THE MODERATING ROLE OF ANTECEDENTS WHEN USING ENTREPRENEURIAL ORIENTATION TO PREDICT FIRM PERFORMANCE

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ABSTRACT

The purpose of this paper is to present how the following antecedents: external contextual knowledge; internal environment; the founder or owner and biographical factors impacted on entrepreneurial orientation and therefore predicted firm performance. The paper further supports that a firm's knowledge of its external contextual environment, which is mediated by its internal organization, independently or interactively predicts entrepreneurial orientation and if entrepreneurial orientation is strategically adopted it will lead to an increase in firm performance. Data from 500 small businesses in the Gauteng Province, South Africa were used. Exploratory Factor analysis was used to test factor structures. A process of model modification using General Linear Modeling was followed and a final predictive model is presented. ***Key words: entrepreneurial orientation; antecedents, external contextual knowledge; firm performance***

Context

The Global Entrepreneurship Monitor (GEM) 2016/2017 Report. Derives their conceptual framework from the assumption that economic prosperity is derived from normal citizen's capabilities to identify and seize opportunities, but that those opportunities are impacted on by the environment they have to execute their opportunities in. Other factors further contributes to this entrepreneurial process, such as individual attributes; owner or manager; the industry of choice; as well as the age and form of the business.

Regionally, Africa is positive with regards to entrepreneurs. Reflecting on South Africa, the GEM (2016/2017) Report, states that 72.6% of the respondents value entrepreneurship as a good career choice and that 78.1% attributes a high status to being an entrepreneur and recently the entrepreneurs started to gain the media attention (74.2%) it deserves. A low percentage of 35% see good opportunities to start a business in the areas that they live in and 37.9% indicated that they have the knowledge and skill to start a business, but 35% indicated that they have a fear of failure that prevents them from doing so. An important factor worth reporting on is that South Africa shows up 59th out of 66 places as having restraining government policies, bureaucracy and taxes placed on Small Businesses, yet maintain 18th place out 66 for government support and policies to promote entrepreneurial activities, clearly indicating lip service to entrepreneurs. This paradox leads to many South African not registering or reporting their business to government. One of the major banks in South Africa reported (2014) that on average 50% of all start-up businesses fail within 24 months (www.bizmag.co.za). Some media reports reflect a figure as high as 74% (DTI reports, 2016). Scanning various media reports on the why businesses fail in South Africa most rhetorically contributes it to the attributes of the owner/manager, lack of business plans, yet scholars like (Honig & Karelsson, 2004; Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007) report that they have not find any evidence to support the significance of having or not having a business plan other than to obtain financial support from financial institutions. This, one can argue contributes to business failure as the entrepreneur seeking finance, will always present the most positive scenario of business outcome.

Background to this Study

The deliberation about the scientific domain of entrepreneurship and a lack of agreement on so many key issues regarding what constitutes entrepreneurship and how it relates to business performance is ongoing (Frese, Lumpkin, Rauch, & Wiklund, 2009). Consensus about what constitutes EO, both conceptually and empirically, is, however, increasing. EO is considered one of the few areas where a cumulative body of knowledge is developing in the field of entrepreneurship (Frese et al., 2009). For this reason, it was chosen for further study. Research efforts directed at understanding the antecedents and dimensionality of the EO construct in explaining its relationship to FP is encouraged as its will enhance understanding of EO and its relationship with FP.

Several studies indicated that firms that adopt a more aggressive EO approach perform better (Covin & Zahra, 1995; Wiklund, 1999; Zahra, 1991). Empirical evidence supports the fact that EO leads to improved business performance (Belausteguigoitia & Patlan, 2005). These results do not go uncontested as several other studies were unable to find a significant relationship between EO and FP (Davis, Dibrell, & Graig, 2008). Prior theory and research (Covin & Slevin, 1989b; Lumpkin & Dess, 1996; Miller & Friesen, 1983,) indicated that EO is a key ingredient in organisational success, and was found to lead to increased FP (Kuratko & Morris, 2002; Wiklund & Shepherd, 2003). A further debate is still going on about the conceptualization of EO and how it relates to business outcomes.

FP is mainly viewed in the entrepreneurial area as the enhancing of financial outcomes rather than other objectives. Reviewing research on growth and referring to previous reviews, Davidson, Delmar, and Wiklund, (2000) found that, despite hundreds of studies having been conducted in the area, knowledge about what

facilitates and hinders FP is still scattered and limited. They further suggested that EO influences FP, that it is a resource-intensive strategy, and that the question that should be asked is, "is it sustainable?" Later studies indicated that, although other non-financial performances also linked positively to EO, the financial performance showed the most positive correlation with EO, this was supported by Frese et al. (2009) who also found strong links between EO and financial performance.

Studies focused on EO at the firm level found many links with different variables, for instance firms with higher levels of EO used strategic alliances more extensively (Marino, Strandholm, Steensma, & Weaver, 2002). Others reported that several management variables such as the IO correlated with EO (de Coning, Goosen, & Smith, 2002; Frese et al., 2009). EO contributes to both growth and financial performance (Wiklund, 1999) and organisational strategy, structure, and culture typically support EO (Zhao, 2005).

The EE or knowledge about external context is considered to be everything outside the firm and is referred to as the macro environment in business management. This would include areas such as the economic, technological, competitive, supplier, customer, legal, and regulatory environments as well as the global environment. The nature of the EE that today's firm has to operate in might impact on a firm's EO. The environment in which firms operate, where businesses constantly need to look out for new opportunities, might relate more positively to EO and therefore might benefit a firm if the firm assumed an EO approach (Friesen & Miller, 1982). Firms with stronger predictors of EO tend to outperform other organisational types in unpredictable environments, and more adaptive or more entrepreneurially orientated firms display higher levels of FP than more conservative firms (Knight, 1997).

The link between biographical data of the founder/owner/manager and firm demographics was also debated in various studies as a factor that might moderate the relationship between EO and FP (Frese et al., 2009; Sinha, 1996; Wang, 2008). To enable SMEs and corporate organisations to take full advantage of EO, it is essential that environmental and organisational factors and their impact on FP are understood (Keh, Nguyen, & Ng, 2007; Wang, 2008). Companies find themselves in a continuous battle to achieve sustainable growth. Various factors impact on the way they structure themselves internally in order to cope with their EE. Against this background, the theoretical model in Figure 1 is proposed to explore the topic at hand.
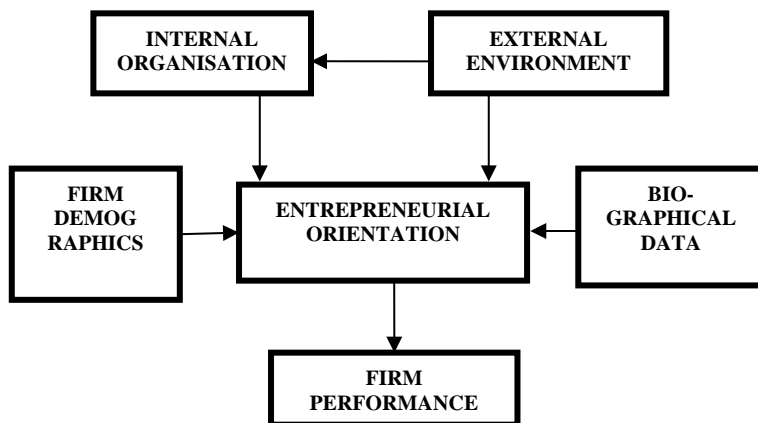

Figure 1: Predictive Model for Entrepreneurial Orientation and FP

Main Research Question
To what extent does the antecedents' external environment, internal organization, firm demographics, biographical relate to EO and how does it relate to firm performance?"

Literature Review

Firm Performance as a construct: The literature survey revealed that researchers mostly used sales growth as an indicator of FP. It is easily obtainable and reflects short and long-term changes in the firm, and it is associated with EO even though growth and profitability do not always show a positive correlation (Barkham et al., 1996; Brown et al., 2001; Casillas & Morento, 2008). Other researchers used profitability ratios, and findings suggested that industry averages should rather be used for comparison purposes. However, it is understood that bias in reporting may contaminate results. An instrument developed by Veldsman and Roodt (2002), based on the Balanced Scorecard developed by Kaplan and Norton (1996, p. 76), was used in this research as a means to investigate FP. The four dimensions of the Kaplan and Norton (1996) Balanced Scorecard provided a theoretical framework for generating the content. This approach ensured that the questionnaire had face and content

validity. The questionnaire dealt with four major areas: Stakeholder Satisfaction, Internal Process Efficiencies, Growth and Innovation, and Financial Performance.

EO as a construct: The theoretical basis of the EO construct is rooted in the assumption that entrepreneurial firms differ from non-entrepreneurial firms, with existing organisational research providing theoretical support for the EO construct. Covin et al. (2008) described EO as entrepreneurial behaviour that takes place inside small, medium, and large companies. Wiklund (1999) pointed out that, if a company acted entrepreneurial in a management framework, it allowed the study of EO to incorporate traditional management terminology such as strategy and performance. Fundamentally, EO refers to how entrepreneurship is carried out, i.e. a process-orientated perspective – the methods, practices, and decision-making styles that managers draw on to act entrepreneurial (Dess & Lumpkin, 2005; Dess et al., 1999; Zahra, 1993a). The entrepreneurial process can therefore be described as the total process whereby established enterprises act in an innovative manner, take risks, and act in a pro-active manner (Bouchard, 2001). These three dimensions of EO (innovativeness, risk-taking, and pro-activeness) are supplemented by two additional dimensions: competitive aggressiveness and autonomy, totaling five dimensions to be considered to fully understand EO as a construct (Frese et al., 2009; Lumpkin & Dess, 1996).

However, there is much debate in the theory as to whether EO should be investigated as one construct, as three dimensions (innovation, risk-taking, and competitive aggressiveness) or as five dimensions (innovation, risk-taking, competitive aggressiveness, pro-activeness, and autonomy). Lumpkin and Dess (1996) supported the notion that EO should be investigated in terms of five separate dimensions. Studies by Knight (1977) and Mueller and Thomas (2001) indicated that the importance of certain dimensions might even differ across countries. Covin and Slevin (1989a) theorised that three of these dimensions, namely innovativeness, risk-taking, and pro-activeness, should be aggregated together when research in entrepreneurship is conducted, as they have shown high levels of reliability and validity in numerous studies. The dependence and independence of these dimensions are challenged, but there is agreement that they are all central to understanding EO.

Past research confirmed a positive relationship between EO and FP (Lumpkin & Dess, 1996; Wiklund, 1999; Todorovic & Schlosser, 2007), and sales volumes were used as a FP indicator. A meta-analysis study conducted on 37 studies found great variances in the magnitude of the correlation between EO and FP, beyond what can be explained by sampling error. Casillas and Moreno (2008) divided these studies into two categories, namely the studies that explored general models describing the nature of the EO – FP, identifying moderating and mediating variables, and attempting to establish wide-reaching propositions (Covin & Slevin, 1991; Dess, et al., 1999: Lumpkin & Dess, 1996). Secondly, studies that attempted to empirically verify partial models of these relationships in an isolated and independent manner, some of the moderating variables that related to the EE (Dess & Lumpkin, 2001) or to the firm's IO (Wiklund & Shepherd, 2005).

EE as a construct and its relationship with EO: Various authors identified the EE as having a strong if not deterministic effect on entrepreneurial activities. If understood correctly by organisations, the EE provides stimuli that must be acted upon; less entrepreneurial ventures do not notice or act upon these stimuli. The EE can further be seen as a multidimensional concept that includes various dimensions. Zahra (1993b), for example, used terms such as dynamism, technology opportunities, industry growth, and a demand for new products. Dess and Lumpkin (2001) stated that the environment largely consisted of three dimensions, namely hostility, complexity, and dynamism. A study conducted by Bloom et al. (2007) used dynamism, hostility, and heterogeneity as sub-dimensions of the environment. Three types of environments were identified by Cronje et al. (2007), who stated that each of these environments, stable, dynamic, or highly technological, imposed its own challenges on the organisation. These two dimensions, *dynamism* and *hostility*, were generally used (Gravis & Zahra, 2000; Dess & Lumpkin, 2001; Shepherd & Wiklund, 2005) when exploring the EE. The EE in which a firm operates may be taken as the departure point when designing the business structure, because the business structure is what keeps the business in touch with its environment.

IO as a construct and its relationship with EO. Frese et al. (2009) stated that certain variables could intervene in the relationship between the IO and EO. Three dimensions of the IO were identified (refer to paragraph 2.6), namely firm strategy, business structure, and firm culture. Firm strategy is a process that guides the approach companies follow to sustain renewal and growth; it ensures that structures follow strategy. Covin et al. (2008) urged firms to maintain a focus on their strategy and to not be side-tracked by situational opportunities. The extent to which leadership demonstrates certain characteristics like innovativeness, risk-taking, and values and beliefs further impacts on the second dimension, namely the form that the organisation will adopt regarding its business structures, strategy, and firm culture. This ultimately impacts on the firm's EO – FP relationship. Once formalized, the structure is not static. It continuously changes as management struggles with the need to balance differentiation of activities and people against integration of activities and people. Regardless of the type of structure currently in place, as environments become more dynamic, threatening, and complex, organisations

find that competitive survival forces them to become more entrepreneurial. A business structure can either assist or hamper attempts at EO, and one often reads about the disturbing effect of corporate silos and how they suppress innovation (Peterson & Johnson, 2005). Firm culture as the third dimension of the IO that fosters EO will exhibit characteristics like mutual trust, open discussions, justice, managerial styles and behaviour appropriate to the task at hand, integration of personal and business goals, quality of work life and job design, a sense of identity, good reward systems, and an acceptance of the psychological contract between the employee and the employer (Mullins, 1999).

EE and its Relationship with the IO: Davis and Powell (1992) postulated that EO was dependent on the business's EE. Their views were supported by Cronje et al. (2007), who proposed that a business had to adapt to its EE in order to survive. Most research suggested that the EE moderated the relationship between EO and FP (Abetti & Badguerahanian, 1995; Antoncic & Hisrich, 2001; Covin & Slevin, 1991; Zahra, 1991). Environmental turbulence creates a need for new management practices within a firm. Examples of turbulence are new technology that requires new management practices, customers having higher expectations as they become informed and knowledgeable about other products and services, competitors who play by different rules showing customers other markets, and regulatory restrictions forcing firms to compete differently. Many firms across the world have responded to these challenges; they have resized, re-engineered, become "lean and mean" and yet they struggle to maintain their competitive edge. It is therefore clear that the EE forces internal organisational change, and firms that are more adaptable, flexible, speedy, aggressive, and innovative are better positioned to influence their EE.

Firm demographics and its relationship with EO:The literature discusses a number of potential moderator variables that impact on the EO - FP relationship (Gravis & Zahra, 2000; Lumpkin & Dess, 1996). However, there is little consensus on what constitutes suitable moderator variables. Candidates for variables include firm age (as older ones with more established habits are less positively affected by EO), firm size, and industry type (Frese et al., 2009). Firms of different sizes and ages and from different industries may exhibit different environmental characteristics (Shepherd & Wiklund, 2005). The geographical location of a firm is often debated as one of the most important factors that contribute to firm success (Bezuidenhout et al., 2008). Empirical studies by various researchers yielded mixed results in that some studies report no relationship between firm location and firm success (Evans, 1987b; Singh & Whittington, 1975).

Firm size is a significant research variable as it often shows a relationship with the major characteristic descriptors of decision-making outcomes such as organisational structure, strategy, and FP. In particular, it is widely accepted that small and large firms differ in various ways, not limited to the availability of funds, activities, management styles, and objectives (Beaver, 2003). These differences may result in divergent paths to success or failure (Nickerson & Pleshko, 2007). A study conducted by Goosen (2002) indicted that firm size does not have an influence on EO in South Africa (Bloom et al., 2007).

In searching the research databases, few studies were found that investigated the *EO - industry type relationship*. However, a South African study suggested that Information Technology and Communication (ITC) companies were more entrepreneurially orientated than JSE-listed companies. It is acknowledged by Bloom et al. (2007) that the climate of the ITC companies is more conducive to EO behaviour. The conclusion can therefore be drawn that EO varies among different industries or company groups (Bloom et al., 2007).

One study was found that stated that it was not the size of a company that impacted on its EO, but its *age*; as companies become older they become more established and their degree of EO declines. It has been found that when company age was correlated with company size the organisation became less tolerant of entrepreneurial behaviour (Bloom et al., 2007).

Founder / owner / manager Biographical Data and their relationship with EO. A number of studies attempted to identify the characteristics of an entrepreneur, but it remains a debate amongst researchers (Bezuidenhout et al., 2008). The owner/manager of a small business is most of the time present at his/her business (Hill, 2001). The competence, characteristics, attitudes, and motives of this individual have a significant influence on FP (Carson & McCartan-Quin, 2003). Bellamy is of the opinion that each entrepreneur has his or her own perception of what constitutes firm success (Bellamy et al., 2004). Founder-managed firms are associated with higher financial performance and are more likely to survive (Lerong, 2008). Previous empirical studies have had trouble finding a consistently positive founder-performance link. This might be explained by the fact that, when ownership is controlled, founders are correlated with only a small probability of bankruptcy, but they do not influence the likelihood of mergers and acquisitions. It is further postulated by Collins, Hanges, and Locke (2004) that founders' economic links and psychological attachment both influence their motivation and

decisions, and, as such, the combined founder effect may not be clear. Therefore, the relationship between a founder-manager and firm financial performance is further moderated by corporate governance structures. A founder-manager is associated with even higher financial performance when sound corporate governance is applied (Lerong, 2008).

Regarding educational levels, the Global Entrepreneurship Monitor Report (2007) stated that the ability of an entrepreneur who had a tertiary education to create employment was 2.5 times more than the ability of those with a secondary education, and 11 times more than the ability of those entrepreneurs who had not completed a secondary education. Herrington, Kew and Kew (2009) indicated that there was a definite growth trend in the number of graduations attained by the South African youth, and that this could have a positive effect on entrepreneurial activities.

The personal characteristic of age of the entrepreneur also affects FP. Owners who had been in business for a long time did not want their firms to grow. In tourism, an entrepreneur near retirement did not report the motivation to invest more time, money or effort in the firm. A great number of entrepreneurs wanted stable growth, although an increase in employment was not a primary goal (Reijonen & Kompula, 2007).

The following hypotheses are set:

H1$_A$: The constructs EO, EE, and IO can be reliably and validly measured.

H2$_A$: There is a relationship between EO (independent variable) and FP (dependent variable).

H3$_A$: There is a relationship between EE (independent variable) and EO (dependent variable).

H4$_A$: There is a relationship between IO (independent variable) and EO (dependent variable).

H5$_A$: There is a relationship between EE (independent variable) and IO (dependent variable).

H6$_A$: There is a relationship between Firm Demographics (independent variables) and EO (dependent variable).

H7$_A$: There are differences between Founder/Owner/Manager Biographical Data (independent variables) and EO (dependent variable).

H8$_A$: General Linear Modeling (GLM) can be used to predict EO.

Research Design

The overall design of the study was based on a quantitative methodology, where empirical findings were tested statistically in order to extend the theoretical contributions in this field. The research approach chosen to investigate the research question was a cross-sectional field survey ex post facto study. A self-administered questionnaire was designed and used to collect primary data. Survey data was collected from Small Medium Enterprises (SMEs), in the Gauteng area, South Africa. A final sample size of $N = 500$ was sought and obtained.

Measuring Instrument: A self-administered questionnaire consisting of 88 items was designed using the conceptual framework approach, shown in Figure 1 above. Variables included in the study were linked to the literature findings. The Cronbach Alpha coefficient was used to measure the model's reliability and the extent to which items were interrelated. Cronbach Alpha coefficient levels above .70 were considered as acceptable (Churchill, 1997; Peter, 1997).

Data Analysis: Phase 1 of the data analysis is to provide the results of the descriptive statistics for all the key constructs and their respective dimensions used in this study. Step 2 of Phase 1, an exploratory factor analysis was conducted on the three key constructs: *EO* (Section B), *EE* (Section D), and *IO* (Section E) to determine empirical factors that might be suggested by the analysis. Phase 2 reports on the statistical inter-correlations being done between constructs, test for the predictions and lastly to present the predictive model.

Findings: Descriptive Statistics

Of the $N = 500$ respondents, $n = 115$ did not answer section F, and $n = 42$ did not answer sections B to E. To test reliability and factors in sections B to E, $n = 458$ cases were used to maximise the sample size where possible. A check was carried out by the researcher ensure that the $n = 385$ samples gave similar results. It was argued by the researcher that it was better to work with the larger sample, although the smaller sample gave similar results. The sample of $n = 385$ respondents was used to test any relationship that involved section F. The results reflected that most respondents (54.2%) were between the ages of 36 and 55. More males (61.1%) than females responded to the study. 67% of the respondents were founders, 71.4% were owners, and 80% of the respondents were managers as well. 89.7% of respondents participated in strategic management decisions. Therefore, the

data was obtained from the correct sample base, namely respondents were either the founder/owner or manager of the business. 68.6 % of the respondents had a higher or other post grade school qualification. It is noticeable that 31.4% of the respondents had grade 12 and lower. The mean age of the businesses who responded was 12.81 years, with a mean of 25 employees. A total of 46.7% of the responses were received from the Johannesburg area, with Pretoria providing 25.8% of responses. The highest response (14%) was from the financial and business services industry, with *Other* second (14.2%) which were mainly from the Catering, Accommodation, and other Trades sector.

Findings: Statistical Analysis – Exploratory Factor Analysis

EO theoretical dimensions as identified by the literature are: innovation, risk, pro-activeness, competitive aggressiveness, and autonomy. Innovation (Items B1 to B4) yielded a Cronbach Alpha coefficient of .793. Risk (Items B5 to B8) reported a Cronbach Alpha coefficient of .664, which is an indication of a moderate internal consistency. First-level factor analysis were applied where scores on all the 19 items were inter-correlated and three factors were extracted. Results of the second-level factor analysis where the sub-scores of the three factors obtained were inter-correlated and the three factors were postulated based on the obtained Eigenvalues larger than unity. In this case, a single factor with a concomitant internal consistency reliability (Cronbach Alpha) of .909 was extracted. In summary the iterative item reliability analysis of all the items of the scale yielded an acceptable item-total score coefficients and internal consistency reliabilities. All items correlated with the total score of the scale (> .449), and item internal consistency reliabilities ranged between .901 and .907. The overall Cronbach Alpha for the EO scale (19 items) was .909.

The underlying *theoretical dimensions for EE* are hostility and dynamism. *Hostility* (Items D1H to D6H) yielded a Cronbach Alpha coefficient of .648, which is moderate and acceptable. *Dynamism* (Items D7D to D9D) yielded a Cronbach Alpha coefficient of .491, which is somewhat lower than the recommended .60. An Iterative item reliability analyses on all the items of the EE scale yielded acceptable item-total score coefficients and internal consistency reliabilities. Most of the items correlated with the total score of the scale (> .193), and item internal consistency reliabilities ranged between .193 and .526. The overall Cronbach Alpha for the EE scale (9 items) was .743.

The underlying *theoretical constructs for IO* are: business structure, firm culture, and firm strategy. Business Structure (Items E1 to E13) yielded a Cronbach Alpha coefficient of .865. Firm Culture (Items E15 to E23) reported a Cronbach Alpha coefficient of .700, which indicated an acceptable internal consistency. Firm Strategy (Items E24 to E29) yielded a Cronbach Alpha coefficient of .767, which was acceptable. A single factor with a concomitant internal consistency reliability (Cronbach Alpha) of .912 was extracted. Iterative item reliability analyses of all the items of the scale yielded acceptable item-total score coefficients and internal consistency reliabilities. All items correlated with the total score of the scale (> .155), and item internal consistency reliabilities ranged between .906 and .909. The overall Cronbach Alpha for the IO scale (27 items) was .912.

Pearson product-moment coefficient correlations were calculated between *FP, EO, and EE and IO, Firm Demographics, and Founder/Owner/Manager Biographical Data* used in the study. Where comparisons between groups (i.e. age groups, industry type) were made, a parametric test (ANOVA) was performed. No significant correlation was found between EO and the FP score [r (388) = -.065; p = .196]. However, for the sake of clarity, further analysis indicated that the Internal Process Efficiencies score showed a small but significant, negative correlation with the EO score [r (388) = -.216; p = .000]. A small increase in the Internal Process Efficiencies score can therefore be associated with a small decrease in the EO score. The Financial Performance score showed a small but significant (p < .06) positive correlation with the EO score [r (388) = .100; p = .052]. An increase in the EO score therefore related to an increase in the Financial Performance score. No correlation was found between EO and Stakeholder Satisfaction, or between EO and Growth and Innovation. The EO score showed a significant, high, positive correlation with the EE score [r (443) = .583; p = .000]. An increase in the EE score can therefore be related to an increase in the EO score. The EO score showed a significant, high, positive correlation with the IO score [r (441) = .760; p = .000]. An increase in the IO score could therefore be associated with an increase in the EO score. The EE score showed a large, positive correlation with the IO score [r (437) = .623; p = .000]. An increase in the EE score related to an increase in the IO score. Firm Size scores showed a small negative correlation with EO scores [r (445) = -.105; p = .026]. A high score for Firm Size (number of employees) was associated with a low score in EO. Firm Age

scores showed a small, negative correlation with EO and Business Age [r (438) = -.154; p = .001]. A high score on Firm Age related to a low score in EO.

As comparisons between groups were done, a parametric test (ANOVA) was performed. The inter-correlation of the dimensions (Industry Type and Firm Location) with EO was performed to establish if there were differences in EO scores according to Industry Type and Firm Location. Significant differences were observed in the mean scores between the finance and business services industries and the category "*other*" regarding EO. Closer scrutiny of the "*other*" category revealed that it was made up mainly of the Catering and Accommodation industry

There were significant overall differences in EO according to location, but the exact nature of these differences was still unknown. A Brown-Forsythe test was performed to confirm mean score differences according to location. However, these results did not indicate which of the various location types were related to these differences. A post hoc Scheffe test was performed to determine which of the EO means differed significantly from the others. Significant differences in mean scores between the East Rand, West Rand (M = -.779), Johannesburg (M = -.606), and Pretoria (M = .832) in respect of EO was reported.

The predictive model: Next, the predictive relationships between EE and EO, EE and IO, and IO and EO were tested. Path A indicates a proposed relationship between EE and EO. Path B indicates a possible relationship between EE and IO, and path C indicates a possible relationship between IO and EO. Path C' controls for the effects of EE, via IO, on EO. In Step 1 an analysis was conducted to verify a relationship between the predictor variable (EE) and the outcome variable (EO) - path A. Thereafter, in Step 2, an analysis was conducted to verify a relationship between EE (predictor) and IO (criterion) - path B. Lastly, in Step 3, an analysis was performed to verify a relationship between IO and EO - path C, while controlling for effects of EE (predictor) - path C'. A discussion of these results follows. In Step One, an analysis was conducted to establish a relationship between EE as a predictor variable and EO as the dependent variable (criterion) - path A. Table 1 below displays the outcome.

Table 1
Summary Model of EE as Predictor of EO

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.583[a]	.339	.338	.789
a. Predictors:(Constant), EE				

The R Square value indicates that EE explained 33.9% of the variance in EO. To assess the statistical significance of this result, ANOVA tests were performed, and the results are presented in Table 2.

Table 2
ANOVA of EE and EO

ANOVA[b]					
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141.148	1	141.148	227.019	.000[a]
	Residual	274.811	442	.622		
	Total	415.959	443			
a. Predictors: (Constant) EE					
b. Dependent Variable: EO					

The ANOVA results [F (1, 442) = 227.019, p < .000] indicated that EE reached statistical significance in its ability to predict the outcome variable (EO). Next, coefficients were calculated to establish how much EE contributed in the prediction of EO. Table 3 illustrates the results.

Table 3
B and Beta Coefficients of the EE Predicting EO (Path A)

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.809	.212		8.534	.000
	EE	.621	.041	.583	15.067	.000
a. Dependent Variable: EO						

Coefficients[a]

Table 3 indicates that EE tested statistically significant, with a [β = .583; $p < .001$]. Analyses proceeded with Step 2 to establish a relationship between EE (predictor) and IO- path B. Step two of the analysis, as portrayed in Table 4 below, determined the relationship between EE and IO.

Table 4
Model Summary of EE Predicting the IO (Path B)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623[a]	.388	.386	.648
a.	Predictors: (Constant) EE; Dependent: IO			

Table 4 above depicts the R Square value indicating that EE explained 38.8% of the variance in IO. To assess the statistical significance of this, ANOVA was performed. Results for the main ANOVA are shown in Table 5.

Table 5
ANOVA for the EE as Predictor of IO (Path B)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	116.151	1	116.151	276.272	.000[a]
	Residual	183.305	436	.420		
	Total	299.456	437			
a. Predictors: (Constant), EE						
b. Dependent Variable: IO						

As can be seen in Table 5 above, the final ANOVA results were [F (1,436) = 276.272; $p < .000$]. As p is .000 < .0005, it could be concluded that EE significantly improved the ability to predict scores of IO. Table 6 illustrates how the calculation of the coefficients determined to what extent EE contributed to the final equation.

Table 6
B and Beta Coefficients of the EE in Predicting the IO (Path B)

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.054	.176		11.682	.000
	EE	.567	.034	.623	16.621	.000
a. Dependent Variable: IO						

Coefficients[a]

In the final model, EE tested statistically significant, [β = .623; $p < .001$]. The third step in the process was to verify a relationship between IO and EO, while controlling for the effects of EE (predictor) (paths C and C'). The results of Step three in the process are shown in Table 7. Both IO and EE were entered into

the model. First, EE as a variable was entered to statistically control it as a variable. In the second row, IO and EE were entered as variables, in order to be able to explain some of the remaining variances in EO.

Table 7
Model Summary of the Ability of the EE and IO to Predict EO

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773[a]	.597	.595	.614
a. Predictors: (Constant) IO; EE				
b. Dependent Variable: EO				

In Table 7, the results of the analysis show that the *R Square* is .597 or 59.7%, indicating that if all items of IO and all items of EE are entered into the model, the overall model explained 59.7% of the variance in EO. EE being entered into step 1 explained 33.9% of the variance in EO. Therefore, IO explained an additional 25.3% of the variance in EO. ANOVA was performed next to test significance. Table 8 below shows the results.

Table 8
ANOVA –Ability of EE and IO to Predict EO

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	243.465	2	121.733	322.445	.000[a]
	Residual	164.226	435	.378		
	Total	407.691	437			
a. Predictors: (Constant) IO; EE						
b. Dependent Variable: EO						

The result of the ANOVA, $[F(2, 435) = 322.445; p < .000]$, illustrated in Table 8 above, showed that EE and IO reached statistical significance in improving the ability to predict the outcome variable (EO). The hypothesis was therefore supported by empirical evidence. Next, coefficients of variables had to be calculated to confirm which of the variables (EE or IO) made the most significant contribution to the variance in EO. Table 9 below presents the model parameters, which included all predictors that made a significant contribution to the prediction of EO. It provides information about EE and IO as predictors of EO (criteria).

Table 9
B and Beta Coefficients in EO where EE and IO Predict EO

Coefficients								
Model		Unstandardised Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.262	.191		1.373	.171	-.113	.637
	EE	.198	.041	.186	4.785	.000	.116	.279
	IO	.750	.045	.643	16.533	.000	.661	.839
a. Dependent Variable: EO								

In the final model, illustrated in Table 9 above, IO and EE were both statistically significant, with IO recording a higher beta value ($\beta = .643; p < .001$) than EE ($\beta = .186; p < .001$). Therefore, the reduced beta value when IO was entered in Step 2 suggested that IO mediated the relationship between External Organisation and EO. As can be seen from Table 4-40 the General Linear Modeling equation for EO was as follows:

$$Y = a + b_1 * X_1 + b_2 * X_2$$

Where: Y = EO; a = .262; b_1 = .198; X_1 = Mean EE; b_2 = .750; X_2 = Mean IO

Therefore:

EO = .262 + (.198) (*Mean* EE) + (.750) (*Mean* IO).

Next, a test for mediation between EE and EO was performed using the Barron, Frazier, and Tix (2004) approach. Below Table 10 demonstrates the application of the Barron, Frazier, and Tix (2004) approach to testing for mediation, effect, significance, and extent.

Table 10
Summary of Mediating Effect of IO between EE and EO

Calculating Mediating Effect - Significance and Extent (after Barron, Frazier, & Tix, 2004)					
		Predictor=> outcome EE => EO	Predictor=> mediator EE=>IE	Mediator =>outcome IE=> EO	Predictor => outcome controlling for mediator
		Path A	Path B	Path C	Path C'
	Unstandardized B coefficient	.621	.567	.198	.75
	Standard error of coefficient	.041	.034	.041	.045
		Model 1	Model 2	Model 3	Model 3
	Although path C' is significant the coefficients are not equal i.e. -.069 <> - .747 suggesting some effect from B				
EQ1	Mediated Effect = a*b = .567 * .198 = .112266				
EQ2	Standard Error Term = (B2 * SA2) + (A2 * SB2) + (SA2 * SB2) Where: A and B are Unstandardized Regression Coefficients and SA and SB are the Standard error of coefficient				
			B2	SA2	A2	SB2
			.039204	.001156	.321489	.001681
	B2 * SA2	4.53198E-05			
	A2 * SB2	.000540423			
	SA2 * SB2	1.94324E-06			
	(B2*SA2) + A2*SB2) + (SA2*SB2)	.000587686			
	SQRT (B2*SA2+A2*SB2+SA2*SB2)	0.024242237			
EQ3	z score of mediated effect = mediated effect/standard error				
	4.631008213				
	4.631008213 is greater than 1.96 so mediation effect is 'significant'				
EQ4	To describe amount of mediation				
	AB / C	0.180782609			
	i.e. 18% of EO is explained by mediation from IO				
Confidence around estimate of indirect effect					
Product of path A and B +- S (AB)) z. 975 where z. 975 is equal to constant 1.96 and S(AB) is standard error term calculated earlier.					
A * B	SE (a*b)	constant			
.112266	.024242237	1.96	.047515	+	0.064751
				-	0.159781
Range does not contain 0 i.e. indirect effect is not 0, so there is mediation					

The mediation effect was significant. Therefore, IO mediated the relationship between EE and EO. 18% of the variance in EO was explained by the mediating effect of IO. Next, Step five, the last step of Phase 2, is presented.

Integrative Hypothesis

MANOVA was used to compare the mean differences between groups (Firm Size, Firm Age, Industry Type, Industry Location, Founder/Owner, and EE as moderators) and EO (Hill & Lewicki, 2007). Firstly, a univariate approach was followed, and, secondly a linear regression analysis was done to determine the independent and interactive role of the various demographic and biographical variables (Firm Size, Firm Age, Industry Type, Industry Location, Founder/Owner, and EE), and to determine if they independently or interactively explained the variance in EO ((Hill and Lewicki, 2007). The following hypothesis was formulated:
Hypothesis H1.1$_A$: Various demographic and biographical variables *(Firm Size, Firm Age, Industry Type, Industry Location, Founder/Owner, and EE)* independently or interactively predict *EO*.

First, Firm Demographics and Biographic variables and EE were entered as independent variables and as two-way interactions (moderation). Secondly, the variables were entered into an equation, as shown below.

a. Design: Intercept + Founder + Owner + Industry Type + Industry Location + Industry Age + Industry Size + EE +(Founder * Owner) +(Founder * Industry Type) +(Founder * Industry Location) + (Founder * Industry Age) + (Founder * Industry Size) + (Founder * EE) + (Owner * Industry Type) + (Owner * Industry Location) + (Owner * Industry Age) + (Owner * Industry Size) + (Owner * EE) + (Industry Type * Industry Location) + (Industry Type * Industry Age) + (Industry Location * Industry Size) + (Industry Type * EE) + (Industry Location * Industry Age + Industry Location * Industry Size + Industry Location * EE) + (Industry Age * Industry Size) + (Industry Age * EE) + (Industry Size * EE)

There were significant differences in the variances. The model shows *R Squared* = .609, which was due to the strong relationship between EE and EO. There were a few significant interactions in the model. However, the effect size was small.

There were main effects for Owner [$F = 4.693$, $p = .031$], Industry Type [$F = 2.089$, $p = .037$], Industry Location [$F = 3.208$, $p = .013$], and interaction effects for Founder and Industry Type [$F = 2.2.392$, $p = .016$], Founder and EE [$F = 3.979$, $p = .047$], Owner and Industry Size [$F = 5.320$, $p = .022$], Owner and EE [$F = 5.149$, $p = .024$], Industry Type and Industry Size [$F = 2.293$, $p = .012$], Industry Type and EE [$F = 2.049$, $p = .041$], and Industry Location and EE [$F = 2.857$, $p = .024$]. Firm Demographics and Founder/Owner/ Biographical Data are more closely related to EE as opposed to the IO. While the main effect was between EE and EO, they showed significant interaction with a low effect. It could therefore be concluded that the final model with all the variables explained 45.1% of the variance in EO.

Discussions and conclusions

Using the Balanced Scorecard developed by Veldsman and Roodt (2002) to test FP provided useful insight into the EO - FP relationship. Closer analysis revealed that when the Financial Performance score was higher, it was related to an increase in EO scores, thereby confirming previous research findings that there was a positive relationship between EO and FP. The results indicated that the larger and older the firm grew, the less entrepreneurial they became. This is due to more rules, policies, and procedures being put into place to manage the firm. The type of industry and firm location also played an interactive role in EO levels.

EO scores showed a significant, high, positive correlation with IO scores [$r = .760$]. This hypothesis was also supported by the Balanced Scorecard that was used to measure FP, as one of the constructs was Internal Process Efficiencies. The results obtained indicated that tighter internal control efficiency led to lower EO.

The large, positive correlation between EE scores and IO scores [$r = .623$] showed that SMEs kept tighter control over their businesses if they were operating in a hostile, dynamic EE. A test for mediation was conducted, and it was concluded that IO mediated (18%) the relationship between EO and EO.

Firm Size, Firm Age, Industry Type, and Firm Location and their relationship with EO were tested. Firm Age and Firm size tested negative with high scores of EO. The larger and older the firm grew, the less it felt the need to become entrepreneurially orientated. The relationship between Industry Type and Firm Location appeared to be more complex in that EO became a necessity for the long-term survival of SMEs operating in a hostile, dynamic industry.

The research findings provided support for the importance of the founder/owner to be present at the place of business as it led to higher EO. Age, Education Level, and Gender did not play a role in the firm being more or less entrepreneurial. However, it should be pointed out here that 68.6% of respondents who owned SMEs had a post graduate qualification.

A sub-hypothesis was formulated by simultaneously entering all the important variables into the equation. It was concluded that Firm Size, Firm Age, Industry Type, Industry Location, Founder, Owner, and EE independently or interactively predicted EO. It can therefore be concluded that the final model with all the variables explained 45.1% of the variance in EO.

A test for mediation was conducted, and it was concluded that IO mediated (18%) the relationship between EO and EO.

Researchers should avoid dividing constructs into unnecessary dimensions. This causes complications in analysis, and the question should be asked if it really adds value when trying to understand the underlying relationships.

Future Research

The EO - FP model with its suggested antecedents could be empirically tested in other countries. A uniformed Firm Performance Measurement instrument should be used to test Firm Performance. The importance of firm location can be further explored.

Reference list upon request will be forwarded