

# Imbalance Between Market Orientation and Innovation Capability: An Empirical Study on Taiwan's Continuing Education

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*Abstract* –Though universities appear to be bureaucratic, inefficient and much less flexible organizations, they now have a tough challenge to manage their new adventure—continuing education (CE). This study aims to explore the relationships among market orientation, innovation capability, and business performance in Taiwanese universities and colleges involving CE. We propose research hypotheses and LISREL model to investigate these based on 261 respondents from 71 universities and colleges. One finding of this study indicates that innovation capability plays a distorter factor in context of the relationship between market orientation and business performance. Such an inconsistent result reveals an imbalance between market orientation and innovation capability. We also find that these two different aspects of innovation all have direct contributions to business performance whereas administrative innovation strongly affects product innovation. This study finally ends with some managerial implications for management and future research.

*Keywords* –Business performance; continuing education; imbalance; innovation capability; market orientation; mediating role.

## I. INTRODUCTION

Since 1998, the Ministry of Education (MOE) has been actively promoting the recurrent education and life-long education in Taiwan. Therefore, the concept of continuing education (CE) has resulted in the rapid growth of continuing education institutes (CEIs) around the island. Considering the market concentration and the major knowledge producer of intellectual capital, we would refer the term CEIs to universities (including colleges) in following sections.

However, their competitive strategies have attracted limited research effort as compared to the focus on other industries (e.g., manufacturing and services). Thus, the interest of this paper has three perspectives. The first is the role transition of universities. The second is the newness/novelty and the third is the overview/guideline for examining the relationships among market orientation, innovation capability and performance. Furthermore, we also investigate the mediating role that innovation capability plays in the context of the relationship between market orientation and business performance.

## II. THEORETICAL BACKGROUND

### A. Market orientation (MO)

MO is a popular term used by marketing practitioners as an indicator of extend to which a firm implements the marketing concept [1]. MO, a management approach striving towards the continuous organizing and managing of the value-adding activities directed to meeting customer requirements and expectations [2-4], would become favorable in the dynamically changing market environment.

Marketing researchers have provided diverse but, to some degree, consistent definitions for MO [5]. For instance, some suggest MO is a set of specific behaviors and activities [2], a resource [6], a basis for decision-making [7], or an aspect of organizational culture [4, 8-9]; others argue MO research is ranging from marketing intelligence perspective [2, 10-11], the culture based behavior perspective [3, 9, 12] to the customer focused perspective [7-8, 13] and the strategic perspective [4, 14].

Although the concept of MO has been defined in several ways [15], the majority of researchers in recent years have often derived their definitions from the conceptualizations of Kohli and Jaworski [2] and Narver and Slater [3].

### B Innovation capability (IC)

No doubt, innovation is widely acknowledged as key to economic development, since it potentially leads to productivity and competitive gains [16]. It is an adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization [17]. Vakola and Rezgui [18] defined innovation as an idea, a product or process, a system or device that is perceived to be new to an individual, a group of people or firms.

Reviewing the classifications of IC in the prior studies, Samson [19] classifies innovation into three categories: (1) product innovation (2) process innovation (3) managerial and systems innovation. Based on Samson's concept on innovation categories, Tsai et al. [20] define a firm's IC including product innovation, process innovation and managerial innovation. Damanpour and Evan [21] and

Damanpour [17] divided innovation into two categories: administrative innovation and technological innovation.

C. Business performance (BP)

The ultimate goal of any business activity is to enhance its profit and improve its performance. BP measures were assessed on growth and profitability [22]. It is generally accepted that BP is a multi-dimensional construct [23]. Based on the concepts of Dephante et al. [8] and Drew [24], Choi and Lee [25] adopt non-financial perspective and this measure consists of output items such as overall success, market share, growth rate, profitability, innovativeness, and business size compared with key competitors.

III. RRSEARCH FRAMEWORK AND HYPOTHESES

A. MO and IC

Traditionally, MO literature has identified positive relationships between MO and innovation. Kohli and Jaworski [2], Deshpande et al. [8] and Slater and Narver [27-28] suggest that market-oriented behavior results in a higher degree of innovation and of success in the commercialization of new products. Santos and Vazquez [29] have verified empirically that market-oriented high-technology companies obtain significantly better results in innovations. Mavondo et al. [30] argued that firms manifest their MO via the success of new innovation. Therefore, the following is hypothesized:

*Hypothesis 1: MO has a positive influence on product innovation (prod-I).*

*Hypothesis 2: MO has a positive influence on Administrative innovation (admin-I).*

B. IC and BP

Innovation is considered vital for its contribution to BP and the literature consistently associates it positively with performance [25, 31]. IC also has been shown to positively contribute to long-term corporate growth [32]. Most studies in the past exploring innovation's influence on performance assume that the concurrent adoption of both innovations (i.e., prod-I & admin-I) will have great effects on performance [21, 33-34]. Santos-Vijande and Alvarez-Gonzalez [35] argue that admin-I is positive associated with technical innovation, which implies that the adoption of one type of innovation influences the other positively. However, Damanpour et al. [33] further emphasize that technical innovations do not always prompt Admin-I. Thus, the following is hypothesized:

*Hypothesis 3: Prod-I has a positive influence on BP.*

*Hypothesis 4: Admin-I has a positive influence on BP.*

*Hypothesis 5: Admin-I has a positive influence on prod-I.*

C. MO and BP

Most MO researches have proven that MO makes a direct contribution to performance. Carunan et al. [36] suggest that MO contributes to higher performance for Australian and New Zealand universities. Chang and Chen [37] find a positive relationship between MO and performance for retail stock-broking firms in Taiwan. In contrast, several studies have failed to find support for a significant relationship or between MO and performance. Sargeant and Mohamad [38] found varying levels of MO but no significant link between MO and performance. Therefore, the following is hypothesized:

*Hypothesis 6: MO has a positive influence on BP.*

*Hypothesis 7: MO-BP relationship is mediated by prod-I.*

*Hypothesis 8: MO-BP relationship is mediated by admin-I.*

Based on 8 hypotheses mentioned earlier, Fig 1 shows the research framework of this study.

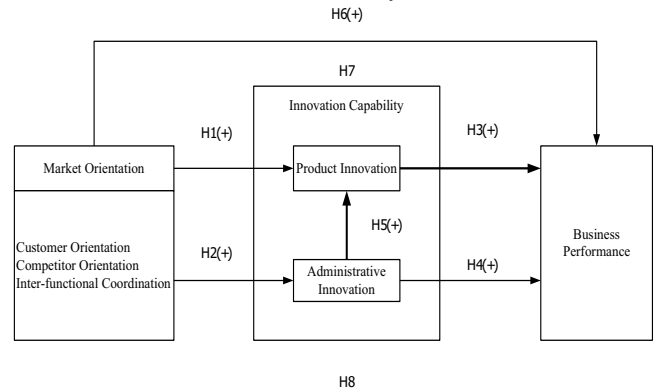


Fig 1. Research framework

IV. METHODOLOGIES

A. Sample design

The population of this study comprises 71 universities and colleges listed in the MOE database that involve in CE business.

B. Data collection

The data collection proceeded in three stages. The first stage was a pilot-test that the questionnaire was mailed to 6 professionals for semantic modification to enhance the clarity. The second stage is to send a total of 47 questionnaires to 9 CEIs of universities and colleges to pre-test the questionnaire. A total of 40 valid responses were received. Tests indicated sufficient reliability and validity. The third stage was to distribute the formal questionnaires from December 2007 to March 2008. A total of 339 questionnaires were sent out and 226 were returned. Excluding 5 invalid questionnaires, a total of

221 valid responses were received for an effective rate of 65.2%.

### C. Measurement

A 5-point Likert scale (1=totally disagree, 5=totally agree) was used to measure the constructs. In this research framework, MO is an independent variable whereas BP is dependent variable. We use an adaptation of Narver and Slater's [3] instrument to measure the extent of an organization's MO. Owing to the confidential secret, we employ two constructs, Prod-I and Admin-I instead of process innovation. Measures of these two innovations were modified on the basis of Tsai et al. [20]. From non-financial perspective, we assess business performance on both market performance and overall performance [25].

### D. Reliability & Validity

After receiving the returned questionnaires, we use confirmatory factor analysis (CFA) to survey reliability and validity. Based on Kenny [39] and Noar [40], they suggest that a valid construct needs no more than four items. Therefore, we plan to keep 5 items at most in each research construct during CFA process. As results, there are 8 items relating to MO, 9 items relating to IC and 3 items relating to BP.

## V. DATA ANALYSIS AND RESULTS

### A. Hypotheses testing

According to the Fig. 2, the relationship between MO and two aspects of innovation was supported (H1 and H2 are supported). As might be speculated, MO has a stronger effect on admin-I than that on prod-I. However, we also have a significantly negative relationship between MO and BP, which is inconsistent with most research in the past (H6 is not supported).

Next, we find these two aspects of innovation are both positively associated with BP. As to mediating effect, IC is proven as a mediator factor in the context of the relationship between MO and BP (H7 and H8 are supported). The first is that MO affects BP positively is significant, which does not support H5. Based on Baron and Kenny [41], the reason why the relationship between MO and BP has negative correlation resulted from the distorter effect of IC (i.e., prod-I & admin-I).

Although we have validated the hypotheses that the IC plays a mediating role in context of MO-BP relationship, there still have another mediating effects for further discussions. For example, one is the mediator role of admin-I plays in the context of the relationship between MO and prod-I, and the other is that of prod-I on the relationship between admin-I and BP. Following the prior procedures, we found admin-I is a mediator, whereas prod-I acts as a distorter.

### Common method variance (CMV) testing

To test whether CMV exists in this study, we adopt the Harman's one-factor test, the most used to date by researchers to manage CMV, to all the items of variables. Therefore, we adopt the method to test CMV. The assumption of Harman's one-factor test is that if the variance explanation of a single factor or a composite factor extracted by factor analysis is more than 50%, it means we have CMV problems [42]. Based on the results from testing, there are six extracted factors and the first factor loading is 40.6% that is not more than 50%. Therefore, it is reasonably accepted that this study is not seriously suffered from CMV.

## VI. DISCUSSIONS AND IMPLICATIONS

First, we empirically provide some evidences that MO facilitates organization's IC, indicating the MO plays an important role in the development of IC. Santos-Vijande and Alvarez-Gonzalez [35] confirm that a true innovative firm must be embedded of a strong culture that stimulates the engagement in innovative behavior. Slater and Narver's [27] suggest that MO, as a corporate culture, characterizes an organization's disposition to deliver superior value to its customers continuously. Therefore, the implication is that managers of CEIs could influence their IC through the adoption of MO.

We also find that IC has a significant positive effect on BP. It is consistent with the previous research [20, 26, 33] Besides, admin-I has greater impacts on BP rather than MO and prod-I. By contrast, prod-I is more expensive and risky to an organization while admin-I includes social structure, design, rules, procedures, reward and information systems, and communication authority structures that govern the relationships among members. Thus, admin-I appears to have a great impact on work productivity and overall performance of the organizations [30].

For prior studies were little concerned in investigating the causality between prod-I and admin-I whereas most studies advocate the adoption concurrently for an optimal BP. In this study, admin-I might affect prod-I and the implication is that managers of CEIs should more care about the internal capability rather than the external capability.

An interesting finding that MO has a strong direct negative relationship on the BP as the results show is not assumed since many previous studies have proposed the link to be strong and positive [8, 10, 27, 37, 43]. As Kohli and Jaworski [2] and Slater and Narver [28] suggest, the strength of MO-BP relationship is contingent upon the conditions in the environment. Jaworski and Kohli [10] further argue that MO has a strong or weak effect on BP, depending on the environmental conditions such as market turbulence and competitive intensity (see [44]). Thus, we argue that the environmental factors playing as critical moderators would affect the relationship between MO and BP while IC acts as a mediator.

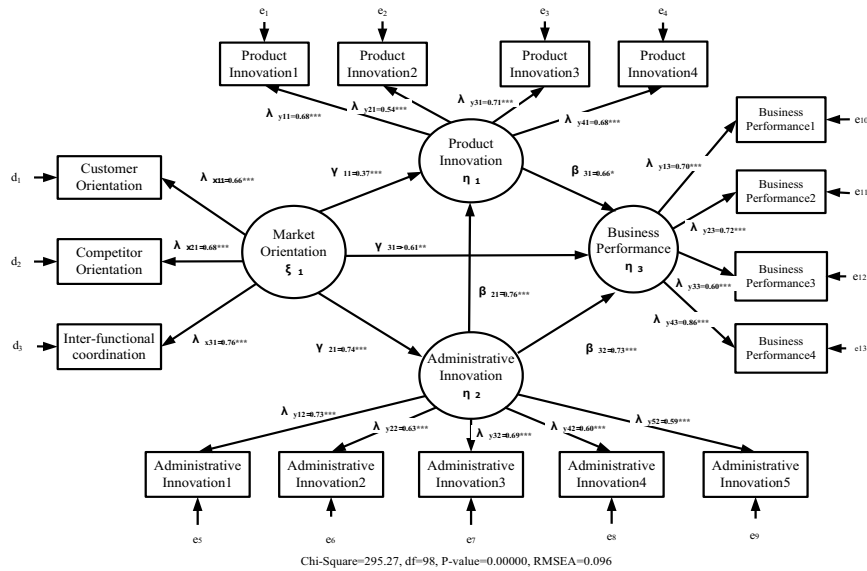


Fig 2. Path diagram of variables

General speaking, IC seems to have taken the place of MO and directly makes great contributions to BP (see Table 5). As Day [45] and Fahy et al. [46] suggest that MO is treated as an internal capability. On one hand, it means that MO might be embedded in organizational capabilities. On the other hand, it indicates that MO has attracted little attention from organizations by contrast to innovation. In fact, those traditional universities/colleges have spent much time in higher education system, where supply always exceeds demand, and now most of them still have failed to adapt to the dynamic and complex environment. Furthermore, the majority of their staffs in universities/colleges are not mature/professional enough to perceive the construct of MO. The implication is that most managers of CEIs today still prefer the practical IC rather than the theoretical MO.

### VII. CONCLUSIONS

This study is to empirically investigate the mediating role of IC in context of the MO-BP relationship. First, MO is positive associated with IC. It clearly indicates that all the capability development within an organization should be aligned with organization's strategy. Second, IC makes great contributions to BP and the effect of admin-I surpasses that of prod-I. It means that an organization must be more concerned about management activities than technical ones. Third, the empirical result suggests that there exists a causal relationship between admin-I and prod-I. Finally, the distorting effects of IC resulting in a strong negative relationship between MO and BP, shows that IC, to some degree, no longer stands at parity with MO. To managers of CEIs, we conclude with that the crisis of **'Imbalance'** between strategy and

capability would distort the resource allocation so as not to achieve an optimal performance.

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