales for the public. Figure 2 illustrates different phases in the sugar cane sugar supply chain in Egypt



Figure 2: Sugar cane sugar supply chain in Egypt

The second research phase investigated the influential factors of the misappropriation of the Egyptian sugar supply chain. The interviewees revealed that poor distribution of sugar within the supply chain of the Sugar cane sugar (SCS) is considered as the main obstacle facing this industry. A business official stated “the government does not apply the proper mechanisms for distributing sugar”. He clarified that the government does not have enough distribution centers to sell to consumers, which has created an informal market. On the other hand, the market official has

expressed that when the sugar crises started, one of the major down falls arouse in the sugar supply chain was the misappropriation of the sugar, he then clarified that certain participants in the supply chain were embezzling sugar and this is when the informal markets began to arise.

Alongside, all parties have also agreed that when it comes to their current situation, it has been a rough period upon them. Primarily the business sector clarified their struggle to survive with a commodity that is exposed in the market with multiple prices (subsidized and regular) and its consequences on the consumer's behavior. Additionally, complaints of government interference were repeatedly mentioned by the business representatives. Moreover, businesses have been struggling from bureaucracy in the sugar industry which hinders the efficiency of their business. Multiple business officials have professed their frustration towards the government for deliberately prolonging the processing of necessary paperwork required to continue their business transactions, causing them delays and forfeitures. In addition, there were also several vindications imposing the lack of capacity buildings limiting the government as well as lack of qualifications. Additionally, derived from the interviewees were proposals that such vindications could be admitted through upgrading the skills of the involved individuals to increase efficiency. Alternatively, another interviewee also propositioned outsourcing as a potential solution to overcome some of the deficiencies in the Egyptian sugar supply chain.

On the contrary, governmental officials have noted that aside from the subsidies system, there is a main issue with the farmers increasing the prices of the sugar cane and that there is lack of utilization of land thus resulting in scarce supply of sugar and claim that this is the main problem that caused the sugar crises in Egypt. On the other hand, Market officials insisted that the problem isn't the scarcity of sugar supply; it is in the weak distribution system. Sugar market officials have also supported and backed up all the remarks of the business sector representatives and ensured that the main problems in the sugar industry is the constant intervention of the government, lack of qualifications resulting in a poor distribution system and inadequacy in capacity buildings.

As for the consumers, after conducting several interviews with consumers withholding different demographic variables, the majority of consumers have mutually complained that since the end of September, 2016 due to what they were convinced to believe to be a remarkable shortage in sugar, they have complained that as a result of the crises it was nearly impossible to find sugar in the market. With the high demand and low supply, it resulted in the pushing of the commodity's price upwards, creating an informal market, and consequently, increasing the suffering of Egyptians. This has caused great distress and frustration upon the Egyptian consumer.

For such a strategic industry like the sugar industry which withholds great importance, relinquishing was not an option. Therefore, each participant involved in the sugar industry while suffering, were still persistent to proceed with the necessary measures to continue their affairs. The challenges the involved participants are facing in overcoming their problems mainly revolve around serious governmental actions. Participants have proposed that if the government commences outsourcing, this will ensure efficiency and effectiveness in the Egyptian sugar supply chain. Also, suggested training programs were recommended to enhance the productivity, effectiveness and qualifications of the individuals involved in the sugar supply chain.

5. Conclusion and Further Research:

The research paper aimed at identifying the main causes and obstacles causing misappropriation in the Egyptian sugar industry and its impact on the consumer's behavior. The research was conducted through the drawing of an analytic study concerning the misappropriation in the Egyptian sugar supply chain from different perspectives, to identify the participants in the sugar supply chain and the eminency of conducting their required roles, and the main problems and obstacles in the Egyptian sugar supply chain.

The identification of the main problems and obstacles were defined and drawn based on the secondary data collected, then it was reviewed and verified by the interviewees and statistical data

gathered. The supply chain of the Egyptian sugar industry was derived and evaluated. Subsequently, it was concluded that the main problems in the sugar industry in Egypt, which is an industry that is mainly encrusted by the government, start with the farmers and their intellectual inability to properly utilize their land. In Egypt, farming is mostly an inherited job. The job is customarily inherited with its know-how, this results in very outdated methods of farming, cultivation and extraction, which as a result cause inefficiency in the Egyptian sugar supply chain. Another setback identified in the research is the weak distribution system of sugar, which resulted in the lack of coverage of the Egyptian market causing the emergence of an informal sugar market reflecting great distress on the Egyptian consumer triggering them to buy more than needed supply and to accumulate the sugar to avoid the high prices of the informal market. In addition, further problems were highlighted by business and market officials declaring governmental interference in the sugar industry arises complications such as prolonging of redundant, repetitive paperwork. Also, business officials emphasized their struggle to compete in a market with a commodity, such as sugar which is available in the market with multiple prices. Resulting in consumers grasping what is convenient for them at the time, focusing mainly on the price rather than quality making it difficult for businesses to survive in a multiple price market.

In accordance to the main problems and obstacles derived in the research, possible solutions were correspondingly proposed by the participants interviewed. Parties have agreed that the major deficiencies in the Egyptian sugar supply chain can be overcome by outsourcing of experts and specialists to ensure efficiency. Alternatively, the government could instead initiate a capacity building for the current individual already involved if their supervision is essential. As specialization ensures the closest thing to perfection, it was recommended that the government delegates the production and distribution functions to experts that would ensure the best solutions for such essential activities. In addition, to overcome the deficiencies of farming, it was recommended that there should be an initiative to start a program to orient the Egyptian farmers of how to properly utilize their land.

As directions for further research, the review revealed that many previous researchers have proposed different factors influencing misappropriation in other industries, but there has been a lack of essential study in the solicitation of investigational studies in Egypt. There has been a lack of research in this topic generally and specifically in Egypt. Additionally, no applied research was formerly conducted within the Egyptian sugar industry. Moreover, studies established formerly were conducted through the use of different influential factors or within different industries. Additionally, there has also been a lack in previous research to combine the three aspects of the influential factors, misappropriation of assets, and consumer behavior in one framework, to derive the degree of association among the three aspects. Moreover, even though previous studies have declared the consequences of misappropriation of assets within organizations, there was a lack of research on how to define the most influential factors that essentially lead to misappropriation of assets.

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