

Research Article

Impact of Entrepreneurial Orientation on the Performance of Company: The Moderating Effect of the External Environment: Tunisian Case

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A B S T R A C T

Although entrepreneurial orientation (EO) has been shown to play a key role in increasing firm performance (FP), the effects of EO have been extremely oversimplified. The plethora of empirical studies on EO and FP suggest that the EO-FP relationship is linearly positive regardless of the amount of EO investment. The results show that EO increases FP at the bounded level. We argue that the excessive use of EO and organisational incapability may contribute to the non-linearity of such effects. We also find that highly dynamic environments enhance the EO-FP relationship. We present prescriptive implications to practitioners on the antecedent conditions for EO practises.

Keywords: Inverted U-Shaped, Entrepreneurial Orientation, Performance, Environment, SMEs

Introduction

A nation's economic development largely depends on new firm creation and innovation in existing firms.^{1,2} When we discuss new firm creation and innovation in existing firms, the core of the academic literature pays attention to entrepreneurship. Not only academics but also policymakers and practitioners are interested in this important sociological, economic, psychological, historical, and managerial aspect of the theory, as the latter are keen to know how to make society entrepreneurial. Firms that plan and manage innovations well will survive and stay competitive. Firms that rarely develop and introduce new products in the market will find long-term survival challenging.³ Therefore, firms must practise some form of entrepreneurial orientation (EO), which is exemplified by engagement in technological change, risky investments, and pioneering activities in an effort to introduce new and innovative products/ services.

Researchers have predominantly agreed on defining firm-

level entrepreneurship as EO.⁴⁻⁶ The underlying assumption is that a positive link exists between a firm's EO and firm performance (FP). A conceptual understanding of this relationship has been emphasised and empirically tested in different cultural, geographical and business contexts.⁷⁻¹⁶ The main body of empirical research has reported a positive EO-FP relationship.¹⁷

Because of the relative newness of the field, many phenomena related to EO are unknown. The EO-FP relationship is at the forefront of such disputes.¹⁷ EO researchers have seemingly oversimplified the EO-FP relationship as completely linear.^{18,19} However, we cannot simply follow such logic without carefully considering a firm's resources, organisational capabilities, and surrounding, for example, R&D investment can be inefficient, and not linear²⁰, and the imbalance of product portfolio management due to organisational incapability may deteriorate the suggested EO-FP relationship. Innovation usually comes from technological innovation and new business models.²¹ EO requires many resources,

which are consumed in innovative activities.²²⁻²⁴ The failure to launch new products and generate profits from them can translate into unproductive resources (mostly R&D and production-related resources), which may be useless for other businesses.²⁵ Studies also have reported an inverted U-shaped relationship between R&D intensity (i.e., innovation) and FP.²⁶ Such investments can also be substituted as opportunity costs that are incurred from not investing in other businesses, which can also lead to a product portfolio imbalance issue.²⁷ Because of organisational incapability, firms invest too many resources in new product development without considering the need for a properly balanced product portfolio, and they may be more likely to perform poorly as a result of portfolio failure.²⁸ We argue that compared with a linear relationship, a curvilinear (i.e., inverted U-shaped) EO-FP relationship more accurately reflects reality.²⁹⁻³² Therefore, firms face a paradoxical dilemma in terms of being entrepreneurial or being managerial.

Recently, contingency-based EO research has received ample attention (Lyon, Lumpkin, and Dess 2000; Zahra and Garvis 2000; Lumpkin and Dess 2001; Stam and Elfring 2008). Such research argues that the EO-FP relationship is not homogeneous and that, in certain environments, this relationship can be strengthened or weakened. The moderating effects of such contingencies are mainly studied through external environments, such as market dynamism and market hostility (Covin and Slevin 1991; Zahra and Covin 1995; Lumpkin and Dess 1996). Although the theoretical understanding of Covin and Slevin, (1991) claims that dynamic and hostile market conditions have a positive impact on the EO-FP relationship, a number of researchers have found that market dynamism and hostility play an insignificant moderating role (e.g., Wiklund 1999; Lumpkin and Dess 2001; Wiklund and Shepherd 2003, 2005; Frank, Kessler, and Fink 2010). These inconsistent results call for researchers to conduct more empirical studies to establish a generally grounded theory on a contingency-based model of the EO-FP relationship (Lyon et al. 2000). Every contingency is unique because of national and regulatory differences and diverse incentives and rules of competition. Therefore, contingency-based EO-FP testing is needed in many different contextual settings. This study investigates the confounding EO-FP relationship and examines the moderating effects of environmental dynamism and hostility on the EO-FP relationship in the context of Tunisian manufacturing SMEs.

Theory and Hypothesis

Entrepreneurial Orientation and Firm Performance

Entrepreneurship researchers have long been encouraged to prove how entrepreneurship is developed, deployed, and

sustained within organisations and to help them become more innovative, take on riskier projects, and act proactively (Miller 1983; Covin and Slevin 1991; Zahra and Covin 1995; Lumpkin and Dess 1996), thus ultimately outperforming others in the market. Zahra and Covin's (1995) definition of EO paints the most comprehensive picture of what can be operationalised in entrepreneurial firms:¹

...top management risk-taking with regard to investment decisions and strategic actions in the face of uncertainty; the extensiveness and frequency of product innovation and the related tendency toward technological leadership; and the pioneering nature of the firm as evident in the propensity to aggressively and proactively compete with industry rivals. (p.44)

In their guest editor's note in a strategic management journal, Guth and Ginsberg (1990) emphasise the direct relationship between firm-level entrepreneurship (i.e., EO) and FP. Covin and Slevin (1991) also insist on the direct positive effect of EO on FP, which can be moderated by internal (e.g., resources, culture, and structure), external (e.g., market dynamism and hostility) and strategic (e.g., grow, maintain, and harvest) variables. Further conceptual work can be found in Lumpkin and Dess (1996), who argue that environmental and organisational factors influenced the direct positive effect of EO on FP. A few researchers have found that EO has a positive direct effect on FP (Lee et al. 2001; Wiklund and Shepherd 2003; Li, Huang, and Tsai 2009). Rauch et al. (2009) conducted a vital meta-analysis of the EO-FP relationship based on 51 EO studies. They found that the EO-FP relationship is reasonably positive (where $r > 0.242$), but it varies depending on the contexts (e.g., nations and measures) and contingencies (e.g., firm size, industry, and environment) in question.

A few researchers have probed the sustainability of EO's effect on FP. Based on longitudinal data on 108 US manufacturing firms, Zahra and Covin (1995) found that EO had an increasingly positive effect on the performance indicator over a 7-year period. They used a composite performance value for the return on assets (ROA), the return on sales (ROS), and the growth rate, which was factor analysed and multiplied by each score of the participating firms. In a study of 132 Swedish small firms, Wiklund (1999) tested the EO level using two years of performance data, mostly on the scale of growth, i.e., "sales growth, employment growth, sales growth compared to competitors, and market value growth compared to competitors" (p.41). Similar to Zahra and Covin (1995), Wiklund contended that the effect of EO would increase gradually. In a similar vein, many other studies have reported a positive EO-FP relationship (Zahra and Garvis 2000; Lee et al. 2001; Wiklund and Shepherd 2005). Thus, we hypothesise the following:

Hypothesis 1: A direct positive relationship level of EO and FP

Lyon et al. (2000) cautioned against the prevailing belief of EO's positive effect on FP and argued that a deeper understanding of the EO-FP relationship was needed. For example, in examining 164 Dutch software venture firms, Stam and Elfring (2008) found no direct positive effect of EO on perceived FP or sales growth. In addition, Moreno and Casillas (2008) reported an insignificant relationship between EO and FP. Kraus and al. (2012) tested the effect of each EO dimension on FP and found that two EO dimensions—innovativeness and risk-taking had no significant effect on FP. Zahra and Garvis (2000) had also previously found a non-linear (inverted U-shaped) relationship in their study of international entrepreneurship and FP. More recently, Tang et al. (2008) and Su (2011) have attempted to take a more complex but realistic view of the EO-FP relationship. They claimed that the EO-FP relationship is positive but non-linear. In the context of Chinese venture capital and established firms, they found a curvilinear (i.e., an inverted U-shaped) relationship between EO and FP. Tang et al. (2008) argued that such phenomena could result from the lack of institutional support and role formalisation, while Su (2011) argued that the liability of newness, the lack of resources and social ties, and role ambiguity could be potential causes.

Although we agree with Tang et al. (2008) and Su (2011), this perspective and their results are relatively new and limited in scope (only Chinese context). We further argue that excessive use of EO and a lack of organisational capabilities may contribute to the insignificant and negative effects reported thus far (Dess and Lumpkin 2005; Stam and Elfring 2008). A genuine entrepreneurial firm usually aggressively develops new products and services ahead of its competitors (Miller 1983; Lumpkin and Dess 1996). Such firms require ample resources for consumption and better organisational capabilities (Wiklund 1999; Tang et al. 2008). A firm without such resources and capability can be at risk of failure. Because firm resources are not infinite, firms cannot invest in every opportunity that they identify (Bessant and Tidd 2007; Tang et al. 2008). For example, product portfolio management, which is mostly handled by senior management, can also affect the EO-FP relationship. Firms that invest too many resources into new product development and do not recognise the need for a balanced portfolio due to organisational incapability are likely to encounter financial instability (Cooper et al. 2000). Therefore, inefficiency in R&D investment (EO) and organisational incapability may have a negative impact on FP. We argue that the performance of EO initiatives will increase up to a certain point and then decrease. Based on the rationale above, we propose the following:

Hypothesis 2: An inverted U-shaped relationship exists between the level of EO and FP.

Moderating Role of External Environments

Lyon et al. (2000) noted that the inconsistent results regarding the EO-FP relationship can be attributable to contingency factors. They divided such contingencies into two types: organisational and environmental factors. Lyon et al. (2000) stated "Organisational factors include internal contingencies such as organisational size, structure and strategy, and the characteristics of the top management team. Environmental factors include external forces such as industry trends, growth rates, and business cycles, as well as the power of a firm's customers, suppliers, and competitors" (p.1077). Among these contingencies, researchers have shown particular interest in the external environment for its moderating role in the EO-FP relationship (Covin and Slevin 1989; Zahra and Garvis 2000; Lumpkin and Dess 2001; Wiklund and Shepherd 2005; Frank et al. 2010). Due to the cultural, regulatory, legislative, and political differences across nations, the external environmental conditions for business practices are not identical. Business practitioners across different countries can view these diverse environmental conditions as either opportunities or threats. Therefore, the environmental factors affecting the EO-FP relationship must be tested in a specific country or continent (the proximity, similarity, and familiarity of social, cultural, and business practices must be considered).

Zahra (1996) classified market environments as dynamic, hostile, and heterogeneous. In dynamic and hostile environments, the EO-FP relationship has been found to be strengthened (Kraus et al. 2012). Miller and Friesen (1983) defined market dynamism as "the amount and unpredictability of change in customer tastes, production or service technologies, and the modes of competition in the firm's principal industries." Firms in dynamic environments face frequent changes in technologies, customer needs, and competitors' strategic moves. The greater uncertainty in particular industries (high-tech industries) requires firms to develop new products faster than their competitors to keep up with such changes. Lumpkin and Dess (2001) found that the EO-FP relationship is positively moderated by dynamic market conditions. However, Wiklund and Shepherd (2005) found a negative moderating effect of market dynamism on the EO-FP relationship in Swedish firms. Frank et al. (2010) found no evidence for the moderating role of market dynamism on the EO-FP relationship.

Miller and Friesen (1983) defined market hostility as "price, product, technological and distribution competition, severe regulatory restrictions, shortages of labour or raw materials, and unfavourable demographic trends" (pp.233). In hostile environments, firms are more threatened by frequent regulatory changes, the difficulties in acquiring needed

resources, and the lack of new business opportunities (Zahra and Garvis 2000). Firms in hostile environments are continuously challenged to survive. These harsh environmental conditions require strong entrepreneurial mindsets (McGrath and MacMillan 2000). EO may be needed more in hostile environments than in benign ones because the risk and uncertainty are greater in the former. Zahra and Covin (1995) tested the role of market hostility in the context of U.S. manufacturing firms and found that market hostility had a positive effect on the EO-FP relationship. Covin and Slevin (1989) also found a positive moderating effect of market hostility on the relationship between EO and FP. However, in their study of 94 U.S. firms, Lumpkin and Dess (2001) found no significant moderating effect of environmental hostility on the EO-FP relationship. Although many have asserted the positive moderating roles of market dynamism and hostility (Covin and Slevin 1991; Zahra and Garvis 2000), contingency-based entrepreneurship research continues to reveal inconsistent results, which stem from the context-specific nature of such research. As such, further empirical research is necessary. Based on the rationale above, we propose the following:

Hypothesis 3: In a dynamic environment, the EO-FP relationship will be strengthened.

Hypothesis 4: In a hostile environment, the EO-FP relationship will be strengthened.

Research Method

Sample and Data Collection

The data were gathered from Tunisian manufacturing SMEs. First, to meet the criteria for SMEs, we chose firms that had fewer than 150 employees. To reduce selection bias, we then used a random sampling method to select firms that can be normally distributed regardless of the region and industry. The total sampling frame consisted of 483 firms. The sample was drawn from an SME database provided by the Tunisian government. We then conducted on-site to assess the questionnaire's face validity. We conducted our survey from September 2020 to November 2020. We used a two-step data collection process. We first contacted all the firms in the sample to ask if they would be willing to participate in the survey; we then sent an email survey to entrepreneurs and executives. We obtained a final usable sample of 146, and this two-step method significantly improved the response rate (30.22%). Among the participating firms, the average number of employees was 35, and the average firm age was 19. Following data collection, we checked for non-response bias; we used t-tests to compare the number of employees in our response group and in our non-response group. The results indicated no statistically significant difference between these groups.

Measures

Entrepreneurial orientation was measured by asking entrepreneurs and executives to evaluate their perceptions of their firms' innovativeness, risk-taking, and proactiveness. First, we measured EO as a "composite weighting" of the level of innovativeness (Miller 1983, p.771), risk-taking and proactiveness. Many empirical studies consider EO unidimensional rather than multidimensional (Rauch et al. 2009). All nine EO items were adopted from Naman and Slevin's (1993) questionnaire, based on a 7-point Likert-type scale. Three items were used to measure the firm's innovativeness: (1) its propensity for technological leadership and innovation, (2) its introduction of new products, and (3) its product line changes. Three items were used to measure the firm's risk-taking tendencies: (1) its propensity for high-risk projects, (2) its fearless acts to achieve its goals, and (3) its boldness in exploiting potential opportunities. The remaining three items measured the firm's proactiveness: (1) its ability to act before its competitors do, (2) its attempts to become the first mover in the market, and (3) its possession of a competitive posture to beat out its competitors.

Firm performance was measured using four items adopted from Tang et al. (2008). Three items measured the firm's relative performance compared to that of its competitors in terms of (1) revenue growth, (2) market share growth, and (3) profit growth. The remaining item measures the firm's overall performance. All items were anchored on a 7-point Likert-type scale.

Market dynamism and hostility were moderating variables in this study. Market dynamism and hostility were measured based on the scale used by Miller and Friesen (1983). Three items were adapted to measure market dynamism. To measure market dynamism, we asked the executives about (1) the predictability of their competitors' activities, (2) the changes in customers' tastes, and (3) the speed of their firms' innovation in terms of new products/ processes. To measure market hostility, we asked them (1) whether their industry was predictable, (2) whether their competitor's activities were aggressive, and (3) which competitor's activities affected their business. All items were anchored on a 7-point Likert-type scale.

We controlled for firm size, firm age, and the radicalness of new product innovations in this study. Compared with smaller firms, larger firms have more available resources for new product development, which affects the degree to which EO can be pursued (Lyon et al. 2000). A logarithm for the number of employees was computed to reflect firm size. Firm age was measured by the number of years that the participating firms had been in existence, and a natural log value was computed to reflect age. Younger firms may be more likely to act innovatively and boldly because they

are disadvantaged in the market because of the “liability of newness” (Freeman, Carroll, and Hannan 1983). Finally, we controlled for the innovative radicalness of new product development using four items measured on a 7-point Likert scale, as suggested by Gatignon, Tushman, Smith, and Anderson (2002). These four items asked executives whether their firms’ new products were perceived as (1) slight improvements from the previous technology (reversed), (2) breakthrough innovations, (3) difficult to replace with substitutes from older technology, and (4) major technological advancements in the subsystem (Gatignon et al. 2002, pp.1112). If firms develop new products with highly sophisticated features, subsystems, and embedded technologies, they will be more likely to possess an innovative posture.

Analysis and Results

We tested the validity and reliability of the data. As suggested in the literature, all the items were loaded on each construct to determine construct validity. All the items used in the testing model had Eigen values greater than 1.0 and factor loadings greater than 0.4, indicating a good convergent validity (Stevens 1992). All the items showed high coefficient alphas (Cronbach $\alpha > 0.6$), indicating good data reliability (Nunnally 1978). Table 1 provides descriptive statistics and the correlation matrix for all variables. The correlation between the independent variables was relatively low. Furthermore, the variance inflation factors (VIFs) for the variables ranged from 1.1 to 1.8 and fell well below the cut-off value of 10, indicating no multicollinearity issues.

Table 1. Descriptive Statistics and Correlations

(N = 146)

-	1	2	3	4	5	6	7
Mean	4.32	3.89	3.59	3.55	3.78	3.32	3.56
SD	0.92	1.18	0.70	1.01	0.82	0.37	0.76
1. Performance	1	-	-	-	-	-	-
2. Entrepreneurial orientation	0.835**	1	-	-	-	-	-
3. Environmental dynamism	0.031	-0.412**	1	-	-	-	-
4. Environmental hostility	-0.067	-0.048	-0.023	1	-	-	-
5. Firm size ^a	0.042	-0.257**	0.481**	0.001	1	-	-
6. Firm age ^a	-0.258**	-0.173**	-0.029	0.233**	-0.240**	1	-
7. Product radicalness	0.028	-0.386**	0.686**	-0.094	0.482**	-0.031	1

^aLogarithm, *p < 0.05, **p < 0.01, two-tailed test

Table 2. Results of Regression Analysis - Standardised Beta Coefficients

Factor	Model 1	Model 2	Model 3	Model 4
Firm size (log)	-0.040	0.059*	0.071***	0.074***
Firm age (log)	-0.266***	-0.054*	-0.062***	-0.044 [†]
Product radicalness	0.039	0.199***	0.204***	0.211***
ED	-	0.293***	0.289***	0.122
EH	-	0.020	0.019	0.129 [†]
EO	-	1.040***	1.346***	1.063***
EO ²	-	-	-0.309***	-0.197
EO × ED	-	-	-	0.271*
EO × EH	-	-	-	-0.158
R ²	0.068	0.898	0.901	0.904
Adjusted R ²	0.057	0.896	0.898	0.901
F-value	6.033***	360.04***	317.94***	254.03***
R ² change	-	0.830	0.003	0.003
F-test for R ² change	-	666.24***	7.321***	3.899*

ED: Environmental dynamism, EH: Environmental hostility, EO: Entrepreneurial orientation, [†]p < 0.1, *p < 0.05, **p < 0.01, ***p < 0.001

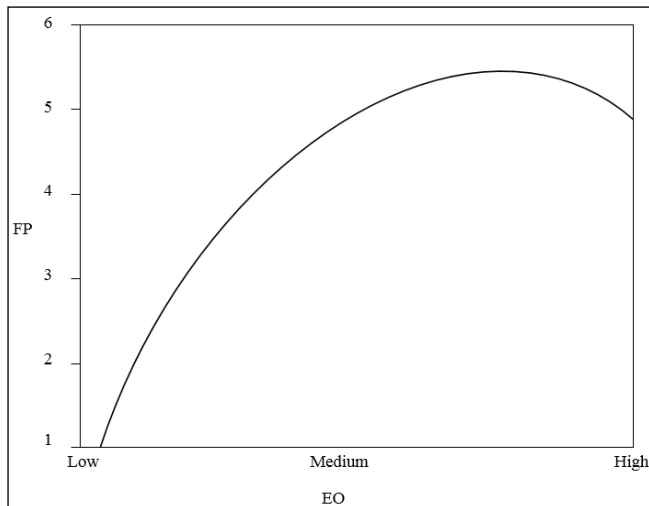


Figure 1. Relationship between Entrepreneurial Orientation (EO) and Firm Performance (FP) in Tunisian Manufacturing SMEs

We used hierarchical regression analysis to test our hypotheses. The results of the tests are presented in Table 2. In the first step, we used control variables in Model 1. The effect of EO and the moderators were included in Model 2. In Model 3, we added the squared term of EO. In Model 4, we included the interaction items. The adjusted R^2 for Model 1 was 0.057, and the f -statistic was highly significant ($p < 0.01$). We found that firm age had a negative effect on FP among Tunisian manufacturing SMEs ($\beta = -0.266$, $p < 0.01$). Model 2 had an adjusted R^2 of 0.896, and the f -statistic was highly significant ($p < 0.01$). We found that the number of employees, the radicalness of new product innovation, and environmental dynamism had a positive significant direct effect on FP.

Model 3 had an adjusted R^2 of 0.898, with high statistical significance ($p < 0.01$). We found a strong positive effect of EO on FP ($\beta = 1.040$, $p < 0.01$), thus supporting Hypothesis 1. We also found that the squared term of EO had a negative significant effect on FP ($\beta = -0.309$, $p < 0.01$), thus supporting Hypothesis 2. Hypothesis 3 and 4 tested the interaction effect of environmental dynamism and hostility on the EO-FP relationship. The results showed that, as an interacting variable, environmental dynamism had a positive effect on the EO-FP relationship ($\beta = 0.271$, $p < 0.05$). However, as an interacting variable, environmental hostility was not found to have a significant effect on the EO-FP relationship ($\beta = -0.158$, *n.s.*). Therefore, the results supported Hypothesis 3 but led us to reject Hypothesis 4. We plotted the relationship between EO and FP in Figure 1.

Discussion

Research suggests that practising EO has a direct positive effect on FP. However, this unduly bright forecast may mislead managers who strongly believe that their success lies in a strategy of being entrepreneurial at all times. However,

we have observed the failures of the most innovative products and the firms that have been regarded as highly entrepreneurial. Although many entrepreneurial firms have experienced enormous success, innovation is a necessary but insufficient condition for success. Although the failures of such products and firms cannot be generalised to reflect the ineffectiveness of EO, researchers should examine EO's effects on performance in greater depth. In this paper, we argue that excessive use of EO (the inefficiency of R&D investment) and organisational incapability may contribute to the non-linearity of such effects. In this study, we further scrutinised the effects of EO. This study sought to investigate the curvilinear effect of EO on performance. We found an inverted U-shaped relationship between the EO and FP of Tunisian manufacturing SMEs. The results indicate that a positive relationship exists between EO and FP at the bounded level. This finding lends support to the recent arguments and findings of Tang et al. (2008) and Su (2011).

We do not intend to deny the positive effect of EO (innovative/ risky/ bold activities) on FP. As found in this study, EO plays a key role in increasing FP. Research and history have proven that innovation is vital in creating a competitive advantage and helping firms stay in the market. However, the findings here provide a few practical implications. We suggest that firms must measure their entrepreneurial competencies and organisational capabilities when setting their entrepreneurial goals. Pursuing EO without considering entrepreneurial competencies, organisational capabilities, and calculated risks, FP can be beyond the control of the entrepreneurs/ executives, who must then rely on luck or external conditions. EO research can be problematic when it oversimplifies the EO-FP relationship and considers ex-ante conditions, such as entrepreneurial competencies and organisational capabilities, as constants. We need to delve into the ways in which the level of EO implementation varies according to these ex-ante EO conditions and the optimal level of EO for particular firms. Man et al. (2002) also argued that particular factors, such as the competitive environment, entrepreneurial competencies, and organisational capabilities, are critical for achieving SMEs' entrepreneurial goals.

This study also investigated the moderating roles of environmental dynamism and hostility in the EO-FP relationship. We found that the impact of EO on performance increases as the external environment becomes more dynamic, which implies that firms operating in highly uncertain and fast-changing environments require more EO. Such environments are often found in high-tech industries. However, we found no support for the positive role of environmental hostility in the EO-FP relationship. The lack of business opportunities, difficulties in acquiring necessary resources, and severe regulations shape the conditions for

hostile environments, which are predominantly observed in saturated/ mature markets and infrastructure industries. When confronted with innovation saturation, strong rival groups, and industrial structures planned by governments or regulatory authorities in these industries, entrepreneurs will find making their businesses succeed extremely difficult through their efforts alone (Osenton 2004). Regulation has been found to have a negative impact on entrepreneurship (Baumol 1990; Lee and Peterson 2000). Therefore, in hostile environments, we argue that EO may not lead to superior performance (Lumpkin and Dess 1996), depending on nation-specific laws, regulations, policies, etc. Further research is needed in this important area.

This study is not without limitations. First, we focused on Tunisian manufacturing SMEs. Given the cultural, political, and institutional differences of this context, the findings of this study should be interpreted and generalised with caution. Contextual differences across nations can significantly affect entrepreneurial attempts, processes, and practices. Therefore, similar studies must be conducted in diverse national contexts. Second, this study focused on general manufacturing industries without targeting specific industries. To gain a more thorough understanding of industry variation in implementing EO, future research should focus on a particular industry. Classifying industrial sectors as high-tech, medium-tech, and low-tech would be beneficial in cases in which the surrounding business environment is quite diverse.

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