

Knowledge Combination Capability in Tourism Related SMEs in Indonesia:

Does the marketing innovation moderate the product innovation-performance relationship?

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Abstract—This study aimed to identify the relationship between knowledge combination capability and product innovation and their influence on company performance. It tested the moderating effect of marketing innovation on a product innovation-company performance relationship on Small and Medium Enterprises (SMEs) of tourism related industry in Indonesia. Based on quantitative approach, data collected from 105 SMEs owners with questionnaire. These SMEs were selected based on two main criteria: producer and seller of food products, and mainly targeting tourists. A Partial Least Square (PLS) was performed to analyse the data. Statistical analysis revealed that marketing innovation does not moderate the relationship between product innovation and business performance. Meanwhile knowledge combination capability was found significantly affect business performance. This research offers companies with important insights that marketing innovation is important aspect in boosting the business performance but it is also important to pay attention to the manage knowledge combination capability. Innovation in marketing helps company to renew product design, to improve pricing technique, to manage distribution channel and to design appropriate communication that will significantly deter business performance. The paper provides insights for academics and professionals in the field of small and medium size business and adds to the literature on tourism industry in emerging economies.

Keywords—marketing innovation; product innovation; knowledge combination capability; performance; SMEs; tourism

I. INTRODUCTION

The tourism industry often comes into contact with the creative industry. The development of creative industries in Indonesia is quite high. The Creative Economy Agency said that the creative industry contributed in 2017 Rp. 852 trillion to GDP. The biggest contribution from the creative industry to GDP is from the culinary sector by 32.4 percent, fashion by 27.9 percent, and crafts by 14.88 percent, while for exports, fashion contributes the most GDP, followed by culinary and handicrafts. As one of the important sectors in the creative industry, culinary or food is one that is very important to support the tourism sector.

Based on the preliminary survey (in 2017), the provincial government of West Sumatra directed the policy of developing

tourism with the development of creative industries, including the food industry. Food industry is a sector that is very important in supporting the sustainability of the tourism industry in West Sumatra. As part of the creative industry, knowledge development, innovation strategies and marketing strategies are expected to drive the performance of food sector companies and as the impact, support the tourism sector. This study aims to investigate whether there are interrelated effects amongst knowledge combination capability, marketing and product innovation with company performance.

The linkages between variables mentioned in the above objectives have previously been discussed by several researchers. For example, innovation can improve company performance [1]. Innovation activities can also create superior value and benefits and can differentiate a company from its competitors [2]. In addition, there is a relationship between knowledge combination capability and company performance [3]. Knowledge combination capability consists of the exchange of knowledge between individuals and work groups, allowing the transfer of knowledge in organizations and their application to the development of new products [4]. A combination of higher knowledge will produce more innovative products [3]. When a company has a combination of marketing and product innovation they will effect performance [3]. However, in the context of small and medium enterprises (SMEs), there is little evidence about interrelation among these variables. How interrelations among these variables help companies configure their performance in food industry related to tourism in West Sumatra is worth to be furthered investigated.

Previous studies have investigated the relationship between marketing innovation, product innovation and company's performance. Marketing innovation has a positive effect on product innovation [5]. Product innovation was mentioned affect company performance [6]. While marketing innovation was mentioned moderate relationship between product innovation and company performance [7]. Based on perspective the Natural Resource-Based View, it was mentioned that environmental product innovation affect company performance [8]. Review on these studies has led to initial understanding about the interrelation among variables,

thus the following hypothesis are formulated: H1a: Marketing innovation has a significant effect on product innovation. H1b: Marketing Innovation has a significant effect on company performance. H2: Marketing innovation moderate relationship between product innovation towards company performance. H3: Product innovation has a significant effect on company performance.

In addition to marketing and product innovation, company performance can be predicted by interaction of knowledge combination capability with product innovation [9]. Although the scientific literature has analyzed the relationship between knowledge and innovation, there is a need for simultaneous analysis of the relationship between the ability of a combination of knowledge and product and process innovation, and ultimately the relationship between the two variables and company performance. To overcome this gap, research is currently developing a research model that links the ability of a combination of knowledge, innovation, and company performance. Thus, the following hypothesis are formulated: H4: Knowledge combination capability has a significant effect on product innovation and H5: Knowledge combination capability has a significant effect on company performance. On the basis the literature review, the propose model is as follow:

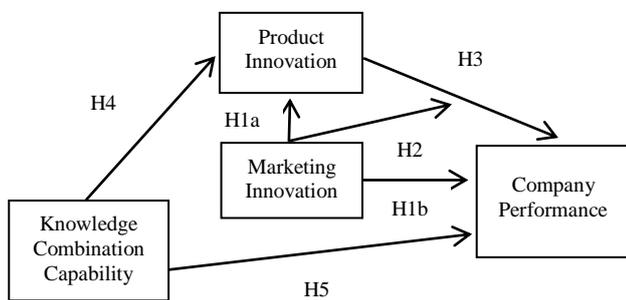


Fig 1. Research framework.

II. METHOD

A quantitative research method was conducted in order to test the proposed hypotheses between reflective latent constructs. To determine the respondents of this study, a cross-sectional data collection in the year of 2018 was used by distributing the questionnaire directly to the both SME’s owners and managers in West Sumatera, especially in food industries supporting tourism. The unit of analysis is the organization. To ensure that the collected data accurately represent the organization, researchers used offline field survey and purposive sampling as a technique to find the samples.

Based on the characteristics of business Table I, we can see from the age of the establishment of food industry in West Sumatra as many as 105 industries, the age is dominated between 6-20 years. The food industry mostly has employees of less than 10 people. Overall, average industry turnover per year of the food industry is below Rp 300 million. Table I presents the profile of the respondents.

TABLE I. PROFILE OF RESPONDENTS

Category	Description	Frequency	Percentage (%)
Age of company	Less than 5 years	33	31,4
	6 - 20 years	52	49,5
	More than 21 years	20	19,1
Number of employees	Less than 10 people	86	81,9
	11 – 30 people	18	17,1
	31 – 300 people	-	-
	More than 300 people	1	1,0
Yearly Turnover	Less than IDR 300 million	72	68,5
	IDR 300 - IDR 2.500. million	30	28,6
	IDR 2.500 – IDR 5. 000.million	1	1,0
	More than IDR 5.000 million	2	1,9

Measurement of knowledge combination capability refers to previous study by Ruiz-Jiménez and Fuentes-Fuentes [9]. There were 5 items that explain knowledge combination capability, where these 5 items are later developed into 6 question items in the questionnaire to fit the local context. These Items are: employees’ ability to collaborate, combine and exchange ideas among themselves to diagnose and solve problems and create opportunities; share their own ideas to formulate new product or service ideas; share their experiences to successfully implement new projects or initiatives; learn to share their ideas and knowledge and commonality of share and exchange ideas to find solutions to problems.

Product innovation uses 4 items adopted from Bao, Li, Pang, Bao and Yi [10]. The four items distributed to measure this variable are: The company introduces product innovation with a completely new attribute to the market; The new product is highly innovative in meeting customer needs; Frequently adopting new ideas in new product development; and introducing new products quickly to market.

Marketing innovation refers to Gunday, Ulusoy, Kilic and Alpan [11], where there are 4 items to measure marketing innovation. These four items were further developed into seven question items in the questionnaire to fit the local context. The items are: Updating product promotion techniques used for the promotion of current products and / or new products; Updating product pricing techniques used to determine current product prices and / or new products; Updating current and/or new product designs through changes such as appearance; packaging; form and volume without altering basic technical and functional features, and Updating general marketing management activities. While, Organizational performance is measured by four items on a scale refers to Campbell and Jeong [12]. These items related to making efforts to reduce costs, Company productivity has increased in the last two years, has a good quality of work, and achieved a high level of customer satisfaction.

III. RESULTS

A. Model Testing: Reliability and Validity of the Measurement Model

The quality of measurement was measured by Cronbach's alpha [13], which shows the internal consistency index. In addition, it also measured with composite reliability [14]. There two validity sub types are usually examined [14]: the convergent validity and the discriminant validity. Convergent validity indicates that a set of indicators represents one and the same underlying construct, which can be demonstrated through their uni-dimensionality was measured with average variance extracted (AVE). An AVE value of at least 0.5 or higher are said to exhibit convergent validity or indicates sufficient convergent validity, meaning that a latent variable is able to explain more than half of the variance of its indicators on average. The AVEs as reported in Table II above shows that all of variables exceed 0.50, confirming that measures demonstrate satisfactory convergent validity. The reliability of the measures for variables in this study is reported satisfactory as shown by the Table II.

TABLE II. MEASUREMENT QUALITY CRITERIA

	AVE	Composite Reliability	Cronbach's Alpha
IM	0.558	0.863	0.802
IP	0.613	0.863	0.788
IP*IM	0.686	0.978	0.976
CP	0.551	0.786	0.613
KCC	0.809	0.962	0.953

KCC=Knowledge Combination Capability, MI=Marketing Innovation, PI=Product Innovation,

Discriminant validity is a rather complementary concept: Two conceptually different concepts should exhibit sufficient difference (i.e. the joint set of indicators is expected not to be uni-dimensional). In PLS path modelling, two measures of discriminant validity have been put forward: The Fornell-Larcker criterion and the cross-loadings [15]. The Fornell-Larcker criterion postulates that a latent variable shares more variance with its assigned indicators than with any other latent variable. The second criterion of discriminant validity is usually a bit more liberal: The loading of each indicator is expected to be greater than all of its cross-loadings [16].

Discriminant validity is established from the latent variable correlation matrix. This matrix has the square root of AVE for the measures on the diagonal and the correlations among the measures as the off-diagonal elements. The matrix has to be constructed from the PLS output. Discriminant validity is determined by looking down the columns and across the rows. When the diagonal elements are greater than all off-diagonal elements, discriminant validity is satisfactory. Table III shows that discriminant validity of latent variables is satisfactory.

TABLE III. DISCRIMINANT VALIDITY MEASURE

	IM	IP	IP*IM	CP	KCC
IM	0.747				
IP	0.622	0.783			
IP*IM	0.902	0.885	0.828		
CP	0.562	0.340	0.504	0.742	
KCC	0.620	0.461	0.603	0.501	0.899

KCC=Knowledge Combination Capability, MI=Marketing Innovation, PI=Product Innovation,

B. Structural Model: Path Coefficients and Predictive Ability

The structural model in Figure 1 presents information about the coefficient of determination the path significance (R^2) and the path coefficients (β) of hypothesized relationships. The R^2 or the coefficient of determination provides indication of the predictive ability of the independent variables [14]. R^2 values of 0.396 and 0.355 in PLS path models as moderate [16] The coefficient of determination for two endogenous variables is 0.157 for Product Innovation (PI) and 0.126 for Company Performance (CP).

In inner path model structures where, endogenous latent variable only few (e.g., one or two) "moderate" R^2 may be acceptable [14]. However, if the endogenous latent variable relies on several exogenous latent variables, the R^2 value should exhibit at least a substantial level. This study indicates that company performance has weak R^2 where the independent variable has low predictive ability.

Tests for predictive relevance of a model can be gauged from its Goodness-of-Fit index (GoF) and Stone-Geiser q-square (Q^2) indicators [17]. The Goodness-of-Fit (GoF), which is the geometric mean of the average communality (outer measurement model) and the average R^2 of endogenous latent variables, is used to assess the overall fit of the model. It is defined as follows:

The GoF validates the PLS model by presenting a compromise between the performance of the measurement and the structural model; it is normalised between 0 and 1 where a high value indicates better path model estimation. The calculation of GoF of the structural model found the value of 0.491 which is considered as medium strong.

The Q^2 statistic measures the predictive relevance of the model. The model's predictive validity can be tested by means of the non-parametric Stone-Geisser test. Similar to the determination coefficient (R^2) in OLS, the Stone-Geisser test criterion Q^2 is interpreted without loss of degrees of freedom. It shows how well the data collected empirically can be reconstructed with the help of the model and the PLS parameters [14].

Value of Q^2 is ranged $0 < Q^2 < 1$, where close to 1 indicate a good model. When the value of Q^2 greater than 0 means that the model has predictive relevance and values close to 0 indicate a lack of predictive relevance. The Q^2 calculation in this model produces value of Q^2 as: 0.610. This result indicates good predictive relevance.

The path coefficients, or the inner model, show the significance level of hypotheses tests. The T-statistics of the inner model must be greater than 1.96 for two-tailed hypotheses and greater than 1.64 for one-tailed hypotheses with the significance level of 5% [18]. The test of structural model is displayed on Table IV.

Table IV, presents the path coefficient and t-statistic to show the significance effect of exogenous variables on environmental behavior. The data support H1a where marketing innovation affect product innovation significantly ($\beta = 0.547$, t-value = 6.987). The obtained result is statistically significant at 0.95 confident intervals and hypothesis was

supported. However, H1b: marketing innovation does not significantly affect company performance ($\beta = 0.397$, t -value = 0.820). It is somewhat surprising that hypotheses H2 marketing innovation not significantly moderate the relationship between product innovation and company performance where the β is 0.064 and t -value is 0.082. While hypotheses H3 was also not supported to indicate that product innovation does not significantly affect company performance where the β is -0.080 and a t -value is 0.190. For H4, knowledge combination capability has no significant effect on product innovation where the β is 0.121 and a t -value is 1.252. Meanwhile for H5, knowledge combination capability was found significantly affect company performance where the β is 0.243 and a t -value is 2.057. Summary of the test of structural model is displayed on Table IV.

TABLE IV. PATH COEFFICIENT (MEAN, STDEV, T-VALUES)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)
MI -> PI	0.547	0.557	0.078	0.078	6.987
MI -> CP	0.397	0.278	0.484	0.484	0.820
PI -> CP	-0.080	-0.201	0.421	0.421	0.190
PI*MI ->CP	0.064	0.280	0.784	0.784	0.082
KCC->PI	0.121	0.126	0.097	0.097	1.252
KCC ->CP	0.253	0.264	0.123	0.123	2.057

C. Analysis

Statistical analysis revealed that marketing innovation significantly affect product innovation, but not business performance. Thus it is partially support previous research [5]. Similarly, product innovation not significantly affect business performance [9]. Meanwhile, marketing innovation did not significantly moderate relationship between product innovation and business performance. Knowledge combination capability significantly affect company performance but not affecting product innovation. These results, convey two messages. First, company in food sector should focus on marketing innovation by implementing strategy such as renewing product design, pricing technique, distribution channel and communication which were found significant in influencing business performance. Second, company business performance is significantly influence by knowledge combination capability. This means, the exchange of knowledge between individuals and work groups, allowing the transfer of knowledge in organizations and their application to the development of new products have important role in determining the business performance.

IV. CONCLUSION

Innovation is a one of precondition for being successful in a competitive environment. In the context of SMEs in tourism industry, innovation culture is an important construct that can sustain marketing innovation and foster product innovation. As such, understanding marketing innovation can help to

encourage product innovation and SME market performance. In West Sumatra tourism industry context, food industry decision on product innovation is mainly influenced by the effort to align with consumer and market taste. In addition, knowledge building, combination and sharing also bring effect to company performance. This research offers companies with important insights that marketing innovation and knowledge combination capability may boost the business performance of small and medium enterprise in tourism related industry.

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REFERENCES

- [1] Naranjo-valencia, J.C., Jiménez-jiménez, D. and Sanz-valle R. "Studying the links between organizational culture , innovation , and performance in Spanish companies". *Rev Latinoam Psicol Fund* [Internet]. vol. 48, pp. 30--41, 2016.
- [2] Rosenbusch N, Brinckmann J, and Bausch A. "Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs". *J Bus Ventur*. 2011;26:441–457.
- [3] Simba A. "A new model of knowledge and innovative capability development for small born–global bio–tech firms: evidence from the East Midlands, UK". *Int J Entrep Innov Manag*. vol. 19(1–2), pp. 35–58, 2015.
- [4] Camelo-Ordaz, Carmen García-Cruz J, Elena S-G, and Valle-Cabrera R. "The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment", *T. Int J Hum Resour Manag*, vol. 22(7), pp. 1442–63, 2011.
- [5] Aksoy H. "How do innovation culture, marketing innovation and product innovation affect the market performance of small and medium-sized enterprises (SMEs)?" *Technol Soc*, vol. 51, pp. 133–41, 2017.
- [6] Zhang S, Wang Z, Zhao X, and Zhang M. "Effects of institutional support on innovation and performance: roles of dysfunctional competition". *Ind Manag Data Syst*, vol. 117(1), pp. 50–67, 2017.
- [7] Lee R-W, Lee J-H, and Garrett T.C. "A Study Of Synergy Effects Of Innovation On Firm Performance". In: *Global Marketing Conference*. pp. 1659–60, 2016.
- [8] Amores-Salvadó J, Martín-de Castro G, and Navas-López J.E. "Green corporate image: moderating the connection between environmental product innovation and firm performance". *J Clean Prod*, vol. 83, pp. 356–65, 2014.
- [9] Ruiz-Jiménez J.M, Fuentes-Fuentes M del M. "Knowledge combination, innovation, organizational performance in technology firms". *Ind Manag Data Syst*, vol. 113(4), pp. 523–40, 2013.
- [10] Bao Y, Li Y, Pang C, Bao Y, and Yi X. "Do resource differences between manufacturers and suppliers help or hinder product innovation of manufacturers? The moderating role of trust and contracts". *Ind Mark Manag*, vol. 64, pp. 79–90, 2017.
- [11] Gunday G, Ulusoy G, Kilic K, and Alpkan L. "Effects of innovation types on firm performance". *Int J Prod Econ*, vol. 133(2), pp. 662–76, 2011.
- [12] Im T, Campbell J.W, Jeong J. "Commitment intensity in public organizations: Performance, innovation, leadership, and PSM". *Rev Public Pers Adm*, vol. 36(3), 219–39, 2016.
- [13] Fornell C, and Larcker D.F. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error". *J Mark Res*, vol. 8(1), pp. 39–50, 1981.
- [14] Henseler J, Ringle C.M, and Sinkovics R.R. "The use of partial least squares path modeling in international marketing". In: *New Challenges*

to International Marketing (Advances in International Marketing. 20th ed. Emerald Group Publishing Limited; pp. 277–319, 2009.

- [15] Henseler J, Ringle C.M, Sarstedt M. "A new criterion for assessing discriminant validity in variance-based structural equation modeling". *J Acad Mark Sci*, vol. 43(1), pp. 115–135, 2015.
- [16] Chin W.W. How to write up and report PLS analyses. In: *Handbook of partial least squares: concepts, methods and applications in marketing and related field*. Berlin: Springer; pp. 655–690, 2010.
- [17] Willaby H.W, Costa D.S., Burns B.D, MacCann C, and Roberts R.D. "Testing complex models with small sample sizes: A historical overview and empirical demonstration of what Partial Least Squares (PLS) can offer differential psychology". *Pers Individ Dif*, vol. 84, pp. 73–8, 2015.
- [18] Hair J.F, Marko S, Ringle C.M, Mena J.A. "An assessment of the use of partial least squares structural equation modeling in marketing research". *J Acad Mark Sci*, May(3), pp. 414–433, 2012.