

## Competitive Advantage as Mediating Variable on the Relationship Between Innovation and Business Performance on SMES in Purwokerto Province

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**Abstract** This study was aimed to examine the influence of innovation toward business performance and competitive advantage as a mediator. To test the empirical models, Structural Equation Modelling (SEM) was used. Among the software used to assist the analysis in this study were AMOS 21.0, SPSS 16.0 and Microsoft Excel 2007. The sample size of this research was 125 owners-managers of Small and Medium Enterprises (SMEs) in the Purwokerto Province, Indonesia. The result showed that innovation has positive effect on business performance, innovation has positive effects on competitive advantage, competitive advantage has a positive effect on business performance, and competitive advantage doesn't mediate the influence of innovation to business performance.

**Keywords:** Innovation, competitive advantage, business performance, small medium enterprises..

### INTRODUCTION

In this modern business environment, there are many changes that occur in our society. These changes will have a real impact on the overall business performance. This can be interpreted as a threat or opportunity in business. For companies that want to continue to grow, these changes can be understood as an opportunity and make the company more motivated to develop. But, for companies that are not prepared in the era of globalization, this change is regarded as a threat that can make their business get financial distress. Basically, all companies want to survive in this era of globalization and understand these changes as an opportunity to improve their business performances. Therefore, they need business strategies to achieve optimal business performance. According to [1], innovation as the impact of rapid technological change and changing tastes of high product will be able to affect the organization's performance. Innovation is starting or introducing something new. Most researchers agree on the definition of innovation include the results of new products and processes. Innovation is often confused with invention. There is a difference between innovation and invention. [2] noted that: "an *invention* is an idea, a sketch or model for a new or improved device, product, process or system" whereas "an *innovation* in the economic sense is accomplished only with the first *commercial* transaction involving the new product, process, system or device..." In simple terms, innovation involves the exploitation of new ideas.

Many studies in the literature have looked at the linkage between innovation and business performance, either directly or as part of a larger study. The results of these studies seem to suggest that there is a close link between innovation and business performance. In general there is clear evidence that innovation play a crucial role to long term profitability and growth in firms [3, 4, 5, 6]. But there is a study that gives different result by [7]. His research concluded that innovation does not have influence on the good performance as measured by the performance of financial and non-financial performance (market share and sales growth). Therefore, in this study will explain the influence of innovation toward business performance.

Based on the text above, small and medium enterprises are the appropriate company for being the object of research. Duncan [11] states that there are several advantages when doing research on small and medium enterprises, which will lead to obscurity research because the products sold are usually not vary. In addition, researchers can maximize the informant's answers because the owners or managers of SMEs are directly related to the operations of the company. Based on data, the number of SMEs in Indonesia reached 56.2 million. While in Purwokerto, small and medium enterprises are still the mainstay industries in Purwokerto [8]. Based on these reasons, researchers are interest in conducting empirical studies raised from small and medium enterprises in Purwokerto and researchers will conduct research on innovation and competitive advantage as mediating variables the effect

of market orientation on business performance of small and medium enterprises in Purwokerto.

### RESEARCH QUESTIONS

There are some literature that supporting a positive and significant association between innovation and organizational performance [3, 4, 5]. But there is a study that gives different result [6]. Therefore, it is suggested to add mediating variables, such as competitive advantage. Based on the *research gap*, in this study defined the problem as follows:

1. Does innovation effect on business performance of SMEs?
2. Does innovation effect on competitive advantage of SMEs?
3. Does competitive advantage effect on business performance of SMEs?
4. Does competitive advantage mediates the relationship between innovation and business performance of SMEs?

### RESEARCH OBJECTIVE

This study was aimed to examine the mediating effects of competitive advantage of the influence of innovation to business performance and to know more variables that can affect the business performance.

Based on the formulation of the problem that exists, then the specific objectives of this study are:

1. To examine the effect of innovation towards business performance SMEs.
2. To examine the effect of innovation towards business performance of SMEs.
3. To examine the effect of competitive advantage towards business performance of SMEs.
4. To examine the competitive advantage as mediating variables between innovation and business performance of SMEs.

### HYPOTHESIS DEVELOPMENT

Ussahawanitchakit P [9] and Duncan J[10] argues that companies in the business market should be able to exploit their innovative capabilities in order to achieve the business performance. This opinion is supported by Espallardo and Elena [4], Aranda *et al.* [12], Mahesh and James [13]. The results of Xayphone & Takahashi [14] Lin and Chen [15] also concluded that innovation has a positive influence on business performance. Therefore, the hypothesis is formulated as follows:

H<sub>1</sub>: Innovation has a positive effect on business performance.

Innovation is the key to competitive advantage in a highly turbulent environment. It is a major driving

force for economic growth of nation states. The ability to innovate has direct consequences for the ability to compete at the individual, firm, regional and national level. The values created by innovations are often manifested in new ways of doing things or new products and processes that contribute to wealth. When we consider a firm as a bundle of resources, skills and competencies, then the effect of innovation is to transform a firm's inner capabilities, making it more adaptive, better able to learn, to exploit new ideas. This enhanced flexibility is crucial in the face of changing market conditions. Thus innovation enhances competitiveness of firms.

H<sub>2</sub> : Innovation has a positive effect on competitive advantage.

Wang *et al.*, [16] and Li *et al.* [17] states that there is a positive influence between competitive advantage to business performance that measured by sales volume, market share, and return on investment. Bharadwaj *et al.* [18], Miller [19], Rosiana [20] and Supranoto [19] also stated that a corporate who pay attention to the market will get company's competitive advantage. Therefore, the hypothesis is formulated as follows:

H<sub>3</sub> : Competitive advantage has positive effect on business performance.

Teece [22] stated that innovation will encourage companies to create their capabilities that can support long-term business performance. Successful innovation can make it more difficult for competitor to making imitation products [23]. Therefore, innovation can affect the competitive advantage and then the performance of the business will also increase [24, 25]. It is also supported by Sakchutchawan, *et al.*, [26]. He stated that there is a significant positive effect between innovation with competitive advantage. Research results show that if a company do innovation, their will have an impact on the creation of competitive advantage and it will affect the performance. In their research, they also stated that a competitive advantage can be used as a mediator of the relationship of innovation to business performance. Therefore, the hypothesis is formulated as follows:

H<sub>4</sub>: Competitive advantage as mediating variables between innovation and business performance.

### METHOD

**Population and Sampling Techniques:** This study is a quantitative study using survey method which is given to the owner or manager of small and medium business in Purwokerto. Then, the object of this study is dimension from the market orientation (customer orientation, competitor orientation, coordination among the function), innovation, competitive advantage, and

business performance. Total sample of the study is 125 respondents and the sampling method is random sampling. Measurement tool of this study is using 1-7 interval scale. The respondent gave the answer on the distance very disagree to very agree. Then, it used Structural Equation Modeling (SEM) analysis. It is helped by using computer program AMOS 21.

**RESULTS AND DISCUSSIONS**

The full structural equation model (SEM) is portrayed in Figure 1. Each model construct was evaluated for construct validity, convergent and discriminant validity. In support of construct validity, coefficient alphas for market orientation, innovation, competitive advantage, business performance were all

well within the acceptable range. In support of convergent validity, the average variance extracted (AVE) from the indicators of each construct all exceeded .7, which was also well within the acceptable range. In support of discriminant validity, each potential pair of latent constructs was compared to one another in a series of confirmatory factor models in which their correlations were constrained or not constrained to 1. In each comparison, the unconstrained model was a significantly better fit than the constrained model, an indication of discriminant validity [27]. The AVEs also were compared with the squared correlations for all pairs of constructs. In each case the AVE exceeded the squared correlation, an indication of discriminant validity.

**Table1. The Result of Convergent Validity**

Construct	Item	Internal Reliability	Factor Loading	Construct Reliability
Innovation	X1	0.770	0.750	0.921
	X2		0.741	
	X3		0.539	
	X4		0.401	
	X5		0.431	
	X6		0.716	
Competitive Advantage	X7	0.871	0.810	0.964
	X8		0.751	
	X9		0.738	
	X10		0.541	
	X11		0.536	
	X12		0.471	
	X13		0.762	
	X14		0.608	
	X15		0.550	
	X16		0.559	
Business Performance	X17	0.867	0.781	0.974
	X18		0.744	
	X19		0.779	
	X20		0.661	
	X21		0.567	
	X22		0.801	

**Table 2: Discriminant Validity**

	Innovation	Competitive Advantage	Business Performance
Innovation	<b>0.672</b>		
Competitive Advantage	0.068	<b>0.736</b>	
Business Performance	0.233	0.191	<b>0.863</b>

Source: Primary Data

**Table 3: Goodness of Fit Test**

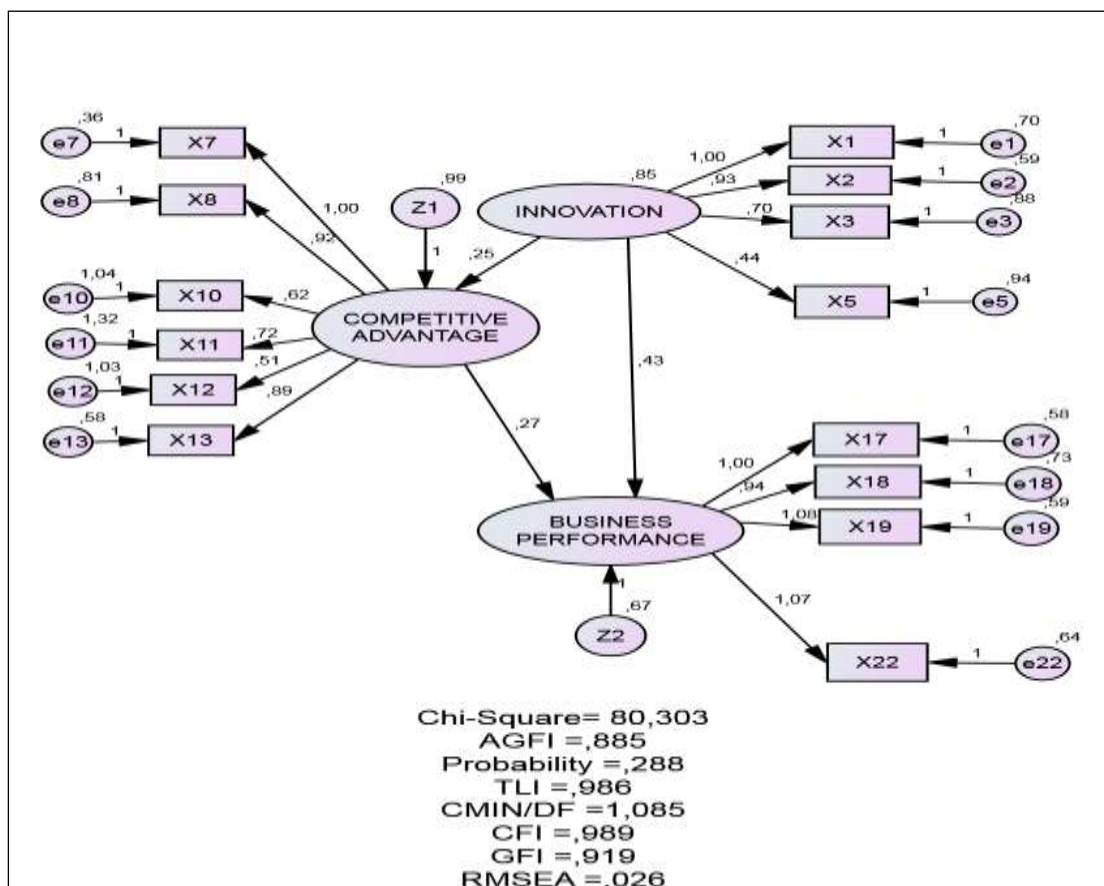
Model Good of Fit Index	Cut-off Value	Model Outcome Analysis	Explanation
$\chi^2$ – Chi Square	$< \chi^2$ 95.081 (p 0.05; df 24)	80.303	Good
Probability	$\geq 0.05$	0.288	Good
CMIN/DF	$\leq 2.00$	1.085	Good
RMSEA	$\leq 0.08$	0.026	Good
GFI	$\geq 0.90$	0.919	Good
AGFI	$\geq 0.90$	0.885	Marginal
TLI	$\geq 0.95$	0.986	Good
CFI	$\geq 0.95$	0.989	Good

Source : Primary Data

**SEM Model Evaluation**

Confirmatory factor analysis was conducted on every construct and measurement models. All CFAs produced a relatively good fit as indicated by the goodness of fit indices such as CMIN/df ratio ( $< 2$ ); p value ( $> 0.05$ ); Goodness of Fit Index (GFI) of  $> 0.95$ ;

and root mean square error of approximation (RMSEA) of values less than 0.08 ( $< 0.08$ ). The measurement model has a good fit with the data based on assessment criteria such as GFI, CFI, TLI, RMSEA [11]. Table 2 shows that the model was an adequate representation of the data.



**Fig-1: Full Model**

**HYPOTHESES RESULTS**

Table 3 shows that innovation has a direct positive and significant influence not only on: (1) competitive advantage (CR=2.024;  $p < 0.05$ ), but also on business

performance (CR=3.531;  $p < 0.05$ ). Thus,  $H_1$  and  $H_2$  are asserted. Competitive advantage has a significant and positive link with business performance (CR=2.744;  $p < 0.05$ ), thus,  $H_3$  is asserted.

**Table 3: Direct Impact of Revised Model Standardized Regression Weights**

Hypothesis	C.R.	t <sub>table</sub>	P
Innovation → Competitive advantage	2.024	1.979	0.043
Innovation → Business Performance	3.531	1.979	0.000
Competitive advantage → Business Performance	2.744	1.979	0.006

Source: Primary Data

**The Mediating Effect**

**Sobel Test**

One famous test to determine the role of mediator is the Sobel test. By Sobel [28] suggested. This test can be done online, using the regression and standard error from the regression equation between independent, dependent and mediator variable done (Baron and Kenny [29], Sobel [28], Goodman [30], MacKin-non, Warsi, and Dwyer [31].  $H_0$  hypothesis of

this test indicate the variable is mediator and the opposite assumption that the hypothesis is rejected. The required values of regression equations using the Sobel test done online (<http://quantpsy.org/sobel/sobel.htm>) and considering the critical value of innovation and competitive advantage are greater than 1.96; So, the hypothesis that indicate competitive advantage as mediation variable of innovation and business performance are not approved.

**Table 4: Competitive advantage as mediating variable of innovation and business performance**

Input:	Test statistic:	Std. Error:	p-value:
a 0.25355	Sobel test: 1.62882736	0.04140977	0.10334957
b 0.26602	Aroian test: 1.56299199	0.04315401	0.11805448
$s_a$ 0.12527	Goodman test: 1.70375046	0.03958876	0.08842772
$s_b$ 0.09695	<input type="button" value="Reset all"/>	<input type="button" value="Calculate"/>	

**DISCUSSIONS**

**Innovation and Business Performance**

The result indicate that, innovation has direct positive and significant influence to business performance. The significant effect of innovation on business performance suggest that innovation is important construct to get a good business performance. Firms with greater administrative innovation tend to achieve higher growth rate, increase return on sales and market share, gain better bright future of the organization, and promote higher business performance. Hence, administrative innovation explicitly has a positive correlation with business performance. This result supports the result of Espallardo and Elena [4], Aranda *et al.* [12], Mahesh and James [13], and Xayphone and Takahashi [14].

**Innovations and Competitive Advantage**

The result indicate that, innovation has direct positive and significant influence to competitive advantage. The significant effect of innovation on competitive advantage suggest that market orientation is

important construct to get competitive advantage. Proctor says, “The goal of revolutionary innovation, is to create a long term competitive advantage”. A company that is well established, in decline or operating in a highly competitive arena might consider game changing innovation to reinvigorate the business. The results are consistent with research by Bharadwaj *et al* [18] and Akimova [32].

**Competitive Advantage and Business Performance**

The result indicate that, competitive advantage has direct positive and significant influence to business performance. The significant effect of competitive advantage on business performance suggest firms with greater competitive advantage tend to achieve higher business performance than competitors. there are multiple ways of achieving competitive advantage. Therefore, to achieve a competitive advantage, company doesn't have to be the best in all dimensions, but it must be superior in value creation. Also, it is important to highlight that competitive advantage has relative, not absolute meaning, because company can

only have advantage in relation to its competitors. This results support the research by Li [17] and Miller [19].

### **Innovation, competitive advantage and business performance**

The result indicates that, competitive advantage as not mediating variable of innovation and business performance. Thus, the innovation can only be a direct impact on business performance. When we see from the results of questionnaires, it can be concluded that the innovation of Small and Medium Enterprises in Purwokerto can directly improve the performance of the company. Results from this study are supported by the statement of Nelson R. [8] which states that innovation is a factor which play an important role in performance. So, innovation can directly affect the performance of the business without going through a competitive advantage. Ussahawanitchakit [9] also argues that companies in the business market that has been exploiting its innovative ability will be able to achieve growth and better business performance.

### **Managerial Implications**

If a business engages only in reactive market orientation, it will miss opportunities to innovate and be a market leader. The power of a proactive market orientation is that the business continuously discovers new opportunities for target-customer benefits. However, if a business engages only in proactive market orientation, it risks alienating its served market by failing to address its expressed needs. For any business the strongest foundation for sustainable competitive advantage is a total market orientation—reactive market orientation coupled with proactive market orientation. The challenge for any market-oriented business is to improve continuously its skill in learning more effectively and efficiently about its target customers' expressed and latent needs. By enhancing their market orientation, firms will know and service its customers better. Thus, they will generate more innovations by adopting a market-based product development process. Also, increasing levels of market orientation enable firms to discriminate more easily which new products have a higher success probability thus enhancing the efficiency of new product development.

### **Research Limitations and Future Research**

The present study was designed to provide a snapshot across company sizes and industry types, these results cannot be generalized to specific business segments or to firms employing certain marketing or business strategies. These observations also are limited to Purwokerto's business practices. In addition, future studies of the market orientation–performance relationship would benefit from specific business segments. More research is needed to understand the role of new business and commercialization versus

implementing new ideas in market orientation and performance.

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