



Service-Logic Business Model Canvas in Healthy-Food Industry using Text Mining Approach as Value Co-Creation

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ABSTRACT

Indonesian market, in general, has swift their perception of healthy food much more positively, It is diverting the focus of contact in business relationships towards the coordination of logistical operations that offer value to the client. By applying value co-creation, the Healthy-food industry is anticipated to expedite the process of innovation and invention. In addition, the purpose of this study is to investigate the blueprint for cooperation and creativity utilizing a business model canvas based on service-dominant logic. This initial business model canvas is proposed to offer a qualitative overview of the process of value co-creation (i.e., literature review, observation). It is anticipated that more research will validate the created BMC by giving various statistical evaluations.

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1. Introduction

Geographically, socioeconomically, biologically, and culturally, Asia and Indonesia are extremely diverse regions. This is also reflected in the variety of traditional dishes available for consumption. Since the dawn of time, traditional foods have been cultivated, nourished, and promoted by successive generations. They are biogeographically diversified and frequently localized. These are elements of cuisine cultures that are preserved and utilized in their original form, flavor, and presentation manner. This is a direct representation of the legacy, history/civilization, and culture of a region's society. Due to local social, economic, cultural, agricultural, biological, and environmental aspects in the region's communities, a rich repository has persisted. Frequently, they have not been exposed to contemporary food processing techniques and have stayed within the boundaries of local production and consumption systems. Due to their dynamic adaptations to local biocultural settings and refinement via generations of empirical observations, it is presumed that they have beneficial health effects on the local population.

Indonesian market in general has swift their perception towards healthy food much more positive. According to the Secretary General of the Indonesian Vegetarian Society (IVS), around 5 percent of Indonesia's 260 million population, or less than 1 percent, practices a vegetarian diet in 2018. In 2019 Indonesia had 260 million people. They further state that "According to a study undertaken by the Indonesia Vegetarian Society (IVS) in 1998, there were just 50 vegan eateries or cafes in Indonesia. In 2017, the number of vegetarian restaurants climbed to 2000. It rises by a factor of 40." (30). Currently, a Healthy-food industry in Indonesia facing big competition.

Wider perspectives are required to gain a better insight and capture the true nature of the situation or challenges (31) In addition, all of these interconnected players have possibilities to co-create, also known as value co-creation. Value co-creation enhances their processes and goods by strengthening their ties with members (29). According to (31), value co-creation in the Healthy-food

industry is a form of supply chain integration. It is diverting the focus of contact in business relationships towards the coordination of logistical operations that offer value to the client. By applying value co-creation, the Healthy-food industry is anticipated to expedite the process of innovation and invention.

In contrast, Indonesia lacks knowledge of the cooperative framework, particularly for the Healthy-food industry. This makes controlling and managing the implementation of value co-creation in the Healthy-food industry challenging.

This study intends to investigate the value co-creation blueprint utilizing a business model canvas based on the service dominant-logic method initially suggested (28) in light of the aforementioned events and for this particular research, study researcher combined the usage of sentiment analysis using Text Mining method to help determine the ideal value proposition key items based on market and consumer as key to create the value co-creation. As the initial step in the creation process, the business model canvas described in this research was created to address who the key players are and how they interact within the Healthy-food ecosystem.

2. Method

2.1 Service Dominant Logic

The formal study of marketing began with a foundation in economics and centered on the distribution and exchange of products and commodities items (14). The first marketing researchers focused on a commodity exchange, the companies that made things available and arranged for their possession (15). The functional school began to transform into a marketing management school in the early 1950s. This was distinguished by a decision-making strategy applied to marketing functions management and a customer-centric focus (16).

McCarthy (17) and Kotler (18) defined marketing as a decision-making activity aimed at profitably satisfying the customer by targeting a market and then making optimal marketing mix decisions, or the "4 P's (Price, Product, Promotion and Place)". The Important basis and link to the standard economic model remained strong. In the 1970s, the leading marketing management textbook (19) stated that "Marketing management seeks to optimize the settings of the company's marketing decision variables in based on the anticipated behavior of variables in demand that are not under our control."

In the 1980s, new reference frames that were not dependent on the 4 P's (Price, Product, Promotion and Place) and were essentially independent of the mainstream The microeconomic paradigm started to take shape.

Numerous academics argued that marketing thought was fragmenting. This appeared to be a respectable description at first glance. Webster (20) claimed in the early 1990s, " The traditional approach to marketing role, on the basis of microeconomic data maximizing paradigm, must be reviewed critically for its relevance to marketing theory and practice." At the end of the twentieth century, Day and Montgoery (21) suggested that "with growing reservations about the validity or usefulness of the Four P's concept and its failure to recognize marketing as an innovating or adaptive force, the Four P's are now regarded as merely a convenient framework." In the fields of relationship marketing, quality management, market orientation, supply and value chain management, resource planning, and networks, ostensibly separate schools of thought have evolved.

Rust (22) emphasizes the significance of an integrated view of commodities and services: "The typical service research article detailed ways in which services were distinct from things, The time has come for a shift. Service research is not a specialized field distinguished by obscure distinctions from the dominating products management field." The prevailing, goods-centered approach of marketing may not only impede a comprehensive understanding of the role of services, but also marketing in general (see, for example, Grönroos (24); Kotler (25)).

Marketing has shifted from a goods-dominant perspective, where tangible output and discrete transactions were central, to a service-dominant perspective, where intangibility, exchange procedures, and relationships are central. It is important to note that the service-centered view should not be equated with (1) the limited, traditional conceptualizations that frequently treat services as a residual (that which is not a tangible good; e.g., (23)); (2) something supplied to improve a product

(value-added services); or (3) Healthcare, government, and education are instances of what has come to be referred to as service industries in recent years. Instead, we define services as the application of specialized competences (knowledge and skills) via deeds, procedures, and performances for the advantage of another entity or the entity itself. Even though our definition is compatible with narrower, more traditional definitions, we argue that it is more inclusive and captures the core purpose of all business enterprises. Thus, the service-centered dominating logic provides a refocused philosophy applicable to all marketing offerings, even those that entail tangible output (goods) in the service supply process.

In summary, the Pre-1900 exchange model was centered on goods (Concepts: Tangibles, Statics, Discrete, Transactions, Operant resources). Between 1900 and 2000: Thought leaders in marketing continue to distance themselves from actual output with embedded value. Where the emphasis was on transactions that were discrete or static. In turn, they shift toward dynamic exchange connections including the execution of processes and the exchange of skills and/or services in which value is co-created with the consumer. The emphasis shifts from resources upon which an operation or deed is carried out (operand resources) to resources that created effects (Operant resources)

On the 21st Century Changing to a Services-Centered Exchange Model (Concepts: Intangibles, Competencies, Dynamics, Exchange Process and Relationships, Operative Resources) The above narrative demonstrates the progression of marketing philosophy toward a new dominant logic. According to S-D logic, services are superior to goods in terms of classification and function, but not in terms of significance. Given the hierarchical relationship between service and goods that is inherent to S-D logic, it would be nearly illogical to assert that service is superior to things.

Also, we are not claiming that S-D logic involves substituting the concept of "service" for "good" (or product) The function of goods, according to S-D logic, is to deliver service. There is nothing inherent in S-D logic that dictates whether a service should be offered directly or via an appliance. The question is how to concurrently maximize the benefits—the jointly created value—for the exchange partners, and the answer is context- and exchange-partner-specific (26).

(3) To challenge goods-dominant logic (G-D Logic), the idea of service dominant logic (S-D Logic) was created. They explained that successful cross-service competition has something to do with the entire organization evaluating and considering itself or the market through the lens of service dominance. Collaboration between the company, appropriate partners, and the customer allows for a more tactical approach than Foundational Premises. To keep S-D logic's attention, it has four axioms derived from the foundational premises (FPs). To begin with, "service is the essential underpinning of exchange" refers to the use of operant resources (knowledge and ability) for the benefit of other actors. "The consumer is always a co-creator of value," says the second. This axiom states that the interaction from one to another in the business is always co-created to create share benefits. The third axiom is "Resource integrators include all social and economic actors". The last axiom is The beneficiary's value is always unique and phenomenologically determined.

2.2 Service Logic Business Model Canvas

Osterwalder (1) introduced the original Business Model Canvas (BMC). It comprises nine basic pieces to construct a value-generating proposition for customers and organizations (27). The service-logic business model canvas included service logic in the original business model (28) This concept contends that the original business model is management-focused rather than service-focused. According to the model given by Viljakainen (28), the essence of the business model's market features is value co-creation.

This paradigm highlighted integration resources based on service-centric reasoning. This model is also a comprehension of the system of all parties involved in service partnerships. The Service Logic Business Model Canvas is comprised of the nine elements depicted in Figure 2.2. (28)

The primary role of the suggested paradigm (28) is the co-creation of value and research integration. Co-creation of value is regarded as the cornerstone of market characteristics and the primary element of a business model. This notion conforms to the SDL (29). The central service logic business model's value proposition is identical to the original business model's. Nonetheless, under the

service logic business model, it serves as a mediator between value co-creation and resource integration, whereas the original model emphasizes value chain thinking (28).

2.3 Value Co-creation

The exchange, integration, and use of resources in the context of other resources linked to a large number of individuals co-creates value (4). Value co-creation does not occur through the activities of a single actor (consumer or otherwise), nor between a firm and its consumers (6). The interaction of value co-creation is a collaborative, innovative, and social process focusing on the provider's facilitation of customer engagement to produce value (7). (7) proposed the "four-co-phase model of the value co-creation process" as a new value co-creation paradigm. This model defines service as a value co-creation interaction between customers and suppliers, with four steps in the process identified. The first and second steps are co-experience and co-definition, respectively.

Throughout the co-experience phase, the provider and client cooperate on an internal model to establish a shared understanding of the service. However, during the co-definition process, both the provider and the customer share an internal model (that is, they understand each other's preferences, capabilities, and expectations). Co-elevation is a zigzag spiral process that combines client wishes with provider capabilities.

Finally, co-development is usually conducted with customers analyzing and quantifying the value and suppliers learning from customer responses. Co-creation is becoming increasingly important in terms of allowing customers to interact with different elements of the service system and apply their resources to service development (8).

The BMC is a visual tool that encourages the examination of potential improvements to the underlying business model, providing a more systemic picture of an enterprise and emphasizing its value production (9). The BMC was created with new business ventures in mind, but it is increasingly being utilized by established organizations with well-defined business models to innovate through fine-tuning and strategy reformulation and preserve a competitive advantage (10). The nine BMC building blocks are roughly expressed in four dimensions: the first dimension is "value proposition," the second dimension is "customer interface," the third dimension is "infrastructure management," and the fourth dimension is "financial aspects" (1).

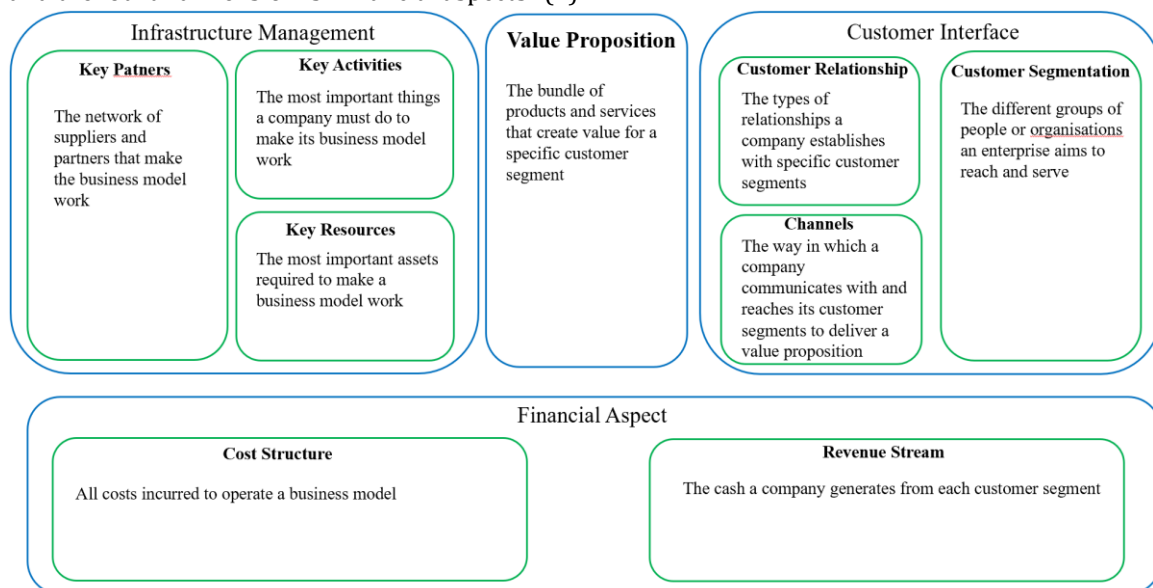


Figure 1. Business Model Canvas – Healthy Food

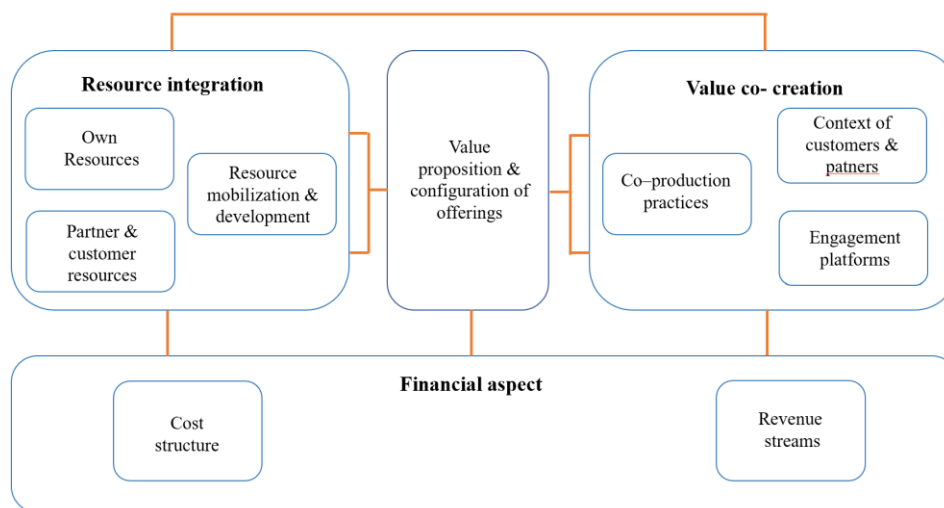


Figure 2. Service – Logic Business Model Canvas Framework

2.4 Data Collection

Python 3.10.4 is used in this study to examine secondary data from Text Mining. For the first phase of data analytics, this study used Sentiment Analysis methodologies. To determine the emotions expressed by the unstructured text, sentiment analysis is used. Input text can be found in product reviews, customer interactions, social media posts, forum discussions, and blogs. Text mining is the technique of reviewing massive collections of papers or text to uncover new insight information (11). Text analytics/text mining is an Artificial Intelligence (AI) technology that uses Natural Language Processing (NLP) algorithms to transform unstructured and semi-structured textual data into normalized structured data that can be analyzed. Text analytics is a combination of machine learning, statistical, and linguistic approaches that are used to analyze vast amounts of unstructured material or text that does not have a preset format in order to discover insights and trends.

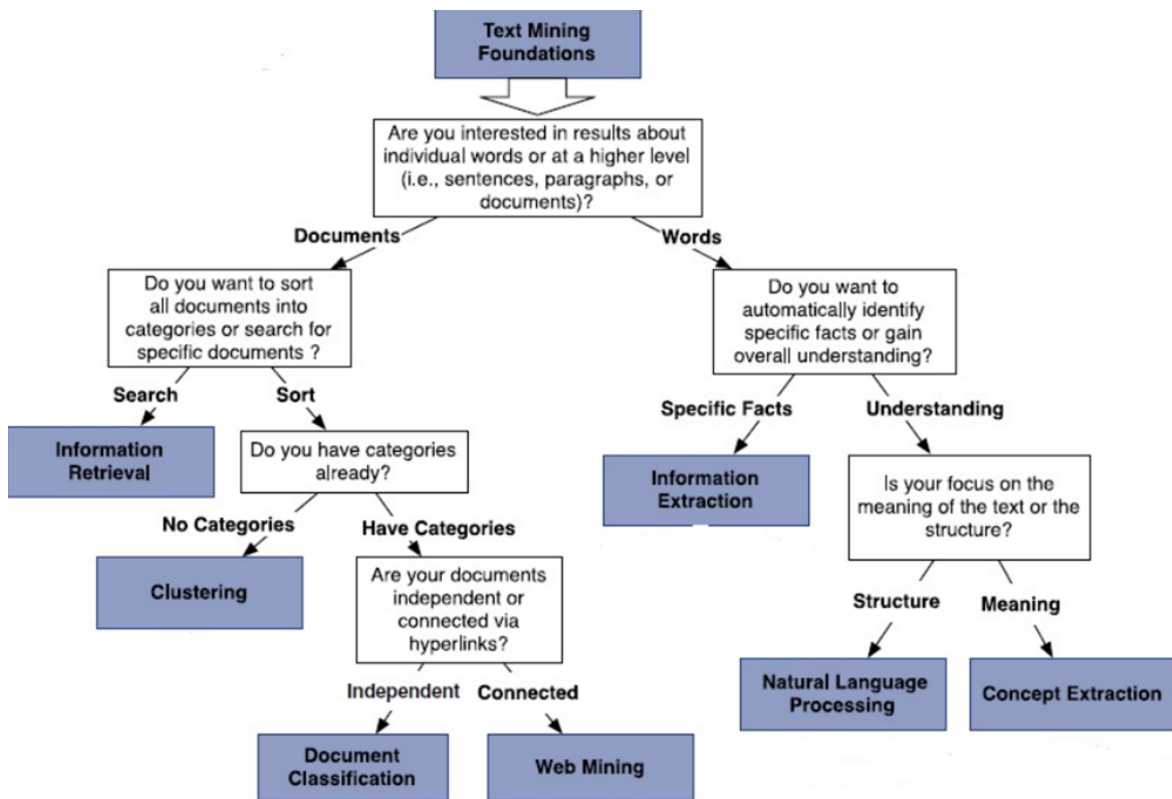


Figure 3. Decision tree for finding the right text mining practice area (11)

For this particular research our Text Mining will only focus on Search and information retrieval (IR) portion which is explained as a practical area in Storage and retrieval of text documents, including search engines and keyword search (11). Sentiment analysis use cases include: Measuring customer response to a product or service, Understanding audience tendencies toward a brand, Understanding new trends in the consumer arena, Prioritizing customer support concerns based on severity, And tracking how customer sentiment changes over time. According to Tibco (12), there are several forms of sentiment analysis: The polarity analysis determines if the text is positive or negative. The categorization method is used to evaluate emotions more precisely - confused, dissatisfied, or enraged. The technique and use case (13) that we will use for our research is called Machine Learning.

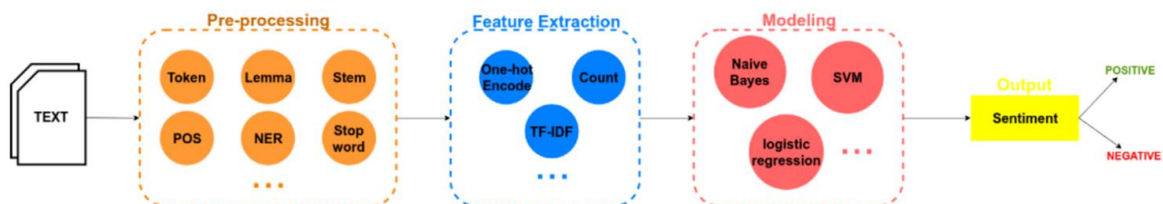


Figure 4. Machine Learning Framework (13)

The data of text mining were Analyzed extracted from Twitter tweets and have gathered 1,000 tweets from the period 21 April - 29 April 2022. Lastly, this study mapping the keywords based on Value-Co Creation proposed for our Business Model Canvas framework in order to confirm whether the sentiment towards the proposed Value-Co Creation is Positive or Negative.

2.5 Data Analysis

All of the Value-Co Creation that was gathered from text mining was rigorously examined and analyzed. The nine element blocks of Business Model Canvas were compared and summarized by eliminating similarities to produce one consolidated construction of Service – Logic Business Model Canvas in Healthy food industry as the paper's final product. The methods used in this article is depicted in Figure 2.2.

3. Result And Discussion

TABLE 1.
COUNT OF TWEET FROM TEXT MINING

Count of Tweets Keywords	Column Labels			Grand Total
	Negative	Neutral	Positive	
Green Marketing	47	11	42	100
Animal Welfare	3	73	24	100
Environmental Issue	19	19	62	100
Flexitarian	30	32	38	100
Healthy Food	12	25	63	100
Meatless	9	36	55	100
Plant-Based	6	37	57	100
Sustainability	5	28	67	100
Vegan	21	29	50	100
Vegetarian	17	38	45	100
Grand Total	169	328	503	1000

TABLE 2.
AVERAGE OF SENTIMENT VALUE USING PHYTON 3.10.4

Average of Sentiment Value Keywords	Column Labels			Grand Total	Comment
	(-1 - <0)	0	(>0-1)		
Green Marketing	- 0.15	-	0.17	0.00	Used
Animal Welfare	- 0.53	-	0.15	0.02	Not used
Environmental Issue	- 0.27	-	0.24	0.10	Not used
Flexitarian	- 0.50	-	0.32	- 0.03	Not used
Healthy Food	- 0.15	-	0.43	0.25	Used
Meatless	- 0.31	-	0.45	0.22	Used
Plant-Based	- 0.32	-	0.30	0.15	Not used
Sustainability	- 0.23	-	0.30	0.19	Used
Vegan	- 0.21	-	0.40	0.15	Used
Vegetarian	- 0.22	-	0.39	0.14	Used
Grand Total	- 0.26	-	0.33	0.12	

Based on data collection results via Python 3.10.4 we have found the Average of Sentiment Value per keyword item, for this particular research we only used the Keyword as Value Proposition that has larger Positive sentiment.

Value Co-Creation Model Canvas based on Service-Dominant Logic

This research used the service logic business model canvas and value co-creation specifies a basis of influencing factors in the suggested service logic business model—specifically, resource integration as the major component and business resources as the second important component. The value proposition serves as a bridge between resource integration and value co-creation in the service logic business model. As a result, it may generate value from both the producer’s and the customer’s perspectives.

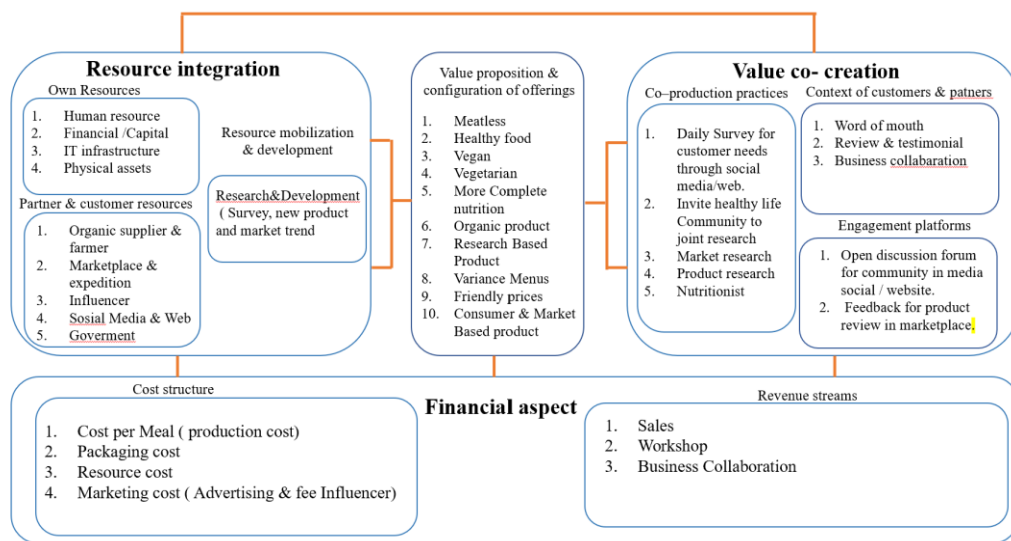


Figure 5. Healthy Food Service – Logic Business Model Canvas

According to the Sentiment Analysis result, the Value Propositions are green marketing, healthy food, meatless, sustainability, vegan, and vegetarian. These value propositions and providing configurations enable value co-creation and resource integration. Furthermore, resource integration is organized into three subsections in the service logic business model canvas: own resources, partner and customer resources, and resource mobilization and development. Its own resources, which include three primary components, form the internal source of its company.

Value co-creation, on the other hand, is made up of three subcomponents: co-production practices, customer and partner context, and engagement platform. Co-production exemplifies how stakeholders are involved in the value co-creation process throughout production. To promote co-production techniques, doing frequent product and market analysis/research through engagement with the sustainable conscious community or conducting regular sentiment analysis from social media channels and consumer surveys is essential to accomplish the value proposition to generate an analytics-based product. While the sole purpose of customers and partners explains how organizations co-create value with their consumers. Healthy-Food businesses should invite their consumers to leave reviews and testimonials about their service and products in order to establish value with their customers and partners.

This strategy is also supposed to create a strong relationship with the consumer, triggering them to spread positive word of mouth. Partnership with Digital marketing or e-influencers who represent the proposition value of each related party is expected to create a mutual benefit for businesses and influencers in terms of increasing consumers and profits. Business collaboration can also be used to implement a business-to-business (B2B) or business-to-customer (B2C) approach. In aiding the value co-creation process, an engagement platform is essential. The usage of the official

website, social media, and marketplace as the platform should be improved to establish a strong interaction among consumers and enterprises. Finally, the financial element is the final part of the service logic business model canvas for the Healthy-food industry. This factor is broken down into two sub-components: cost structure and income stream.

4. Conclusions

In this research, it is shown that Goods Dominant logic is no longer relevant whereas the Service-Dominant logic is becoming more relevant, especially in the Service Industry. With the raise of Service of dominant logic put the customer as a key factor to create Value Co-creation based on Customer-Centric. This research also offers a new way to see customer insight from text mining methodology. Service Logic Business Model Canvas approach, in this research, shows that the value proposition is captured from consumer aspirations through the text data mining method on social media (Twitter). Value co-creation that is based on the Customer's aspirations can become a consideration to make good products that match the Customer's needs. This research also concluded that the business especially in the Healthy-food industry may use this value co-creation model canvas as a starting point. In order for the business to capture customer-driven product and value co-creation. The Business Model Canvas can also be use as check-list for pre-launched or during business incubation therefore the stakeholder can be determined which area should be their first focused and prioritized.

In this research, data on text mining is only limited to 1,000 tweets. Data were taken from various kinds of sentiments (comments) from Twitter users in Indonesia related to healthy food. The results of this research can be utilized by high-level management from healthy food industry players for the development of company strategies, especially to strengthen customer engagement. The research that is being presented is an endeavor that is exploratory and serves as an introduction. We are aware of the limitations of the research, which stem from the methodology, the size of the sample that was analyzed, as well as the research tool that was used. The intensity of sentiment data should be determined on the basis of strategic and relevant based sectoral analysis standards, including the methodological standards of considering the value proposition and assessing its effectiveness. Future research studies should certainly give attention to market data, including detailed information about particular sectors, and the intensity of sentiment data determined on the basis of strategic and relevant-based sectoral analysis standards. An analysis of the various approaches and tactics utilized by the various market segments is capable of being an interesting topic for research. To achieve more fruitful outcomes from the process of value co-creation, it is recommended that future research make use of in-depth interviews, focus group discussions, and customer feedback gathered from surveys and questionnaires. In addition, we strongly suggest using confirmatory tools based on quantitative approaches, such as SEM-LISREL, in order to test each co-variable

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