

THE INFLUENCE OF TRANSFORMATIONAL LEADERSHIP ON PRODUCT INNOVATIONS AMONG SMALL BUSINESS

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ABSTRACT

Innovation has been associated with various positive organizational outcomes such as organizational performance, improved efficiency and productivity and increased organizational effectiveness. Innovation among small businesses is of a greater importance as their sustainability relies on their continuous ability to innovate. However, majority of existing studies focused on the one-dimensional effect of transformational leadership on organizational innovation. In order to bridge this gap, this study would investigate the multidimensionality of transformational leadership by examining the effect of its dimensions on product innovation. Thirty-two small businesses participated in a cross-sectional survey to yield a return rate of 80%. Contrary to previous findings, transformational leadership had no significant effect on product innovation. However, Individualized Consideration has significant influence on incremental improvements and additional to product families while Intellectual Stimulation is a significant predictor of incremental improvements and new core products. The results indicate the need to further investigate the complex dynamics of leadership-innovation relationship.

Keywords: Transformational leadership, product innovation, small business.

Introduction

Innovation has been recognized as the 'core metric of organizational efficiency and effectiveness' (McMillan, 2010), key future of the organization (Stamm, 2009) and an important factor in the success and competitive advantage of organizations (Gumusluoglu and Iisev, 2007). The role of innovation among small business is claimed to be more critical as they are more vulnerable to dynamic environmental and market changes (Wilson and Bates, 2003) and often has limited resources (O'Regan et al., 2005). There is a growing interest to study numerous predictors of innovation including organizational size (Damanpour, 1992), market orientation and organizational learning (Hurllet, et al, 1998), human resource practices (Li et al., 2005; Abdullah et al., 2010), knowledge management (), work-team characteristics (Carmen et al. (2006) and leadership. Despite this growing interest, several gaps in this research field remain.

First, there is still limited empirical studies on the effect of transformational leadership on innovation (Yulk, 2002, Kim and Lee, 2012), in particular, product innovation. Most existing studies used diverse operational definition of innovation. For example, some define innovation in terms of organizational attributes (), while others look at innovation in terms of innovative behaviors displayed by the employees (Kim and Lee, 2012). Oslo Manual (1992), on the other hand, defines innovation as inclusive of both goods and services, whether totally new or improved with respect to previously existing model. This study operationalized product innovation into four major categories which

include new core products, next generation core-products, additional to product family and incremental improvements. This delimitation was imposed as product innovation is the primary means of making improvements if the underlying technologies changes less frequently (Rainey, 2006). Since most small business in Malaysia use matured technologies (Mazuki et. al, 2004), focus on product innovation per se is warranted.

Secondly, most prior research focuses on cases in Western countries with very limited studies in Asian context. As a fast-developing country, Malaysia poses different challenges as technological innovation in Malaysia is under study despite a radical call by the government for innovation-led economy (MOSTI, 2007).

Thirdly, most research focuses on transformational leadership as a one- dimensional construct and none had specifically address the effects of its dimensions on product innovation. Furthermore, product innovation is commonly defined as making beneficial changes to physical products in terms of designs and functions. This is particularly limiting as transformational leadership is a multidimensional construct consisting four important dimensions and product innovation is not limited to only new product development.

Finally, limited prior research on innovation focused on small business. In most countries, small businesses play significant roles in economic, social and political development of the countries. The relative importance of each dimensions of transformational leadership on product innovation would enable small business to strategize their resources to optimize their product innovation.

This study aimed to address these significant gaps using upper-echelons theory (Hambrick, 2007) as a theoretical anchor. In essence, this theory postulates that top management of a company has a considerable impact on the company's strategic orientations which include driving innovation. In this study, dimensions of transformational leaderships which include Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individualized Consideration were postulated to be related to product innovation among small business located at Pasir Gudang Industrial Area, Johor, Malaysia. The following is the structure of this paper. First, review of both theoretical and empirical literatures investigating the relationship between dimensions transformational leadership and product innovation to justify the research conceptual framework and hypotheses is conducted. Next, research methodology, findings and discussion are described in the sequence mentioned.

Literature Review

Theoretical Background and Hypotheses

There is a general consensus among several researchers on the influence of leadership on innovation. For example, Von Stamm (2009) emphasizes the imperative roles of leaders in inculcating values and displaying behaviors supportive to innovation. Denning (2005) concurs and further highlights the importance of various leadership communications tools which should be used at different levels of innovation and stages of acceptance. Leaders should rely on different narrative tools to elicit motivation and commitment from employees. McMillan (2010), on the other hand, claims that internal factors channeled by effective strategic leadership which include core organizational skills and competence, institutional capacity to listen, capacity to learn from the past, capacity to mobilize the organizations would affect organizational capacity to innovate. Leaders 'establish the emotional DNA of entire firm' (McMillan, 2010, p.12) and thus would facilitate ongoing contribution of innovative efforts. Carneiro (2008) focuses on strategic leadership processes and claims that innovation management has three strategic goals which are to support and expand present business portfolios, develop new businesses and improve organizational technological abilities. As leaders are key players in strategic management processes, they play eminent roles to manage innovation effectively (Carneiro, 2008). Review of these theoretical stances shows various ways how leaders become significant driver of innovation initiatives. Leaders, through the compelling vision and

behaviors consistent with the values they believe in, inculcate the innovative organizational culture by inspiring the employees be innovative, aligning and mobilizing organizational resources to support innovation.

Moreover, these theoretical propositions in various literatures shows substantial evidence of transformational leadership behaviors compared to other types of leadership styles.

Idealized Influence and Product Innovation

Idealized Influence consists of attributed and behavioural Idealized Influence. The attributed Idealized Influence refers to leader's socialized charisma while the behavioral Idealized Influence refers to leaders' charismatic actions that focus on values, beliefs and sense of mission (). Together, both Idealized Influence's attributes and behaviors of leaders lend subordinates' trust and reverence. In order to encourage innovation, leaders need to provide the employees an inspiring vision to contribute the ideas to and create a shared language around innovation (van Stamm, 2009). Employees strive to identify with these leaders and subsequently increase their commitment to innovative ideas evoked by leaders (Kanungo, 1998). Articulation of mission of the organization in an idealized form and the use of empowering techniques such as role modeling create employees' commitment to innovation initiatives such as product innovation. Thus,

H₁: Idealized Influence is positively related to different types of product innovation.

Inspirational Motivation and Product Innovation

Inspirational Motivation refers to leaders' behaviors that motivate the subordinates by providing meaning, and challenge to their work and boosting their appropriate innovative ideas and behavior (Bass, 1985) which translate into more product innovation. When transformational change involving innovation is being introduced, the leader has the task to continuously stimulating others to follow the idea by stimulating team work, pointing out positive results, advantages, emphasizing aims, stimulating followers, etc. Thus,

H₂: Inspirational Motivation is positively related to different types of product innovation.

Intellectual Stimulation and Product Innovation

Intellectual Stimulation refers to leaders' abilities to stimulate subordinates' effort to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways (Bass, 1985). Transformational leaders, through Intellectual Stimulation also encourage their followers to take more responsibility and autonomy. As such, the work tasks provide employees with an increased level of accomplishment and satisfaction. Walumbwa, et al. (2004) explained that by encouraging employees to seek new ways to approach problems and challenges, and identifying with employees' needs, transformational leaders are able to motivate their employees to get more involved in their work. By encouraging employees to think critically by using novel approaches, involving employees in the decision-making processes, inspiring loyalty, while recognizing and appreciating the different needs of each employee to develop his or her personal potential (Bass and Avolio, 1997), employees' would realize their potential and produce innovative ideas (Jung, Chow, & Wu, 2003) which is the basis of product innovation. Therefore,

H₃: Intellectual Stimulation is positively related to different types of product innovation.

Individualized Consideration and Product Innovation

Individualized Consideration refers to leaders who build a considerate relationship with each individual, pay attention to each individual's need for achievement and growth by acting as a coach or mentor, developing subordinates in a supportive climate to higher level of potential. Transformational leaders, through Individualized Consideration, highlight individual qualities of followers, thereby emphasizing the diversity of talent, instigating innovative behavior (Reuvers et al., 2008) which is the basis of new knowledge for idea generation (Gumusluoglu & Ilsev, 2009). These in turn would affect product innovation. Therefore,

H₄: Individualized Consideration is positively related to different types of product innovation.

Results and Discussion

Samples and Procedures

The level of analysis of this study was organizational level. Thus, a cross sectional survey using questionnaires was used to collect the primary data from small business owners operating at Pasir Gudang Industrial Park. The park was one of the most diverse in terms of industrial-mix and highly populated industrial parks in Malaysia (). A sampling frame was obtained from the SME Corporation's list. There was a total of forty SMEs registered with SME Corporation resided at the Pasir Gudang Industrial Park. Thirty-six owner-managers of small businesses were randomly chosen to participate to attain a 95% level of confidence with 5 percent error.. However, only thirty-two owner-managers of small business in Pasir Gudang industrial area participated to yield a return rate of 89%. The demographic profiles of the respondents were as follows;

Table 1: Respondents' Demographic Profiles

		Frequency	Percentage
Gender	Male	15	46.9
	Female	17	53.1
Age	24-34 yrs	11	34.4
	35-45 yrs	17	53.1
	> 46 yrs	4	12.5
Ethnic	Malay	12	37.5
	Chinese	15	46.9
	Indian	4	12.5
	Others	1	3.1
Education Level	Secondary	3	9.4
	High School	9	28.1
	Diploma	6	18.8
	Degree and Higher	14	43.8

Questionnaires

Data in this study was collected via cross sectional survey. Transformational leadership was measured using 20 items taken from MLQ-5x while product innovation was measured using self-developed questionnaires containing 19 items. Product innovation was operationalized into four categories which were Incremental Improvements, Addition to Product Families, Next-generation Products and New Core Products. New core products are defined as totally new products in a new field of technology

while next-generation of core products refer to news product outside the existing range but in a similar field. Addition to product family refers to new models in the existing product range and incremental improvements refer to modified version of an existing product range. Responses were made on a five-point scale ranging from 1, Never, to 5, Frequently. The Cronbach's coefficient alphas for both construct were 0.835 and 0.954 respectively. The results indicate that both constructs had high internal consistency as the alpha values exceed 0.7 as measured using inter-item consistency (Nunnally, 1978).

Descriptive and basic statistical analyses of the data were performed using SPSS 16 computer software. Multiple Linear Regression (MLR) analyses were used to test the hypotheses. Prior to using the MLR, testing of assumptions which include establishing linear relationship between independent and dependent variables, homoscedasticity and independence of error terms were conducted. The factorability of twenty transformational leadership items and nineteen product innovation items was examined. Several well-recognized criteria for the factorability of a correlation were used. Firstly, 19 out of the 20 transformational leadership items and all the nineteen items of product innovation correlated at least .3 with at least one other item, suggesting reasonable factorability. Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy for transformational leadership was .519, which is considered acceptable, while product innovation was 0.807 which is good. Bartlett's test of sphericity for both transformational leadership and product innovation was significant at (χ^2 (190) = 280.192, $p < .05$) and (χ^2 (171) = 504.813, $p < .05$) respectively. The diagonals of the anti-image correlation matrix for both constructs' items were all over 0.5, supporting the inclusion of each item in the factor analysis. Finally, the communalities were all above 0.3, further confirming that each item shared some common variance with other items. Given these overall indicators, factor analysis was conducted with all 20 items of transformational leadership.

Results

Table 2 includes means, standard deviation, correlations coefficient of all the transformational leadership dimensions and the different types of product innovation.

Table 2: Descriptive Statistics and Correlations

Variable	Mean	SD	NC	NGC	APF	ICP
1. TL (Overall)	2.75	0.39				
2. II	3.84	0.43				
3. IM	3.95	0.51				
4. IS	3.73	0.49				
5. IC	3.88	0.47				
Variable	Mean	SD	II	IM	IS	IC
7. NC	3.81	0.72	0.27	0.25	0.53**	0.31
8. NGP	3.8	0.81	0.45**	0.43*	0.40*	0.43*
9. APF	3.81	0.73	0.40*	0.36*	0.51**	0.47*
10. ICP	3.71	0.84	0.37*	0.35*	0.50**	0.46**

* $p < 0.05$

** $p < 0.01$

TL : Transformational
Leadership
II : Idealized Influence
IM: Inspirational Motivation

NC: New Core
Products
NGP: Next Generation Products
APF: Addition to Product Families

IS : Intellectual Stimulation
IC: Individualized
Consideration

ICP: Incremental Improvement Products

The descriptive results indicated that the respondents displayed very moderate transformational leadership behaviors ($M=2.75$, $SD=0.39$). In addition, the product innovation was also not high. Large standard deviations indicated high variability among responses on all the product innovation items which may indicate that participating SMEs involved in product innovation activities at varying levels. This finding is expected as all of the participating small business were mixed-performing small business and results conforms with the general consensus that innovative activities are quite low among Malaysian small business. All dimensions of transformational leadership are significantly correlated with next generation products, incremental improvements and addition to family products. However, for new core product, only intellectual stimulation is significantly related to it. Nonetheless, the correlational strengths, ranging from 0.35 to 0.53, are not strong.

Table 3 shows results of simple linear regression of transformational leadership dimension on different production innovation categories.

Table 3: Regression Results

	R^2	F	B	β
Transformational Leadership				
<i>Product Innovation</i>	0.095	3.151	0.556	0.308
Idealized Influence				
<i>Incremental Improvement</i>	0.05	1.582	0.375	0.224
<i>Addition to family products</i>	0.047	1.475	0.364	0.216
<i>New generation products</i>	0.045	1.405	0.397	0.212
<i>New core products</i>	0.013	0.385	0.218	0.113
Inspirational Motivation				
<i>Incremental Improvement</i>	0.008	0.248	0.13	0.091
<i>Addition to family products</i>	0.009	0.262	0.134	0.093
<i>New generation products</i>	0.018	0.546	0.214	0.134
<i>New core products</i>	0.001	0.034	0.056	0.034
Individualized Consideration				
<i>Incremental Improvement</i>	0.149*	5.258	0.589	0.386
<i>Addition to family products</i>	0.163*	5.854	0.618	0.404
<i>New generation products</i>	0.109	3.681	0.564	0.294
<i>New core products</i>	0.088	2.903	0.524	0.297
Intellectual Stimulation				
<i>Incremental Improvement</i>	0.163*	5.849	0.595	0.404
<i>Addition to family products</i>	0.081	2.648	0.421	0.285
<i>New generation products</i>	0.1	3.315	0.521	0.315
<i>New core products</i>	0.193*	7.161	0.748	0.439

* $p < 0.05$

Overall, transformational leadership is not significantly related to different types of product innovation. Individualized Consideration explained a significant 14% of variance in incremental improvement products, $R^2 = 0.149$, $p < .05$ and 16% of variance in Addition to family products, $R^2=0.163$, $p < 0.05$ but not in other categories of product innovation. Intellectual Stimulation explained 16% of variance in incremental improvement products, $R^2=0.163$, $p < 0.05$ and 19% of new core products, $R^2=0.193$, $p < 0.05$. Both Idealized Influence and Inspirational Motivation have no significant influence on different types of product innovations.

Discussion and Conclusions

These results provide support to our earlier contention that dimensions of transformational leadership have different effects on different types of product innovation. The importance of individualized consideration and intellectual stimulation is further accentuated as both dimensions have significant effect on incremental improvement products, addition to family products and new core products respectively. Therefore, small business owner-managers should cultivate these leadership competencies to improve product innovation activities. Intellectual stimulation is seen as critical component to be nurtured among the small business owner-managers to sustain firm strategic competitive advantage since it has significant effect on the development of new core products.

It should be noted, however, that there many insignificant relationships between dimensions of transformational leadership and different types of product innovations. This may be caused by the presence of mediating variables such as employee innovative capabilities, employee empowerment and innovative climate. Furthermore, product innovation activities are intricate and dynamic processes under product development where leadership might be seen as enabler but not directly affecting it. Therefore, further scrutiny is warranted to link leadership-product innovation.

This study is not without limitations. One of the major limitations would be the small sample size. It should be noted, however, that research participation among Malaysian SMEs is not very encouraging and a big hurdle for most researchers. The cross-sectional design of this study implies the need to treat the results of this study with caution as generalization is limited.

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