



Heriot-Watt University
Research Gateway

Performance and entrepreneurial orientation in SMEs

Citation for published version:

Sherif, M, Galloway, L & Zarrouk, H 2019, 'Performance and entrepreneurial orientation in SMEs: The case of Abu Dhabi', *International Journal of Accounting, Auditing and Performance Evaluation*, vol. 15, no. 3, pp. 241-261. <https://doi.org/10.1504/IJAAPE.2019.102247>

Digital Object Identifier (DOI):

[10.1504/IJAAPE.2019.102247](https://doi.org/10.1504/IJAAPE.2019.102247)

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Peer reviewed version

Published In:

International Journal of Accounting, Auditing and Performance Evaluation

Publisher Rights Statement:

© 2019 Inderscience Enterprises Ltd.

General rights

Copyright for the publications made accessible via Heriot-Watt Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

Heriot-Watt University has made every reasonable effort to ensure that the content in Heriot-Watt Research Portal complies with UK legislation. If you believe that the public display of this file breaches copyright please contact open.access@hw.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Performance and Entrepreneurial Orientation in SMEs: the Case of Abu Dhabi

Abstract

The paper explores Entrepreneurial Orientation (EO) in SMEs in the Middle Eastern state of Abu Dhabi in the United Arab Emirates. We hypothesize that emerging market context and unique UAE business structures will impact the expression and effects of the five dimensions of EO. Using OLS and GMM techniques, our study shows that innovation, risk taking, proactiveness and competitive aggressiveness do not correlate positively with performance, but autonomy does. By studying EO in a unique region and amongst SMEs we contribute to the implementation and development of theory in alternative business contexts. We suggest the EO dimensions co-depend, with autonomy a capstone dimension in SMEs upon which the others rely. At a local level, we suggest policy might take steps to encourage autonomy by reducing ownership restrictions, and improve the institutional environment to facilitate risk-taking and, in turn, the other EO dimensions.

Keywords: Performance evaluation; entrepreneurial orientation; SMEs; emerging economy; Abu Dhabi, business structures

1. Introduction

The last half century has seen some Middle Eastern economies emerge as the richest in the world as a consequence of the discovery and extraction of oil. This primary industry has a finite lifespan though, and governments of countries in the region are keen to encourage and promote other sources of economic development (Cetindamar et al., 2012; Valliere & Peterson, 2009). One of these countries is the United Arab Emirates (UAE) and there has been much effort to develop alternative economic underpinnings there. According to Schiliro et al. (2013) and Duncan (2012), there are 200,000 small and medium-sized enterprises (SMEs) in the UAE, representing 95 per cent of the business population. In the capital, Abu Dhabi, government data shows that SMEs contribute 60 per cent of GDP and 84 per cent of employment (SCAD, 2016), and there is much ambition to support SME activity as a means by which to diversify the economy. The goal asserted by the Competitiveness Office is to become “a sustainable, diversified, high-value added economy that encourages enterprises and entrepreneurship” (COAD, 2016, p. 3). One of the means by which this might be supported is by encouraging entrepreneurial strategies in existing organizations.

Fayolle et al. (2016) and Gartner (2004) note that entrepreneurship varies by environment - by social and structural conditions - and can only be understood in context (also Berglund et al., 2016). With this in mind, as a Middle Eastern country, the UAE is a particularly interesting context in which to study entrepreneurship because of its structural and organizational divergence from other regions. Petinently, there are specific structural conditions for business, and SMEs in particular, that vary somewhat from other regions and this may have an effect on the ability of them to adopt and operationalize entrepreneurial strategies.

There are few studies to date on entrepreneurship in the Middle East and in the UAE specifically. Other than Farzanegan (2014) in which UAE is included in a study of entrepreneurship in oil-rich countries, and Sokari et al. (2013) on rates of business start-up, there is little research on entrepreneurial strategies in UAE. Similarly, there are few studies of entrepreneurial strategy beyond the developed world context, with the notable exceptions of Javalgi & Todd (2011) and Bhaumik & Selarka (2012) in the very different emerging economy context of India. As an emerging economy, UAE exhibits institutional voids that may inhibit business behaviour; limited access to finance and insurance products relative to other countries are examples of this. In addition, business structures

throughout the Middle East can vary from that experienced elsewhere. While both local nationals and in-migrants may own firms, an in-migrant can only do so in a strict co-ownership arrangement with a national. In a context like UAE, where up to 90 per cent of the population is expatriate in the Emirates of Abu Dhabi and Dubai ([Worldpopulationreview, 2017](#)), this creates a business environment very different to other regions in that by far the most common business structure is that of Emirati-expatriate co-ownership. This diverges from the sovereign ownership structure of SMEs found elsewhere - that which underpins conceptualisations of the independent entrepreneur ([Hessels et al., 2008](#)) - and in turn, the experience and expression of entrepreneurship in firms in this context may vary from that found elsewhere. This paper therefore explores entrepreneurship in SMEs in Abu Dhabi in the UAE.

The paper refers specifically to the conceptualization of Entrepreneurial Orientation (EO). EO provides a robust and validated theoretical framework within which to investigate entrepreneurship as a strategic orientation in SMEs. First introduced by [Miller \(1983\)](#), theorizing about EO has been developed, particularly in the work of [Covin & Slevin \(1989\)](#) and [Lumpkin & Dess \(1996\)](#). EO theory incorporates five core dimensions: risk-taking, proactiveness, innovativeness, competitive aggressiveness and autonomy. The extent to which an organization exhibits these has been found to have beneficial consequences for performance ([Pett & Wolff, 2016](#); [Rauch et al., 2009](#); [Wales et al., 2013](#)). By exploring EO in SMEs in Abu Dhabi, this paper thus seeks to contribute to two main agendas. First, it seeks to explore how entrepreneurship is enacted in firms in the specific structural environment of UAE with a view to contributing knowledge to the policy agenda of economic diversification and development. The second contribution the research reported in this paper seeks to make is to develop knowledge on EO and afford some advancement of it as a theory and practice in an alternative business environment.

The next section provides a review of the literature on the core elements of the EO concept and firm performance framework. Following that, we describe the unique UAE economic context and the Abu Dhabi business environment. The methodology and models we use to explore EO are described in the next section. In particular we use ordinary least square (OLS) and generalized method of moments (GMM) techniques, to investigate the significance of EO dimensions in determining Abu Dhabi firm performance. The EO dimensions are represented by proxies and an econometric analysis of their relationship with performance on a large sample of firms is presented. The final

sections present the empirical results and discussion of these in terms of theory and policy, and the paper concludes with recommendations for further research.

2. The EO construct

There has been a long running debate in the academic literature regarding the role of EO in corporate strategy processes and entrepreneurial decisions (Covin & Slevin, 1991; Miles et al., 1978; Mintzberg & Waters, 1985; Wiklund & Shepherd, 2005). One strand of the literature has investigated the management implications of a constructed EO measurement.

Miller (1983) hypothesised EO to comprise innovation, risk taking and proactivity. Lumpkin & Dess (1996) added competitive aggressiveness and autonomy to these. Jointly, the five sub-dimensions reflect the extent to which a firm is considered entrepreneurial and they have been combined to create a higher order indicator of firm level entrepreneurship (Covin & Lumpkin, 2011; Covin & Wales, 2012). Some studies have found that the different components covary with each other, with some finding high correlations between them (e.g. Covin & Slevin, 1989) and others reporting lower correlations (Ferreira et al., 2011). This suggests a relationship between the dimensions, perhaps even a codependence. Elsewhere, some studies suggest that the EO dimensions may vary independently (Mason & Gos, 2014; Pett & Wolff, 2016). EO is then constructed as the sum of scores across the separate dimensions or as a weighted linear combination. From a management perspective, this would imply that companies can make up for a lower score on proactiveness, for example, by being more innovative. However constituted, there is substantial evidence that EO is associated with performance (Covin & Lumpkin, 2011; Dess & Lumpkin, 2005a,b; Dimitratos et al., 2004; Rauch et al., 2009; Saeed et al., 2014). Similarly, Rauch et al. (2009) and Saeed et al. (2014) in their meta-analyses, provide clear evidence that regardless of firm specifics and national context, firm performance benefits from an entrepreneurial strategic orientation. The main argument underlying this observation is that firms that adopt an EO are more likely to be able to detect and pursue new business opportunities and thus achieve higher performance levels. The EO construct and relationship to performance is illustrated in Figure 1.

However, the literature contains conflicting outcomes too. For example, George et al. (2001) and Smart & Conant (1994) find an insignificant relationship between EO and performance. Rauch

et al. (2009) argue that any positive relationship between EO and performance does not hold homogeneously for all contexts, rather, there are likely to be moderators that will determine how EO affects performance. These results convey an important message that the link between EO and performance may encompass more than a simple direct relationship (Rosenbusch et al., 2013), and that other external and internal variables mediate it (Mason & Gos, 2014). This resonates with the literature on entrepreneurship as contextually and socio-environmentally bound (Fayolle et al., 2016; Gartner, 2004). To investigate this from an EO-specific perspective, there is a vast literature exploring many potential moderators, including dynamics of the environment, munificence, complexity, and various organizational factors (e.g. Lisboa et al., 2011; Mason et al., 2015; Wang, 2008; Zehir et al., 2015). Cumulatively, these empirical studies support the idea that the EO-performance relationship is influenced by context and as a consequence entrepreneurial strategizing in firms must be studied in context. Within all this literature, however, there are very few EO-based studies beyond the developed economy context, and none to our knowledge, in the Middle East, the context of the research reported in this paper. The following section provides some background information on the specific context of this study, the UAE.

2.1 The UAE Business context and EO

According to the international investment and intelligence organisations Morgan Stanley Capital International (MSCI, 2017) and Standard and Poor Dow Jones (SPDJ, 2017), the UAE is an emerging economy. While classification criteria vary, broadly speaking this suggests a market orientation with some infrastructure and regulatory framework, but also some institutional voids. Emerging economies are usually less innovation-oriented than developed economies since there is less tradition and knowledge in capital-rich technology sectors (Bhaumik & Selarka, 2012). Consequently, economic development tends to be bricolage-based rather than underpinned by knowledge-led innovation (Schillo, 2011). The UAE is somewhat unique amongst emerging economies though in that it is wealthy (Elhage, 2005), rank the UAE in the top ten richest in the world) and has aspiration to develop innovative capacity (Government.ae, 2017). Despite these though, emerging economies present for investors substantial risk as a consequence of the newness and potential volatility within the policy, regulatory and financial infrastructures, and these conditions still prevail in UAE. Nevertheless, returns can be high since goods and services reach new, previously

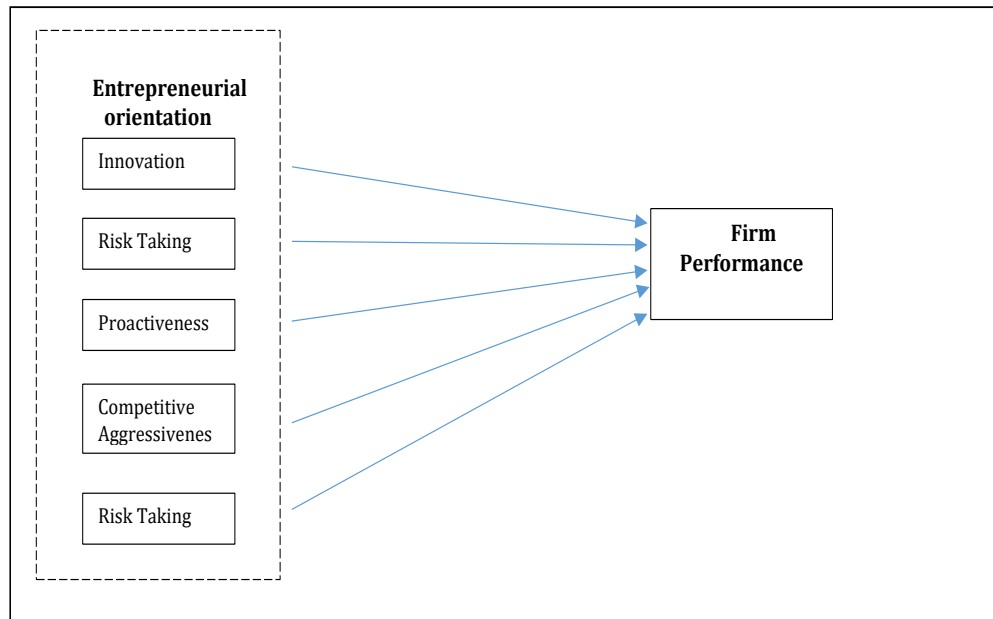


Figure 1: Entrepreneurial Orientation and firm performance

untapped customers as the consumer and business markets emerge and develop.

A further issue, specific to the UAE environment, concerns business structure. Economic policy in UAE has focused on attracting knowledge and investment from in-migrants to augment that of indigenous populations. Like other countries in the region, the model for this has been strictly employment or business co-ownership, the latter requiring that any expatriate business activity in UAE most often must be in collaboration with a national of an Arabian Gulf state who must own at least 51 per cent. While there are some ‘freezones’ in which expatriates may trade independently, the numbers and industries of firms are limited and tightly controlled. Consequently, by far the most common business structure is co-ownership by an Emirati and expatriate on a 51:49 shareholding basis. Meanwhile, native Emiratis often own and co-own several businesses, and indeed, some own businesses alongside well-paid jobs (often in the public sector). Expatriates, on the other hand,

are usually granted a visa to reside in the UAE on the basis that they are economically active and solvent. Loss of either of these can lead to loss of compliance with these visa and residency rules.

From an EO perspective, it seems reasonable to expect that the unique structural and organisational conditions in UAE might have an effect on the capacity for and expression of EO in SMEs. Bricolage, in the form of managerial drive and the ability to identify, select, import and apply knowledge to fit local conditions, is implied by emerging economy context. But in the UAE innovation is also encouraged, at least in policy rhetoric, and so it is not clear if the EO dimension innovation is important for firms in practice. In addition, risk-taking may be affected by the external structural conditions and the unique ownership structures in UAE. Business structures clearly affect the EO dimension of autonomy; expatriates are required to be minority shareholders, and majority shareholding Emiratis tend to have various incomes, rendering a firm part of a portfolio. The implied lack of autonomy of individual owners might act to discourage risk and from there, competitive aggressiveness and proactiveness may be uniquely affected. The following sections explore further each of the EO dimensions in the UAE context.

2.2 Hypotheses development

EO theory is predicated on the following five hypotheses:

H1. Innovativeness will correlate positively with performance

H2. Risk-taking will correlate positively with performance

H3. Proactiveness will correlate positively with performance

H4. Competitive aggressiveness will correlate positively with performance

H5. Autonomy will correlate positively with performance

Each of these hypotheses is discussed in the Abu Dhabi context in turn below.

2.2.1 Innovativeness

Innovativeness refers in a broad sense to a firm's willingness to support new ideas, novelty, experimentation, and creativity in introducing new products and services, or in developing new technological processes (Lumpkin & Dess, 1996; Minniti & Lévesque, 2010; Schillo, 2011). The traditional explanation for the positive relationship between firm level innovation and performance rests on the argument that innovation when first introduced to the market faces limited direct

competition and, as a result, allows firms to enjoy relatively high profits. Over time, these high profits are likely to erode due to imitation and competition, but firms that continue to innovate may be able to achieve high profitability for a sustained period (Sharma & Lacey, 2004). There is empirical support for this. Geroski et al. (1993) for example, found that the number of innovations achieved by 721 UK manufacturing firms had a positive effect on profits. Roberts (1999) found similar effects in the USA pharmaceutical industry. Calantone et al. (2002) and Gunday et al. (2011) provide similar empirical support.

While innovativeness thus is clearly a critical dimension of entrepreneurship in developed markets, it may be less so for firms in emerging economies though. Acemoglu et al. (2006) propose that it is significant efficiency gains that develop SMEs in emerging economies, not operations on the technological frontier. This is consistent with Abu Dhabi statistics; Zehir et al. (2015) in their survey of UAE SMEs found no firms in technology sectors. Accordingly, entrepreneurial identification of opportunities in the SME sector in Abu Dhabi may come not from globally new, created knowledge (i.e., from innovation), but from bricolage and from providing goods and services that have been already standardized and applied in developed markets. On this basis and as seen in Figure 2, we might expect a divergence from established EO wisdom, expressed via the hypothesis (H1) that innovativeness will correlate positively with performance. Alternatively, we might expect the opposite.

2.2.2 Risk-taking

Risk-taking is a key characteristic associated with entrepreneurship; entrepreneurship involves risk-taking activities in return for rewards (Gebreegziabher & Tadesse, 2014; Jalali et al., 2014; Segal et al., 2005). This is often attributed at an individual level; entrepreneurs engage in risk (McClelland, 1967). While this can refer to the risk individuals take by working for themselves rather than being employed (Zahra & Covin, 1995), risk has also been widely applied to companies, whereby risk-taking orientation has been related to the likelihood of seizing beneficial deals and, in general, is positively associated with financial success (Frese et al., 2002; Schillo, 2011). According to Miller & Friesen (1978, p. 923), risk-taking is “the degree to which managers are willing to make large and risky resource commitments, that is, those which have a reasonable chance of costly failures.” The impact of risk-taking on firm performance has been little studied, however.

Most empirical studies have examined the impact of risk perception on a single, predefined decision (Forlani & Mullins, 2000; Norton & Moore, 2006), but not on firm performance. Where it has been studied in terms of performance, results are broadly negative. For example, Naldi et al. (2007) found that in family businesses a higher propensity to take risk decreases performance. Similarly, Tang & Tang (2007) found negative effects of risk on performance. Beyond these, and in a non-western context, Thapa (2015) investigated the role of risk-taking propensity on performance in Nepal and found no effect.

In emerging economies in particular, deficiencies in capital markets and absence of efficient institutions that reduce transactions costs (Khanna & Yafeh, 2007), may lead to potentially high entrepreneurial gains, but the downside risks are high as well because a firm may be less able to draw on formal external finance in response to temporary shocks to cash flow resulting from following risky strategies. Notably, such downside risks are relatively higher than those associated with developed market economies because of the absence of well-functioning insurance markets and associated financial products (Forlani & Mullins, 2000).

For the specific Abu Dhabi context of this study, we argue further limiting factors for risk emerge. First, the regulatory infrastructure for business is incomplete and unserviced debt and bankruptcy are treated as criminal offences. In turn this has further effect on the availability of financial and insurance products. Second, the ownership structure of firms may not be conducive to risk-taking. For Emirati owners, since a firm is part of a portfolio, risk in one can be mitigated by performance in another. Rather than acting to hedge risk, the portfolio might even act to discourage risk; where conditions are stable - even lucrative - there may be little interest in pursuing risky strategies for an Emirati owner, especially where penalties for failure are severe. This is likely to have an effect on risk-taking for expatriates too, and compounding this, since their visas are contingent on business sustainability, while risk-based activities may seem attractive in terms of potential gain, the penalties may be too severe, with livelihood and residency threatened. Braunerhjelm et al. (2010, p. 110) note, “to engage in entrepreneurial activities the individual’s expected net payoff...must be larger than the [otherwise] expected net payoff”. This being the case, from both perspectives, Emirati and expatriate, risk might be avoided since it may be considered either relatively unnecessary or too dangerous if business is already providing stable returns. Thus, it seems likely that risk-taking will be limited in Abu Dhabi, and thus unlikely to be consistent

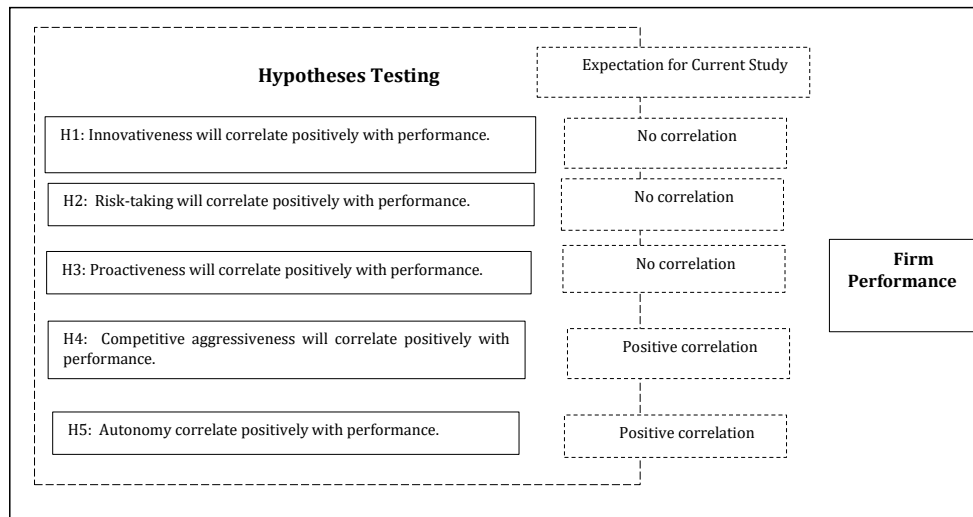


Figure 2: Expectation for Current Study

with the EO hypothesis (H2) that risk taking will correlate positively with performance.

2.2.3 Proactiveness

Proactiveness describes business actions that anticipate future opportunities, both in terms of products or technologies and in terms of markets and consumer demand (Schillo, 2011; Wiklund & Shepherd, 2005). This is at the centre of economic perspectives of entrepreneurship; the entrepreneur identifies opportunities in the marketplace and proactively pursues them (Lumpkin & Dess, 1996). The links between proactiveness and innovation and risk are clear (Jalali et al., 2014; Okpara, 2009). In fact, Venkatraman(1989) defines proactiveness as taking initiative and a forward-looking perspective in the pursuit of new business opportunities characterized by the introduction of new products, services and brands through anticipating future demands, participating in markets and shaping the environment. Proactiveness refers to firms that have the will to lead an

industry, even if they are not always the first to enter the market and in so doing perform better than their rivals. Empirically, proactiveness has been found to enhance performance in terms of employee growth and profitability (Craig et al., 2014; Zahra & Covin, 1995). These studies refer to developed economies though, where markets are mature and customers expect product and service development. In those circumstances innovation and its itinerant catering for and shaping the changing needs and expectations of customers drives economic growth. This is not the case in emerging economies if bricolage is the main agent of development though. Instead, local firms may be more likely to tend to follow innovations and trends to service local markets, rather than lead these. This prompts the argument that contrary to that found in western developed nations, experience in Abu Dhabi may well diverge from the EO hypothesis (H3) that proactiveness will correlate positively with performance.

2.2.4 Competitive aggressiveness

Competitive aggressiveness refers to firm's responsiveness to directly and intensely challenge its rivals to achieve entry or improve position in the market. According to Stuart & Abetti (1990) and Cooper et al. (1986) competitive aggressiveness also reflects a willingness to compete using unconventional methods, such as analyzing and targeting competitors' weaknesses and engaging in activities or adopting unconventional tactics to challenge their competitors.

Overall, the relationship between competitive aggressiveness and firm performance is debatable. While some studies have found a positive relationship between it and firm performance, others have not (Bhaumik & Selarka, 2012; Casillas & Moreno, 2010; Hughes & Morgan, 2007; Schillo, 2011). Abu Dhabi businesses are likely to be in the same position as any in terms of their stance on competitiveness. Therefore, we expect consistency with the EO hypothesis (H4) that competitive aggressiveness will correlate positively with performance.

2.2.5 Autonomy

Autonomy refers to the ability of individuals or teams to develop ideas and carry them through to completion (Lumpkin & Dess, 1996). Autonomy allows individuals in firms to be creative and develop business activities and to own responsibility for success and failure. A firm's capacity to enable this amongst employees has been positively correlated with business performance (Awang

et al., 2009). In SMEs it also relates directly to the individual(s) who have founded and own the firm - the entrepreneur(s). According to Mintzberg & Waters (1985), entrepreneurs undertake decisive and risky actions, thus entrepreneurial autonomy is related to freedom of business owners and independent decision making (Lumpkin & Dess, 1996; Schillo, 2011).

Many studies have found autonomy to be positively related to business performance (e.g. Coulthard, 2007; Madsen, 2007; Tajudin et al., 2014). Zahra (2008) asserts further though that the environment can impact on the propensity and effects of autonomy. For this study, the effect of Abu Dhabi business structures may be particularly interesting. First, a UAE national may have several co-owners in a portfolio group. This portfolio might act to inhibit independence and autonomy as actions and subsequent performance in one firm in the group may affect or be mitigated by actions and performance in another. In addition, we envisage that an expatriate SME owner does not exhibit the independence characteristic of entrepreneurs elsewhere. In fact, the ownership relationship for some might more accurately be described as one in which an Emirati national sponsors the expatriate. We suggest that in the UAE context there will be little autonomy as understood in the normative, western sense. However, as in developed economies, business strategy and actions will still be most effective if entrepreneurs and any employees they have are able to own their decisions, act independently, and exercise autonomy. We argue thus that, regardless of context, autonomy is a central feature of entrepreneurship, and as such we expect consistency with the EO hypothesis (H5) that autonomy will correlate positively with performance.

2.2.6 Summary

Collectively, our expectations regarding EO in Abu Dhabi SMEs are illustrated in Figure 2.

The following section describes the methods employed to test the five EO dimension hypotheses with a sample of Abu Dhabi SMEs.

3. Methodology and models

Our sample consists of 174 SMEs in UAE. All firms were outside of the ‘freezone’, so all firms had the standard UAE structure of being wholly Emirati owned or co-owned with an expatriate. The data comes in a form of unbalanced panel spread over the 2014-2015 time period resulting

in 348 firm-year observations. The firms were sourced from the government business support agency Khalifa Fund for Enterprise Development (KFED), and financial information and ownership and industry affiliation data was obtained from the comprehensive database OSIRIS, containing information on over 38,000 listed companies and online reports.

We investigated the EO dimensions and their relationship with firm performance by representing that performance as net profit:

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}}$$

The regression model employed in our study has the following functional form:

$$PER_{it} = \int [INOV_{i,t}, RT_{i,t}, PRO_{i,t}, COMP_{i,t}, AUT_{i,t}, SIZ_{i,t}, AG_{i,t}] \quad (1)$$

where PER, INOV, RT, PRO, COMP, AUT, SIZ, AG denote firm performance, innovation, risk-taking, proactiveness, competitive aggressiveness, autonomy, firm size, and age respectively. For each element of EO we used proxies. These proxies were selected on the basis that they have been used for the same purposes in previous studies of EO and so allow for homogeneity of explanation of the dimensions themselves, affording comparison. The dimensions, proxies with explanatory rationales, and supporting references are given in [Table 1](#).

 INSERT Table 1 here

For control variables, we used firm age and firm size. In terms of firm size, we apply the SME definition used by [COAD \(2016\)](#) and [O'Brien et al. \(2007\)](#) as seen in [Table 2](#).

 INSERT Table 2 here

According to the above-mentioned definition, the number of SMEs used in our study is shown in [Table 3](#).

INSERT Table 3 here

Analysis was conducted using the regression technique Ordinary Least Square (OLS). However, OLS is only appropriate if no individual firm or time-specific effects exist. Consequently, to control for heterogeneity and multi-collinearity across firms, we employed also the econometric technique Generalized Method of Moments (GMM). GMM is a robust estimator dealing with variables consisting of errors, multi-collinearity and also endogeneity problems (Hayes & Cai, 2007; Sherif & Hussnain, 2017). GMM mitigates any potential skew by unobserved effects of unobserved individual and time-specific factors on dependent variables, and in this research provides an alternative technique with which to support our OLS calculations.

4. Empirical Findings

4.1 Descriptive statistics

Table 4 provides the mean and standard deviation of the dependent and independent variables and also the correlation between different variables. It shows that performance has a high standard deviation, at 39.03 of the mean, suggesting that the data sample contains a variety of firm performance. The highest significant positive correlation is between autonomy and performance reflecting the ability of leaders and employees to develop ideas and operationalise them to improve firm performance. There is also a significant negative correlation between performance and proactiveness.

INSERT Table 4 here

Table 5 shows the empirical findings of the OLS regression. Again, performance is negatively related to proactiveness (PRO) with a coefficient of -0.1886 . In addition, a significant relationship between autonomy and performance (0.4968) is again observed. Firm size is also positively and significantly related to performance ($\beta = 0.1933$).

INSERT Table 5 here

Regarding the question of evaluating the EO and performance estimations using GMM, related results are reported in [Table 6](#). Notably, many of the results correspond with those from the OLS pooled regression above; proactiveness is inversely related to firm performance, and again, autonomy and performance correlate.

INSERT Table 6 here

4.2 *Hypotheses tests*

In detail, and as summarized in [Table 7](#), the findings of the first EO hypothesis (H1), that innovativeness will correlate positively with performance, is not supported as the analysis shows an insignificant relationship. H2 concerns the effects of risk taking. Our results suggest that risk taking is not an important aspect of Abu Dhabi SMEs performance. Risk does correlate with proactiveness but that correlates significantly negatively with performance, as per H3. The results show a significant negative impact of proactiveness on Abu Dhabi SMEs' performance, i.e. performance is reduced by proactiveness. H4 is associated with the effects of competitive aggressiveness on Abu Dhabi SMEs firm performance. Our results show an insignificant relationship between competitive aggressiveness and performance; there is neither a positive nor negative effect. Finally, H5 concerns the relationship between autonomy and performance. The results support this relationship, implying that there is a positive and significant impact of autonomy on Abu Dhabi SMEs' performance.

INSERT Table 7 here

4.3 Discussion

The research reported in this paper sought to explore EO in SMEs in Abu Dhabi with the purpose of contributing some information on the expression and effects of EO in a Middle Eastern economy context. Framed by the literature on the five dimensions of EO, which are theorized and empirically reported as important in terms of firm performance and competitiveness, the study was cognizant that most previous EO research has been based on firms in developed western economies. As such, we speculated that EO would be affected by context - by the emerging market environment and by the specific business structures in UAE.

Unlike that theorized by EO, most of the EO dimensions do not correlate with performance amongst this sample of Abu Dhabi SMEs. First, results suggest that the dimension innovativeness does not seem to correlate in the Abu Dhabi context. Gains in performance do not appear to come from innovation implied by high knowledge:employee ratios. We propose this reflects the emergent status of the UAE economy, whereby bricolage underpins economic development rather than innovation. That said, break-out in terms of innovation can happen at any time - that is the nature of entrepreneurship - but the unique infrastructure in Abu Dhabi seems unlikely to be conducive to that. The link between innovativeness and proactiveness may have some explanatory power here. The data in this study suggests that contrary to a positive effect, or even a benign effect, the relationship between proactiveness and performance is significantly negative. Thus, it appears that even where innovation may happen, the process of getting it to market will be precarious. The conditions of risk in Abu Dhabi seem a likely contributor to this.

The data shows a correlation between proactiveness and risk, but a negative relationship with performance. It appears, therefore, that where risk is taken the results for a firm are financially diminishing rather than productive. The reasons for this are unknown. We have theorized that severe penalties and gaps in the financial infrastructure might deter risk (and therefore proactiveness), but it seems also to be the case that where risk is taken, there is a negative effect on the fortunes of a firm.

Competitive aggressiveness showed no correlation with performance, further suggesting that performance is not enhanced by pushing products and services ahead of competitors. Again this suggests that either the market is not yet ready, or that structural conditions are not able to support

these activities so that they benefit firms.

Of the EO dimensions, only autonomy showed a positive correlation with performance, and the correlation was consistent and strong. We speculated that autonomy is hard to achieve in the unique business structure context of UAE for business owners, and by extension, for their employees. The data shows though that where autonomy is enabled in a firm, a strong contribution to performance may result. Ongoing sustainability and even business growth seem to be facilitated by autonomy, even if riskier activities are avoided.

We infer that results from this study evidence that autonomy is a critical element of EO. Without autonomy the decision and actions required for entrepreneurship cannot happen. In the co-ownership context of Abu Dhabi firms, there is clear evidence that autonomy can and is achieved and where this is the case entrepreneurship is enabled. The key dimension of innovation is also evidenced in this study as important. While we see no link between innovation and performance in this sample of firms, we do see that innovation is linked to proactiveness and risk-taking; a firm must be proactive to generate innovation and the introduction of innovative products, services or processes to market will require risk. Where proactiveness and risk are stymied, the knock-on effect is to stifle innovation. While this may result in a neutral effect in terms of competition between firms locally, at a national level, the competitiveness of the diversified UAE economy is likely to be affected by the lack of opportunity to innovate.

4.3.1 Implications for policy and practice

From a policy and practice perspective, the environment in Abu Dhabi seems to be such that the effects of EO hypothesized and evidenced by research in western developed nations seem unlikely. We suggest various policy potentials are implied.

First, businesses in Abu Dhabi might be best supported by structures that allow for autonomous decision making. While co-ownership between expatriates and Emiratis are clearly evidenced in this study as capable of affording autonomy amongst individual owners and staff, expansion of ‘freezones’ is likely to have further impact too, as is wider consideration of the means by which independent businesses are created, owned and developed so as to encourage and enable autonomy widely. There is a rationale that suggests greater autonomy will encourage greater risk-taking, so development of the formal finance sector and regulatory environment are further

areas of potential interest to policy-makers seeking to encourage entrepreneurship in the Emirate, and in time these may underpin other entrepreneurial endeavors such as innovation. A diverse business environment, involving participation from an international community, local and external knowledge, and the ability to take risks and decisions independently are all necessary for the competitiveness of firms. Policy makers may consider maintaining a dynamic international business environment therefore, but allow both in-migrants and Emiratis alike to develop autonomous and entrepreneurially oriented strategies without fear of excessively punitive outcomes, and a finance and insurance sector that can support risk. While it is inherent in risk that some will go awry, without the capacity for risk-taking, an economy cannot support the potential for business wins. From a policy perspective this seems to merit further investigation, as to develop at firm level, and indeed, ultimately to contribute at economic level, the dimensions of EO may need better support, and this requires that the experiences of them in Abu Dhabi need to be better understood.

4.3.2 Theoretical contribution

From the perspective of developing EO theorizing, the research reported makes two specific contributions. First, while previous studies of EO have explained growth and competitiveness amongst firms in developed economies, the research here suggests that in emerging market contexts EO may be nuanced. We attribute this to the effects of the environment, and as such, we find support for [Fayolle et al. \(2016\)](#) and [Gartner \(2004\)](#), that entrepreneurship varies contextually; and for [Mason & Gos \(2014\)](#) and [Rauch et al. \(2009\)](#) that the environment has a critical effect on the ability to enact, and the expression of, the EO dimensions. In this study of Abu Dhabi, emerging economy conditions, strict regulatory environment, business structures and demographics are all implicated as having a critical effect on the ability of a firm to be entrepreneurial.

The second contribution this research makes is that it responds to the call that studies should explore contexts that mediate or moderate the EO-performance relationship ([Wales et al., 2013](#)). Our study suggests that the EO dimensions are not independent of each-other or the business context. While not disputing the notion in the literature that the EO-dimensions have different roles ([Dai et al., 2014](#); [Lomberg et al., 2016](#); [Wales, 2016](#)), we propose that this lack of independence of the EO dimensions extends beyond covariation, as per [Covin & Slevin \(1989\)](#) and [Ferreira et al. \(2011\)](#). In Abu Dhabi the ability to be risk-taking, for example, is compromised, but where risk

is taken, there is no effect on performance. We assert this direct causal relationship does not reveal the underlying limitation though. Instead, the correlation between risk and proactiveness, and the significantly negative effect of proactiveness on performance suggests that proactiveness is dependent on risk-taking ability. In fact, it may be described as a risk itself. Similarly with regards to autonomy, it is hard to see how any strategic decisions (relating to risk, proactiveness, innovation or competitiveness) can be taken or enacted without autonomy, at least for business owners as the entrepreneurial agents in most SMEs. Indeed, we argue that owner autonomy may be rationalised as a capstone dimension on which the others rely. Consequently, we contend that contrary to the argument that a lack of one dimension may be mitigated by another, as per [Mason et al. \(2015\)](#) and [Pett & Wolff \(2016\)](#), we propose that lack of one dimension may actually have a cascade effect on the ability to enact or the expression of another.

5. Conclusion

The value of this study lies in its exposure of the extent to which the various EO dimensions are correlated, or not, with performance in the specific circumstances of Abu Dhabi. At a local level, the study contributes to knowledge to support aspiration to improve performance amongst SMEs in Abu Dhabi. It thereby offers insights to local policymakers interested in developing entrepreneurship and EO in SMEs.

From a broader perspective, the research provides new evidence on the theory and practice of EO as expressed in the context of an emerging Middle Eastern economy. As such, it responds to calls such as [Fayolle et al. \(2016\)](#) to explore entrepreneurship in contexts, and [Berglund et al. \(2016\)](#) to widen our investigations of it so as to broaden our understanding this internationally nuanced set of phenomena.

The study reported here has some limitations. Critically, while the data shows some dimensions of EO are associated with performance in Abu Dhabi and other are not, it cannot explain why this is the case. Indeed, this study cannot explain the reasons for any of the results emerging. Further research is required for this. We speculate that emerging economy status and business structures are implied as contributory factors that are inhibiting EO, but only qualitative follow-up investigation will determine the mechanisms behind the results in this study.

While this study goes a long way in terms of filling gaps in the existing literature on EO in SMEs in a Middle Eastern state, it opens up numerous avenues for further research. There is immediate potential to increase the population of firms and include larger firms and firms in other countries. In addition, it would be interesting to see how EO may change over time based on political and economic changes. Finally, the facilitating functions of some of the EO dimensions should not be neglected and should be incorporated in future studies. Examples might include the effects and utility of human resource management functions on employee (and owner) ability to take risks and exercise autonomy; or studies of any limiting effect on risk-taking of the legislative environment. Studies like these will provide a clearer picture in regard to how EO might best be developed in SMEs in Abu Dhabi and similar Middle Eastern contexts.

References

- Acemoglu, D., Aghion, P., & Zilibotti, F. (2006). Distance to frontier, selection, and economic growth. *Journal of the European Economic Association*, 4(1), 37–74.
- Awang, A., Khalid, S. A., Kassim, K. M., Ismail, M., Zain, R. S., Madar, A. R. S., et al. (2009). Entrepreneurial orientation and performance relations of malaysian bumiputera smes: The impact of some perceived environmental factors. *International Journal of Business and Management*, 4(9), 84.
- Berglund, K., Gaddefors, J., & Lindgren, M. (2016). Provoking identities: entrepreneurship and emerging identity positions in rural development. *Entrepreneurship and Regional Development*, 28(1-2), 76–96.
- Bhaumik, S. K. & Selarka, E. (2012). Does ownership concentration improve m&a outcomes in emerging markets?: Evidence from india. *Journal of Corporate Finance*, 18(4), 717–726.
- Braunerhjelm, P., Acs, Z. J., Audretsch, D. B., & Carlsson, B. (2010). The missing link: knowledge diffusion and entrepreneurship in endogenous growth. *Small Business Economics*, 34(2), 105–125.
- Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management*, 31(6), 515–524.

- Casillas, J. C. & Moreno, A. M. (2010). The relationship between entrepreneurial orientation and growth: the moderating role of family involvement. *Entrepreneurship and Regional Development*, 22(3-4), 265–291.
- Cetindamar, D., Gupta, V. K., Karadeniz, E. E., & Egrican, N. (2012). What the numbers tell: the impact of human, family and financial capital on women and men’s entry into entrepreneurship in turkey. *Entrepreneurship and Regional Development*, 24(1-2), 29–51.
- COAD (2016). *Abu Dhabi competitiveness report*. Technical report.
- Cooper, A. C., Willard, G. E., & Woo, C. Y. (1986). Strategies of high performing new and small firms: a reexamination of the niche concept. *Journal of Business Venturing*, 1(3), 247–260.
- Coulthard, M. (2007). The role of entrepreneurial orientation on firm performance and the potential influence of relational dynamism. *Journal of Global Business and Technology*, 3(1), 29.
- Covin, J. G. & Lumpkin, G. T. (2011). Entrepreneurial orientation theory and research: reflections on a needed construct. *Entrepreneurship Theory and Practice*, 35(5), 855–872.
- Covin, J. G. & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75–87.
- Covin, J. G. & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Critical perspectives on business and management*, 3, 5–28.
- Covin, J. G. & Wales, W. J. (2012). The measurement of entrepreneurial orientation. *Entrepreneurship Theory and Practice*, 36(4), 677–702.
- Craig, J. B., Pohjola, M., Kraus, S., & Jensen, S. H. (2014). Exploring relationships among proactiveness, risk-taking and innovation output in family and non-family firms. *Creativity and Innovation Management*, 23(2), 199–210.
- Dess, G. & Lumpkin, G. (2005a). Entrepreneurial orientation as a source of innovative strategy. *Innovating strategy process*, 1, 3–9.
- Dess, G. G. & Lumpkin, G. T. (2005b). The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. *The Academy of Management Executive*, 19(1), 147–156.

- Dimitratos, P., Lioukas, S., & Carter, S. (2004). The relationship between entrepreneurship and international performance: the importance of domestic environment. *International Business Review*, 13(1), 19–41.
- Duncan, G. (2012). Step by step approach is key for small businesses in the uae. *The National*, January(1), 228–239.
- Elhage, M. (2005). *The United Arab Emirates: selected issues and statistical appendix*. International Monetary Fund.
- Farzanegan, M. R. (2014). Can oil-rich countries encourage entrepreneurship? *Entrepreneurship and Regional Development*, 26(9-10), 706–725.
- Fayolle, A., Landstrom, H., Gartner, W. B., & Berglund, K. (2016). The institutionalization of entrepreneurship: Questioning the status quo and re-gaining hope for entrepreneurship research. *Entrepreneurship and Regional Development*, 28(7-8), 477–486.
- Ferreira, J. J., Garrido Azevedo, S., & Fernández Ortiz, R. (2011). Contribution of resource-based view and entrepreneurial orientation on small firm growth. *Cuadernos de Gestión*, 11(1).
- Forlani, D. & Mullins, J. W. (2000). Perceived risks and choices in entrepreneurs' new venture decisions. *Journal of Business Venturing*, 15(4), 305–322.
- Frese, M., Brantjes, A., & Hoorn, R. (2002). Psychological success factors of small scale businesses in namibia: the roles of strategy process, entrepreneurial orientation and the environment. *Journal of Developmental Entrepreneurship*, 7(3), 259.
- Gartner, W. B. (2004). Achieving “critical mass” in entrepreneurship scholarship. In *Advances in Entrepreneurship, Firm Emergence and Growth* (pp. 199–216). Emerald Group Publishing Limited.
- Gebreegziabher, K. & Tadesse, T. (2014). Risk perception and management in smallholder dairy farming in tigray, northern ethiopia. *Journal of Risk Research*, 17(3), 367–381.
- George, G., Robley Wood Jr, D., & Khan, R. (2001). Networking strategy of boards: Implications

- for small and medium-sized enterprises. *Entrepreneurship and Regional Development*, 13(3), 269–285.
- Geroski, P., Machin, S., & Van Reenen, J. (1993). The profitability of innovating firms. *The Rand Journal of Economics*, (pp. 198–211).
- Government.ae (2017). *Innovation and vision 2021*. Technical report.
- Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production economics*, 133(2), 662–676.
- Hayes, A. F. & Cai, L. (2007). Using heteroskedasticity-consistent standard error estimators in ols regression: An introduction and software implementation. *Behavior Research Methods*, 39(4), 709–722.
- Hessels, J., Van Gelderen, M., & Thurik, R. (2008). Entrepreneurial aspirations, motivations, and their drivers. *Small Business Economics*, 31(3), 323–339.
- Hughes, M. & Morgan, R. E. (2007). Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. *Industrial Marketing Management*, 36(5), 651–661.
- Jalali, A., Jaafar, M., & Ramayah, T. (2014). Entrepreneurial orientation and performance: the interaction effect of customer capital. *World Journal of Entrepreneurship, Management and Sustainable Development*, 10(1), 48–68.
- Javalgi, R. R. G. & Todd, P. R. (2011). Entrepreneurial orientation, management commitment, and human capital: the internationalization of smes in india. *Journal of Business Research*, 64(9), 1004–1010.
- Khanna, T. & Yafeh, Y. (2007). Business groups in emerging markets: Paragons or parasites? *Journal of Economic literature*, 45(2), 331–372.
- Lisboa, A., Skarmeas, D., & Lages, C. (2011). Entrepreneurial orientation, exploitative and explorative capabilities, and performance outcomes in export markets: a resource-based approach. *Industrial Marketing Management*, 40(8), 1274–1284.

- Lumpkin, G. T. & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135–172.
- Madsen, E. L. (2007). The significance of sustained entrepreneurial orientation on performance of firms—a longitudinal analysis. *Entrepreneurship and Regional Development*, 19(2), 185–204.
- Mason, M. C., Floreani, J., Miani, S., Beltrame, F., & Cappelletto, R. (2015). Understanding the impact of entrepreneurial orientation on smes' performance. the role of the financing structure. *Procedia Economics and Finance*, 23, 1649–1661.
- Mason, M. C. & Gos, L. (2014). The role of agglomeration in entrepreneurship: empirical evidence from italy. *International Journal of Entrepreneurship and Small Business*, 21(1), 33–54.
- McClelland, D. C. (1967). *Achieving society*. Simon and Schuster.
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational strategy, structure, and process. *Academy of Management Review*, 3(3), 546–562.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770–791.
- Miller, D. & Friesen, P. H. (1978). Archetypes of strategy formulation. *Management Science*, 24(9), 921–933.
- Minniti, M. & Lévesque, M. (2010). Entrepreneurial types and economic growth. *Journal of Business Venturing*, 25(3), 305–314.
- Mintzberg, H. & Waters, J. A. (1985). Of strategies, deliberate and emergent. *Strategic Management Journal*, 6(3), 257–272.
- MSCI (2017). Mcsi emerging markets index. Available at <https://www.msci.com/emerging-markets>.
- Naldi, L., Nordqvist, M., Sjöberg, K., & Wiklund, J. (2007). Entrepreneurial orientation, risk taking, and performance in family firms. *Family Business Review*, 20(1), 33–47.
- Norton, W. I. & Moore, W. T. (2006). The influence of entrepreneurial risk assessment on venture launch or growth decisions. *Small Business Economics*, 26(3), 215–226.

- Okpara, J. O. (2009). Strategic choices, export orientation and export performance of smes in nigeria. *Management Decision*, 47(8), 1281–1299.
- O'Brien, J., Keivani, R., & Glasson, J. (2007). Towards a new paradigm in environmental policy development in high-income developing countries: The case of abu dhabi, united arab emirates. *Progress in Planning*, 68(4), 201–256.
- Pett, T. & Wolff, J. A. (2016). Entrepreneurial orientation and learning in high and low-performing smes. *Journal of Small Business Strategy*, 26(2), 71.
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(3), 761–787.
- Roberts, P. W. (1999). Product innovation, product-market competition and persistent profitability in the us pharmaceutical industry. *Strategic Management Journal*, (pp. 655–670).
- Rosenbusch, N., Rauch, A., & Bausch, A. (2013). The mediating role of entrepreneurial orientation in the task environment–performance relationship: a meta-analysis. *Journal of Management*, 39(3), 633–659.
- Saeed, S., Yousafzai, S. Y., & Engelen, A. (2014). On cultural and macroeconomic contingencies of the entrepreneurial orientation–performance relationship. *Entrepreneurship Theory and Practice*, 38(2), 255–290.
- SCAD (2016). *Number of enterprises by economic activity*. Technical report.
- Schiliro, D. et al. (2013). Diversification and development of the united arab emirates' economy. *Journal of Applied Economic Sciences*, 8(2), 228–239.
- Schillo, R. S. (2011). Entrepreneurial orientation and company performance: Can the academic literature guide managers? *Technology Innovation Management Review*, 1(2).
- Segal, G., Borgia, D., & Schoenfeld, J. (2005). The motivation to become an entrepreneur. *International Journal of Entrepreneurial Behavior & research*, 11(1), 42–57.

- Sharma, A. & Lacey, N. (2004). Linking product development outcomes to market valuation of the firm: the case of the us pharmaceutical industry. *Journal of Product Innovation Management*, 21(5), 297–308.
- Sherif, M. & Hussnain, S. (2017). Family takaful in developing countries: the case of middle east and north africa (mena). *International Journal of Islamic and Middle Eastern Finance and Management*, 10(3), 371–399.
- Smart, D. T. & Conant, J. S. (1994). Entrepreneurial orientation, distinctive marketing competencies and organizational performance. *Journal of Applied Business Research*, 10(3), 28.
- Sokari, H., Van Horne, C., Huang, Z.-Y., & Awad, M. (2013). *Entrepreneurship: an emirati perspective*. Zayed University Institute for Social and Economic Research.
- SPDJ (2017). *S & P Dow Jones indices: Middle East and Africa*. Technical report.
- Stuart, R. W. & Abetti, P. A. (1990). Impact of entrepreneurial and management experience on early performance. *Journal of Business Venturing*, 5(3), 151–162.
- Tajudin, A., Aziz, R. A., Mahmood, R., & Abdullah, M. H. (2014). The relationship between entrepreneurial orientation and business performance of smes in malaysia. *International Journal of Management Excellence*, 2(3), 221–226.
- Tang, J. & Tang, Z. (2007). The relationship of achievement motivation and risk-taking propensity to new venture performance: a test of the moderating effect of entrepreneurial munificence. *International Journal of Entrepreneurship and Small Business*, 4(4), 450–472.
- Thapa, A. (2015). Determinants of microenterprise performance in nepal. *Small Business Economics*, 45(3), 581–594.
- Valliere, D. & Peterson, R. (2009). Entrepreneurship and economic growth: evidence from emerging and developed countries. *Entrepreneurship and Regional Development*, 21(5-6), 459–480.
- Wales, W. J., Gupta, V. K., & Mousa, F.-T. (2013). Empirical research on entrepreneurial orientation: an assessment and suggestions for future research. *International Small Business Journal*, 31(4), 357–383.

- Wang, C. L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship Theory and Practice*, 32(4), 635–657.
- Wiklund, J. & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing*, 20(1), 71–91.
- Worldpopulationreview (2017). *United Arab Emirates population*. Technical report.
- Zahra, S. A. (2008). Being entrepreneurial and market driven: implications for company performance. *Journal of Strategy and Management*, 1(2), 125–142.
- Zahra, S. A. & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: a longitudinal analysis. *Journal of Business Venturing*, 10(1), 43–58.
- Zehir, C., Can, E., & Karaboga, T. (2015). Linking entrepreneurial orientation to firm performance: the role of differentiation strategy and innovation performance. *Procedia-Social and Behavioral Sciences*, 210, 358–367.

Table 1: Elements of Entrepreneurial Orientation

<i>EO Dimension</i>	<i>Proxy</i>	<i>References</i>
Innovativeness	Total revenues over the number of employees: eg., the greater the disparity between (high) revenue and (low) employee numbers, the greater the impact of knowledge per employee, suggesting innovative capacity.	(1) Miller and Breton (2011); (2) Bhaumik and Selarka (2012)
Risk taking	Average volatility of cash flows over net income: eg., a close relationship between high volatility and high income is suggestive of advantage by risk-taking.	Stein, et al. (2001); (1); (2)
Proactiveness	Percentage of earnings retained by a firm: earnings reserved for the purpose of further investment, thus affording the opportunity to be proactive	Miller (1983); Kaplan and Zingales (1997) Morck, et al (2005) (1);(2)
Competitive Aggressiveness	Price Cost Margin: the lower the difference between price to customer and cost to firm of supply the more aggressively competitive a firm.	OECD (2002); Krauss, et al. (2005) Anderson and Eshima (2013)
Autonomy	Total revenues over total costs: implying investment in personnel, including owners.	DeVaro (2006); Schillo (2011)

Table 2: Definition of Micro, Small-and Medium-sized Enterprises

<i>Type of company</i>	<i>TRADING</i>	<i>MANUFACTURING</i>	<i>SERVICES</i>
Micro	≤ 9	≤ 20	≤ 20
Small	≤ 35	≤ 100	≤ 100
Medium	≤ 75	≤ 250	≤ 250

Table 3: SMEs sample

	<i>Micro</i>	<i>Small</i>	<i>Medium</i>	<i>Total</i>
Total	114	41	19	174

Table 4: Descriptive Statistics and Pearson Correlation Matrix

stats	PER	AUT	COMP	RT	PRO	INOV	SIZ	AG
mean	-3.486	0.1886	0.01485	5.0689	17.379	5.0171	6.0192	2.138
sd	39.03	0.2599	0.39006	11.188	184.47	0.5040	0.68181	1.521
min	-468.41	0.00053	-3.4317	0.0011	0.0377	2.224	2.826	1.00
max	0.8397	1.875	1.931	96.62	2215.07	6.497	7.892	8.00
skewness	-11.85	3.335	-4.393	5.983	11.86	-1.148	-0.5152	1.687
kurtosis	141.7	17.431	49.209	45.044	141.83	8.944	5.699	5.361
PER	1.0000							
AUT	0.0679***	1.000						
COMP	0.0041	0.1562	1.0000					
RT	-0.6869	-0.1219	-0.0870	1.0000				
PRO	-0.9999**	-0.0637	-0.0027	0.6871	1.0000			
INVO	0.4755	0.1197	-0.1795	-0.3138	-0.4754	1.0000		
SIZ	0.4026*	-0.3510	-0.2724	-0.1448	-0.4028	0.6922	1.0000	
AG	0.0069	-0.2369	0.0918	0.0698	-0.0057	-0.0073	0.2232	1.0000

Note: *Statistically significant at the 0.10 level

**Statistically significant at the 0.05 level

***Statistically significant at the 0.01 level.

Table 5: OLS Pooled Regression

Variable	Coef.
Constant	-0.8481 (0.7441)
AUT	0.4968*** (0.0958)
COMP	0.1267 (0.1399)
PRO	-0.1886*** (0.0141)
RT	0.0003 (0.0065)
INOV	0.0379 (0.0616)
SIZ	0.1933* (0.1505)
AG	0.0511 (0.0429)
Adjusted R-squared	0.627

Note: *Statistically significant at the 0.10 level

**Statistically significant at the 0.05 level

***Statistically significant at the 0.01 level.

Table 6: GMM Estimations

Variable	Coef.
Constant	-0.4201 (1.611)
AUT	0.9733*** (0.3064)
COMP	0.0964 (0.0837)
PRO	-0.2114*** (0.0006)
RT	-0.0002 (0.0062)
INOV	-0.2611 (0.1666)
SIZ	0.2734 (0.1947)
AG	0.0411 (0.0329)
Hansen's χ^2	6.22598
P value	[0.1085]

Note: *Statistically significant at the 0.10 level

**Statistically significant at the 0.05 level

***Statistically significant at the 0.01 level.

Table 7: Summary of Hypotheses Testing

<i>Hypothesis</i>	<i>Description</i>	<i>Supported</i>
H1	Innovativeness will correlate positively with performance.	No correlation
H2	Risk-taking will correlate positively with performance.	No correlation
H3	Proactiveness will correlate positively with performance.	No, negative correlation
H4	Competitive aggressiveness will correlate positively with performance.	Inconclusive
H5	Autonomy correlate positively with performance.	Yes