

العلاقة بين القيادة الموجهة بالإبتكار و بقاء الشركات متوسطة و صغيرة الحجم في وقت الأزمات :الدور الوسيط لتطوير منتج جديد

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الملخص :

تهدف هذه الدراسة لفحص التأثير المباشر و غير المباشر للقيادة الموجهة بالإبتكار على بقاء الشركات متوسطة و صغيرة الحجم في وقت الأزمات من خلال توسيط تطوير منتج جديد . تم جمع بيانات الدراسة من 200 من مديري الشركات محل الدراسة بمدينة دمياط الجديدة باستخدام قائمة الاستقصاء . وتم تطبيق أسلوب تحليل المسار لاختبار فروض الدراسة من خلال تطبيق برنامج Warp (P.L.S. 6.0) وأشارت نتائج الدراسة إلى وجود تأثير معنوي للقيادة الموجهة بالإبتكار على كلا من تطوير منتج جديد و بقاء الشركات في وقت الأزمات .

كلمات افتتاحية :

القيادة الموجهة بالإبتكار، تطوير منتج جديد، بقاء الشركات متوسطة وصغيرة الحجم في وقت الأزمات

The Relationship between Innovation-oriented Leadership and SMEs Survival in Crises Times: The Mediating Role of New Product Development

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Abstract

This study aims to investigate the direct and indirect effect of innovation-oriented leadership (IOL) on SMEs survival in crises times via new product development (NPD). Data were collected from 200 SMEs managers in New Damietta-Egypt using a questionnaire. Path analysis technique is employed to test the research hypotheses using a partial least squares structural equation modelling (PLS – SEM). The research findings showed that IOL significantly influences both NPD and SMEs survival in crises times. Furthermore, NPD partially mediates the relationship between IOL and SMEs survival in crises times.

Keywords: Innovation-oriented Leadership; New Product Development; SMEs Survival in Crises Times.

1. Introduction

Small and medium-sized enterprises (SMEs) encompass the mainstream of firms in most economies. According to the sight of many governments, SMEs are a key source of new jobs (Mazzarol & Reboud, 2020). SMEs represent the competitive spirit that a market economy necessitates to achieve efficiency. They help an economy to grow and to significantly adapt to structural changes through continuous initiatives which represent new products and technologies. They are an essential source of innovation, and a significant basis for new industries (Hashim & Abdullah, 2000). Zaied (2012) approves that SMEs characterise the greatest share of the productive units of the Egyptian economy. SMEs are a crucial driver of economic growth for Egypt. Economist Intelligence Unit (2009) admits that SMEs has contributed significantly to the economies of the African continent, representing around 90% of all businesses, and providing the central source of jobs and income for African people. Particularly, in Egypt, SMEs represent a great proportion of economic activity and international development organizations (Rexhepi, 2015).

Management researchers are increasingly interested in investigating innovation in SMEs (De Massis et al., 2012). Product innovation is a key determinant of competitive advantage for exporting SMEs (Falahat et al., 2020). Firm innovation is widely acknowledged to be essential for the organizations' success, growth, and survival (Cho & Pucik, 2005). Innovation has a positive effect on survival SMEs (Lussak et al., 2020). Distinction through new product development (NPD) is one of the most crucial strategies for accomplishing success (Valle & Avella, 2003). Improvements in technologies have enabled firms to focus on developing new products for current markets and new ways of working in order to meet major changes in economic conditions (Ayağ & Özdem, 2007). However, despite the importance of NPD, the failure rate of new products continues to increase. Lampel et al. (2008) conclude that many leadership styles, such as innovative leadership, are essential in affecting NPD project success.

To prove the important of studying SEMs survival, the failure rates of small firms are very high. For example, if we have ten start-ups, we can realize that one will succeed, four will fight in the 'land of the living dead', and five will be forced into bankruptcy (Mazzarol & Reboud, 2020). According to Global Entrepreneurship Monitor (GEM) report (2018/2019), the rate of business discontinuation has increased significantly over the last years from 2.7% (2010) to 10.2% (2018) in Egypt (Bosma & Kelley, 2019). In addition, literature reviews have concluded that the research still provides a limited understanding of the driving mechanisms that enhance it (Brouder & Eriksson, 2013). Thus, it appears that there are important relationships among leadership style, NPD, and firm survival that need to be better understood. Previous studies have explored the

effects of leadership styles on NPD (Edmondson & Nembhard, 2009; Wouters et al., 2009) and performance (Yitshaki, 2012; Matzler et al., 2008).

There are some research gaps. Prior researches had focused on the association between transformational leadership style (Edmondson & Nembhard, 2009) and NPD; IOL and NPD (Bossink, 2004). There is a lack of prior research in terms of examining such an association in the context of SMEs. No prior research has explored the effects of NPD on SMEs survival in crises times. Consequently, in order to fill these gaps, this study seeks to address the following research questions within the context of Egyptian SMEs. Firstly, how does IOL directly affect NPD on SMEs survival in crises times? Secondly, whether NPD mediates the relationship between IOL and SMEs survival in crises times? To answer the above questions, this paper aims to examine the direct and indirect effect IOL on SMEs survival in crises times through the mediating role of NPD.

2. Literature Review and Hypotheses Development

The study adopts the following conceptual framework, as shown in Figure1.

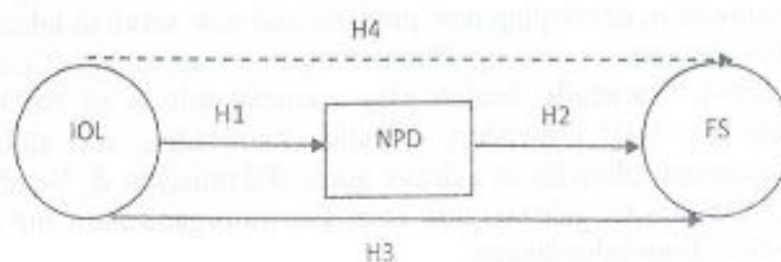


Figure (1): Conceptual Framework

2.1 Innovation-orientated leadership and New Product Development

IOL refers to the degree to which a leader promotes the type of climate and orientation that encourage employees to be innovative (Stock et al., 2013). IOL aims to smooth the performance of innovators through inspiring their effective engagement in the processes of innovation, which relates to individual initiatives, generation of ideas, promotion and implementation. This benefits to reach an innovative product and supports an exploratory orientation through cultivating an environment for learning, change and adaptation among employees. That is an organization's leader can boost a climate to produce a well environment for innovation (Carmeli et al., 2010). Also, Lado and Wilson (1994) inveterated that innovation-oriented leadership is a key source for creating competitive advantage through innovation. It creates a unique value by making social relationships and determining mutual exchanges between a firm and its employees. Moreover, Stock et al. (2014) argued that innovation-oriented leadership as a form of

organizational support not only fosters innovative behavior, but also encourages cooperation across functions.

NPD is a set of activities that starts with observing market opportunities and ends with producing, selling and delivering a product, which is critical to the success and sustainability of an organization (Ayağ & Özdem, 2007). Corso et al. (2001) declared that product innovation is one of the most promising areas in the field of knowledge management. In addition, Olson et al. (1995) confirmed that in the current highly competitive marketplace, firms are highly pressured to develop new products. Additionally, Lichtenthaler and Lichtenthaler (2009) stated that the firm's capability of continuously developing its products is significant for its future success. An advantage of NPD for an organization is not in the process peruse, but rather in the implementation and efficiency of the process (Marion et al., 2012). An efficient NPD management improves the performance and eventually leads to an increase in market share and profitability (Ahmad et al., 2013).

Molina-Castillo and Munuera-Alema'na (2009) assured that among the possible approaches to innovation, developing new products and new services takes huge interest as it allows business to gain significant competitive advantage (Cormican & O'Sullivan, 2004). Essentially, leaders play a crucial role in an NPD team because they can use their leadership, empathy, knowledge, and ability to persuade and encourage followers to achieve goals (Edmondson & Nembhard, 2009). They also can directly generate new ideas into an organization and foster innovation initiatives from subordinates.

Notably, leadership is a significant factor affecting NPD innovation (Matzler et al., 2008). Therefore, leadership can enhance and improve NPD performance by showing vision, inspiring followers with clear goals, setting high performance expectations, and offering individual supports (Sarros et al., 2002). Barczak et al. (2009, p. 22) add that leadership is an essential path to investigate NPD processes. Furthermore, they argued, "high-ranking leaders can improve and enhance a project's chance for success by ensuring that the NPD efforts are not limited by resource constraints". Besides, leaders with a higher rank provide an umbrella of credibility and legitimacy to the NPD project. Moreover, Valle and Avella (2003) concluded that a leader who runs the team has an influence on the success of the NPD process. By contrast, NPD projects who have no a senior leader, frequently, face substantial difficulties to be survive in a business environment. Thus, based on the above discussion, this study proposed the following hypothesis:

H₁: IOL has a positive significant impact on NPD.

2.2 Innovation-orientated leadership and Firm Survival in crises times

Firm survival is defined as the ability of firm to live in an economic crisis and cope with its challenges. It has a superior competency to address the slowdown in business activity and the ability of the firm's sales volume to round back to pre-crisis level after it has been reduced by the economic crisis (Naidoo, 2010).

Zahra (2005) states that SMEs have the capacity to be innovative. Casillas et al. (2010) add that the innovativeness of SMEs improves their performance. According to Liu et al. (2005), innovation is regarded as one of the most essential sources of sustainable competitive advantage as it aids in achieving high levels of firm growth and making continuous advances. Previous research investigates innovation environment in family firms. For instance, Litz and Kleysen (2001) declared that the founder of a family firm is more innovative than following generations. Thus, innovation is a vital driver for a family firm's performance (Matzler et al., 2008). Likewise, Yitshaki (2012) indicated that entrepreneurs' demonstration of leadership behaviours impact on the growth of family firms. In addition, Matzler et al. (2008) proposed that leadership has a direct and positive effect on growth. This argument is based on the preface that leadership is not limited to technical professionals, but is applied to all employees. They assume that leadership enables employees across the institution to explore and exploit advantage of business opportunities.

Furthermore, Pearson and Marler (2010) suggested that employees who are treated well by the leaders improve a sense of obligation to perform in a positive way to the best interests of the organization. In addition, the literature on economic crisis highlights the need for outstanding leadership as a survival mechanism. Thus, based on the above discussion, the following hypothesis is developed:

H_2 : IOL has a positive significant impact on FS.

2.3 New Product Development and Firm Survival in crises times

Prior researches confirmed that SMEs are growing over time (Memili et al., 2015). NPD increases the likelihood of SMEs growth (Cucculelli & Ermini, 2012; Che & Pucik, 2005). Some studies find associations between product innovation and firm performance in terms of productivity and/or growth (Cucculelli & Ermini, 2012). Particularly, De Massis et al. (2012) focus on NPD in family firms and argue that family firms are considered the most significant form of organizational enterprises. They state that family firms evidently develop longer term oriented innovations than non-family enterprises. This long-term direction of family businesses against non-family companies plays a key role in creating NPD projects with long-term push. On the other hand, Souder and Thomas (2003) declared that NPD in family businesses has been overlooked and

it needs more in-depth investigations that consider a vital role that NPD plays as a source of sustained company performance.

NPD is significantly essential for company performance, survival, and sustainable competitive advantage (Cormican & O'Sullivan, 2004; Cooper & Kleinschmidt, 2007). This is particularly true for SMEs (Souder & Thomas, 2003). Moore (2011) concluded that family firms aim to save and maximize their market share, particularly when their growth is threatened by spending more on NPD. NPD process is a control system that reduces the risk of new products and increases return on investment that leads to firm growth. Furthermore, NPD should be a core element of an organizations strategy to retain its strength and maintain growth in the market. Essentially, Stenholm (2011) confirmed that innovative actions that generate new product innovations improve the performance and growth of firms. As well, Stock (2011) declared that managers extensively consider product innovativeness as a crucial mean to ensure long-term firm growth and to improve business performance. Moreover, Ernst (2002) affirmed that among all possible fields of innovation, developing new products is regarded as the most important for firms' performance. Additionally, De Brentani et al. (2010) agree that the firm's strategy of new product development is a crucial determinant of the firm's performance. Therefore, NPD has a significant influence on FS and, consequently, this study suggests the following hypothesis:
H₃: NPD has a positive and significant direct impact on FS.

2.4 The mediating effect of NPD

Considering the previous discussions in developing the hypotheses namely *H₁*, *H₂* and *H₃*, NPD mediates the relationship between IOL and FS. This suggested relationship has been built based on the notion that IOL enhances NPD, and in turn, NPD is positively associated with FS. Therefore, this study adopts the following hypothesis:

H₄: NPD partially mediates the relationship between IOL and FS.

3. Research Design

3.1 Sample and data collection

A post-positivist research philosophy was employed with a quantitative approach to confirm the suggested framework, and survey questionnaire was used to collect the research data from SMEs managers in New Damietta City- Egypt. An English version of the questionnaire is developed and then translated into Arabic and back translated from Arabic into English to check the translation accuracy of the scale items. According to Saunders et al. (2009), this method confirms the consistency of the real meaning of each item in the original questionnaires. Then, a pre-test using 30 questionnaires was used to validate the questions. 230 questionnaires were personally distributed face to face to the main respondents.

The researcher collected 215 questionnaires (response rate 93%) and 200 questionnaires of them were valid.

To test the non-response bias, Armstrong and Overton (1977) recommended that the early respondents should be compared to the late ones. The t-test results report that there are no significant differences between early and late responses. This means that non-response bias is not an issue. Moreover, following prior research (Podsakoff, et al., 2003), the common method bias is tested using Harman's one-factor test, which is used when many deviations may be explained by a single variable. The results show that there is no common variable bias appeared in the un-rotated factor.

3.2 Measurement development

The IOL, NPD and FS are measured as first-order factors with reflective items because all observed variables. Each item uses a 5-Point Likert Scale ranging from 1 (i.e. strongly disagree) to 5 (i.e. strongly agree). This uses 14 questions as observed variables of IOL, FS and NPD (see an Appendix 1). Six items are used as indicators for IOL (Stock et al., 2014) that have been modified based on the work of (Stock & Zacharias, 2011); four items are used for FS (Stenholm et al., 2016); and five items are used for NPD performance (Land et al., 2012) that have been modified based on the work of (Im et al., 2003).

4. Model Analysis and Results

The proposed model is tested applying partial least squares (PLS) model using Warp PLS version 6.0. PLS is mainly used for causal predictive analysis in situations of high complexity (Sok et al., 2015). It reduces the residual variances of endogenous variables biased and inconsistent parameter estimates and ensures robustness against multicollinearity. It also builds on a set of nonparametric evaluation criteria to assess measurement and structural model results (Hair et al., 2010, p.98). This study employs non-parametric bootstrapping to test the proposed research hypotheses (Karahanna & Preston, 2013). The outputs are categorized into measurement and structural models.

4.1 The measurement model

The measurement model is used to assess the instruments' quality in terms of item factor loadings, internal consistency and discriminant validity. Table 1 presents the measurement model. All constructs are reflectively measured as first-order factors. The items loadings are ranging from 0.60 to 0.76 ($p < 0.01$). For Cronbach's alpha (α) and composite reliability (CR), Hair et al. (2010) suggest that α and CR values should be at least 0.60 to be reliable. The values of α and CR are > 0.70 for all constructs. This clearly implies that these constructs are reliable. Finally, to evaluate the convergent validity, the Average Variance

Extracted (AVE) is used. Fornell and Larcker (1981) recommend that AVE value should be at least 0.50. The AVE values are greater than 0.50 for all constructs. These results indicate an adequate convergent validity.

Table 1: Measurement model

Constructs	Loading	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
IOL		0.726	0.815	0.424
IOL 1	0.601			
IOL 2	0.699			
IOL 3	0.630			
IOL 4	0.605			
IOL 5	0.625			
IOL 6	0.736			
NPD		0.729	0.822	0.483
NPD 1	0.572			
NPD 2	0.734			
NPD 3	0.749			
NPD 4	0.751			
NPD 5	0.651			
FS		0.726	0.830	0.549
FS 1	0.765			
FS 2	0.762			
FS 3	0.717			
FS 4	0.720			

Table 2 showed the correlations and discriminant validity. The bold numbers in the diagonal show the square root of AVE while the numbers below them show the correlation coefficients. The square root of AVE for each construct is greater than the variance shared with the remaining constructs. Therefore, all measures adopted in this study are valid and internally consistent (Henseler et al., 2009).

Table 2: Correlations and discriminant validity

	IOL	NPD	FS
IOL	0.651	0.527	0.321
NPD	0.527	0.695	0.348
FS	0.321	0.348	0.741

4.2 The structural model

Table 3 showed the findings related to testing the study's hypotheses. Effect sizes (f^2) were employed to evaluate the extent to which independent variables affect the dependent variable. The following formula was used to estimate the effect size for the path coefficients: $f^2 = [R^2_{included} - R^2_{excluded}] / [1 - R^2_{included}]$ (Chin, 2010). The effect sizes should be 0.02, 0.15 and 0.35 for small, medium and large effect sizes, respectively (Lew & Sinkovics, 2013; Cohen, 1988).

The results showed that the effect size of the association between IOL and NPD is medium with an f^2 value of 0.282. The effect size is small for the association between both IOL and FS with an f^2 value of 0.073, and NPD and FS with an f^2 value of 0.087.

Table 3 Path coefficients for the research model.

Hypotheses	Path coefficient	Effect size	Results
H1: IOL → NPD	0.533***	0.282	Supported
H2: IOL → FS	0.217***	0.073	Supported
H3: NPD → FS	0.247***	0.083	Supported
H4: IOL → NPD → FS	0.132***	0.045	Supported
***P<0.001			

In terms of testing the research hypotheses, the path coefficient for the direct effect of IOL on NPD is significant ($\beta = 0.533$, $p < 0.001$). IOL is significantly and positively associated with FS ($\beta = 0.217$, $p < 0.001$) whereas NPD positively affects FS ($\beta = 0.247$, $p < 0.001$). Finally, NPD partially mediates the relationship between IOL and FS ($\beta = 0.132$, $p < 0.004$). Therefore, H1, H2, H3 and H4 are accepted.

5. Discussion

This study investigated the direct and indirect association between IOL, NPD and FS. The research results reported that IOL is significantly and positively associated with NPD (H1). This result suggests that firms with good IOL are more likely to stimulate NPD in SMEs. The result is consistent with Valle and Avella (2003) and Wouters et al. (2009) who argue that leadership is a crucial variable that affects the development of new products and it may boost NPD performance. The findings mentioned that IOL positively and significantly influences FS (H2). This result is consistent with Matzler et al. (2008) who find that leadership can increase the level of FS. Firms hoping to enhance their survival opportunities should pay attention to their culture. Leader who are oriented by innovation are capable of dealing with crises that threat the firm's

survival by their capability of creating a new vision and inspiring commitment to achieve this vision. This is aligned with Baliga and Hunt (1988) which state that the organization recovery during the crisis path includes creating a new vision and a clear plan for dealing with this crisis. Similarly, NPD positively affects FS (H_3). NPD provides new ideas that aid in increasing firm survival. FS could stimulate managers to innovate more new and unique products that allow them to grow even more. Firms that are highly innovative and develop new products realize higher rates of FS. This result confirmed leaders manage innovation (Gokce, et al., 2014; Szczepańska-Woszczyna, 2015). In addition, NPD is crucial and can increase the likelihood of a firm's performance and FS (Cormican & O'Sullivan, 2004; Cho & Pucik, 2005; Cooper & Kleinschmidt, 2007; Cucculelli & Ermini, 2012). This study concluded that IOL could promote NPD, which in turn affects FS. Managers may particularly wish to adopt this leadership style when trying to enhance NPD and ultimately FS. Therefore, NPD partially mediates the relationship between IOL and FS (H_4).

By answering the research questions and testing the research hypotheses, this paper has several significant contributes to SMEs literature by considering an alternative style of leadership namely IOL. First, no previous studies had explored the direct and indirect effects of innovation-oriented leadership, NPD and FS. Second, this study is the first paper presenting a comprehensive model that addresses important antecedents FS. It contributes to understand the mediating role of NPD in the relationship between IOL and FS.

6. Future Research

Future research may focus on investigating the adoption of alternative leadership styles such as knowledge-oriented leadership, visionary leadership, and strategic leadership. In addition, it may use longitudinal data to investigate whether any changes may be captured in relation to innovation-oriented leadership, new product development and FS.

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Appendix 1: Measures used in this study

Innovation-oriented Leadership (Stock and Zacharias, 2011)
IOL1: The leaders in our company encourage activities that foster innovations
IOL2: The leaders in our company express appreciation for innovation-oriented attitudes of their employees
IOL3: The leaders in our company criticize employees' behaviors that are not innovation-oriented
IOL4: The leaders in our company support innovation-oriented employees in particular
IOL6: The leaders in our company demonstrate an innovation orientation in their own behavior
IOL7: The leaders in our company set the goals of their employees in order to

promote a high innovation orientation.
New Product Development Performance Land et al., 2012)
NPD1: In relation to our competitors, sales volume for our recently developed products/services is better.
NPD2: In relation to our original objectives, sales volume for our recently developed products/services is better.
NPD3: In relation to our competitors, profitability for our recently developed products/services is better.
NPD4: In relation to our original objectives, profitability for our recently developed products/services is better.
NPD5: In relation to our competitors, market share for our recently developed products/services is better.
Firm Survival in the crises times such as terrorism, revolutions, and economic crises (Naidoo, 2010)
FS1: My firm survives the current crises
FS2: My firm possesses the ability to withstand the challenges of the current crises.
FS3: My firm is in a good position to address the slowdown in business activity currently being experienced as a result of the crises times.
FS4: Sales volume has decreased in the last three months as a result of the economic crisis but sales will rebound back to pre-crisis level (R)