Value Co-creation for Innovation Process in Small Business Community

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Abstract

Purpose –This paper explores the interaction of multi-actors to co-create value and its influence toward innovation process in small business community. This study offers a research model that is derived from a fundamental premise of Service-Dominant Logic (SDL)concept and supported by Consumer Culture Theory (CCT).

Design/methodology/approach – Quantitative approach was applied through self-administered survey using purposive sampling method. The research model and hypothesis was analyzed by using Structural Equation Modeling.

Findings - Educating among members in the small business community shows significant influences to dynamic interaction and value co-creation. Enriching negatively influences value co-creation. Dynamic interaction did not influence value co-creation, but dynamic interaction and value co-creation drives innovation process significantly.

Practical implication – Small business should educate each other to develop positive connectivity with other members to exchange and integrate collective resources. This situation could be beneficial to build synergy that drives innovation process as a survival and development strategy in challenging business environment.

Originality/value – The previous study on value co-creation is dominantly performed in established companies using qualitative approach. This research offers a new perspective from small business community in emerging market by applying quantitative approach.

This article gives contribution to the collaboration of service-dominant logic and consumer culture theory. The research model will be beneficial to developan alternative marketing and business model as well as to drive the growth and the contribution of micro, small, and medium entreprises on society, environment, and economy.

Keywords - *Consumer Culture Theory, Service-Dominant Logic, value co-creation, small business community, innovation process.*

Introduction

Indonesia is one of the Asian countries, together with China and India, predicted to be a strong economic potential. The World Bank's (2017) report projected Indonesia's real GDP to grow from 2016 to 2018 by 5.3%. The consumer confidence index also showed stability throughout 2016 following growing private and government consumption. Small to medium sized enterprises (SMEs) have been proven to be effective means of surviving economic crises (e.g. 1998 crisis) contributing to a country's emerging economic potential. Given the important role of SMEs in a country's economic development and sustainability, studies in this area are of value. The challenge for every SME is limited resources. This situation forces businesses to re-think their survival strategy. Collaboration among the SMEs could be an alternative strategy to leverage this capacity. The SME community provides many opportunities for its members to interact and co-create value (value co-creation).As a result, it is expected to stimulate the innovation process, which can lead to long-term sustainability. Value co-creation is in-line with the Indonesian traditional culture, *gotong royong*, which reflects mutual assistance and cohesiveness in communal living to achieve the goals of the community or society (Irawanto, 2015).The value is built through their spontaneous dynamic interaction. The value from within the culture seems to enhance the value-co-creation potential of the SME community in which actors can play multi-faceted roles. For instance, the owner of SME does not only act as producer, but also a consumer or a supplier for other entities. This research offers a model of value co-creation by combining the concepts of service-dominant logic (SDL) and consumer culture theory (CCT). SDL has continued its evolution with the introduction of the fifth axiom (eleventh fundamental premise) to expand the concept and practice of marketing. It adds the role of institutions and institutional arrangements generated by many actors to co-create value in society as broad markets. Knowledge, skill, and experience, as "service," become the focus of SDL. This main element is the exchange among the actors to create a service ecosystem (Vargo & Lusch, 2016). The service system was also described by Maglio & Spohrer (2008) as basic theoretical construct of systematic service innovation: it orchestrates the interaction within an organization and allows the exchange of operant resources (service) to build competencies in the service system. CCT has made significant contributions to marketing and other fields, such as sociology, anthropology, and politics, through an eclectic approach. Its existence enriches the exploration of marketing because it can explain the interaction between the consumers with the market in the wider perspective. The elaboration has shifted from value-in-use to value-in-context and the exposition of value co-creation. This situation is an opportunity for researchers to make contributions to theory development through collaborative projects with many actors to accommodate the critique and perform reformative action (Arnould & Thompson, 2015). The topic of collaborative alignment between SDL and CCT has been studied in some published articles. Arnould (2006) observed the same meaning and understanding between some terminologies used in both SDL and CCT. Shifting from value-in-use to value-in-context and the exposition of value co-creation, SDL explores the flow of resources from resource integration and service exchange (interdependent of rules, norms, meanings, symbols, and practices)that generate value co-creation (Vargo & Lusch, 2016). Nevertheless, it still overlooks the mechanism of interaction among the actors (Arnould, 2006). CCT, however, elaborates the interaction between consumer and the market at large, including multi-actors in society, to build consumption patterns and cultures (Arnould &Thompson, 2007).However, it has not

explicitly mentioned the operant resources as important elements that lead to value co-creation. Extensive studies on value co-creation have been performed by several researchers, such as the role of service systems in firms' adaptability and survivability (Vargo, Maglio & Akaka, 2008), the role of service innovation in accelerating value co-creation (Maglio & Spohrer, 2008), the evolution of value creation from collaborating to co-innovation (Lee, Olson&Trimi, 2012), advantage comparison between two different innovative companies (Ramasvamy, 2010), knowledge-based services as co-producers of innovation (Hertog, 2010), a framework of value co-creation and capture (Reypens, Lievens & Blazevic, 2016), and the role of collaborative consumers on service innovation performance (Sharma *et al.*, 2016).However, these articles have not employed a combination of SDL and CCT as fundamental theories. The research has also been predominantly conducted in established companies rather than in SMEs.The combination of SDL and CCT will enrich the explanation of how value co-creation significantly impacts the innovation process.

The aims of this study are as follows:

1. Propose a research model combining SDL and CCT.
2. Determine the mechanism of value co-creation for the innovation process in the SME community.
3. Measure the effects of educating and enriching on multi-actor dynamic interaction and the influence of dynamic interaction in the community both on value co-creation and the innovation process.

Literature Review

Service dominant logic (SDL)

SDL has become a main stream of research in marketing through the evolution and redefinition of some of the fundamental premises (Vargo & Lusch, 2004, 2008, 2016).One of the latest fundamental premises regarding value co-creation states that "value co-creation is coordinated through actor-generated institutions and institutional arrangements" (Vargo & Lusch, 2016, p. 8). SDL's view on value co-creation centers on the integration of many resources based on service exchange, from many actors that share norms, rules, beliefs, and meanings (institution) through the arrangement of process and role (institutional arrangement) to co-create value in the service ecosystem. In this context, institution does not represent organization, but the "rules of the game."Institution directly relates to cognition, communication, and judgment as a result of interaction and inter-relation (Vargo & Lusch, 2016). Service in the SDL context represents knowledge, skill, and experience as the fundamental basis of exchange (Vargo & Lusch, 2008). SDL's evolution has led to some fundamental premises: focusing on strategic benefit rather than competitive advantage; the value of actors in co-creating value rather than firms and consumers; the role of multi-actors participating to create and offer a value proposition; and beneficial relational orientation as the consequence of actor-to-actor dynamic networks. These concepts are an important link to the role of communities in forming the perception of customers through marketplace culture on market-mediated networks (Arnould & Thompson, 2007). This understanding reveals that communities can act as institutions rather than just organizations; therefore, communities can play a role as a platform for interaction to enable value co-creation. Institutions and institutional arrangements allow multi-actors to utilize limited sources to co-create value efficiently and effectively. Value is created after the experience of the consumers in the value-in-use context. It means that the value offered by the producers will become

the competitive advantage of the firm if their consumers have good experiences of the firm's offerings and confirm the value .Meanwhile, co-creation can happen if there is an interaction among consumers with other actors. To date, no study has explored the interaction that defines the role of service provider and other actors involved in this mechanism (Grönroos & Voima, 2013).Thus, the combination of SDL and CCT to interpret the effects of value co-creation on innovation will provide a robust and fluid means of modeling and reflecting the emerging innovation.

Consumer culture theory (CCT)

CCT explores the interaction between consumer micro-culture and market macro-culture in shaping consumption interpretation and patterns .It links four dimensions of theoretical structure: consumer identity; socio-cultural consumption patterns; marketplace cultures and mass-mediated marketplace ideologies; and consumers' interpretative strategies. These dimensions interact with one another through several processes: ideological shaping, structure-agency tension, globalization, and market-mediated networks (Arnould & Thompson, 2007).This research focuses on the market mediated network process. The interactions, relationships, and communication that happen in the marketplace produce the network among consumers and build the consumers' interpretation of the consumption. The process describes the movement or ideology transfer from the community, or consumer micro-culture, to the consumer as an individual. The two important arguments underlying this linkage are that culture is viewed form a dynamic network perspective and that the action is embedded in the institution's structure in the local context (Arnould & Thompson, 2007).Some articles have studied the important process of market-mediated networks inexploring embedded consumption (Miller & Slater, 2000), the role of technological and market structure in the community (Muniz & Schau, 2005), the re-conceptualization of gift giving in the cyber era (Giesler, 2006), consumer adaptation to urban change and multicultural marketplaces (Broeckerhoff, Carrigan, Hardy &Kipnis, 2015), brand community in the car industry (Cova, Pace& Skålén, 2015), and factors influencing anti-brand communities (Dessart, Morgan-Thomas& Veloutsou, 2016).

Most CCT research has focused on the interaction of consumer power and various global or market cultures with the dyadic relationship. This paper explores the network relationship among many actors in the community in shaping the consumption pattern and how value co-creation affects the innovation process in the community. Consumption in this research refers to service (knowledge andskill) consumption through interaction in the community to leverage their interaction capacity.

Value co-creation and innovation in SMEs

Vargo and Lusch (2016) conceptualized value co-creation in the context of multi-actor interaction in the ecosystem. When this conceptualization is connected to Arnould and Thompson's (2007) supposition that community is an effective way to create movement in market-mediated networks, value co-creation in the community shows the potential to overcome the limitations of SME. If multi-actor interaction is the key to service exchange and resource integration, this could drive the innovation process as a sustainability strategy for SMEs.

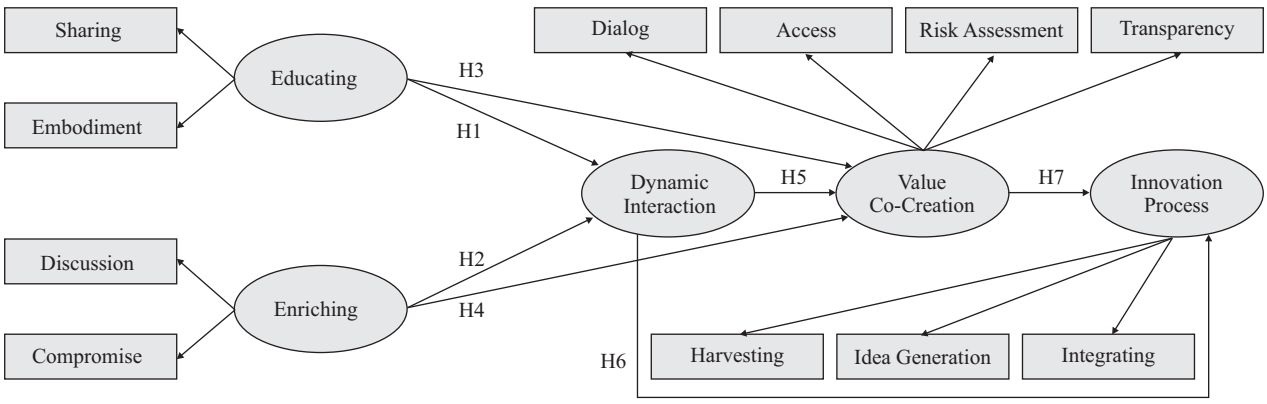
Some scholars have defined the relationship between value co-creation and innovation process. Frow, Nenonen, Payneand Storbacka (2015) described value co-creation as the platform of innovation by giving the business actor the opportunity to integrate resources. They

conceptualized co-creation in the context of co-production and co-creative activities. Gustafsson, Kristensson and Witell (2012) defined co-creation as the resources derived from interaction with customers to leverage the product and market success rate that contribute to innovativeness and to understanding customers' future needs. Fidel, Schlesinger and Cervera (2015) showed customer collaboration in the innovation process as an influential antecedent for building knowledge leading to positive marketing results. Meanwhile, Romero and Molina (2011) conceptualized networking as a source of value co-creation and co-innovation as well as a means of accessing knowledge, skill, technology, and markets through sharing risk and integrating competencies. This situation gives encouragement for sustainable, user-driven, and collaborative innovation. Small enterprises need an innovation ecosystem to develop their business model; therefore, value co-creation becomes an essential requirement to grow their business. Value co-creation not only facilitates the achievement of common goal and benefits financial support, but also garners commitment from the involved actors (Radziwon, Bogers & Bilberg, 2017) to be part of the continuous innovation process. SMEs need an innovation process, since they have limited resources compared to large companies; they do, however, play an important role in economic growth, especially in the Asian emerging market (Hitchen, Nylund, Ferràs & Mussons, 2017).

Conceptual framework and hypothesis

There are five latent variables that are developed as a research model based on the concept of value co-creation from SDL, supported by the market-mediated-networks concept from CCT (see Figure 1).In this section, the dimensions of the latent variables will be defined and measurable indicators will be provided to allow the measurement of value co-creation and its output.

Figure 1. The Conceptual Framework



Educating and dynamic interaction

The findings of Pongsakornrungsilp (2010) showed that the actors in the brand community play the role of provider and beneficiary through the educating process in the community. The educating process is marked by sharing knowledge and skills and embodies the values of the community. Sharing knowledge and skills leverages the capacity to positively impact dynamic interaction(Pongsakornrungsilp, 2010) and increase the quality of the interaction by integrating potential chaos, which is associated with confused and unformed resources (Larsson & Dahlin, 2012).Sharing knowledge is firstly done in an asymmetric manner where the expert, leader, or owner of the knowledge educates the members of community before each member can engage a reciprocal mode of knowledge sharing based on their expertise (Kaewkitipong, Chen&Ractham, 2016; Boer, van Baalen, & Kumar,2004).This educating process among members drives dynamic interaction and produces a transformative capacity in the community (Kaewkitipong*et al.*, 2016). Embodiment of the community valueperformed by the key actors in the community leads them to reach consensus. It drives all actors to act in the same way to accommodate aspirations and achieve their vision together. Embodiment in SMEs reflects the way the educating act shapes the members' interpretation and constructs the mind set regarding the vision, mission, objective, values, and activities necessary to embody the whole community's identity (see, for example,Bonomi, Moggi & Ricciardi, 2016; Luca, Hibbert& McDonald, 2016) by providinga fertile ecosystem for dynamic interaction (Wolfgramm, Flynn-Coleman&Conroy, 2015).

Thus, the following hypothesis is proposed:

- H1: Educating community members positively influences dynamic interaction in SME communities.

Enriching and dynamic interaction

Enriching concerns the process behind the positive relationship between the key actors, who have superior knowledge or skill or are leaders in the community, and members of the community (Pongsakornrungsilp, 2010).Enriching is demonstrated by robust discussions and efforts to synthesize and extend the key actors' knowledge, skill, and experience and compromising regarding the best solution for all members of the community. Discussion is defined as a conversation or reciprocal communication between members within the community that provides benefits for leveraging the capacity of the community.It is demonstrated by the availability of a forum or a chance to discuss all efforts to overcome the challenges and problems, or leverage the capability of community (Santini *et al.*, 2016; Pongsakornrungsilp, 2010).Compromise is defined as the effort or willingness to make sacrificesto achieve acceptable standards or dealing with critical issues through mutual concessions. It is demonstrated by the ability to put benefit for others above benefit for oneself to achieve the optimal solution for all members of the community (Santini *et al.*, 2016; Pongsakornrungsilp, 2010). The enriching process tries to find a unified logic and togetherness in leveraging the capacity of the community (Pongsakornrungsilp, 2010). It expressesthe willingness of the community members to talk, give, considers, and examine to certain issue in the community and come to an agreement that finally drives positive dynamic interaction among the actors in the community (Pongsakornrungsilp, 2010).

This literature review leads to the following hypothesis:

- H2: Enriching community members positively influences dynamic interaction in SME communities.

Educating and value co-creation

In the community, senior members educate others through sharing of knowledge, information, and experience to drive value co-creation (Yi & Gong, 2013; Pongsakornrungsilp, 2010).Sharing among actors creates access to knowledge, skills, and experience (Breidback & Maglio, 2016; Kipping& Engwall, 2002). Educating also embodies the spirit of sharing the traditions of the community with newcomers (Pongsakornrungsilp & Schroeder, 2011).The members of the community absorb principles, norms, beliefs, and cultural codes that provide the understanding for the co-creation process (Pongsakornrungsilp & Schroeder, 2011).The configuration of resources reveals the complex relationshipsof institutional arrangements as a pre-requisite of value co-creation (Vargo & Lusch, 2016; Breidback & Maglio, 2016).

This literature review leads to the following hypothesis:

- H3: Educating community members in SME communities positively influences value co-creation.

Enriching and value co-creation

The enriching interaction between senior actors and others in the community is demonstrated by discussing the relevant issue and compromising for the best solution. Discussion facilitates dialog among the actors in the community, provides access to more resources, and drives transparency. It is, therefore, an effective vehicle for reaching value co-creation (Pongsakornrungsilp & Schroeder, 2011). Open discussion and willingness to compromise also facilitates multi-actors to perform risk assessment that drives constructive value co-creation (Pongsakornrungsilp & Schroeder, 2011; Schau, Muñiz Jr & Arnould, 2009). The following hypothesis is, therefore, proposed:

- H4: Enriching community members inSME communities positively influences value co-creation.

Dynamic interaction and value co-creation

Dynamic interaction concerns the interaction among members of the community to create value. The interaction across various channels and mechanisms builds experience that creates value co-creation among many actors in the community (Ramaswamy & Ozcan, 2016).Dynamic exchange of benefits and relevant information among actors increases the capacity of the community (Pan *et al.*, 2015). Dynamic interaction refers to a vigorous, active, and enthusiastic relationship among the producers in the community through learning, negotiating, and co-developing processes (Ramaswamy & Ozcan, 2016; Brodie, Hollebeek, Jurić & Ilić, 2011; Roncha & Radclyffe-Thomas, 2016; Geiger & Finch, 2016; Pongsakornrungsilp, 2010). Multi-actors' interaction is also expressed through negotiation to achieve agreement, acceptance or compromise on the knowledge, skills, experience, or information to leverage their capacity(Pongsakornrungsilp,2010; Sjodin *etal.*, 2016).Learning, negotiating, and co-developing enable the members of the community to face challenges regarding different expectations, set clear responsibilities and align the roles and benefits that provide positive initial value co-creation (Sjodin *et al.*, 2016).Advocating refers to recommendations and support to other community members to promote institutions, brands, products, or ideas (Brodie *et al.*, 2011) throughstory-telling

or simply through the desire to share information (Roncha & Radclyffe-Thomas,2016). Socializingrefers to the reciprocal interaction among community members to build a cohesive relationship through good attitudes and behavior (Brodie *et al.*, 2011) and through emotional attachment and encouragement for active participation (Roncha & Radclyffe-Thomas, 2016).

Dynamic interaction among the members of a developing organization or community enables them to identify which resources to pool. In this situation, the co-developing process demonstrated by dynamic interaction drives the construction of value co-creation (Plé, 2016).
The literature review supports the following hypothesis:

- H5: Dynamic interaction among actors in the community positively influences value co-creation.

Dynamic interaction and innovation process

Multi-actor interaction and collaboration in the community drives reformation of institutions and institutional arrangements that impact on change, disruption, sustainability, and the core of the innovation process (Vargo, Wieland & Akaka, 2015; Lawrence & Suddaby, 2006). Dynamic interaction provides an opportunity for service exchange and integrates all potential resources in the community to enhance the capabilities of its members. The accumulation of these activities provides key elements and power for the innovation process, which becomes a mechanism for the survival and development of the community as well as its members (Wehn & Montalvo, 2018; Vargo*et al.*, 2015; Lawrence & Suddaby, 2006). Multi-actor interaction is not static and builds new norms, beliefs, and guidance that are gradually embedded in the community and how it discovers new capabilities in the innovation process (Vargo *et al.*, 2015).Such dynamic interaction improves the innovation process within the community ecosystem through collective learning (Phillips*et al.*, 2015; Neumeier, 2012). Dynamic interactions among actors play an important role in community learning and networking (Dawson & Daniel, 2010; McElroy, 2002). Learning from dynamic interaction disseminates, transferring knowledge and generating new experiences that help organizations gain collective resources as a driving force of the innovation process (Azagra-Caro, Barberá-Tomás, Edwards-Schachter & Tur,2017; Phillips *et al.*, 2015; Edwards-Schachter, Matti & Alcántara, 2012). It breaks down institutional and organizational boundariesto boost creative ideas and multi-actor innovativeness (Azagra-Caro*et al.*, 2017; Herzog & Leker, 2010).Negotiation in dynamic interaction generates an agreement on the best solution and secures future potential value for the service innovation process (Sundström, Karlsson & Camén, 2017).Negotiation is the critical phase in dynamic interaction among actors to define and allocate important resources that make the innovation process effective(Salerno*et al.*, 2015; Vargo*et al.*, 2015). Another indicator of dynamic interaction is co-development among actors. Xu, Cui, Qualls and Zhang (2017) found that co-development drives the innovation process. Co-development draws out stakeholders' different perspectives in positive way that supports their goals and generates and integrates resources that increase the efficiency of the innovation process (Oinonen & Jalkala, 2015). Co-development is achieved by balancing the various multi-actor perspectives, focusing on outcomes and managing various potential resources (Oinonen, Ritala, Jalkala, & Blomqvist, 2017).

Socializing among actors provides a space to have face-to-face networking, learn new skills, and build emotional bonding that can all drive the innovation process(Zukin & Papadantonakis,

2017).Socializing and advocating also provide an opportunity engaging in knowledge sharing that drives idea generation and development in the innovation process (Stockstrom, Goduscheit, Lüthje & Jørgensen, 2016).
The literature review supports the following hypothesis:

- H6: Dynamic interaction among actors in the community positively influences the innovation process.

Value co-creation and the innovation process

Value co-creation is defined as the interaction of multi-actors to exchange operant resources (knowledge and skills) and integrate, guided by institutional arrangements. This process will establish a nested and interlocking service ecosystem of value co-creation (Vargo & Lusch, 2016). Albinsson, Perera and Sautter (2016) developed the DART scale proposed by Prahalad and Ramaswamy (2004) by measuring the following co-creation dimensions: dialog, access, risk assessment and transparency. Dialog refers to conducive communication, interaction, or discussion among actors in the community to reach agreement or solutions to a problem (Albinsson *et al.*,2016).Access mean stability for actors in the community to get relevant information for continuous improvement and participate in value co-creation (Albinsso n*et al.*,2016).Risk assessment allows consumers to obtain comprehensive information about the potential risk to minimize the potentially damaging effect of the value co-creation process (Albinsson *et al.*, 2016). Transparency refers to the openness and accountability in the information exchange that shows the integrity of the actors in the community by seeking feedback from others to co-create value (Albinsson *et al.*, 2016). The innovation process is defined as a process to discover, define, and develop new ideas, methods, and process to be implemented in the business. The steps of the process include harvesting the data from internal and external sources, idea generation from the marketplace and within the community, and integrating the relevant information (Tsimiklis & Makatsoris, 2015; Prónay & Buzás, 2015; Holman *et al.*, 2012). Harvesting is the process of gathering the data from internal and external sources to understand the market, its expectations, and possible future development (Tsimiklis & Makatsoris, 2015; Väyrynen & Smeds, 2009).Idea generation is the process of extracting the relevant data to find new ideas for new products or methods(Prónay & Buzás, 2015; Holman *et al.*, 2012; Väyrynen & Smeds, 2009; Fontana, 2009).Integrating refers to the process of identifying the relevant idea and realizing itinto a concrete form by gathering, adopting, and combining relevant resources (Tsimiklis & Makatsoris, 2015; Prónay & Buzás, 2015; Holman *et al.*, 2012).

Beneficial dialog and meaningful involvement of multi-actors develop the capacity of the community and reveals co-creation that drives the innovation process (Romero & Molina, 2011).Sharing values, developing networks, and co-developing ideas combine to allow multi-actors to drive the innovation process(Lee*et al.*, 2012;Füller, Hutter & Faullant,2011). Accesses to the operant resources and reducing the risk of cognitive bias are both important in the innovation process (Romero & Molina, 2011; Liedtka, 2015). Value co-creation contributes to the process of innovation that is constructed through harvesting the market data, ideation, and integrating all the resources to create new products, mechanisms, processes, and policies (Tsimiklis & Makatsoris, 2015). The first step of the innovation process is harvesting the market data from consumers, suppliers, channels, or competitors and adds it to the internal information system (Tsimiklis & Makatsoris, 2015).The second step, called

ideation, refers to generating ideas from the accumulated relevant information from the market ecosystem. Ideation arises from creative thinking and the ability to translate information into alternative solutions to fulfill market needs (Fontana, 2009).The third step, integrating the specification of resources into production, describes all there sources needed for the technical procedure, product characteristics, and systematic production guidance (Tsimiklis & Makatsoris, 2015). Collaboration in open innovation should allow the knowledge to support business models beyond the community boundaries (Chesbrough & Bogers, 2014) to accelerate market acceptance, enhance the innovation culture, advance the position in the market, and find new target markets (Chesbrough, 2003). The research findings of Taghizadeh, Jayaraman, Ismail & Rahman, 2016) indicated that dialog, access, risk assessment, and transparency (DART), as an indicator of co-creation value, show a significant relationship with innovation strategy that leads to success in the market or in implementation.

The following hypothesisis, therefore, proposed:

- H7*:* Value co-creation in SME communities positively influences the innovation process.

Methodology

Quantitative research was performed to confirm the relationship among variables in the model through a consumer survey because this is an appropriate method to measure consumers' attitudes, activities, opinions, and beliefs (Christensen, Johnson&Turner, 2011). Recent studies on value co-creation have also used this method (Zhang, Jahromi & Kizildag, 2018; Jouny-Rivier, Reynoso & Edvardsson, 2017; Mainardes, Teixeira & Romano, 2017). Self-administered questionnaires were completed by respondents selected by non-probability judgmental sampling. The collected data were bootstrapped to get 500 data setand processed by Lisrel 9.3.The respondents were the members of Indonesian Organic Community who play multi-actor roles and had demonstrated interaction in this ecosystem. Multi-actor roles were defined by becoming a consumer of at least one other product from another member in the community. Interaction was defined by actively participating in a local event performed at least three times in the community within a current year. The survey was undertaken during a community national event on October 2016 as it was a forum at which all active members from all chapters in Indonesia were present. The construct of variables was developed from the findings of Pongsakornrungsilp (2010), combined with the DART scale of Prahalad & Ramaswamy (2004), modified and adapted to the Indonesian context through observations of activities within the community. Dimensions and indicators of each variable were structured based on the literature review and the findings of the observation as well as in-depth interviews with key persons in the community. A five-point Likert scale was used to measure attitude toward a statement of indicator that ranged from 1, representing "strongly disagree," to 5 "strongly agree" (Cooper & Schindler, 2008).

The questionnaire items were subjected to language review by ten business and economics academicians before the data collection performed to ensure face and content validity by providing a clear and understandable description of each observed variable (Hair *et al.*, 2006). The collected data were processed using SPSS v22.Most of the respondents were female (74.2%),of a productive age(23-40 years, 67.8%), and graduates (70.9%).Food and beverages dominated the type of business in the community (64.5%).Most (96.8%) had become members of the community for less than four years ago (this is reasonable, as the community was only begun six years ago).Most of

their businesses were established before or at the same time as they joined the community. Exploratory factor analysis (EFA) was conducted at the first step to ensure that each item reflected the relevant dimension or latent variable, since most of the items were built from the conceptual and qualitative research. This technique helps the researcher to build structure from the underlying relationship (Fabrigar & Wegener, 2011; Cudeck, 2000) and it was performed using SPSS by using principal axis factoring on EFA.The items that did not group into one dimension and showed co-efficient factors less than 0.5 were omitted. Next, the selected items underwent confirmatory factor analysis (CFA) for structural equation modeling (SEM) with Lisrel 9.3.The objective of this stage is to ensure that each selected item represents the dimension or latent variable to which they are grouped (Fabrigar & Wegener, 2011; Cudeck, 2000).CFA was performed using a two-step process. On the first run, the items with standardized factor loadings less than 0.5 were omitted, but this step was not performed for the dimension level. According to Hair *et al.* (2006), there are three steps necessary to evaluate the level of data fitness with the research model: overall model fit; measurement model fit; and structural model fit. Overall model fit can be grouped into absolute fit measures, incremental fit measures, and parsimonious fit measures. Measure model fit is indicated by good validity and reliability .Validity is shown by t-value ≥ 1.96 and standardized factor loading ≥ 0.5, while reliability is indicated by construct reliability (CR) ≥ 0.70 and variance extracted (VE) ≥ 0.50.Structural model fit is expressed by t-value absolute ≥ 1.96 and coefficient of standardized estimation that shows negative or positive influences to test the hypothesis.

Results

The results of the data processing of the selected items are shown on the Appendix A.Educating had two dimensions: sharing; and embodying .Enriching also had two dimensions: discussion and compromising. This is in-line with the findings of Pongsakornrungsilp (2010).Value co-creation showed four dimensions: dialog, access to information, risk assessment, and transparency. This is in-line with Prahalad and Ramaswamy (2004), Taghizadeh*et al.* (2016), and Albinsson*et al.* (2016).The innovation process was expressed in three dimensions: harvesting; idea generation; and integration of operant resources. This construct is similar to those of Tsimiklis and Makatsoris (2015) and Holman *et al.* (2012). The validity and reliability test showed that overall items and latent variables were of a good standard.The validity of each item, expressed on the standardized factor loading (SFL),was greater than 0.5 (see the Appendix A), with CR ≥ 0.7 and VE ≥ 0.5 (see Table 1). This is in line with Hair *et al.*'s (2006) expectations, which were also used by Albinsson*et al.*(2016) and Taghizadeh*et al.* (2016).

Table 1. Construct Reliability and Variance Extracted of Latent

Variable	CR	VE
Educating	0.71	0.55
Enriching	0.70	0.54
Dynamic Interaction	0.95	0.95
Value Co-Creation	0.80	0.52
Innovation Process	0.73	0.48

Notes: NFI=0.852, NNFI=0.844, CFI=0.864, IFI=0.864, RFI=0.831, GFI=0.886, AGFI=0.860

The results of data processing exhibited a quite good overall model fit (NFI, NNFI, CFI, IFI, RFI, GFI, and AGFI in the range of 0.80-0.90), revealing good incremental and parsimonious fit measures. The results indicated that all items and dimensions represented latent variable accordingly. The values for CR ≥ 0.70 and VE ≥ 0.50 proved that the constructs have convergent validity (Hair *et al.*, 2006), exception for the VE value for innovation process slightly below 0.5.However, this condition can be considered acceptable(see Albinsson*et al.*, 2016).

Table 2. Discriminate Validity of Latent Variables

	Educating	**Enriching**	**Dynamic***	**VCC****	**Process*****
Educating	0.742				
Enriching	0.852	0.735			
Dynamic*	0.714	0.666	0.975		
VCC**	0.523	0.142	0.397	0.721	
Process***	0.415	0.258	0.456	0.495	0.693

Notes: *) Dynamic Interaction; **) Value co-creation, ***) Innovation Process Diagonally italic scores indicate square root of VE, others represent the correlations

In general, the square root of VE was greater than the correlation co-efficient, which indicated good discriminant validity, except for the correlation of educating and enriching that showed a slightly higher co-efficient than the square root of VE (see Table 2).

The SEM analysis with Lisrel 9.3 was performed using the estimation method of diagonally weighted least squares and the results show six indicators within the acceptable range of overall structural model fit. The results revealed quite good overall model fit (NFI=0.852, NNFI=0.844, CFI=0.864, IFI=0.864, RFI=0.831, GFI=0.886, AGFI=0.860,all is in the range of 0.80-0.90),which demonstrate good incremental and parsimonious fit measures (Hair *et al.*, 2006).

Determination co-efficient (R^2) on reduced form equations indicated that both educating and enriching variables explain 52.2% of the variation on dynamic interaction and 61.2%of the variation on value co-creation. The causal effect of education and enriching on dynamic interaction is complementary, but enriching shows diminishes causal effect on value co-creation. However, the causal effect of enriching is less dominant than that of educating, both on dynamic interaction and value co-creation.

Table 3. The Result of Hypothesis Testing

Hypothesis: Path	Estimation	t-value	Result
H1: Educating → Dynamic Interaction	0.54	4.13	Supported
H2: Enriching → Dynamic interaction	0.21	1.62	Rejected
H3: Educating → Value Co-creation	1.37	3.65	Supported
H4: Enriching → Value Co-creation	-1.15	-3.34	Supported
H5: Dynamic Interaction → Value Co-creation	0.18	1.79	Rejected
H6: Dynamic Interaction → Innovation Process	0.31	5.16	Supported
H7: Value Co-creation → Innovation Process	0.37	5.42	Supported

Based on the test of hypothesis (see Table 3), the co-efficient of the structural model shows significant results for *H1*, *H3*, *H4*, *H6*, and *H7* (absolute t-value > 1.96) and insignificant results for *H2* and *H5* (absolute t-value < 1.96).All significantly positive t-values indicate that the positive relationship of the hypothesis is proven, while significantly negative t-value shows the opposite causal effect. The direct effects of educating on value co-creation and enriching on value co-creation are greater than the indirect effects through dynamic interaction. The direct effect of dynamic interaction the innovation process is greater than that of value co-creation (Table 3).

Discussion

Educating shows a positive influence of dynamic interaction. It indicates that, in SME communities, educating community members is the main factor driving dynamic interaction. Educating is demonstrated by sharing knowledge, relevant experience, and current information, as well as embodying community values, self-responsibility, and community tradition. Educating can happen when members of the community share cultural symbols among other members (Pongsakornrungsilp & Shroeder, 2011). Knowledge sharing can influence the performance of various activities (Boer*et al.*, 2004), increase internal capabilities and absorb external resources to drive dynamic interaction (Chen, Chang& Tseng, 2012).The educating process happens at gatherings, exhibitions, bazaars, workshops, seminars, events, and via social media (e.g. WhatsApp chatting). Educating also drives value co-creation, since knowledge sharing and how actors in the community embody the cultural symbols of the community enables the exchange of knowledge and skills and the integration of collective resources in the small business ecosystem (Vargo & Lusch, 2016).Educating activities allow members of the community to perform multi-actor roles, such as co-constructing experience to conduct dialog, having access to information, reducing avoidable risk, and benefiting from information transparency (Prahalad & Ramaswamy, 2004). Enriching in SME communities does not have a positive impact on dynamic interaction. This may because, in some literature, discussion one of them reaching dimensions is equated with knowledge capture and similar to sharing knowledge (O'Hern & Rindfleisch, 2010).It is almost impossible to separate it from learning as a part of dynamic interaction, although they have different definitions in this study. Meanwhile, compromising relates to negotiation and arguing in dynamic interaction. In an Indonesian context, a compromise is sometimes made to avoid conflict. Surprisingly, enriching shows a negative impact on

value co-creation. This may be because actors cannot clearly define their role in the community, causing a misunderstanding and creating a hidden conflict that can have a negative impact on value co-creation (Heidenreich, Wittkowski, Handrich& Falk, 2015).Discussion and compromising can also build tensions and lead to an imbalance in the efforts made by individuals to co-create value (Tóth, Peters, Pressey & Johnston, in press).This situation leads to ineffective dialog, poor access to information, poor risk assessment, a lack of transparency, and generates suspiciousness among members in the community. The influence of dynamic interaction on value co-creation is not significant. It seems that it does not capture the essence of the co-creation concept (Vargo & Lusch, 2016;Albinsson *et al.*, 2016; Prahalad & Ramaswamy, 2004). The possible explanation for this relationship could be how actors in the community deal with tension and conflict in dynamic interaction, where negotiation and moderation should be well managed to create a healthy dialog and openness toward relevant information as indicators of value o-creation (Gebauer, Füller & Pezzei, 2013). The ambiguity regarding the role of multi-actors, the imbalance of power among actors, and opportunism in community can also lessen the positive effect of dynamic interaction in building value co-creation, since sharing responsibility can cause unclear expectations and misunderstandings among the actors (Chowdhury, Gruber& Zolkiewski, 2016).Dynamic interaction can show both beneficial and detrimental effects, and so can result in impaired resource integration in the community (Plé & Chumpitaz Cáceres, 2010). However, dynamic interaction shows a positive influence on the innovation process. This means that learning, co-developing, advocating, socializing, and negotiating among actors in SME community results in harvesting ideas from internal and external sources, generating promising ideas, and helping to integrate relevant ideas in the innovation process .Dynamic interaction performs the mechanism and modality of service exchange and resource integration to drive an innovative ecosystem (Vargo*et al.*, 2015; Phillips *et al.*, 2015; Neumeier, 2012).Dynamic interaction focusing on the collective goalsdrives the capability development and the integration of robust resources as a result of strong bonding among members in the community that benefits the innovation process (Herzog & Leker, 2010; Vargo*et al.*, 2015; Oinonen & Jalkala, 2015; Xu *et al.*, 2017; Zukin & Papadantonakis, 2017).

Value co-creation has a positive impact in the innovation process. Dialog, openness to information, and the ability to assess potential risk all drive the innovation process. The significant relationship between value co-creation and the innovation process will help firms formulate innovation strategies for their business development (Taghizadeh,*et al.*, 2016).Multi-actor value co-creation can be managed to obtain collectively unique resources that become a key to the innovation process by identifying relevant resources (Kazadi, Lievens&Mahr, 2016). Dialog allows multi-actors to give and receive relevant resources from other actors (Albinsson *et al.*, 2016; Romero & Molina, 2011).Access to information increases the knowledge of community members allowing them to harvest and generate many ideas (Tsimiklis and Makatsoris, 2015).The opportunity to assess risks and benefits enables community members to match and integrate pertinent resources and ideas that, in turn, drive the innovation process and build an innovation ecosystem (Adner, 2006).

Conclusions

Combining SDL and CCT can generate a research model that has the potential to develop strategies for SMEs through their communities. SME communities enable each member to develop their

capacity through dynamic interaction to co-create value, which drives the innovation process. SME communities should focus on educating their members to drive dynamic interaction. When they absorb knowledge, skills, and values, they have enough resources to increase the quality of interaction among themselves and co-create value. Dynamic interaction and the ability to manage collective resources through dialog, to access information, to evaluate risks and benefits, and to be transparent all enable SMEs to strengthen the innovation process together as a survival and development strategy. The results of this research still leave room for further research on combining SDL and CCT. This present study offers a basic model based on combining many constructs from previous studies and, consequently, some constructs may overlap in terms of the respondents' understanding. This theory combination should be investigated through searching for unexplored factors and constructs to provide more robust model for value co-creation in SME communities. Further research should also involve a large number of respondents from various SME communities to allow generalization of the most favorable model fit for the theory combination. Another aspect that could be explored is the influence of asymmetric capability among actors and the development stage of the community to reveal how the enriching process influences dynamic interaction and value co-creation in SME communities.

References

Adner, R. (2006).Match your innovation strategy to your innovation ecosystem. *Harvard Business Review*,84(4), 1-10.

Albinsson, P.A., Perera, B.Y. and Sautter, P.T. (2016). DART scale development: Diagnosing a firm's readiness for strategic value co-creation. *Journal of Marketing Theory and Practice*, 24(1), 42-58.

Arnould, E.J. (2006). Service-dominant logic and consumer culture theory: natural allies in an emerging paradigm. *Marketing Theory*,6(3), 293.

Arnould, E. and Thompson, C. (2007). Consumer culture theory (and we really mean theoretics): Dilemmas and opportunities posed by an academic branding strategy. *Research in Consumer Behavior*,11, 3-22.

Arnould, E.J. and Thompson, C.J. (2015). Introduction: Consumer culture theory: Ten years gone (and beyond). In Thyroff, A.E., Murray, J.B. and Belk, R.W. (Eds), *Research in Consumer Behavior.* Bingley: Emerald Group Publishing.

Azagra-Caro, J.M., Barberá-Tomás, D., Edwards-Schachter, M. and Tur, E.M. (2017). Dynamic interactions between university-industry knowledge transfer channels: A case study of the most highly cited academic patent. *Research Policy*,46(2), 463-474.

Boer, N.I., Van Baalen, P.J. and Kumar, K. (2004). The implications of different models of social relations for understanding knowledge sharing. In Tsoukas, H. and Mylonopoulos, N. (Eds), *Organizations as Knowledge Systems*, London:Palgrave Macmillan.

Bonomi, S., Moggi, S. and Ricciardi, F. (2016). Innovation for sustainable development by educating the local community. The case of an Italian project of food waste prevention. In Borangiu, T., Dragoicea, M. and Nóvoa, H. (Eds), *IESS: International Conference on Exploring Services Science.* Berlin: Springer.

Breidbach, C.F. and Maglio, P.P. (2016). Technology-enabled value co-creation: An empirical analysis of actors, resources, and practices. *Industrial Marketing Management,*56, 73-85.

Broeckerhoff, A., Carrigan, M., Hardy, M. and Kipnis, E. (2015, June). *Urban change, multicultural marketplaces and consumer adaptation.* Paper presented at the *40th Annual Macromarketing Conference*, Chicago, Illinois, USA .

Brodie, R.J., Hollebeek, L.D., Jurić, B. and Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*,14 (3), 252-271.

Chen, C.W., Chang, M.L. and Tseng, C.P. (2012). Retracted: Human factors of knowledge‐sharing intention among Taiwanese enterprises: A model of hypotheses. Human Factors and Ergonomics in Manufacturing and Service Industries, 22 (4),362-371.

Chesbrough, H.W. (2003). A better way to innovate. Harvard Business Review,81 (7), 12-13.

Chesbrough, H. and Bogers, M. (2014). Explicating open innovation: Clarifying an emerging paradigm for understanding innovation. In Chesbrough, H., Vanhaverbeke, W. and West, J. (Eds), *Open Innovation: New Frontiers and Applications*, Oxford: Oxford University Press.

Chowdhury, I.N., Gruber, T. and Zolkiewski, J. (2016). Every cloud has a silver lining-Exploring the dark side of value co-creation in B2B service networks. *Industrial Marketing Management*,55, 97-109.

Christensen, L.B., Johnson, B. and Turner, L.A. (2011). *Research Methods, Design, and Analysis.* Boston: Allyn and Bacon.

Cooper, D.R. and Schindler, P.S. (2008). *Business Research Methods*, 10th ed., New York: McGraw-Hill.

Cova, B., Pace, S. and Skålén, P. (2015). Marketing with working consumers: The case of a carmaker and its brand community. *Organization*, 22(5), 682-701.

Cudeck, R. (2000). Exploratory factor analysis. InTinsley, H.E.A. and Brown, S.D., *Handbook of Applied Multivariate Statistics and Mathematical Modeling.* New York: Elsevier.

Dawson, P. and Daniel, L. (2010). Understanding social innovation: a provisional framework. *International Journal of Technology Management*,51 (1), 9-21.

Dessart, L., Morgan-Thomas, A.and Veloutsou, C. (2016). What drives anti-brand community behaviours: An examination of online hate of technology brands. InObal, M.W., Krey, N. and Bushardt, C. (Eds), *Let's Get Engaged! Crossing the Threshold of Marketing's Engagement Era*. Berlin: Springer.

Edwards-Schachter, M. E., Matti, C. E. and Alcántara, E. (2012). Fostering quality of life through social innovation: A living lab methodology study case. *Review of Policy Research*, 29, 672-692.

Fabrigar, L.R. and Wegener, D.T. (2011).*Exploratory Factor Analysis.* Oxford: Oxford University Press.

Fidel, P., Schlesinger, W. and Cervera, A. (2015). Collaborating to innovate: Effects on customer knowledge management and performance. *Journal of Business Research*,68 (7), 1426-1428.

Fontana, A. (2009).*Innovate We Can! How to Create Value through Innovation in Your Organization and Society.* Jakarta: Grasindo.

Frow, P., Nenonen, S., Payne, A. and Storbacka, K. (2015). Managing co‐creation design: A strategic approach to innovation. British Journal of Management,26(3), 463-483.

Füller, J., Hutter, K., and Faullant, R. (2011). Why co‐creation experience matters? Creative experience and its impact on the quantity and quality of creative contributions. *RandD Management*, 41(3), 259-273.

Gebauer, J., Füller, J., and Pezzei, R. (2013). The dark and the bright side of co-creation: Triggers of member behavior in online innovation communities. *Journal of Business Research*, *66*(9), 1516-1527.

Geiger, S. and Finch, J. (2016). Making incremental innovation tradable in industrial service settings. *Journal of Business Research*, *69*(7), 2463-2470.

Giesler, M. (2006). Consumer gift systems. *Journal of consumer research*, *33*(2), 283-290.

Grönroos, C. and Voima, P. (2013). Critical service logic: making sense of value creation and co-creation. *Journal of the academy of marketing science*, *41*(2), 133-150.

Gustafsson, A., Kristensson, P., and Witell, L. (2012). Customer co-creation in service innovation: a matter of communication?. *Journal of Service Management*, *23*(3), 311-327.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006). *Multivariate Data Analysis*, 6th ed. New York: Prentice Hall.

Hertog, P.D. (2010). *Managing service innovation: firm-level dynamic capabilities and policy options*. PhD thesis, University of Amsterdam.

Herzog, P. and Leker, J. (2010). Open and closed innovation–different innovation cultures for different strategies. *International Journal of Technology Management*, *52*(3/4), 322-343.

Heidenreich, S., Wittkowski, K., Handrich, M., and Falk, T. (2015). The dark side of customer co-creation: exploring the consequences of failed co-created services. *Journal of the Academy of Marketing Science*, *43*(3), 279-296.

Hitchen, E. L., Nylund, P. A., Ferràs, X., and Mussons, S.

(2017). Social media: open innovation in SMEs finds new support. *Journal of Business Strategy*, *38*(3), 21-29.

Holman, D., Totterdell, P., Axtell, C., Stride, C., Port, R., Svensson, R., and Zibarras, L. (2012). Job design and the employee innovation process: The mediating role of learning strategies. *Journal of Business and Psychology*, *27*(2), 177-191.

Irawanto, D. W. (2015). Employee participation in decision making: Evidence from state owned enterprise in Indonesia. *Management: journal of contemporary management issues*, *20*(1), 159-172.

Jouny-Rivier, E., Reynoso, J., and Edvardsson, B. (2017). Determinants of services co-creation with business customers. *Journal of Services Marketing*, *31*(2), 85-103.

Kaewkitipong, L., Chen, C. C., and Ractham, P. (2016). A community-based approach to sharing knowledge before, during, and after crisis events: A case study from Thailand. *Computers in Human Behavior*, *54*, 653-666.

Kalleberg, A.L. and Vallas, S.P. (Eds), *Precarious Work*, Vol. 31: Research in the Sociology of Work. Bingley: Emerald Publishing.

Kazadi, K., Lievens, A., and Mahr, D. (2016). Stakeholder co-creation during the innovation process: Identifying capabilities for knowledge creation among multiple stakeholders. *Journal of Business Research*, *69*(2), 525-540.

Kipping, M. and Engwall, L. (Eds) (2002). *Management Consulting: Emergence and Dynamics of a Knowledge Industry.* Oxford: Oxford University Press.

Larsson, J. and Dahlin, B. (2012). Educating far from equilibrium: Chaos philosophy and the quest for complexity in education. *Complicity: An International Journal of Complexity and Education*, 9 (2), 1-14.

Lawrence, T.B. and Suddaby, R. (Eds) (2006).*Institutions and Institutional Work.* London: Sage.

Lee, S. M., Olson, D. L., and Trimi, S. (2012). Co-innovation: convergenomics, collaboration, and co-creation for organizational values. *Management Decision*, *50*(5), 817-831.

Liedtka, J. (2015). Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. *Journal of Product Innovation Management*, *32*(6), 925-938.

Luca, N. R., Hibbert, S., and McDonald, R. (2016). Towards a service-dominant approach to social marketing. *Marketing Theory*, *16*(2), 194-218.

Maglio, P. P. and Spohrer, J. (2008). Fundamentals of service science. *Journal of the academy of marketing science*, *36*(1), 18-20.

Mainardes, E. W., Teixeira, A., and Romano, P. C. D. S. (2017). Determinants of co-creation in banking services. *International Journal of Bank Marketing*, *35*(2), 187-204.

McElroy, M. W. (2002). Social innovation capital. *Journal of intellectual capital*, *3*(1), 30-39.

Miller, D. and Slater, D. (2000).*The Internet: An Ethnographic Approach.* Oxford:Berg.

Muniz Jr, A. M. and Schau, H. J. (2005). Religiosity in the abandoned Apple Newton brand community. *Journal of consumer research*, *31*(4), 737-747.

Neumeier, S. (2012). Why do social innovations in rural development matter and should they be considered more seriously in rural development research?–Proposal for a stronger focus on social innovations in rural development research. *Sociologia ruralis*, *52*(1), 48-69.

O'Hern, M.S. and Rindfleisch, A. (2010). Customer co-creation. In Malhotra, N.K. (Ed.). *Review of Marketing Research.* Bingley: Emerald Group Publishing.

Oinonen, M. and Jalkala, A. M. (2015). Divergent goals in supplier-customer co-development process: an integrated framework. *Journal of Business and Industrial Marketing*, *30*(3/4), 290-301.

Oinonen, M., Ritala, P., Jalkala, A., and Blomqvist, K. (2017). In search of paradox management capability in supplier–customer co-development. *Industrial Marketing Management*.

Pan, Y., Xu, Y. C., Wang, X., Zhang, C., Ling, H. and Lin, J. (2015). Integrating social networking support for dyadic knowledge exchange: a study in a virtual community of practice. *Information and Management*, *52*(1), 61-70.

Phillips, W., Lee, H., Ghobadian, A., O'Regan, N. and James, P. (2015). Social innovation and social entrepreneurship: A systematic review. *Group and Organization Management*, *40*(3), 428-461.

Plé, L. (2016). Studying customers' resource integration by

service employees in interactional value co-creation. *Journal of Services Marketing*, *30*(2), 152-164.

Plé, L. and Chumpitaz Cáceres, R. (2010). Not always co-creation: introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, *24*(6), 430-437.

Pongsakornrungsilp, S. (2010). *Value co-creation process: Reconciling SD logic of marketing and consumer culture theory within the co-consuming group*. Thesis Doctoral, University of Exeter.

Pongsakornrungsilp, S. and Schroeder, J. E. (2011). Understanding value co-creation in a co-consuming brand community. *Marketing Theory*, *11*(3), 303-324.

Prahalad, C. K. and Ramaswamy, V. (2004). Co‐creation experiences: The next practice in value creation. Journal of interactive marketing, 18(3), 5-14.

Prónay, S. and Buzás, N. (2015). The evolution of marketing influence in the innovation process: toward a new science-to-business marketing model in quadruple helix. *Journal of the knowledge economy*, *6*(3), 494-504.

Radziwon, A., Bogers, M. and Bilberg, A. (2017). Creating and capturing value in a regional innovation ecosystem: A study of how manufacturing SMEs develop collaborative solutions. *International Journal of Technology Management*, *75*(1-4), 73-96.

Ramaswamy, V. (2010). Competing through co-creation: innovation at two companies. *Strategy and Leadership*, *38*(2), 22-29.

Ramaswamy, V. and Ozcan, K. (2016). Brand value co-creation in a digitalized world: An integrative framework and research implications. *International Journal of Research in Marketing*, *33*(1), 93-106.

Reypens, C., Lievens, A. and Blazevic, V. (2016). Leveraging value in multi-stakeholder innovation networks: A process framework for value co-creation and capture. *Industrial Marketing Management*, *56*, 40-50.

Romero, D. and Molina, A. (2011). Collaborative networked organisations and customer communities: value co-creation and co-innovation in the networking era. *Production Planning and Control*, *22*(5-6), 447-472.

Roncha, A. and Radclyffe-Thomas, N. (2016). How TOMS'"one day without shoes" campaign brings stakeholders together and co-creates value for the brand using Instagram as a platform. *Journal of Fashion Marketing and Management*, *20*(3), 300-321.

Salerno, M. S., de Vasconcelos Gomes, L. A., da Silva, D. O., Bagno, R. B. and Freitas, S. L. T. U. (2015). Innovation processes: Which process for which project?. *Technovation*, *35*, 59-70.

Santini, C., Marinelli, E., Boden, M., Cavicchi, A. and Haegeman, K. (2016). Reducing the distance between thinkers and doers in the entrepreneurial discovery process: An exploratory study. *Journal of Business Research*, *69*(5), 1840-1844.

Schau, H. J., Muñiz Jr, A. M. and Arnould, E. J. (2009). How brand community practices create value. *Journal of marketing*, *73*(5), 30-51.

Sharma, S., Conduit, J., Karpen, I.O., Hill, S.R. and Farrelly, F. (2016). Co-creation in a service innovation context. In Campbell, C. and Ma J. (Eds), *Looking Forward, Looking Back: Drawing on the Past to Shape the Future of Marketing.* Berlin: Springer.

Stockstrom, C. S., Goduscheit, R. C., Lüthje, C., and Jørgensen, J. H. (2016). Identifying valuable users as informants for innovation processes: Comparing the search efficiency of pyramiding and screening. *Research Policy*, *45*(2), 507-516.

Sundström, E., Karlsson, J. and Camén, C. (2017). Service innovation as a political process. *The Service Industries Journal*, *37*(5-6), 341-362.

Taghizadeh, S. K., Jayaraman, K., Ismail, I. and Rahman, S. A. (2016). Scale development and validation for DART model of value co-creation process on innovation strategy. *Journal of Business and Industrial Marketing*, *31*(1), 24-35.

Tóth, Z., Peters, L.D., Pressey, A. and Johnston, W.J. (in press). Tension in a value co-creation context: A network case study. *Industrial Marketing Management*.

Tsimiklis, P. and Makatsoris, C. (2015). An Open Innovation Framework for collaborative food product design and manufacturing. *Journal of Innovation Management*, *3*(4), 134-163.

Vargo, S. L. and Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1-17.

Vargo, S. L. and Lusch, R. F. (2008). Service-dominant logic: continuing the evolution. *Journal of the Academy of marketing Science*, *36*(1), 1-10.

Vargo, S. L. and Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, *44*(1), 5-23.

Vargo, S. L., Maglio, P. P. and Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European management journal*, *26*(3), 145-152.

Vargo, S. L., Wieland, H., and Akaka, M. A. (2015). Innovation through institutionalization: A service ecosystems perspective. *Industrial Marketing Management*, *44*, 63-72.

Väyrynen, E. and Smeds, R. (2009). Networked service innovation process in the production of a new urban area. In Vallespir, B. and Alix, T. (Eds), *IFIP Advances in Information and Communication Technology*, Vol. 38:Advances in Production Management Systems. New Challenges, New Approaches. APMS 2009.Berlin:Springer.

Wehn, U. and Montalvo, C. (2018). Knowledge transfer dynamics and innovation: behaviour, interactions and aggregated outcomes. *Journal of Cleaner Production*, *171*, S56-S68.

(The)World Bank (2017), *December 2017 Indonesian Economic Quarterly: Decentralization that Delivers*. Washington DC: The World Bank

Wolfgramm, R., Flynn-Coleman, S. and Conroy, D. (2015). Dynamic interactions of agency in leadership (Dial): An integrative framework for analysing agency in sustainability leadership. *Journal of Business Ethics*, *126*(4), 649-662.

Xu, L., Cui, N., Qualls, W., and Zhang, L. (2017). How socialization tactics affect supplier-buyer co-development performance in exploratory and exploitative projects: The mediating effects of cooperation and collaboration. *Journal of Business Research*, *78*, 242-251.

Yi, Y. and Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *Journal of Business Research*, *66*(9), 1279-1284.

Zhang, T. C., Jahromi, M. F., and Kizildag, M. (2018). Value co-creation in a sharing economy: The end of price wars? *International Journal of Hospitality Management*, *71*, 51-58.

Zukin, S., & Papadantonakis, M. (2017). Hackathons as Co-optation Ritual: Socializing Workers and Institutionalizing Innovation in the "New" Economy. In Precarious Work (pp. 157-181). Bingley: Emerald Publishing Limited.

Appendix A

Measured variables of each dimension

Dimension/Variables	Items	SFL	Error
Sharing	I share valuable knowledge with other community members	0.83	0.30
	I share relevant experience with other community members	0.83	0.31
	I share current information with other community members	0.98	0.05
Embodying	I try to build community tradition	0.69	0.52
	I try to increase community capability	0.66	0.57
	I develop my responsibility as a community member	0.83	0.31
	I try to implement the community value	0.97	0.06
Discussion	I have an opportunity to discuss valuable knowledge for the community	0.74	0.46
	I can discuss for the best solution in the community	0.84	0.30
	I can discuss the effort for community development	0.89	0.20

Dimension/Variables	Items	SFL	Error
Compromising	I can propose a change to contribute for community development	0.75	0.44
	I can adapt to the changes in the community	0.88	0.22
	I try to understand the different interest of the others	0.66	0.57
Dynamic Interaction	A member in the community shares experience through interaction with other members	0.62	0.62
	A member in the community gets a new skill through interaction with other members	0.71	0.50
	A member in the community looks for agreement to face different interest among them	0.71	0.50
	A member in the community shows reciprocal offering to reach agreement among others	0.83	0.31
	A member in the community builds relationship by developing the understanding among them	0.75	0.44
	A member in the community can accept different opinion from other members	0.71	0.50
	A member can co-operate with others to get better business way	0.75	0.44
	A member can help other member to develop better thinking	0.71	0.49
	A member in the community can search the best solution for other members	0.73	0.46
	A member in the community can get collective idea through the interaction with others	0.78	0.39
	A member in the community can give contribution for their business development through interaction with other members	0.69	0.53
	A member in the community can give valuable opinion for other member in the community	0.71	0.49
	A member in the community try to know each other	0.65	0.57
	A member in the community try to co-operate with others	0.74	0.46
	A member in the community try to communicate with others	0.76	0.43
	A member in the community try to strengthen their relationship with others	0.78	0.40
Dialog	Producers and consumers can communicate each other to increase consumer experience	0.80	0.35
	Consumers have an opportunity to share their experience with producers to give added value in return	0.74	0.45
	Producers can ask consumers to know their response toward their experience	0.84	0.29
Access	Producers accommodate consumers' opinion on how to improve goods/service quality	0.87	0.24
	Producers use many devices/tools to communicate with consumers for idea/opinion exchange	0.73	0.47
	Producers allow consumers to build their own experience	0.63	0.61
	Consumers can get information from producers for their evaluation	0.74	0.45
Risk Assessment	Producers give information to consumers about the quality assurance for their offering	0.70	0.51
	Producers give opportunity for consumers to assess strength and weaknesses of their offering	0.70	0.51
	Consumers can easily give critic for goods/service quality improvement	0.79	0.38
	Producers and consumers can accept new understanding through their interaction	0.96	0.08
Transparency	Consumers have abundant choices to fulfill their needs through producers' offering	0.63	0.61
	Producers are welcome for consumers' feedback to improve consumers' experience	0.98	0.04
	Producers and consumers show openness to share information	0.82	0.33
Harvesting	A member of community gets information to identify market need in the future	0.75	0.44
	A member of community gets information to face the problem in the field	0.80	0.36
	A member of community gets information to find new potential consumers	0.67	0.55
	A member of community can recognize the marketable product specification	0.68	0.54
Idea Generation	A member of community can think about new idea to develop their offering	0.86	0.25
	A member of community can analyze ideas to develop new product	0.65	0.57
	A member of community finds a new way to produce product that matches to the market need	0.60	0.64
	A member of community initiates to make their business better perform	0.72	0.48
Integration	A member of community can combine the resources that are needed	0.69	0.53
	A member of community is able to mix various ways to conduct their business	0.98	0.04
	A member of community can perform operational steps to implement new idea	0.96	0.08