

**The impact of managerial characteristics on business strategies under the environmental change: an investigation of the Israeli diamond industry**

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# **The impact of managerial characteristics on business strategies under the environmental change: An investigation of the Israeli diamond industry**

## **Abstract**

The changing business environment has required firms to adopt new strategies to facilitate efficient organizational adaptation. Previous upper echelons studies suggested that the demographic characteristics of top managers influence their choice of strategies, and ultimately the firms' performance. These studies tended to examine firms in a homogenous way. The characteristics of family-owned firms, together with the unique external environment within which they operate, have been largely ignored. This study aims to fill this gap and examine the relationships between the top managers' characteristics and their choice of exchange strategy within the diamond industry in light of the environmental changes. This paper illustrates the evolutionary stages of the diamond industry and how players adjust their strategies in-line with the environment. We interviewed 100 diamond firm managers to gather the empirical data. The results have shown that certain managerial characteristics, such as family background and marketing experience, have positively influenced the choice of using the arm's-length market exchange strategies. Our findings have also reflected that the relationship between managers' characteristics and strategic choice is social and normative. Many managers follow the family or community traditions and imitate other key industry players in order to achieve legitimacy from the stakeholders and improve competitiveness.

**Key words:** Diamond industry, Strategic management, Upper echelons, SME, Family-owned firms, Environmental evolution.

## **Introduction**

Many organizational theorists suggest that firms can be understood as strategic mechanisms, which utilize various processes and systems to adapt to environmental change in order to achieve their objectives (Fiol & Lyles, 1985). Adhering to the past strategies in the face of changing market environments inevitably erodes strategic fit, competitive advantage and eventually the firms' performance. An area of growing significance in strategic management research is the top managers' characteristics and their impact on strategic decisions and firms' performance (Goll et al., 2007; Handika & Wibowo, 2018; Nielsen, 2010; Nielsen & Nielsen, 2013; Shen & Cho, 2005), especially in small firms (Blackburn et al., 2013; Dendup et al., 2018; Islam et al., 2011). Firms act in the way they do because of the strategic choices the senior managers make on their behalf (Hambrick & Mason, 1984).

Previous upper echelons research have theorized that top management team's (TMT) characteristics have significant influence over the strategies of which a firm adopts (Goll et al., 2007; Hambrick & Mason, 1984; Handika & Wibowo, 2018; Nielsen & Nielsen, 2013). This is especially true in family businesses within which the senior managers are often the owners (Blackburn et al., 2013 ; Dendup et al., 2018; Escriba-Esteve et al., 2009; Islam et al., 2011; Roxas & Coetzer, 2012). "Organizational outcomes - both strategies and effectiveness - are viewed as reflections of the values and cognitive bases of powerful managers in the organization" (Hambrick & Mason, 1984:193). These powerful actors are the senior managers who "align the opportunities and threats in the external environment with an organization's internal strengths and weaknesses" (Goll et al., 2007:202).

Understanding how managerial characteristics influence organizational outcomes is an important area for strategic management research, which has attracted significant research effort. Nielsen (2010) concluded that the influence of the diversity of the TMT on organizational outcomes are not altogether consistent or conclusive. Qian et al. (2013) observed that whilst prior upper echelons research recognised the importance of the environment, only a few of these studies empirically examined how the environment has influenced the firms. These studies were "deemed incomplete without considering the environmental context" (Qian et al., 2013:110). Handika and Wibowo's (2018) recent upper echelons study illustrated the importance of considering the moderating effect of the environment in understanding the effects of TMT's diversity on an organization's outcomes. Our study aims to bridge a part of

this gap in the existing literature by examining the impact of management demographics on strategic choice in light of environmental change using the diamond industry as a case study.

The diamond industry provides a unique setting for research into the relationship between TMT's demographics and strategic choice, as firms have had to cope with complex changes in their business environment, in terms of players, processes, resources and industry structure, over the past few decades (Gupta et al., 2010). The upstream part (rough diamonds) of the industry supply chain historically was controlled by a powerful cartel network called De Beers (Li et al., 2009; Spar 2006; The Economist, 2004, 2017). The downstream side of the supply chain (polished diamonds) was mainly made up of smaller family-owned firms (FOFs) which specialized in different processes; such as diamond cutting, trading, and jewelry manufacturing (Rao & Bhatnagar, 2009). The secretive cartel operations and little overtly available information from the upper echelons studies within the diamond industry have presented opportunities that this research aims to capture.

This study is based upon interviews with 100 senior managers from family-owned polished diamond firms based in Israel, a leading global diamond hub with a long history of trade through Orthodox Jews. The paper is structured as follows: introduction to the diamond industry, which is followed by an in-depth literature review. Then, an overview of the evolution of the diamond industry is presented. It is followed by a discussion of the hypotheses and methodology. Lastly, empirical analysis, discussion, conclusions, and findings are presented.

### **Theoretical conceptualization of this research**

Managers need to make cycles of choices navigating their firms through a changing and competitive landscape, such as product and service variety, regulations, pricing, and the entry and exit of players. Hambrick and Mason (1984:194) defined these choices as strategic as they are "complex and of major significance to the organisation". Various forms of rules and regulations in the industry, be it internal (culture and industrial coercion) or external (law and regulations), endorse stability through the establishment of industry standards and practices. They in turn affect managers' strategic options (Kim & Prescott, 2005). Deregulation, globalization, digitalization, and other internal and external environmental changes have helped to remove boundaries and obstacles of trade and provide both managers and consumers

with a wider and quicker access to information and goods. Whilst the changes have brought more choices to the TMT, they have also brought challenges and instability, as many of the established industry practices need to be adjusted in order to achieve the renewed strategic fit (Rajagopalan & Finkelstein, 1992).

The diamond industry provides a unique setting for upper echelons research as it has gone through major deregulation and institutional changes in recent decades. It has transformed from an industry within which there was restricted choice for managerial discretion due to the tight control and industry coercion imposed by the cartel networks, to the one where managerial choice has become more widely available and acceptable. The industry structure; such as the variety of players, processes, resources, law and regulations; has undergone major stages of change (Li et al., 2009; Gupta et al., 2010; Rarick & Angriawan, 2017). These changes will be further discussed in the later parts of this paper.

Hambrick and Mason (1984) claimed that the values and cognitive capacity of the TMT influence organizational outcomes, such as strategic choices and performance levels. Demographic characteristics; such as age, gender, education, experience and social networks; influence managers' decisions and thus affect firms' receptivity to change, diversity in information sources and outlooks, willingness to take risk, business strategy, innovativeness in decision-making, and/or general creativity (Cavusgil & Kirpalani 1993; Cavusgil & Zou 1994; Escriba-Esteve et al., 2009; Handika & Wibowo, 2018; Leonidou et al., 1998; Qian et al., 2013).

Dendup et al.'s (2018) research found that TMT's motivation and competencies have a positive impact on the success of small and medium enterprises (SMEs) in Bhutan. Whereas, Islam et al.'s (2010) study revealed that gender of the managers and duration of the firm's operations have had a significant influence over the success of SMEs in Bangladesh. On the other hand, the TMT's characteristics; such as age, managerial expertise, education, industry knowledge and social skills; were found to be insignificant to SMEs' performance. Fernandez-Ortiz and Lombardo's (2009) study of Spanish SMEs identified that age, international experience and education of the TMT have significant impact on strategic decisions, and hence the firms' performance. The influence of management characteristics on organizational outcomes has drawn significant attention from the academia and the topic has been widely studied by numerous researchers (Nielsen, 2010). The findings of prior studies form the theoretical foundation of this paper, which assume that there

is an inconclusive relationship between managerial characteristics and strategic choice.

The nature of market exchange used by the firms is a key strategic choice which is believed to be significantly influenced by the managers who formulate and implement these strategies (Granovetter, 1985; Sako, 1992; Uzzi, 1997). Within the global diamond industry, in broad terms, two market exchange strategies exist: social network-based and arm's-length market-based exchange. The latter exchange approach is gaining traction over the former along with the evolution of the diamond industry over the recent years (Berger et al., 2016; Gupta et al., 2010; Li et al., 2009).

The social network exchange strategy, as suggested by Grief (1994) and Uzzi (1997), is embedded within and implemented through social networks and personal ties, rather than explicit contracts. While some traditional organizational theorists (such as Williamson, 1981) see these informal relations as random noise, others consider social relationships as crucial factors in the understanding of social settings in where exchange is undertaken (Abrahamson, 1996; Katz & Shapiro, 1992; Berger & Herstein, 2012). Under this view, what is exchanged in the market between various parties is more than just the products, but also the relationships (Grief, 1994). Exchange which is conducted through social networks helps the exchange parties establish expectations of the others' behavior, which in turn reduces the degree of ambiguity and risk in the exchange (Choi et al., 2010).

The network ties and the increased level of certainty are especially important to the exchange of goods which are difficult to price, especially in an environment where contract enforcement is difficult to regulate (Arthur, 1996; Nahapiet & Ghoshal, 1998). Weak legal systems create loopholes, which attract dishonest behavior (Berger & Herstein, 2012). These factors explain why the social network-based exchange strategy has been widely used for decades in the diamond industry. rough diamonds are mined and most of the labour intensive diamond processing work is carried out in developing countries in where the legal systems are often under-developed.

Sako (1992) and Uzzi (1997) have discussed in detail the market exchange mechanisms and the arm's-length exchange strategies. Through the market-based approach, actors regularly change exchange partners in order to take advantage of new opportunities and/or reduce the dependency on one specific partner. Interdependency can reduce partners' freedom of choice, hence the ability to implement their own

strategy and react to the environmental change (Ford & Hakansson, 2013). Firms adopting an arm's-length exchange strategy have a wider pool of potential exchange partners. The wider market coverage enables these firms to obtain novel information and react better to the environmental change, which in turn increases their likelihood of success. Under this view, social relations are considered as unimportant to market-based exchange (Granovetter, 1985). Hirshman (1970) argued that the cost of exchange is lower under the market-based approach because of the increase in competition and the reduction of uneconomical relationships. This exchange approach works well within an environment which has strong legal infrastructure, relatively free competition, and readily available market information.

The above discussion has reflected the importance of finding a fit between a firm's strategy and its environment. Hambrick and Mason's (1984:194) seminal work, which has inspired many later studies to adopt the upper echelons theory, took the view that "top executives matter" and their demographics characterize the internal environment of the organization. There is now a pledge from many upper echelons theorists that "to get a better explanation about firms' performance there is a need to use a more comprehensive view by considering the internal and external factor simultaneously" (Handika & Wibowo, 2018:1). Li et al. (2009) argued that the internal environmental factors alone cannot fully explain management's choice of market exchange arrangements. Indeed, the external governance environment within a country; such as the political, economic, social and technological institutions, which facilitate or constrain the choice of governance mechanisms; influences the way in which firms conduct market exchange. According to Goll et al. (2007), the relationship between managers' demographics and organizational outcomes is context dependent. Handika and Wibowo's (2018) research into the Indonesian Banking Industry revealed that top managers often imitate what other players do and follow the industry norms in order to obtain legitimacy from the key stakeholders, the so-called "strategic isomorphism".

Blackburn et al. (2013) suggested that the institutional environment influences the TMT's attitudes and perceptions, thus affect their decisions, and ultimately the SMEs' performance and growth. According to Roxas and Coetzer (2012: 462), "a firm's environment is governed by institutions manifested by a wide-range of social structures, including schemas, rules, norms and routines". Managers make decisions which

conform to the regulatory, normative and/or cognitive aspects of the institutional environment in order to earn legitimacy from the key stakeholders.

Qian et al. (2013) criticised that some previous upper echelons studies considered the impact of the external environment only from a theoretical, not empirical, perspective. Whereas, Goll et al. (2007) argued that the inconsistent findings from previous strategic behaviour research could be caused by their failure in considering the role of the environment. This study aims to bridge the gap in the literature by considering both the internal and external environment and examining the impact of the TMTs' characteristics on their strategic decision-making theoretically and empirically. The following section provides an account of the key players, events and development that have shaped the global diamond industry over time. This account explains the environmental context within which this research lies.

### **The evolution of the global diamond industry**

The following illustration explains the evolution of the global diamond industry through three key stages.

#### *Stage I: Pre 1980s – supply cartel and networked dealers*

Diamonds were found in Brazil in the early eighteenth century. For the following 130 odd years, Brazil was the world's leading diamond supplier (Berger et al., 2016). In 1866, diamonds were discovered in South Africa, where De Beers mines started to operate and grow at a fast pace (The Economist, 2017). Since then, "De Beers runs most of the diamond mines in South Africa, Namibia and Botswana which produced the bulk of world supply of the best gemstones" (The Economist, 2004:60). Although there were diamond mines established outside the De Beers' network, such as the Cullinan Mine which found the largest ever rough diamond (The Telegraph, 11/02/2011), by the end of the First World War, most of the diamond mines had aligned with De Beers (including the Cullinan Mine). The coalition enabled De Beers to run a single-channel cartel and dominate the world's rough diamond industry for a long time until the early 1980's (Pallister et al., 1988; The Economist, 2004 & 2017; Rarick & Angriawan, 2017).

Cecil Rhodes was the founder of the De Beers group. Following the Rhodes dynasty, the Oppenheimer family took control of De Beers from the end of 1920s, and their reign lasted for three generations (The Economist, 2004 & 2017; Rarick &



Angriawan, 2017; Spar 2006). In 2011, the Oppenheimer family sold off 45% of their De Beers shares to Anglo American PLC (another 45% to a private holding company owned by the Oppenheims).

Historically, the difficulty of pricing diamonds and policing opportunistic behavior were few of the reasons explaining why family networks dominated the industry through a cartel's mechanisms (Schnitzer, 1988; Berger & Herstein, 2012). The mining, processing, marketing and sales of diamonds spread out globally and the dispersion made the enforcement of contracts and maintenance of high security very challenging, if not impossible. Thus, the industry was run by cartel networks based on family ties and relationships embedded in a shroud of trust and cultural coercion (Spar, 1994). Most exchange was carried out through intercessors who endorsed the exchange partners and this mechanism reduced the enforcement and product assessment costs (Berger et al., 2016; Grief, 1994). These might be the key reasons explaining why most diamond firms opted out the legal systems (Bernstein, 1992).

Within the single-marketing channel cartel, De Beers' stockpile of rough diamonds was sold to a select syndicate of buyers called "sight holders". In 1893, there were only ten Jewish firms which had the privilege to be in this syndicate (Pallister et al., 1988; Schnitzer, 1988). These selected few were granted sight holder status, the ability to bulk purchase rough diamonds from the De Beers network for cutting, polishing and/or resale purposes. Inter-marriage and family ties connected these sight-holders and strengthened the power of the cartel which dominated the global supply and demand of rough diamonds (Berger et al., 2016).

Downstream of the diamond supply chain; which included rough and polished diamond trading, polishing of rough diamonds and jewelry manufacturing; was dominated by SMEs and family-owned businesses. This part of the industry chain was characterized with more competition between a bigger number of players. Antwerp, Bombay, New York and Tel Aviv were the four big trading, cutting, and polishing centers, within which Jewish firms dominated the diamond trade from the end of the nineteenth century (Berger et al., 2016). Diamond cutting was a fashionable business controlled by small family-owned firms (FOFs) who worked on small margins. It was a natural trade for the Jews who were scattered across central Europe, since many Jews were moneylenders. The cutting and polishing of diamonds were the few crafts in which Jews were permitted to take part according to the medieval guilds in Europe (Schnitzer, 1988; Berger et al., 2016). Whenever a Jew wanted to have an

occupation, the choice would normally be either gem polishing or money lending; both professions dealt with diamonds. Money lenders needed to know how to assess, repair and sell diamond jewelry, as jewelry was often used as the collateral for loans.

In addition to the upstream end, the downstream side of the diamond supply chain was, to a large extent, indirectly influenced by the De Beers group through their marketing arm called the Central Selling Organisation (CSO). CSO was at a later stage transformed into a new organization called the Diamond Trading Company (Spar, 2006). The CSO acted as the major marketing channel for rough (unpolished) and near gem quality diamonds for the global diamond industry. This set up effectively enabled De Beers controlled both the supply and demand of rough diamonds, "by owning mines and by buying diamonds from others" (The Economist, 2017:57). This single-channel approach "regulated" the flow of diamonds and enabled De Beers to project an "illusion of scarcity" into the mind of the consumers (Spar, 2006:201). Scarcity and the sentiment with which diamonds are associated, helped support the high value of diamonds in the eyes of the consumers. From De Beers' perspective, the coalition was there to ensure the interests of all players in the supply chain (Berger et al., 2018). The power of the cartel enabled De Beers to control, directly and indirectly, 80% of the rough diamonds sold in the international markets (Gupta et al., 2010). The De Beers cartel was "curious and anomalous - no other such market exists, nor would anything similar be tolerated in a serious industry" (The Economist, 2004:60).

Along with the development of international trade routes, the first diamond trading organization in Israel, the Israel Diamond Club (IDC), was founded in 1937 (Israel Diamond Exchange Ltd, 2018). Since then, the IDC and other diamond associations went through waves of merger and reform (Spar, 2006). In 1968, the first trading building of the Israel Diamond Exchange (IDE) was inaugurated. The IDE brought together Israeli firms engaging in different aspects of the diamond business and provided all the facilities and security needed for diamond trading under one roof. Nowadays, the IDE has expanded into four large interconnected buildings which are equipped with advanced technology and security. The whole diamond exchange complex is described as an "impenetrable fortress" (Israeli Diamond Industry, 2018). The IDE has been a hub for international diamond trade, and it remains to be one of the world's biggest diamond centres.

## *Stage II: 1980s – 2000s – rationalization and categorization*

The price of polished diamonds and jewelry were determined by the craftsmanship of the diamantaires whom each firm employed. The particular empathy between the seller and buyer affected the selling price. Up to the start of this time period, the market exchange strategy that most of diamond firms adopted was socially based. Nevertheless, two key events, the publication of the Rapaport Price List (RPL) in 1978 (The Rapaport Group, 2018) and the formation of the Gemological Institute of America (GIA) who certified polished diamonds, triggered a major industry reform. From this point forward, the price of polished diamonds was measured on a four-point scale called the “4Cs” – Carat (weight), Clarity, Color and Cut (American Gem Society, 2018). These two major changes brought transparency and standardization to the industry; the GIA certification verified the quality of the 4Cs of individual diamonds, based on which the RPL projected the indicative market price. Price negotiations were then based on the discount indicated on the RPL.

The introduction of the RPL and the GIA created new opportunities and threats to the diamond industry. For instance, the pricing of diamonds was no longer exclusively decided behind closed doors. In addition, the way to assess the value of polished diamonds was clarified and simplified. Technology was advancing and machinery was used to help identify the 4Cs of diamonds. The standardized pricing approach using the RPL and GIA certification have made the needs of industry specific knowledge, which was once believed to be the prerequisite to enter the diamond industry, less critical. This created a situation which allowed traders, who might not have abundant industry knowledge and family connections, to join the industry. The liberalization of the diamond industry and the advancement of technology led to the start of diamond trading through the internet.

The rising social and political concerns over unethically sourced diamonds from conflict areas questioned De Beers' near monopoly position as a trader of rough diamonds and their direct and indirect role in these conflicts (The Economist, 2004 & 2017; Rarick & Angriawan, 2017). With the emergence of new supplies of rough diamonds from geographically diverse locations, such as Russia, Canada and Australia, have provided the world markets with more choices beyond the De Beers' network. De Beers' control over the world diamond supply has been significantly reduced over time, which was estimated to be around one-third in recent years (Rarick & Angriawan, 2017). Under significant public relations pressures, De Beers had to

adjust its role from being the "guardian" to a "major" player in the diamond industry (Berger et al., 2016). Through the ethical battle, De Beers finally decided to release their tight control over the supply of rough diamonds.

Another change, which posed a severe threat to the dominance of the De Beers cartel, was the rise of Lev Leviev. The Israeli businessperson extended his operations from transport and property into diamond cutting, polishing and mining. Leviev empire has established diamond factories in Armenia, Ukraine, India, Israel and elsewhere, and cultivated close ties with important politicians worldwide (The Economist, 2004). The growth of Leviev's empire has become significant enough to challenge the De Beers way of doing business in the global diamond industry.

The above changes have resulted that players in the diamond industry started to accept and adopt a more open approach based upon market-driven strategies. The relationship between participants in the diamond industry has slowly started to shift from social network- towards the free market-based. These changes fundamentally transformed the upstream part of the diamond supply chain and broke up one of the oldest cartels in the world. Facing these threats, De Beers diverted their strategic focus from upstream towards the downstream side of the diamond supply chain. "It began to sell off its diamond stockpile and promote its image as a quality provider of diamonds" (Rarick & Angriawan, 2017:94).

### *Stage III: 2000s – Present – digitalization of the industry*

The change within the global polished diamond industry has been hastened by the technological advancement and globalization (Berger et al., 2016). E-commerce has allowed buyers and sellers to advertise globally and bypass the prevalent socially based exchange networks. In addition, technological advancement has brought cheaper and higher quality synthetic diamonds to the market for the first time.

Furthermore, there was a chain of world events (external to the diamond industry) which had significant influence over the industry. The end of apartheid in South Africa, the opening-up of China, Russia and other African countries to the world, the new global law and regulations against money laundering and terrorism, and the introduction of the Kimberley Process Certification Scheme (KPCS), all caused tremors to the entire global diamond supply chain (Berger et al., 2016; Gupta et al., 2010; Spar 2006). In the late 1990s, the US government began exploring ways of restricting the diamond trade as a part of the anti-money laundering act. This type

of changes significantly affected the global diamond trade as America has been the world largest polished diamond sales market in the world (The Economist, 2004, 2017).

The KPCS was launched in early 2000s aiming to eradicate the problems associated with diamonds sourced from conflict areas. The Kimberley Process defines conflict diamonds as "rough diamonds used to finance wars against governments" around the world" (Kimberley Process, 2018). The KPCS tracks diamonds' life journey, from the extraction stage to the final sale to the end user using specific barcodes for each diamond. The governments who have signed up to the KPCS agreement are required to issue certificates proving the rough diamonds they export are conflict free. These key events and development have changed the industry and drawn social and consumer attention to matters behind the sparkly surface of diamonds. The public relations pressures have driven the players to bring their strategies and code of conduct in line with the socially and/or legally accepted standards common in many other industries.

Along with these shifts, the importance of relationship and family ties in the diamond industry has been gradually reducing, but not eliminated altogether. De Beers has remained as a dominant player in the diamond industry and the company is still under the significant control of the Oppenheimer family. The influence of the FOFs has just been exerted into the diamond industry in a different way (Spar, 2006). The changing business environment requires firms, especially SMEs, to increase their strategic adaptiveness and competitive fit (Chirico & Salvato, 2008). The continued success of the Oppenheimers and other players have illustrated the resilience and adaptiveness of family businesses. The diamond industry has been re-shaped over time by different players, processes and events which were discussed above. The unique institutional environment provides the context to help develop the theoretical framework and the empirical analysis of this research.

### **Building the hypotheses**

Informed by previous studies, this paper has hypothesised a relationship between managers' characteristics and strategic choice. This section illustrates the process of, and the rationale behind, the formation of seven hypotheses for this research. The first five hypotheses are related to the top managers' demographical characteristics; such as tenure and age. Hypotheses 6 and 7 are concerned with the

managers' experience in, and exposure from, taking part in marketing activities (i.e. past experiences). Figure 1 exhibits the theoretical model, which is followed by the explanations and justification of the theoretical model undertaken in this paper.

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***Insert Figure 1 here***

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## **Tenure**

The first hypothesis is based upon the assumptions that the longer a manager works for the same diamond firm, the more s/he has been exposed to specific social network-based exchange (i.e. less experience in other types of strategies). Michel and Hambrick (1992) proposed that TMTs with a longer tenure tend to be more socially connected; hence, they are less likely to challenge the current state of affairs. When faced with environmental change, the long tenure is likely to restrict the TMTs' initiatives and ability for change (Hambrick & Mason, 1984; Wiersema & Bantel, 1992). In summary, TMTs with a longer tenure tend to lean towards strategic perseverance in order to maintain the status quo and stability and are less capable of accepting or adjusting to change (Finkelstein & Hambrick, 1990; Goll et al., 2007; Hambrick & Mason, 1984). Based on above, we hypothesize the following:

***Hypothesis 1: The tenure of the manager at the diamond firm is negatively associated with his/her use of the arm's-length type of exchange strategies.***

## **Industry experience**

It is suggested that the experience that TMTs accumulate from working in other firms or industries influences their choice of strategic flexibility, especially under environmental change and uncertainty (Finkelstein & Hambrick, 1990; Hambrick & Mason, 1984). Managers who have advanced their career solely in one industry are likely to have comparatively confined experience, skills and/or outlook when faced with environmental threats (Herrmann & Datta, 2006). TMTs who have been with the same company and/or industry for a long time may become "stale in the saddle" resisting strategic change (Goll et al., 2007:207). Therefore, we propose the following:

***Hypothesis 2:** The industry experience of a manager in the diamond industry is negatively associated with the use of the arm's-length type of exchange strategies.*

### **Diamond-family background**

A key characteristic of the global diamond industry is that it is built on family networks and dominated by homogeneous type of players (Berger et al., 2016; Bernstein, 1992; Rao & Bhatnagar, 2009; Spar, 1994). Historically, diamond dealing was a trade passed down from father to son through the generations (Berger & Herstein, 2012; Rao & Bhatnagar, 2009). As a result, there was a strong foundation of trust in exchange which was conducted through family networks. Spar (1994) argued that trust in the industry is based not only on reputation and past experience, but family ties. Exchange through socially embedded networks provides participants with a strong sense of ethnic identity and mutual dependence and this sense of security helps lower the risk in diamond trading. Consequently, we hypothesize that a manager who originates from a diamond family, especially the one with a long history in the industry, would place a strong emphasis on socially embedded mechanisms of exchange and family networks and would be more resistant to change.

***Hypothesis 3:** the manager's family trade history in the diamond industry is negatively associated with his/her use of the arm's-length type of exchange strategies.*

### **Education**

The upper echelons theory suggests that the level of education, to some extent, reflects upon the manager's values and cognitive ability, which in turn affects the strategic decision making ability (Hambrick & Mason, 1984). TMTs with a high level of formal education are more likely to take high quality choices. This means that they have the mental capacity and the tools to better analyze and process information and manage ill-structured circumstances than the less educated managers (Papadakis & Barwise, 2002; Usdiken, 1992). Prior studies found a positive relationship between education and openness to change (Goll et al., 2007; Hambrick & Mason, 1984; Kimberly & Evanisko, 1981). Educated managers tend to reflect more openly upon the external environment and are better able to deal with intricacy (Dollinger, 1984). Wiersema and Bantel (1992) found a positive relationship between the level of

education and managers' receptiveness to strategic adjustment. Accordingly, we have hypothesized the following:

***Hypothesis 4:** The level of formal education a diamond firm manager has received is positively associated with his/her use of the arm's-length type of exchange strategies.*

### **Age**

Ganitsky (1989) suggested that younger managers are more open-minded to industry changes, as they are not locked into the established industry norms and assumptions of acceptable business practices. They tend to have less commitment to maintain the status quo. As a result, they are willing to attempt "the novel, the unprecedented" approach to business (Hambrick & Mason, 1984:198). The age of managers has been found to be positively correlated with superior dogmatism and risk averseness (Child, 1974; Vroom & Pahl, 1991), but negatively with the ability to learn new behaviours (Hambrick et al., 1993; Weinzimmer, 2000) and foreign languages to facilitate international diversification (Fernandez-Ortiz & Lombardo, 2009). This type of human tendency of the top managers can confine the firms' ability in responding to the evolving environmental demands. Therefore, we establish the following hypothesis:

***Hypothesis 5:** The age of the manager is negatively associated with his/her use of the arm's-length type of exchange strategies.*

### **Marketing experience characteristic I – visiting diamond trade exhibitions**

The general purpose of visiting trade exhibitions is to enable managers to get access to updated market information and a wider pool of potential customers, suppliers and alliances. "Showing one's face" in high profile exhibitions can help managers signal to the market the relevance of their businesses. We assume that diamond managers who visit exhibitions are more likely to use the RPL, an international common pricing reference point, to communicate with the wider market as it enables an indicative price of polished diamonds to be set according to the quality of its 4Cs (i.e. carat, clarity, cut, color). Under the current market conditions, the role of social relationships and family ties, which were once vital to successful



market exchange in the diamond industry, has become less critical (Berger et al., 2016). Therefore, we form the following hypothesis:

***Hypothesis 6:** The manager's experience from attending diamond trade exhibitions is positively associated with his/her use of the arm's-length type of exchange strategies.*

### **Marketing experience characteristic II – advertising the firm and its products**

The secretive way in which the diamond industry operated in the past meant that it was uncommon for a diamond firm to advertise itself or its products to the public through mass marketing channels. Information about polished diamonds that a firm had for sale was disseminated through direct inquiries, brokers and family networks (Berger et al., 2016). Along with the technological advancement and industry development, firms have started to advertise their demand and supply needs globally through various platforms; such as the Internet, trade magazines and trade exhibitions. "Pricing and advertising, as the most important factors affecting consumer demands, are effective marketing tools to improve firm's revenue" (Lu et al., 2016:5250). The ability of the TMTs to change and embrace the modern days' marketing and sales technology and channels is critical to the competitiveness of their business. When the diamond managers use advertising and mass media, it has reflected their preference of the market-oriented approach. These managers are likely to adopt the RPL, the industry recommended pricing benchmark, in order to build customers' confidence through demonstrating pricing comparability and transparency. Therefore, we have hypothesized the following:

***Hypothesis 7:** The manager's adoption of advertising is positively associated with his/her use of the arm's-length type of exchange strategies.*

The above justification explains how the seven hypotheses of this research have been developed to examine the relationship between top managers' characteristics and strategic choice within the diamond industry. The following section explains the Methodology adopted in this study.

## Methodology

Empirical information for this research was collected through extensive primary research with Israeli diamond managers, access to whom was normally very difficult to obtain. Before requesting the interviews with the diamond managers and carrying out a very significant research exercise in the diamond industry, the researchers had first operated from the office of the Israeli Ministry of Industry and Trade (IMIT) in order to build presence and credibility. The information gathering exercise involved reviewing the general literature about the diamond industry (e.g. books, magazines, journals, and industry publications) and talking to academics, practitioners and officials in various government institutions (e.g. The Diamond Manufacturing Association, the IMIT, and the Israeli Diamond Institute). Wherever possible, the empirical information gathered from the diamond managers was triangulated with other information sources in order to improve the quality of the data (Bonama, 1985).

The IMIT provided the researchers with a list of 190 official Israeli diamond exporters (export sales of US\$4 million and above). Interviews were conducted with managers from 100 of these official diamond exporters (53%), whose collective export value represented 56% of the total official Israeli polished diamond exports (see Table 1). Hence, these samples were considered as representative of the Israeli diamond industry. The interviews were semi-structured, using a common set of questions for each interview while allowing additional dialogue between the interviewer and interviewee. The interviewees were senior managers of the Israeli diamond firms, in most cases they were the Owner-Managing Director. The duration of the interviews ranged from one to two hours.

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**Insert Table 1 here**

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### *The definition of variables in the model*

Following are explanations and justification of the two types of variables adopted in the model for the empirical investigation of the Israeli diamond managers.

### *The dependent variable*

The dependent variable indicates whether a manager uses social network or an arm's-length market exchange strategy. The managers' usage of the Rapaport Price

List (RPL) in setting the diamond prices is adopted in this research, as a proxy, to measure the managers' choice of market exchange strategy. RPL was the first industry-wide pricing index published in 1978 by the Rapaport Group (The Rapaport Group, 2018). Until today, the RPL has remained to be the primary source of information to assess the value of polished diamonds (Israeli Diamond Industry, 2018). Many diamond jewelers and traders in major international markets have used the RPL as an approximate guideline for assessing the value of individual polished diamonds according to the gems' 4Cs characteristics. The RPL is published every week to reflect the latest situation of the global polished diamond market.

This research has assumed that the diamond managers who adopt a social network-based exchange strategy are much more likely to vary their prices depending upon the relationship ties with each customer. Whereas, managers who follow an arm's-length strategy are likely to adopt the RPL and follow its pricing benchmarks and use the Gemological Institute of America (GIA) for certification.

#### *Independent variables*

This research has adopted seven managerial characteristics as the independent variables; five are management demographical variables and two are marketing specific variables.

#### Managers' demographic characteristics

F = The tenure of the manager at the diamond firm (testing hypothesis 1).

D = The diamond industry experience that the manager has (testing hypothesis 2).

H = The manager's family history in the diamond industry (testing hypothesis 3).

E = The education level of the manager (testing hypothesis 4).

A = The age of the manager (testing hypothesis 5).

#### Managers' marketing experience and exposure

S = Visiting diamond trade exhibitions (testing hypothesis 6).

M = Manager's use of advertising to market his/her products (testing hypothesis 7).

### **Empirical results and discussion**

Tables 2 and 3 show the overall mean scores, standard deviations and the Pearson Correlation Coefficient for the characteristics of the managers interviewed.

===  
**Insert Table 2 and Table 3 here**  
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Hierarchical regression analysis was performed in order to determine the relationship between the managerial demographics and their marketing experience and exposure (the 7 independent variables) and between the management characteristics and the usage of the RPL (the dependent variable). At the first stage, the managers' demographics were included, and in the second stage their marketing experience and exposure were added onto the model. The results were as follows:

$$\hat{Y} = C + \sum B_i P_i + \sum B_j F_j$$

$\hat{Y}$  = Expected usage of the Rapaport Price List

$C$  = The Regression Constant

$B_i$  = The Coefficient of managers' demographic characteristics, where  $i \in \{F, D, H, E, A\}$

$B_j$  = The Coefficient of managers' marketing experience characteristics, where  $j \in \{S, M\}$

$P_i$  = Managers' demographical characteristics

$F_j$  = Managers' marketing experience characteristics

The final regression equation obtained is:

$$\hat{Y} = 1.058 - 0.018D + 0.014F - 0.140H - 0.026E + 0.139S + 0.116M$$

$$R^2 = 47.1\%$$

#### ***Top management's characteristics***

Based on the measurement of fit  $R^2$ , the results show that the seven managerial characteristics (independent variables) have explained 47.10% of the variability of the RPL usage (dependent variable). Further analysis shows that 37.10% out of the total 47.10% variability is explained by the five managerial demographic characteristics, whereas 10% is explained by the managers' marketing experience.

#### *Tenure - years of working for the same diamond firm*

The results have shown a weak and insignificant positive Correlation Coefficient ( $R = +0.050$ ) between tenure and the managers' usage of the RPL. On the other hand, the Beta Coefficient indicates a significant positive relationship ( $B = +0.014$ ,  $P = 0.000$ ). This indicates that the longer the tenure at the same diamond firm, the more the usage of the RPL in the market exchange strategy. Tenure is ranked second in terms of its explanatory power of the RPL usage among the Israeli diamond managers we interviewed ( $\Delta R^2 = 10.70\%$  out of the total  $47.10\%$  variability). The variable's relative power measured by the absolute value of the standardized  $\beta$  is shown at  $0.083$  level. These results are different from the original hypothesis which has assumed a negative relationship between tenure and the managers' choice of using RPL as the market exchange strategy. Hence, the results do not support Hypothesis 1.

#### *Industry experience at the diamond industry*

The results have shown a significant negative Correlation Coefficient ( $R = -0.393$ ,  $P < 0.05$ ) between the length of diamond industry experience and the use of RPL. In line with this result, a significant negative Beta Coefficient ( $B = -0.018$ ,  $P = 0.000$ ) was found. These findings support Hypothesis 2 which has assumed that the longer a manager is operating under the traditional way of conducting business in the diamond industry, the more s/he will preserve the status quo and rely more on the social network-based exchange mechanisms. This Hypothesis is the strongest in explaining the variability of the RPL usage. This is evidenced by the variable's explanatory power ( $\Delta R^2 = 15.50\%$  out of total  $47.10\%$ ) and its relative impact measured by the absolute value of the standardized  $\beta = 0.647$ .

The above findings could be explained further using the details of the managers we interviewed. They had an average of 21 years of working experience in the diamond industry and the longest service spanned across 57 years. Only 14% of the interviewees had less than 10 years of experience in the diamond industry. The average age of the managers was 44.94, which reflects that many of the managers had started young in the diamond industry. Indeed, 44% of the managers were born into a diamond family.

### *Diamond-family background*

The results have shown a negative Correlation Coefficient ( $R = -0.228$ ,  $P < 0.05$ ). In line with this, a negative Beta Coefficient ( $B = -0.140$ ,  $P = 0.006$ ) is found indicating that the longer the diamond family history, the less usage the Israeli diamond manager would make to the RPL. This variable is ranked third in the importance in explaining the variability of the RPL usage. This is explained by the explanatory power of the variable,  $\Delta R^2 = 7.90\%$  out of total  $47.10\%$ , and its relative impact measured by the absolute value of the standardized  $\beta = -0.219$ . The findings have supported Hypothesis 3, which has assumed that managers with diamond-family background make less use of the RPL as the market exchange strategy.

Indeed, 44 out of the total 100 managers we interviewed had a long family history in the diamond industry, ranging from one to five generations. Out of these 44 managers, 36 of them had two generations of history in the field. These managers were born into, and grew up with, the family business. They were likely to adopt and adapt their father's and other senior family members' management style and systems in order to obtain legitimacy from these key stakeholders. Our empirical results are consistent with the findings of some previous upper echelons studies (such as Goll et al., 2007; Handika & Wibowo, 2018; Li et al., 2009; Qian et al., 2013; Roxas & Coetzer, 2012) which discovered that managerial decisions are social and normative dependent on the institutional environment facing the managers.

### *Education*

An insignificant Correlation Coefficient ( $R = +0.051$ ) has been found between the education level and the managers' usage of the RPL as the market exchange strategy. However, the Beta Coefficient ( $B = -0.026$ ,  $P = 0.024$ ) is significant at the 5% confidence level. Among the five management demographical variables, education was found to be the weakest factor in explaining the variability of the RPL usage. This is evidenced by the low impact of the education variable ( $\Delta R^2 = 3.0\%$  out of the  $37.10\%$  explained variability) and its relative power which is measured by the absolute value of the standardized  $\beta = 0.198$ . The analytical results are different from the original assumption of a positive relationship between education level and managers' use of the RPL, and they do not support Hypothesis 4. Nonetheless, the descriptive statistics have lent some support to the Hypothesis 4 by showing that the

Israeli managers had an average of 12 years of formal schooling. The managers who did not use RPL were those who had the lowest level of formal schooling.

The insignificant Correlation Coefficient between education and the usage of RPL may be explained by the demographic homogeneity of the diamond managers. In Israel, diamonds have been a family trade which has passed down from father to sons for many generations (Berger et al., 2016; Schnitzer, 1988). In fact, 12 out of the total 100 firms participated in this research have explicitly put the words “sons” or “brothers” in their company name. 94% of the managers we interviewed were male. The findings identified in the above sections have shown that our sample of Israeli managers had a relatively long diamond industry experience. Together with the long family background in the industry, the results have signaled a low level of gender, functional background and family background diversity amongst the Israeli managers we interviewed. Hambrick and Mason (1984) suggested that homogeneity is one of the contributing factors leading to group thinking, which restricts the initiatives of generating and assessing alternatives.

Our findings of patriarch leadership style and close-knit community members working together are not unique. Rao and Bhatnagar's (2009) research into the Indian diamond cutting and polishing firms revealed similar industry norms and characteristics. Nonetheless, we assume when younger managers enter into the diamond industry in the future, the overall level of education and gender diversity is likely to rise. The collective power of these young managers is likely to generate new momentum steering the industry norms and practices towards a different direction.

### *Age*

The Correlation Coefficient between age and the use of the RPL was found insignificant ( $R = -0.392$ ). Further multivariate analysis has shown that the managers' age has had no significant effect on their choice of using the RPL. The results do not support Hypothesis 5. In the interviews with the diamond managers, we noticed that the younger managers were generally more self-assured in their way of doing business and willing to take risk in new ventures. One of the interviewees told us - “one can differentiate between the generations by age... many of the older generations are much smarter than the younger people and can put them in their small pockets ... The younger generation is wider in outlook and more self-confident than their father, but the older people are more careful, owing to their experience”. The older generation of

managers seemed to have developed mutual trust and a strong identity with other exchange partners. The relationship can help reduce environmental uncertainty facing the managers.

Our findings in relation to the insignificant effect of age on managers' strategic decisions may be explained by the rationale put forward by Dendup et al. (2018). Their research discovered that the age of the managers had no significant relationship on the organizational outcomes. It was because most of their sample entrepreneurs from SMEs, regardless of their age, directly or indirectly received help from their family. Thus, age was not found to have a direct influence over managers' strategic decisions. Islam et al.'s (2011) study also found that age had no significant impact on the success of SMEs in Bangladesh. However, Fernandez-Ortiz and Lombardo (2009) found age as a significant factor affecting the Spanish managers' strategic decisions on internationalization which are built on the understanding of and ability to learn and embrace new cultures and languages. The inconsistent results about the importance of age has reflected the needs of breaking down the type of strategic decisions on which each upper echelons study focuses.

Managers whom we interviewed had an average of 21 years of experience in the diamond industry. 44% of the managers grew up with the diamond family business. Hence, the impact of age on the strategic decisions that these Israeli managers made in their firms might have been embedded in, and hence reflected through, other variables measured in this research, such as the industry experience (Table 2 has shown a high correlation between the length of industry experience and the usage of RPL).

### ***Managers' marketing experience and exposure characteristics***

The managers' marketing experience characteristics were introduced into the second stage of the hierarchical regression analysis. These two marketing variables were found to explain 10% of the total 47.10% variability of RPL usage as the market exchange strategy.

### ***Visiting diamond trade exhibitions***

The Pearson Correlation Coefficient indicates a significant positive relationship ( $R = +0.454$ ,  $P < 0.05$ ) between visiting diamond trade exhibitions and the usage of the RPL as the market exchange strategy. The Beta Coefficient was found to



be  $B = +0.139$  ( $P = 0.019$ ). These results supported Hypothesis 6, which assumed when a manager visits diamond exhibitions in order to get access to the wider market, s/he is likely to adopt the industry's benchmark for pricing. The Israeli managers might have used the RPL as a trade language to communicate with the potential customers and build consumer confidence. This variable was found to be the strongest within the marketing experience block and it is ranked the fourth among all seven independent variables in explaining the variability of the RPL usage. This is evidenced in the variable's explanatory power ( $\Delta R^2 = 7.60\%$  out of total 47.10% explained variability), and its relative impact measured by the absolute value of the standardized  $\beta = 0.212$ .

With further analysis, we discovered that the intensity of visiting trade exhibitions (in terms of the number of visits per year) was significantly related to the decision of using RPL. Nevertheless, the intensity of visit has insignificant impact on the variability of the RPL usage. A possible explanation could be when the Israeli managers decided to visit trade exhibitions promoting themselves and the products beyond the family network, it drove them to adopt the industry based pricing method. The number of diamond exhibitions they visited did not seem to vary the extent of usage of the RPL as the market exchange strategy.

### *Advertising*

The Pearson Correlation analysis has shown a significant positive correlation ( $R = +0.348$ ,  $P < 0.05$ ) between advertising and the use of the RPL. In line with this, the Beta Coefficient was found to be positive ( $\beta = +0.116$ ,  $P = 0.042$ ). Advertising had the lowest level of impact on the variability of the RPL usage. It is evidenced by this variable's explanatory power ( $\Delta R^2 = 2.40\%$  out of total 47.10%) and its relative impact measured by the absolute value of the standardized  $\beta = 0.176$ . The results have supported hypothesis 7, which has assumed that the adoption of advertising is positively related to the managers' choice of using the RPL.

Our findings have reflected the results of the fundamental changes which took place in the diamond industry over the past few decades. The general purpose of advertising is to reach the wider market and induce purchases. Approaching the mass market via advertising makes it harder for diamantaires to price discriminate potential customers based on the prior relationship. As what Lu et al. (2016) have suggested, pricing and advertising are two of the most important factors which influence market

demand and consequently the firm's revenue. Using the market-based pricing method through adopting the RPL helps the TMT send out a message to its customers that their firm is compatible and comparable to other diamond dealers and merchants. Furthermore, the higher degree of pricing transparency through using the RPL allows comparability which is considered to be particularly important to competition in the digital age. Our results illustrate that the more one advertises, the more one would use the arm's-length exchange strategies.

## **Discussion and Conclusions**

This paper has examined seven managerial characteristics, which were believed to have influence over managerial choice of strategy in the diamond industry. Historically, social networks as means of facilitating exchange were used to be critical to strategic decision making and the competitiveness of diamond firms (Berger et al., 2016; Bernstein, 1992; Spar, 1994, 2006). As the industry matured, the reliance on social relationships as the foundation of market exchange has led to limitations and misalignment with the environment. The evolution of the diamond industry has required diamond merchants and relevant governments to respond accordingly. The changing business environment has required firms, especially SMEs and FOFs, to increase their strategic adaptiveness and competitive fit in order to survive and grow (Chirico & Salvato, 2008).

Several fundamental changes were implemented in the diamond industry in recent decades; such as the introduction of the Kimberley Process (KP), the RPL, GIA, and the legislation to stop the global flow of conflict diamonds and illegal funds. The KP has now had over 80 member-states to ensure that their exported diamonds are conflict free (Kimberley Process, 2018). The public's awareness of the environmental and social issues behind the shiny surface of diamonds has been rising. All of these are momentous results of the changes implemented in the diamond industry worldwide.

We have taken the view of two bi-polar market exchange strategies, arm's-length or social network exchange. In practice, market exchange and managerial choices were far more complicated than what the black-and-white assumptions could capture, especially in FOFs which aim to fulfil both financial and non-financial objectives. As what Rao and Bhatnagar (2009) found in their study, transgenerational succession and delegation of power from the paternal leaders to the successors have been the key strategic issues to the Indian diamond firms they interviewed. FOFs, especially the small

ones, lack resources and diversity of skill sets. They tend to follow the family successful traditions and imitate other players in order to obtain legitimacy from the community and increase competitiveness. Our results are consistent with Roxas and Coetzer's (2012) findings which revealed that community norms and values are the strongest factors influencing the senior managers' strategic decisions. This research has highlighted the importance of adjusting one's business strategies according to the evolving internal and external environments (Handika & Wibowo, 2018; Qian et al., 2013).

The way in which the senior managers have responded to the industry's and the society's calls for change and the speed at which the managers adjusted their strategies was found to depend on a range of factors. Our findings have illustrated that the experience in the diamond industry (15.50% of the total explained variability), tenure (10.70%), diamond-family background (7.90%), visiting diamond trade exhibitions (7.60%) and advertising (2.40%) were significant influencing the market exchange strategy that the managers adopt. Indeed, 92% of the Israeli managers we interviewed had adopted the RPL and used this international pricing benchmark to various extents (in terms of partial or full usage of the RPL). This in itself illustrates a fundamental shift in the diamond industry and an alignment with the environmental changes.

FOFs, most of them are SMEs, have made significant contribution to their national economy (Dendup et al., 2018; Islam et al., 2011). The findings of this research have important implications on both practice and policies (in terms of trade, finance, environmental and education and training policies) which can support and develop the current and future generations of managers in the diamond industry. The world leading diamond exchanges are located at Tel Aviv, Antwerp, Bombay and New York, while many upstream supply chain activities are predominantly located in Africa, Russia, Australia and Canada (The Economist, 2017). These large and small diamond firms have helped boost their local economy and their operations and well-being have significant implications to the social and economic development of their countries.

We have acknowledged the limitations of this research. Although the model has generated an explained variability of  $R^2 = 47.10\%$ , it could not capture the rest of the 52.90%. This study has used the environmental context as a mediator to help make sense of the relationships between the managerial characteristics and strategic decision-making. In hindsight, we have recognized that we had not sufficiently taken the effect of the institutional environment to the heart of the theoretical conceptualisation. There is a need of putting the environmental factors into the

theoretical and regression models and empirically measuring the effect of both the internal and external environmental factors simultaneously.

We have also recognized the degree of sophistication of our regression model could have been enhanced to reveal more refined empirical data and findings. The weaknesses of this study have reflected future research opportunities for other upper echelons studies of FOFs and/or SMEs, particularly those operate in the diamond industry. Future research can examine how other managerial characteristics influence the choice of exchange strategies which represent various degrees of market or social orientation. Also, the type of strategic decisions of which future upper echelons research studied needs to be more finely classified.

Looking at our empirical results from another angle, the lower level of explained variability is indeed a key finding. The changes within the diamond industry over the past few decades have altered the institutional environment and caused a shift in strategic management style, systems and processes adopted by the senior managers. As the worldwide diamond industry is becoming more regulated and transparent, the reliance on managerial discretion and informal processes and systems is reducing. This trend is reflected through the lower explanatory power of the TMT demographics on the choice of exchange strategies. As Blackburn et al. (2013) suggested, although managerial characteristics are undoubtedly important to the strategic decisions, the structural conditions within which the firms operate ultimately determine their performance. Our empirical results have shown that TMT's strategic decisions are social and normative dependent on the institutional environment facing the managers.

This study is important as a case study as diamond firms have been notoriously reluctant to divulge information. Together with a lack of previous research, especially upper echelons studies, in the diamond industry have stimulated this research. We thank for the kindness of various diamond institutions for the secondary information and their assistance in helping us reach the diamond managers who have made this empirical study possible. Our experience has shown that social networks have remained to be important to the Israeli diamond industry.

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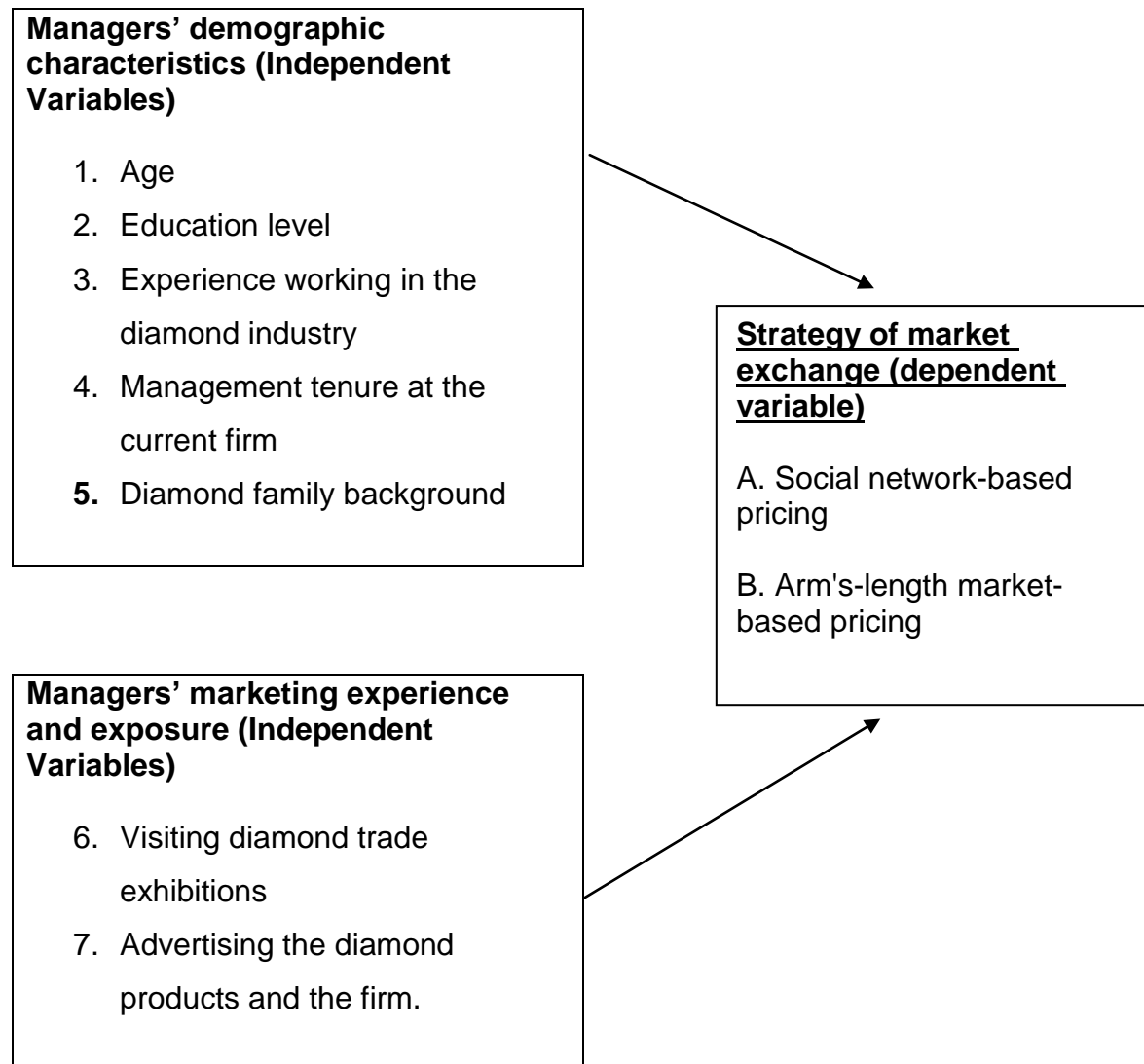
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**Figure 1: The theoretical conceptualization of this study**



**Table 1: Characteristics of the samples for this research**

Export value in US\$ million	Israeli managers and firms participated in this research	Total firms on the Israeli Exporters List	% of samples participated in this research out of the Israeli Exporters List
50+	7	8	88
20-50	20	26	77
10-20	20	41	49
4 - 10	53	115	46
Total	100	190	53

**Table 2: Mean, SD and Pearson Correlation for Rapaport Price List Usage**

8	7	6	5	4	3	2	1	SD	Mean	Variable	No.
								.316	.634	Rapaport Price List usage	1
<b>Marketing Experience Characteristics</b>											
							.454**	.482	.640	Visit exhibitions	2
						.468**	.316**	.498	.560	Intensity of Visits	3
				.448**	.454**	.348**		.479	.650	Advertising	4
<b>Manager Demographical Characteristics</b>											
				-.132	-.046	-.174	-.393**	11.28	21.15	Years in business	5
			.561**	-.006	-.004	.113	.050	8.89	12.78	Years in firm	6
		-.030	-.104	-.007	-.162	-.095	-.228**	.494	.410	Diamond family	7
	.164	-.004	-.387*	.116	.031	.075	.051	2.42	12.38	Education	8
-.230*	-.217*	.584**	.843**	-.122	-.048	-.106	-.392	10.88	44.94	Age	9

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

\*\*Correlation is significant at the 0.05 level (2-tailed).

**Table 3: Stepwise Hierarchical Regression Analysis of Rapaport Price List Usage**

Sig.	F-change	F-	Change	$\Delta R^2$ (%)	$R^2$ (%)	Sig.	T	$\beta$	Std. Error	B	Variables
					.000	6.207			0.17	1.058	Constant
<b>Manager Demographical Characteristics (Block 1)</b>											
0.000	17.912	15.5	15.5	.000	-6.009	-0.647	0.003	-0.018			Years in business
0.000	14.024	10.7	26.1	.000	3.879	0.383	0.004	0.014			Years in firm
0.001	11.549	7.9	34.1	.006	-2.833	-0.219	0.049	-0.140			Diamond family
0.035	4.556	3.0	37.1	.024	-2.292	0.198	0.011	-0.026			Education
								ns			Age
<b>Marketing Experience Characteristics (Block 2)</b>											
0.001	12.846	7.6	44.6	0.019	2.385	0.212	0.058	0.139			Visit exhibitions
0.042	4.243	2.4	47.1	0.042	2.060	0.176	0.056	0.116			Advertising
								ns			Intensity of visits