

# **The Impact of New Product Marketing Strategy on New Product Performance: The Moderating Effects of Competitive Intensity and Product Innovation**

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## **Abstract**

The purpose of this study is to explore the impact of new product marketing strategy on new product performance, and the moderating effects of competitive intensity and product innovation. The samples are taken from food industry in Taiwan, while 224 members of the GMP Development Association of Taiwan are exploited as the population, census are used to collect primary data. A total of 224 questionnaires are distributed, 103 effective questionnaires are collected, and the effective response rate is 46%. Regression analysis and t-test are used to test the hypotheses. The major findings are list as follow: (1)The rational and emotional marketing strategy have a significantly positive impact on achieve rate of sales. (2) The impact of rational and emotional new product marketing strategy on new product performance has not significantly difference. (3)Product innovation has a significantly positive moderating effect in the influence of new product marketing strategy on new product performance.

**Keywords:** New Product Marketing Strategy, New Product Performance, Competitive Intensity, Product Innovation,

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## Introduction

According to Ministry of Economic Affairs of Taiwan, that the food industry production value from 8.57% in 2007 rise to 12.77% in 2008 and the sales value increased from 7.78% in 2007 to 13.46% in 2008. It shows that the food industry is very important among livelihood industry some more is a very important industry in affecting the employment of domestic workers. As the liberalization growing of Taiwan's economic development after WTO accession and gradually opened up the market and lower tariffs have opening up plenty of food entering to domestic market so that domestic firms face significant competitive pressure. In the process of rapid economic development, Taiwan is facing the loss of rural population, labor shortage, economic restructuring and changes in social values. Economic liberalization, internationalization and a new challenge after another have resulting in many combat unfavorable situations. These external economic and non-economic resistances are undeniable but also the difficulties on the formation of the food business (Lin et al., 2003).

In recent years, research about new product performance mostly related to industry products and technology products. The food industry-related research only in the agriculture and food sciences academic research, few of business management scholars have a systematic research and this is the first motivation for this study.

The new product performance is the mainstream in modern marketing research. Many scholars were based on the concepts of marketing strategies to explore their impact on new product performances respectively. But so far little research has accounts this two variables and its' dimensions. While enterprises are facing ever-changing competitive environment and shorten of product life cycles, product innovation and competitive intensity of the business environment will be what the impact of new product performance. This is the second motivation of this study.

This study focus on how to use different marketing strategies, improve their market share. And add the competitive intensity and product innovation as a moderating variable, try to explore their moderating effects in the impacts of new product marketing strategy on new product performance respectively. The purposes of this study include: (1) Explore the impact of new product marketing strategy on new product performance. (2) Study the moderating effects of competitive intensity in the impact of new product marketing strategy on new product performance. (3) Exaime the moderating effects of product innovation in the impact of new product marketing strategy on new product performance.

## **Literature Review and Hypotheses Development**

### **New Product Marketing Strategy**

Weits (1985) defined marketing strategy as in a given market area, the proper allocation of resources to support enterprises to win competitive advantage. Lin (1993) proposed that marketing strategy can be divided into four ways to research that: (1) Dual-oriented marketing strategy: using rational and emotional product name, easy to remember, and pricing to take into account the cost of service and quality orientation, psychological factors and competitors' prices. (2) Rational marketing strategy: the use of functional demands of a rational position, consider after-sales service, warranties, delivery and installation attached by the product factors. (3) Emotional marketing strategy: the emotional appeal to locate, emphasis on physical product shape, color design, the use of emotional product names, and so on memory, attention to product packaging and labeling. (4) Maintenance marketing strategy: consumers are more concerned about price and quality, it is not suitable to use a lot of marketing techniques, manufacturers can improve product packaging and labeling, give a simple name for remember, consider the quality position and competitor pricing during pricing. Lin (1993) divided marketing strategy into four parts, that is dual-oriented, rational, emotional and low involvement, different product types with different marketing strategy, so the manufacturer's marketing strategy can be divided into five parts which is the choice of target market, product strategy, pricing strategy, channel strategy and marketing strategy. He use a total of 29 questions to measure new product marketing strategy and seven points Likert scale is used to measure.

When the industry lack of competition, the business performance would be better even when companies are not entirely market-driven, the performance will have a more excellent performance (Kohli et al., 1993). By reference to the above literature, the hypothesis 1 of this study can be developed as follow:

### **New Product Performance**

New product performance was the degree of success of new products (Cooper and Kleinschmidt, 1987; Griffin and Page, 1992); or the financial levels and the results of the competition in the market which was usually reflected in the profit, on market share and return on investment (Li and Calatone, 1998). Atuahene-Gima (1996) advocated two dimensions of innovation performance as the market orientation, the first dimension is related to organization get into the market with a specific innovation activities in sales, profit and market share performance; second dimension is the project of impact performance used to measure the innovation results or benefits of a company, such as providing cost-effective or to strengthen the company's other products, services, sales and profitability.

Griffin and Page (1993) integrated the relevant literature and practical

achievements of company's performance, identify the most commonly used indicators to measure new product performance that can be summarized into five dimensions: (1) the customer: such as market share and customer satisfaction; (2) financial: such as profit objectives and profit margins; (3) procedure: such as technical performance, the ability to timely completion of new products; (4) products: such as rate of product success and failure and the proportion of new product sales; (5) proposal: such as new product development plans to achieve the desired goals.

Lin (1993) pointed out that high rational/low emotional product, if company use higher rational marketing strategy, the better product innovation performance will be. In research the type of consumer, innovation and new product marketing strategy, Lin (1993) found that low rational/high emotional product, if company use higher emotional marketing strategy, the better performance of innovation product will be. Greenley (1986), Pearce et al. (1987) pointed out that there has a positive relation between marketing strategy and performance. By reference to the above literature, the hypothesis 1 of this study can be developed as follow:

H<sub>1</sub>: New product marketing strategy has a significantly positive impact on the new product performance.

H<sub>1-1</sub>: Rational marketing strategy has a significantly positive impact on the achieve rate of sales.

H<sub>1-2</sub>: Emotional marketing strategy has a significant positive impact on the achieve rate of sales.

H<sub>1-3</sub>: Rational marketing strategy has more significantly positive impact on the achieve rate of sales than emotional marketing strategy.

### **Competitive Intensity**

Competitive intensity or the degree of market competition usually refers to the price war, the frequency of promotions, levels of new competitive activity introduced by companies (Slater and Narver, 1994; Fein and Anderson, 1997; Jaworski et al. (1993). In study competitive intensity, Miller (1987) proposed three dimensions: (1) the predictability of company's key competitors' marketing activity; (2) the hostility of a company's key competitors; (3) the breadth of a company's key competitors' activities. Jaworski et al. (1993) suggested the environmental factors by three dimensions as market turbulence, competitive intensity and technological turbulence composed. The market turbulence is to measure the composition and preferences of the organizational customer. Competitive intensity is to measure the competitive strength of competitor behavior, resources and capabilities of differentiation. Technology turbulence is to measure the situation of technological change. Seven point of Liker scale was used to measure the variables and its' dimensions (1= very dissatisfied, 7= very satisfied).

Jaworski et al. (1993) and Slater and Narver (1994) found that competitive intensity is one of the moderating factors that business deal with competitors and new product marketing strategy. By reference to the above literature, the hypothesis 2 of this study can be developed as follow:

H<sub>2</sub>: Competitive intensity has a moderating effect in the impact of new product marketing strategy on new product performance.

H<sub>2-1</sub>: Competitive intensity has a moderating effect in the impact of rational marketing strategy on achieve rate of sales.

H<sub>2-2</sub>: Competitive intensity has a moderating effect in the impact of emotional marketing strategy on achieve rate of sales.

### **Product Innovation**

Lai et al. (1997) defined product innovation as a concept that is relatively certain products, companies, industries or countries as long as different from its original state and can serve as product innovation. Yoon and Lilien (1985) divided product innovation into two types which is original type of new products and modified new product. Original type of new products using new technologies to develop new products, it is only from the technology breakthroughs; modifies product is a part of the new product line extensions or product improvements are derived from new products. Song and Montoya-Weiss (1998) divided product innovation into two types of new products which are truly new product and modified product. Truly new product is the technology the industry has never been used, and will result in industry or industry changes impact on the market and this is a new product. The improved new product is the transformation of existing products, refining or strengthening. A total of seven questions to measure by Likert 10 point scales were used to measure the product innovation.

Lin et al. (2008) researched active and passive market orientation of new product development and performance. He investigated the moderating effect of the degree of product innovation, and found that degree of market orientation has a significantly moderating effect in the impact of market orientation on new product marketing strategy and new product performance. Narver et al. (2004) studied the influence of market orientation on new product performance base on different level of product innovation. By reference to the above literature, the hypothesis 3 of this study can be developed as follow:

H<sub>3</sub>: Product innovation has a moderating effect in the impact of new product marketing strategy on the achieve rate of sales.

H<sub>3-1</sub>: Product innovation has a moderating effect in the impact of rational marketing strategy on the achieve rate of sales.

H<sub>3-2</sub>: Product innovation has a moderating effect in the impact of emotional

marketing strategy on the achieve rate of sales.

## Research Methods

### Conceptual Framework

Base on the research motivation and research purposes of this study and refer to the literature proposed by Kohli et al. (1993), Weitz (1985), Atuahene-Gima (1996), Slater and Narver (1994), Fein and Anderson (1997), and Lai et al. (1997), this study use four research variables which are new product marketing strategy, new product performance, competitive intensity and product innovation. For new product marketing strategy, this study divided into two dimensions which are rational and emotional of marketing strategy. For new product performance, this study chose the achieve rate of sales as a measurement.

By refer to the study that Lin (1993) about the influence of new product marketing strategy on new product performance. By refer to Jaworski and Kohli (1993) and Slater and Narver (1994), about the moderating effects of competitive intensity in the impact of market orientation on new products marketing strategy. And by refer to Lin et al. (2008), the moderating effects of product innovation in the new product marketing strategy on new product performance. A conceptual framework for this study is developed as shown in Figure 1.

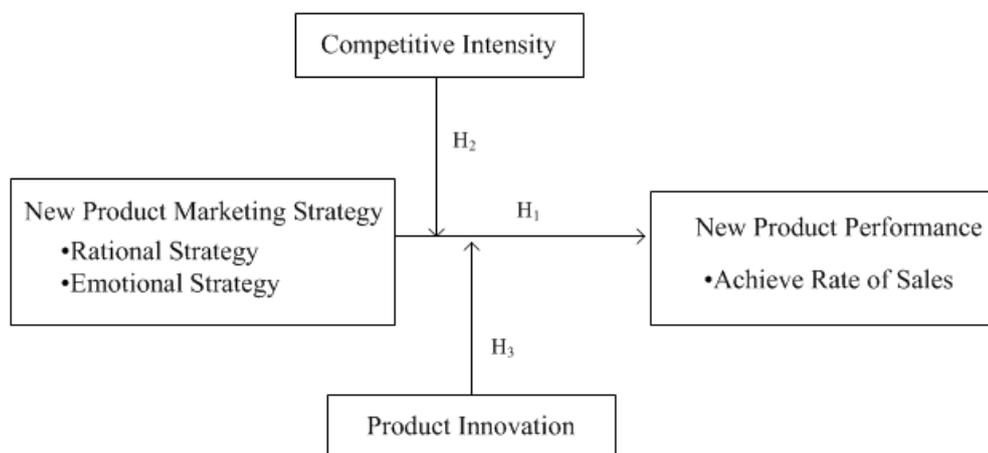


Figure 1 Conceptual Framework

### Variables definition and measurement

This study refers to the point of view of Weitz (1985), Slater and Olson (2001), Varadarjan and Clar (1994), the new product marketing strategy is defined as the company use marketing skills to achieve the objectives of its new product sales in line with the value of customer demand. Refer to the point of view of Lin (1993), new product marketing strategy is divided into rational and emotional marketing strategy.

Rational marketing strategy is defined as the functional demands of rational position by using rational and functional advertising. Emotional marketing strategy is defined as emotional appeal of the product positional and the use of emotional and psychological factors of advertising. A seven point of Likert scale is used to measure new product marketing strategy.

This study refer to the point of view of Cooper and Kleinschmidt (1987), Griffin and Page (1992), Li and Calantone (1998), Cooper et al. (1994) and Moorman and Miner (1997), new product performance is defined as the assessment results of new products competition in the market. New product performance indicators by refer to Griffin and Page (1993), Langerak, Hutlink and Robben (2004) and the companies themselves can master the new product performance evaluation indicators, this study chose achieve rate of sales to measure new product performance. A seven point of Likert scale is used to measure new product performance.

This study refers to the discussion of Slater and Narver (1994), Fein and Anderson (1997), Jaworski and Kohli (1993), Grewal and Tansuhaj (2001) and Gatignon (1984), competitive intensity is defined as company face competition on the market where the company of alternative similar products and caused the level of competition. Refer to Jaworski and Kohli (1993) a seven point of Likert scale is used to measure competitive intensity.

By refers to Xu (1983), Lai et al. (1997) and Seetoo (1985), the product innovation is defined as the use of new technology or innovation, a new concept invented to meet the extent of unmet needs. Refers to the study of Song and Montoya-Weiss (1998) and Kleinschmidt and Cooper (1991), a seven point of Likert scale is used to measure product innovation.

### **Data Collection and Analysis Methods**

The census method is used in this study to collect primary data, and a total of 224 member companies of Taiwan Food GMP Development Association are investigated. The questionnaires are distributed by mail and E-Mail and 103 validity questionnaires are collected, the validity response rate is 46%.

This study use SPSS Statistical software for data analysis. The description statistic is used to understand the central tendency and distribution of the subject in the various dimensions. For reliability analysis, Conbanch's  $\alpha$  value is used to analyze the internal consistency of the questionnaire. Factor analysis is used to test content validity and construct validity. Correlation analysis is used to explore whether the significant correlation between variables, and finally the regression analysis and t-test are used to test the hypothesis.

## Research Result

### Sample Descriptions

Based on the sample data analysis showed that the companies did not set up factories at mainland China (71.8%) are the most. Companies that have exported their products to overseas accounted for 77.7%. Company's capital less than NT\$80 million (30.1%) are the most and the total number of employees of the companies are mostly from 101 to 300 people (30.1%) for the total number of major companies.

### The Reliability and Validity Analysis

In this study, the result of variables and their dimensions of reliability analysis of Cronbachs'  $\alpha$  values are shown in Table 1. Except the Cronbachs'  $\alpha$  value of competitive intensity is 0.670, the others are larger than 0.7, the reliability of the questionnaire used in this study is acceptable. It means there have a high level of confidence that the questionnaire used in this study has internal consistency.

Table 1 Reliability Analysis

Variables	Dimensions	Question No.	$\alpha$ for Dimensions	$\alpha$ for Variables
New product marketing strategy	Rational	19~25	0.868	0.926
	Emotional	26~32	0.904	
New product performance		33~36		0.958
Competitive Intensity		37~42		0.670
Product Innovation		43~47		0.913

Factor analysis is used to examine the validity of the questionnaire, the factor loading of each question are greater than 0.5, and the eigenvalues are larger than 1. Each dimensions explained variance are greater than 40% except competitive intensity, indicating that the questionnaire used in this study meet the requirement of content validity and also have good construct validity.

### The Correlation Analysis

In this study, Pearson correlation analysis is used to identify the variables associated with the dimensions. The result of correlation analysis is showed in Table 2. From the data showed in Table 2, we can see the most relevant are the new product marketing strategy (correlation coefficient is 0.740). The correlation coefficient matrix shows in addition to the competitive intensity and new product performance, both two dimensions showed a weak correlation. Both the two dimensions are all significantly positive correlation and the correlation between the independent variables showing no negative effects.

Table 2 Pearson Correlation Analysis of Variables

Dependent Variables	1	2	3	4
1. New Product Marketing Strategy	1			
2. New Product Performance	0.129	1		
3. Competitive Intensity	0.283**	0.059	1	
4. Product Innovation	0.364**	0.187	0.305**	1

Note: \* :  $p < 0.05$  ; \*\* :  $p < 0.01$  ; \*\*\* :  $p < 0.001$

### Hypothesis Testing

#### The impact of new product marketing strategy on new product performance

The result of regression analysis of the impact of new product marketing strategy on new product performance is shown in Table 3 and Table 4. Table 3 take 2 dimensions (rational and emotional) of new product marketing strategy as independent variable and the achieve rate of sales as dependent variable, then multiple regression analysis is used to test the impact of new product marketing strategy on the achieve rate of sales. Table 4 is used to compare the difference of the impact of rational marketing strategy and emotional marketing strategy on the achieve rate of sales. The result of test show the hypothesis 1-1 and hypothesis 1-2 are supported, but hypothesis 1-3 is not supported.

Table 3 Regression analysis of the impact of new product marketing strategy on the achieve rate of sales

Dependent Variable	Independent Variable (New product marketing strategy)	$\beta$	t	p
Achieve rate of sales	Rational marketing strategy	0.403	2.174	0.032**
	Emotional marketing strategy	0.387	2.158	0.033**
$R^2=0.052$ ; $\Delta R^2=0.033$ ; N=103 ; F=2.727 ; D-W=1.767 ; P=0.070*				

Note: \* :  $p < 0.1$  ; \*\* :  $p < 0.05$  ; \*\*\* :  $p < 0.01$

Table 4 Comparison of the impact of rational and emotional marketing strategy on the achieve rate of sales

Dependent Variable	Achieve Rate of Sales (Independent Variable)
Rational Marketing Strategy	0.033
Emotional Marketing Strategy	

**The moderating effect of competitive intensity in the impact of new product marketing strategy on new product performance**

The result of regression analysis of moderating effects of competitive intensity in the impact of new product marketing strategy on new product performance is summarized as shown in Table 5 and Table 6. The interaction of the dimensions of new product marketing strategy (rational and emotional) and competitive intensity is independent variables, the dimensions of the achieve rate of sales is dependent variable. The results show the hypothesis 2-1 and hypothesis 2-2 is not supported.

Table 5 Regression analysis of moderating effects of competitive intensity in the impact of rational marketing strategy on the achieve rate of sales

Dependent Variable	Independent Variable	$\beta$	t	p
Achieve rate of sales	Rational marketing strategy	0.211	2.174	0.032**
	Rational marketing strategy × Competitive Intensity	0.834	1.078	0.451
$R^2=0.046$ ; $\Delta R^2 = 0.027$ ; N=103 ; F=1.741 ; D-W=1.766 ; VIF=1.102 ; P=0.095*				

Note: \* :  $p < 0.1$  ; \*\* :  $p < 0.05$  ; \*\*\* :  $p < 0.01$

Table 6 Regression analysis of moderating effects of competitive intensity in the impact of emotional marketing strategy on the achieve rate of sales

Dependent Variable	Independent Variable	$\beta$	t	p
Achieve rate of sales	Emotional marketing strategy	0.121	0.861	0.391
	Emotional marketing strategy × Competitive Intensity	0.805	0.827	0.725
$R^2=0.053$ ; $\Delta R^2 = 0.024$ ; N=103 ; F=1.311 ; D-W=1.757 ; VIF=2.057 ; P=0.070*				

Note: \* :  $p < 0.1$  ; \*\* :  $p < 0.05$  ; \*\*\* :  $p < 0.01$

**The moderating effect of product innovation in the impact of new product marketing strategy on new product performance**

The result of regression analysis of moderating effects of product innovation in the impact of new product marketing strategy on the achieve rate of sales is summarized as shown in Table 7 and Table 8. The interaction of the dimensions of new product marketing strategy (rational and emotional) and product innovation is independent variable, the achieve rate of sales is dependent variable. The results show the hypothesis 3-1 and hypothesis 3-2 is supported.

Table 7 Regression analysis of moderating effects of product innovation in the impact of rational marketing strategy on the achieve rate of sales

Dependent Variable	Independent Variable	$\beta$	t	p
Achieve Rate of Sales	Rational Marketing Strategy	-0.002	- 0.012	0.990
	Product Innovation $\times$ Rational Marketing Strategy	0.345	2.712	0.019**

$R^2=0.096$  ;  $\Delta R^2 = 0.078$  ; N=103 ; F=5.318 ; D-W=1.885 ; VIF=1.718 ; P=0.006\*\*\*

Note: \* :  $p < 0.1$  ; \*\* :  $p < 0.05$  ; \*\*\* :  $p < 0.01$

Table 8 Regression analysis of moderating effects of product innovation in the impact of emotional marketing strategy on the achieve rate of sales

Dependent Variable	Independent Variable	$\beta$	t	p
Achieve Rate of Sales	Emotional Marketing Strategy	0.014	0.111	0.912
	Product Innovation $\times$ Emotional Marketing Strategy	0.303	2.436	0.017**

$R^2=0.098$  ;  $\Delta R^2 = 0.080$  ; N=103 ; F=5.410 ; D-W=1.863 ; VIF=1.718 ; P=0.006\*\*\*

Note: \* :  $p < 0.1$  ; \*\* :  $p < 0.05$  ; \*\*\* :  $p < 0.01$

## Conclusions and Suggestions

### Conclusions

The major finding of this study are list as follow: (1)The rational and emotional marketing strategy have a significantly positive impact on achieve rate of sales. (2) The impact of rational and emotional new product marketing strategy on new product performance has not significantly difference. (3)Product innovation has a significantly positive moderating effect in the influence of new product marketing strategy on new product performance.

### Theoretical Implications

This study verified once again that new product marketing strategy is an antecedent variable of new product performance. We confirmed that both rational and emotional marketing strategies for new products have a significantly positive impact on new product performance.

Product innovation will do have a moderating effect in the impact of new product marketing strategy on new product performance. For product innovation, most of the past research emphasize in the technology industry, in this empirical research in food industry, product innovation placed as a moderating variable, that provides valuable theory reference for future study.

### **Practical Implications**

Identified the importance of the moderating effects of product innovation. Research regarding new product innovation in the past mostly emphasis on the technology industry. Food industry is a very important livelihood industry in Taiwan, the important and it's influence in the market should not be underestimated. This study using product innovation as a moderating variable and verified it's moderating effect, this is the main difference and contribution of this study from previous study. For businesses, products not only should meet the needs of existing customers but also continue to emphasize new product development, process innovation in order to maintain the market performance of old and new products. As Drucker (1985) pointed out that innovation is a necessary way for business, only innovation can make profit.

### **Limitations**

The limitations of this study are list as follow: (1) The explanation power of some models are relative low, that make some limitations of the appropriateness of the conclusions. (2) The limitations for data collection. Mail and E-mail are used to collect primary data, due to there is no personal assisted in answering the questionnaire so it will inevitably lead to incomplete status of the questionnaires. (3) The limitations for new product performance measurement. This study use achieve rate of sales which firms are more able to control as a measurement, but there are a lot of indicators to measure new product performance, so there may be far from embracing restrictions. (4) External validity limitations, this study focus on examined the member companies of Taiwan Food GMP Development Association, although it obtain definitely conclusions but results will lack of external validity and can not be inferred to other non-certified products.

### **Suggestions**

#### **Suggestions for Food Industry**

More emphasis market the innovative product in the way of emotional appeal, through the easy way to remember of advertisement performing, closer to the consumer's lifestyle and let the customers interested in the product and increase purchase attention. More emphasis on product innovation: This study demonstrated that product innovation has a significantly positive moderating effect in the impact of new product marketing strategy on new product performance. Consumer behavior is developed through quite a long time. Once the formation of a behavior, it is not easy to change. Therefore, the food industry developing innovative products for customers unmet needs would quickly win the market. The companies wish to be the first in the market have to seek and develop innovative products to meet consumer needs.

### Suggestions for future study

Strengthen the external validity: This study takes the member companies of Taiwan Food GMP Development Association as a research object, it is not on behalf of other food certification or other member companies of food industry associations, different food certification or different products in the food industry associations should have their different characteristics, therefore we recommended that researchers can increase the certification and other food products or other food industry associations. Research other variable dimension or adding other variables: Different research purposes, each of the scope of variables and their dimensions are not the same, future researchers can target different dimensions or by adding other variables make the study more complete. Increase the impact of the effect between variables: Product innovation in this study had been confirmed has a positive moderating effect, but whether a direct impact on the same technology industry effects are not available, it is suggested the future researchers that product innovation can be explored in depth the performance of new products to make a direct impact on research results more comprehensive.

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