A study on the effects of innovation marketing process for Indonesian SMEs' in food and beverage sector

Nurliza[a*], Wanti Fitrianti[a] and Pamela[a]

[a]Agribusiness Department, Agriculture Faculty, University of Tanjungpura, Jl. Prof. Hadari Nawawi, Pontianak 78124, West Kalimantan, Indonesia

C H R O N I C L E	A B S T R A C T
	SMEs in the food and beverage sector should be a responsive business for reaching consumers more effectively, expanding the market, and reducing consumer transaction costs. Still, many SMEs' in the food and beverage sector are hesitant to use social media due to lack of some aspects in their business platforms. The study aims to give an overview model of the innovation marketing process by emphasizing the characteristics of SMEs', which is simultaneously associated with marketing mix. The proposed model combined the TOE model and characteristics with a marketing mix using SEM on 198 SMEs in the Indonesian food and beverage sector. The findings proved that each technological, environmental, organizational, and characteristics are positively related to each of the people and processes. The management team roles in innovative solutions and contingencies of a complex environment gave the highest positive effects to technology and environment. However, technology does not always facilitate the work process, the quality of result, and process consistency for more efficiency. There are highlight points, i.e. the clear visibility of employee appraisals process for bridging the gap of competencies; using perceived usefulness, perceived ease of use, and perceived trust for generating business ideas, and attracting new customers.

1. Introduction

Most of SMEs are in the food and beverage sector which include 2.92 million number of micro with 737,596 of employees, contribute to sustainable development and substantially related to the country's population and its ongoing growth (eibn.org, 2017). While, there are enforced factors in recent market complexity for new ideas, processes, and technologies in innovative ways with diverging in terms of internet users worldwide. And, many firms recently have integrated social media and social networking for boosting and delivering inclusive globalization (OECD, 2004; Galati et al., 2017). However, most SMEs' in the food and beverage sector are hesitant to use social media due to low and lack of some aspects in their business platforms. It includes ICT, wages of employees due to financial resources, knowledge and competitive ability (OECD, 2004; Singh et al., 2008), promotion and advertising, and conventional marketing strategy are (Cragg et al., 2011; Bank Indonesia and LPPI, 2015). The competition also demands for intensity, richness, and responsiveness business that reach consumers more effectively for expanding the market and reducing consumer transaction costs. Thus, SMEs are required to be more adaptable and active as consumers of behavior changes and growing consumer power in the digital domain (Tiago & Veríssimo, 2014). And, there must be intellectual and technology resources for building the capacities for organizational sustainability (Chong & Olesen, 2017). The interaction support of innovation capability, innovation type, and firm performance has influenced employees and work environment (Rajapathirana & Hui, 2017), uncertain environment promotes technical innovation and a complex environment promotes both administrative and technical innovation.

The social network is recognized as innovation tools in internal management (Ram & Liu, 2018), especially in networks and technology markets (Ioanid et al., 2018a). The social media have proven moderating role by amplifying the positive impact for boosting brand opportunity in the consumers' minds from their competitors (Elaydi, 2018) and a tool for managing relationships with customers effectively and compatibility, cost-effectiveness (Carson et al., 2018; Ioanid et al., 2018b; Appel et al., 2020). It can also increase sales and alliances of opportunity to attract potential customers (McCorkindale & Distaso, 2014); vital resources for social entrepreneurship ideas and applications than traditional marketing (Mário et al., 2016). So, the future of social media is perceived as high regarding open innovation for companies to gain a competitive advantage over their competitors (Bansal et al., 2014). Despite its obvious importance of social media in the innovation marketing process, it has received little attention in why and how the innovation process among businesses with varied characteristics could be used in a marketing strategy for winning customers and markets, through the development of sustainable competitive advantage, And, marketing will help the business to use the customer intelligence that has a positive innovation impact. Therefore, this study tried to give an overview model of the innovation marketing process by emphasizing the characteristics of SMEs' that are simultaneously associated with the marketing mix. The innovation process used in Technology-Organization-Environment (TOE) framework from marketing and CRM theoretical literature. I consider the examination impact of technological, organizational, and environmental (TOE) drivers will emphasize institutional role context encouraging SMEs to engage in pro-environmental behavior and thus shift the attention of the innovation marketing process (HOTI, 2015). Then, SMEs' characteristics are based on stakeholder theory due to their effects on stakeholders for sustainability management (Wang et al., 2017), such non-financial characteristics (size, age, ownership, productivity), and financial characteristics, innovation efforts, location, entrepreneur and managerial attitudes for increasing market value growth (OECD, 2019). Thus, the TOE model and organization characteristics ascertain their relative impact and strength. While, the idea of marketing mix factor is used for transforming customer insights into business insights that create consumer value and innovation (Ozeritskaya, 2015; Erdil & Özdemir, 2016; Wu & Li, 2018).

2. Materials and method

The research design was conducted from 198 SMEs' in the food and beverage sector in Indonesia (DISKUMDAG, 2019) which are more than 90% of them concentrated in agriculture (Tambunnan, 2007). In the primary sector, the production of raw material for the F&B industry by agriculture, plantation, and fisheries accounted for 15% of Indonesia's GDP. While, the manufacturing of food and beverage in the secondary sector accounted for 5% of GDP and 27% of all manufacturing output, and overall related services contributed 2% to GDP (eibn.org, 2017). The research contribution involves two phases. The first phase was the characteristics of SMEs, which is consist of several factors, i.e., Size, business age, ownership, productivity, financial characteristics, innovation effort, entrepreneurship, and managerial attitude through new strategy adoption. The second phase was the quantitative stage with the Structural Equation Model (SEM) to explain the simultaneously relationships of TOE model as the benefits of social media networks that considered as innovation process and SMEs' characteristics with marketing mix (i.e. product, place, promotion, price, people, and process) for the proposed model of innovation marketing process. In the second phase, the reliability model test is conducted using construct reliability (CR) more than equal to 0.70 and variance extracted (VE) more than equal to 0.50, and standardized factor loadings more than 0.70 or more than 0.50 (Rigdon & Ferguson, 1991) for the consistency of measurement is presented in Table 1.

Table 1
Construct reliability (CR) and variance extracted (VE) of people, process, characteristic, technology, organization, and environmental

Criteria	People	Process	Characteristics	Technology	Organization	Environment
S_{td}. Loading	2.44	1.84	2.23	2.08	2.69	2.04
Error	1.30	0.65	1.61	1.76	1.95	0.92
CR	0.82	0.83	0.75	0.71	0.78	0.81
VE	0.54	0.65	0.52	0.38	0.47	0.60

Source: own research

Then, the goodness of fit test to improve the theoretical explanation is presented in Table 2. In the goodness of fit test, the re-specification model proved that there were seven criteria good fit, such , NCP, SNCP, RMSEA, ECVI, AIC, and RMR. Then, the result of SEM provides consistency and comprehensive explanations of the two types of models approach simultaneously, i.e. the measurement model that represents the theory and the structural model that shows how constructs are related to other constructs. Data analyses have been performed using SPSS v.17 and LISREL 8.80. There are several light limitations in the contributions of the study, such in terms of coverage in the Indonesian food and beverage sector, which might not be suitable to other countries and other sectors. The others are in terms of the number of cross-sectional data and the measurement of rating development. However, it gives an overview of the current model of innovation marketing process to leverage the capability of internal strategic SME resources. The information on SMEs' characteristics is consists of several factors, i.e. size, business age, ownership, productivity, financial characteristics, innovation effort, entrepreneurship, and managerial attitude through new strategy adoption (Table 3).

Table 2
The goodness of fit model

GOF Criteria	GOF Standard Value	Initial Estimate	Initial Conclusion	Final Estimate	Final Conclusion
Chi-square (χ^2)	$\rho \geq 0,05$	$\rho = 0.000$	marginal	$\rho = 0.000$	marginal
χ^2/DF	$1.0 \geq x \leq 5.0$	1.86	good	2.50	good
NCP	Small value with narrow intervals	205.44 (150.10; 268.59)	good	280.47 (220.70; 347.92)	good
SNCP (NCP/n)	Small value	1.03	good	1.41	good
RMSEA	≤ 0.08	0.066	good	0.087	good
ECVI	Small value and close to Saturated ECVI	M= 2.89 S= 3.05 I= 14.91	marginal	M= 3.78 S= 3.30 I= 15.84	good
AIC	Small value and close to Saturated AIC	M= 568.44 S= 600.00 I= 2937.54	marginal	M= 744.47 S= 650.00 I= 3121.43	good
CAIC	Small value and close to Saturated CAIC	M= 838.60 S= 1886.48 I= 3040.46	marginal	M= 1340.54 S= 2043.69 I= 3228.63	marginal
NFI	≥ 0.90	0.84	marginal	0.81	marginal
CFI	≥ 0.90	0.92	good	0.86	marginal
IFI	≥ 0.90	0.92	good	0.87	marginal
GFI	≥ 0.90	0.84	marginal	0.83	marginal
PGFI	0 - 1	0.67	good	0.48	good
RMR	≤ 0.05	0.038	good	0.071	good

Source: own research

Table 3a
Characteristics of size

Characteristics	(%)
Size:	
- Labor less than 11 peoples	95
- Work in team less than 11 hours/day	82
- Investment capital (millions Rp./month)	
≤ 50	57
> 50 - 150	36
> 150	8
- Wages less than 3 millions Rp./month	96
- Electric power (kwh/month)	
≤ 450	12
900	23
$\geq 1,200$	65
- Product value:	
Production (millions Rp./month)	
≤ 1	16
> 1 - 5	34
> 5 - 10	18
> 10	32
Profit (millions Rp./month.)	
≤ 1.5	10
> 1.5 - 5	28
> 5 - 10	38
> 10	24
Satisfied with product	99
Consumers (people/day)	
≤ 10	19
11 - 20	23
> 21	58
Raw material (kg/month)	
≤ 100	65
> 100 - 200	34

Source: own research

Table 3b
Characteristics of business age, ownership, productivity

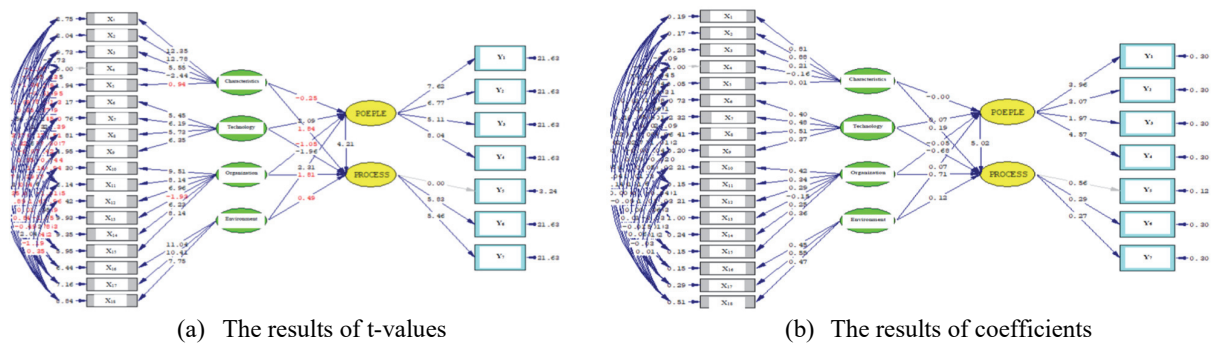| Characteristics	(%)
Business age (years):	
- ≤ 1	26
- > 1-3	39
- > 3	36
Ownership:	
- Private ownership more than 50%	92
- Others less than 20%	90
Productivity:	
- Sales:	
Quantity (unit/month)	
≤ 600	60
> 600	40
Price (Rp/unit)	
$\leq 1,000$	16
> 1,000 – 20,000	30
> 20,000 – 100,000	54
Sales growth in first year (unit/month)	
≤ 50	61
> 50	39
Sales growth in second years (unit/month)	
≤ 10	54
> 10 – 100	19
> 100	27
Sales growth in third years (unit/month)	
≤ 10	65
> 10 - 100	11
> 100	23
Sales growth in fourth year (unit/month)	
≤ 10	67
> 10	33
- Production cost structure (million Rp./month):	
Labor cost	
≤ 10	51
> 10 – 1,000,000	20
> 1,000,000	29
Raw material cost	
≤ 10	43
> 10 - 500,000	28
> 500,000	29
Utility cost	
$\leq 50,000$	60
> 50,000	42
Interest fee less than 10	94
Others cost less than 10	74
Labor education (years)	
≤ 9	27
< 12	1
12	60
> 12	12

Table 3c

Characteristics of financial, innovation effort, location, and entrepreneurship and managerial attitude through new strategy adoption

Characteristics	(%)
Financial characteristics:	
- Source of working capital	
Profit	87
Interest rate	2
Others	11
- Interest Coverage Ratio (ICR) consideration	
Yes	95
No	5
- Sales area	
Local	89
Domestic	10
Foreign	1
Innovation effort:	
- Human capital from educated labor (people) less than 11 peoples	64
- No Standard business	89
- No introduction in information and communication	55
- No business branch and network	83
- No purchase and upgrade a new equipment	82
- No new product innovation	60
Location:	
- The distance between the company to the port (km/hours) less than 5	51
- Perception of business risk is positive	81
Entrepreneurship and managerial attitude through new strategy adoption:	
- Positive	30
- Negative	70

Source: own research

While, the simultaneous relationships between Technology-Organization-Environment (TOE) factors for the benefits of social media networks, which are considered as the innovation process and marketing mix factors (i.e., product, place, promotion, price, people, and process) or the Innovation marketing process model are using SEM for testing the hypothesis are described in Fig. 1.

(a) The results of t-values   (b) The results of coefficients
Fig. 1. Model of innovation marketing process

(Source: own research)

In Fig. 1, the exogenous latent variables of SEM, i.e., the characteristics include indicators, such as size/X_1, productivity/X_2, innovation effort/X_3, location/X_4, entrepreneurial and managerial attitudes/X_5. Technology includes indicators, such as perceived usefulness/X_6, perceived ease of use/X_7, perceived behavioral control/X_8, and perceived service quality/X_9. The organization includes indicators, such as scope of business operations/X_{10}, individual difference factors/X_{11}, organization mission/X_{12}, firm's size/X_{13}, facilitating conditions/X_{14}, and social influences/X_{15}. Environmental includes indicators, such as Consumer readiness/X_{16}, perceived trust/X_{17}, trading partners' readiness/X_{18}. While, the endogenous latent variables of SEM, i.e. People and Process which are each their indicators, such employee skills/Y_1, employee performance/Y_2, rewards to employees/Y_3, and the management team/Y_4, process/Y_5, output quality/Y_6, and process consistency/Y_7. The structural model of the innovation marketing process proved that each technological, environmental, organizational, and characteristics are not significantly related to product, place, promotion, and price. However, it proved that each of the technological, environmental, and organizational are positively related to each of the people and process. The observed variable or their indicators, such as characteristics, technology, organization, and environment can estimate 46% of people. While, the characteristics, technology, organization, and environment can estimate 77% of the processes. It also proved that technology (0.07) and environment (0.07) are positively related to people respectively, which means that technology, or environment is better for the innovation

marketing process or people tend to increase the usage of social media marketing. The significant effect of exogenous latent variables (technology and environment) on the endogenous latent variables (people and process) are presented in Table 4.

Table 4
Standardized effects of exogenous on endogenous latent

Standardized effects	Total/Direct Effect	Indirect Effect
Technology → People	0.52	-
Environment → People	0.52	-
Technology → Process	-0.32	0.34
People → Process	0.65	-

Source: own research

In Table 4, the magnitude of the estimated coefficient of the environment is equal to technology in the structural model. The total effect of technology on people describes that an increase in 1% of technology leads to an increase in 0.52% of people in the innovation marketing process. The total effect of the environment on people describes that an increase in 1% of the environment leads to an increase in 0.52% of people in the innovation marketing process. On the other hand, technology is negatively related to process or an increase in 1% of technology leads to a decrease in 0.62% of the innovation marketing process. The total effect of technology on the process describes that an increase in 1% of technology leads to a decrease in 0.32% of the process. However, there is an indirect effect of technology on the process that is larger than its negative total effect. While people are positively related to process or people leads to an increase in the innovation marketing process with 0.65 of total effect or an increase in 1% of the people leads to an increase in 0.65% of the process in the innovation marketing process. In the measurement model, employee skill, employee performance achievement, reward to employees, and management team are indicators of the observed variables for the people of the marketing mix; while work process, the quality of the result, and the process consistency are the indicators for the processes of the marketing mix as presented in Table 5.

Table 5
Standardized effects of exogenous latent variables on their indicators

Standardized Effects	Total effect
Technology → Management team	0.38
Technology → Employee Skill	0.36
Technology → Employee performance achievement	0.35
Technology → Work process	-0.26
Technology → The quality of the final result	-0.18
Technology → Reward to employees	0.17
Technology → Process consistency	-0.14
Environment → Management team	0.38
Environment → Employee skill	0.36
Environment → Employee performance achievement	0.35
Environment → Reward to employees	0.17

Source: own research

The highest positive total effects of technology on their indicators are the management team and followed by employee skill, employee performance achievement, work process, quality of the results, reward to employees, and process consistency. Still, there are negative total effects of technology on the work process, the quality of the result, and process consistency. While, the highest positive total effects of the environment on their indicator are the management team, followed by employee skill, employee performance achievement, and reward to employees.

3. Discussion

3.1 The SME characteristics

The information on SMEs' characteristics showed that the flow of knowledge and ideas within the organization can be built through stronger social connections, which is influenced by firm size, degree of innovativeness, manager's age, and industry sector (Wamba & Carter, 2014). While, the size characteristic implied that SMEs faces some constraints, that is no formal organizational structure (Araújo & Zilber, 2016), lack of clarity surrounding social media rules for marketing and advertising, a lower-level skills of an employee, lower job quality, and non-digitized jobs (World Bank Group, 2015). The others are lower demand response capability for the diffusion of social media (Wang et al., 2017), ineffective costs and incompatibility in production due to a limited budget (Carson et al., 2018), lower degree of trust, and social influence in product values (Beyari & Abareshi, 2018). In characteristics of business age, ownership, productivity, the majority of SMEs have limited investments and sales revenues, which consistently face severe financing obstacles (Carson et al., 2018). While, diverse attitudes towards technology adoption varies considerably, implies that there is no technology demanded (Alsharji et al., 2019). In terms of productivity, there are interaction terms between financing constraints and growth in the past years, SMEs have trouble getting customers, greater competitive pressures, and higher labor and production costs likely to report decreasing profits (Banerjee, 2014). In financial characteristics, SMEs can use the resources and capacities (e.g. age, revenue, product types) for social media marketing (Gazal et al., 2016) with certain types of products. The higher-priced custom products were more likely to

adopt information technology (Carson et al., 2018), otherwise with the volatility of production with low profitability and limited liquidity (Black et al., 2012). The characteristics of the production network also vary greatly and mostly acquire raw materials from local suppliers due to internal and external barriers (Black et al., 2012).

While, most of SMEs' entrepreneurship and managerial attitude through new strategy adoption are negative because of some reasons, i.e. Limited size and market, a lower degree of diversification, lower capital strength, the higher risk resulting in financial gaps, and the imbalance of concentration of equity, and enormous price growth of resources (Aleksandr et al., 2016). The quality of the business environment, such as the financial support system from the government, access to external financing sources, and the market perception will define the social groups for strategy adoption results (Aleksandr et al., 2016). The structural model of the innovation marketing process proved that each technological, environmental, organizational, and characteristics are not significantly related to product, place, promotion, and price. This is because of insufficient technology capabilities to use and match the needs of the system, lack of training by organization management, and an incompatibility in the intention influence of technology usage between the user, organization, and technology (Muslimin et al., 2017). However, it proved that each of the technological, environmental, and organizational are positively related to each of the people and process, due to innovation role in business ways or dimensions of technological innovations (HOTI, 2015). The technology or environment is better for the innovation marketing process or people tend to increase the usage of social media marketing. The role of an individual also affects the performance and effort expectancy, social influence of intention to use, user satisfaction, and net benefits (HOTI, 2015). Building the competitive advantages for SMEs need an adequate and intensive use of information systems in a technology context, which consists of system quality, information quality, and service quality (Muslimin et al., 2017). The quality of the business environment can improve their efficiency, effectiveness (HOTI, 2015), and favorable conditions of the market risk (Aleksandr et al., 2016)

The total effect indicated the contractual relationship between the technology and process with objectives arise from the activity establishment and operation of technology. While, new competencies for quality improvements, transfer of technology processes, and new market development correspond to the indirect effects of technology on the process (Bach & Matt, 2005). Technology doesn't always facilitate the existing processes for more efficient, which is contrary to the role of technology's impact on the business environment, commerce, market structure, and marketing (Dilogini & Shivany, 2017). Therefore, the opportunity to create favorable conditions of the technology needs more personalized behavior-driven receptiveness, motivation to change, and contextual barrier (Dilogini & Shivany, 2017). Hence, social media marketing can facilitate communications with customers, tools for broadening awareness, and creating brand recognition, making the process of exchanging information easier and faster (Nobre & Silva, 2014). Implementing innovative solutions for the processes of delivering results and performance management are positively impacted on job satisfaction, employee retention, and loyalty (Abdul Majid et al., 2017; Frempong et al., 2018). While, the negative effect of technology can be caused by several factors, i.e. the individual goals are not aligned with business strategy, no differentiation in performance ratings, lack of visibility and accountability documentation, not accurate performance information, and mistrust of performance discussions (Muñoz et al., 2016). The whole performance package characterizing by uncertainty and complexity of environmental contingencies influence organizational structure, the competitiveness of the technology, and management processes for innovation (Oltra, 2008). Therefore, the process appraisals for training and development plans should clear visibility for identifying the competencies and skills of gaps (Taipale-Erävala et al., 2015; Parry & Battista, 2019), and knowledge base for customer co-creation that generate business ideas and attract new customers (Wamba & Carter, 2014) by using perceived usefulness, perceived ease of use, and perceived trust (Ramachandran et al., 2020).

4. Conclusion

Each technological, environmental, organizational, and characteristics are not related to product, place, promotion, and price due to insufficient and incompatibility of technology capabilities; but positively related to each of people, and process. It proved that the role of the people with the support of technology and the environment in the innovation marketing process. The highest positive total effects of technology are the management team due to its role in innovative solutions, and followed by employee skill, employee performance achievement, work process, quality of the results, reward to employees, and process consistency. However, there are negative total effects of technology on the work process, the quality of the final result, and process consistency due its role doesn't always facilitate the existing processes for more efficiency. While, the highest positive total effects of the environment are also the management team due to the uncertainty and complexity of environmental contingencies, followed by employee skill, employee performance achievement, and reward to employees. Therefore, there are some highlight points for the findings, i.e. the process appraisal have to clear visibility to identify the competencies and skills of gaps, and knowledge base for customer co-creation which generate business ideas and attract new customers by using perceived usefulness, perceived ease of use, and perceived trust.

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