

A VIRTUAL CO-CREATION MODEL OF THE HIJAB FASHION INDUSTRY IN INDONESIA

Lisandy Arinta Suryana*
Institut Teknologi Bandung

Lidia Mayangsari
Institut Teknologi Bandung

Santi Novani
Institut Teknologi Bandung

ABSTRACT

All stakeholders, internal and external, need to collaborate to coordinate their thoughts, meanings, and actions to create value together – value co-creation. Sources of ideas and competencies do not only come from internal stakeholders of business but also from external stakeholders such as customers. The lack of collaboration between internal and external stakeholders becomes the issue that may threaten business sustainability. It can be argued that the development of ICT, such as in the form of websites, makes it easier to co-create value. In this article, we present research that looks into virtual co-creation between customers and providers occurring in websites in the hijab fashion industry in Bandung. The research aims to redesign a conceptual model for virtual co-creation based on customers' motivation. Data were collected using questionnaires and analyzed using partial least square - structural equation modeling (PLS-SEM). The result shows that customers have certain motives when it comes to participating in customer-and-customer interaction and customer-and-provider interaction.

Keywords: Customers' Motivation; Virtual Co-Creation Model; Business Sustainability; Structural Equation Modeling; Service Science.

1. INTRODUCTION

Bandung as the capital city of the province of West Java is targeted to be a barometer for the development of Islamic fashion of the world in 2020 (Government of the Province of West Java website, 2015). Therefore, the sustainability of hijab fashion businesses in Bandung becomes a crucial issue. According to the CEO of Shafco Enterprise¹ (2016), hijab is defined as part of woman clothes that covers from the top to bottom of a Muslim body (hair, body, and foot). Around 70% of the Muslim fashion business was dominated by hijab, and the market always increases at least 7% each year (Ministry of Industry of Indonesia, 2016a). The large number of the Muslim population in Indonesia brings ample opportunities for Muslim fashion businesses. Moreover, the survey result of Gallup poll

*Corresponding author: Institut Teknologi Bandung, Jl. Ganesa No. 10, Bandung 40132, Indonesia. Email: lisandy.arinta@sbm-itb.ac.id

¹ Shafco Enterprise is one of the biggest and oldest companies that produces Islamic dress in Indonesia

(cited in Grace, 2016) found that Indonesia presents a unique case; the religiosity of people in Indonesia is in line with the increase in their per capita income, while most countries do the opposite. Many start-up businesses in Bandung create hijab fashion products and many of them are successful. Nevertheless, although the number of hijab businesses has increased rapidly, the market share of hijab fashion is around 20 million people or 10% of the Muslim population (Ministry of Industry of Indonesia, 2016b).

In the context of service science, businesses cannot separate the internal and external factors in order to develop their business value to be sustainable (Lusch & Vargo, 2014; Ramaswamy & Ozcan, 2014). Collaboration among stakeholders becomes the important issue. The lack of collaboration among stakeholders, including internal and external stakeholders, becomes the issue that may impede the development and sustainability of business. It means that the actors should collaborate and interact to coordinate their thoughts, meanings, and actions in order to create value together, called *value co-creation*. Rather than focusing only on internal stakeholders, hijab fashion businesses in Bandung need to maximize the role of external stakeholders such as customers and partners. Hijab fashion industry (i.e. provider) cannot underestimate the role of customers to support the business sustainability. Customer involvement can provide several benefits for provider such as reducing marketing cost through the positive word of mouth. The benefits will help provider to expand their market locally and globally (Ramaswamy & Ozcan, 2014). Therefore, to create customer involvement in value co-creation, Provider needs to first understand the customers' motivation.

In addition, Provider also needs to understand the behavior of their customers. The use of the Internet and Information and Communication Technology (ICT) enables customers to have high levels of intensity and dependencies to interact virtually. A research by the Association of Internet Service Provider in Indonesia (APJII) shows that internet penetration in Indonesia increased around 34% from 2013 to 2014. In particular, West Java became a province that had the highest number of internet penetration in 2014. In addition, the result also shows that there are 85% of internet users in Indonesia who accessed the internet using mobile phones and laptops or notebook. This shows that there is a potential market in the virtual world, triggering the existence of virtual customer environments (VCEs). Furthermore, this research aims to combine those aspects (i.e. customers, motivation, value co-creation, and VCEs) to develop a virtual co-creation model. It is hoped that this model will provide more understanding about virtual co-creation as a strategy to achieve business sustainability based on collaboration involving internal and external stakeholders. More specifically, this research addresses the following research questions: What motivate the customers to participate in virtual co-creation? How do stakeholders interact in the process of virtual co-creation?

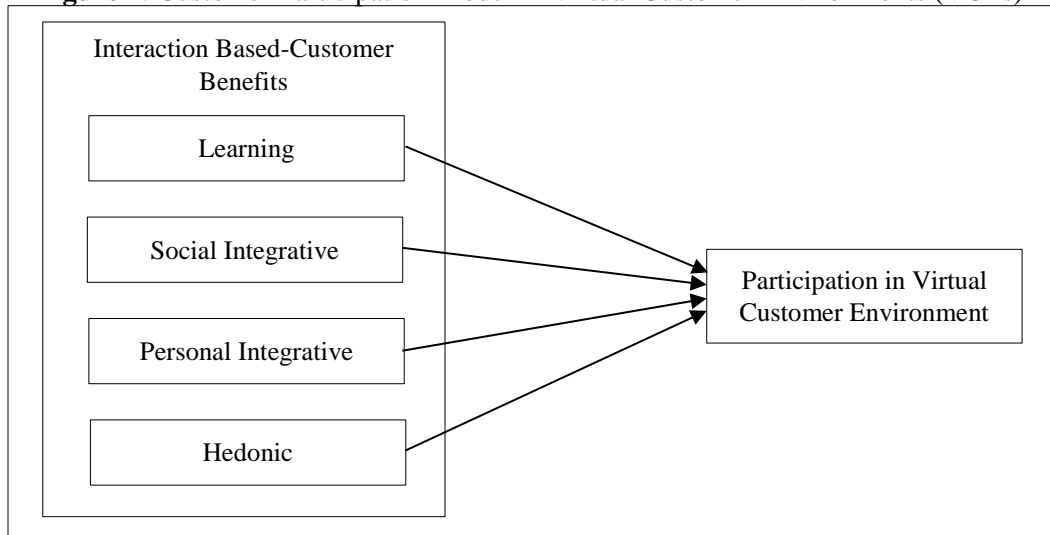
2. THEORETICAL BACKGROUND

2.1. Customers' Motivation

Motivation is the driving force within individuals that prompt them to act. It can be defined as the stimulation of any emotion or desire to do and act as what they want (Durmaz & Diyarbakirlioglu, 2011). Here, the use and gravitation (U&G) theory allows

for investigating customers' motivation for using media communication such as mobile internet (Katz et al. cited in Nambisan & Baron, 2007). According to Nambisan & Baron (2007), as seen in Figure 1, there are four benefits that individuals are motivated to have from participating in virtual customer environments (VCEs) which are adopted from U&G theory. They are learning, social integrative, personal integrative, and hedonic benefits. VCEs provide services ranging from online discussion forums to virtual design. They also allow Provider to involve their customers to give suggestions for product innovation and other general discussions about products.

Figure 1: Customer Participation Model in Virtual Customer Environments (VCEs)



Source: adopted from Nambisan & Baron (2007)

Learning benefits reflect product-related learning such as better understanding and knowledge about the products and their usage. By participating in VCEs, customer is possible to gain deeper insight about product and its components. In particular, learning benefits relate to are benefits that enhance the knowledge of customers about hijab products, including solutions about specific hijab product-usage problem faced by customers. Previous researches that conducted by Nambisan & Baroon (2007) and Franke & Shah (2003) found that learning benefit has positive influence to the participation in VCEs.

Social integrative benefits are benefits that stems from rational and social bonds while customer involve in VCEs. In case of virtual co-creation, it related to expanding the social network and enhancing the sense of belongingness between customers and Provider who interact in virtual co-creation. Moreover, the researches result from Shamim & Ghazali (2014), and Nambisan & Baroon (2007) shown that social integrative has positive influence to the participation in VCEs.

Personal integrative benefits are benefits relate to the self-efficacy and another certain kind of community status. This benefits stems from customers' product-related

knowledge and their ability to solve problems. It explains that by joining in virtual co-creation, customers want to enhance their reputation and derive satisfaction from influencing hijab product usage of other customers and also hijab product development. Research by Nambisan & Baroon (2007) and Hertel, Niedner, & Hermann (2003) shown that personal integrative has positive influence againts participation in VCEs.

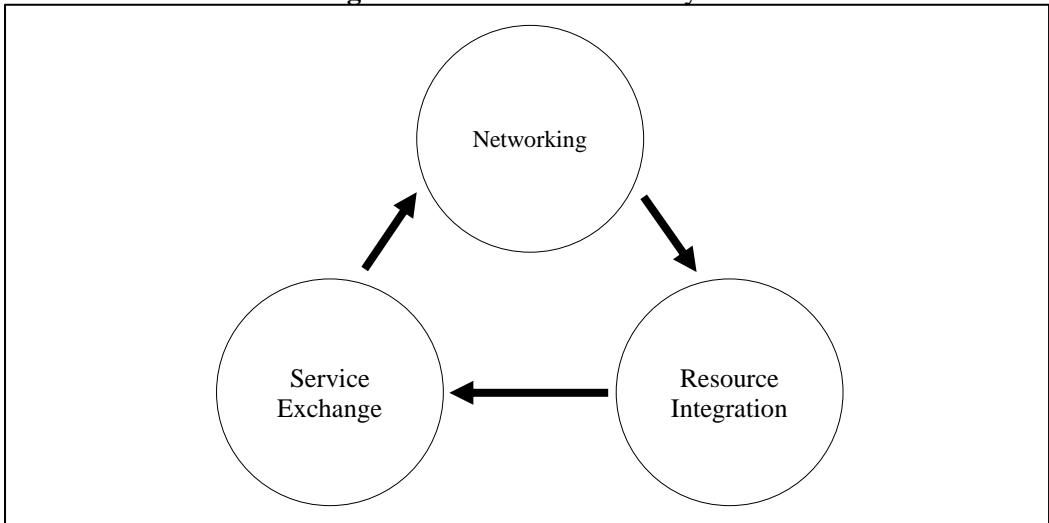
Hedonic benefits can be in terms of enjoyment, fun, pleasure, and entertainment, which derive idea generation, problem solving, and etc. Discussing and improving new idea of product with others might be delightful. Then, it will stimulate them to participate in VCEs Nambisan & Baroon (2007). In the context of hijab fashion industry in Bandung, hedonic benefits are indicated by enjoyment and entertainment to participate in virtual co-creation to support hijab product development. Previously, Nambisan & Baroon (2007) and Franke & Shah (2003) found that hedonic has positive influence to participation in VCEs.

2.2. *Virtual Co-creation Cycle*

Value co-creation is defined as a collection of values that people mostly prefer as a consequence of information exchange, intentional communication, knowledge-intensive interaction and any other purposes (Mayangsari et al., 2015; Spohrer & Maghlio, 2008). Goda & Kijima (2015) identify three phases of value co-creation process of a service ecosystem: networking, resource integration, and service exchange. Service ecosystem is relatively self-contained, self-adjusting systems of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange. Through the network, the stakeholders of a ecosystem will integrate various resources to create service value. Then, by interacting, they exchange service values with each other. These phases are modeled as a cycle (see Figure 2). In the case of hijab fashion businesses, all the stakeholders will create a network with each other and then share and integrate their resources, capabilities, and competencies to create added value of products. By service exchanges in the network, they will generate a new value that will support business sustainability. However, this value co-creation model proposed by Goda & Kijima (2015) does not explain customers' motivation to get involved in each phase of the value co-creation cycle or value co-creation in the virtual world. Virtual co-creation means that all of the value co-creation processes are operated in online media such as websites, social media, mobile apps, and so on.

Networking, resource integration, and service exchange represent virtual co-creation activities. Networking, as the first stage of value co-creation cycle, captures the desire of customers to interact and cooperate with other customers and hijab provider virtually. The second stage of value co-creation cycle is resource integration, which highlights the willingness of customers to share their information, technology, and other resources related to the hijab product development with other customers and provider virtually. And the last stage of value co-creation cycle is service exchange, which describes the desire of customers to exchange their knowledge, skills, and competencies with other customers and Provider virtually to create new value. After that, the process of value co-creation will feed back to the networking stage in the creation of new value. All those activities in virtual co-creation are practiced to support the development of hijab products. At the end, this interaction is expected to support the sustainability of hijab fashion businesses.

Figure 2: Value Co-creation Cycle

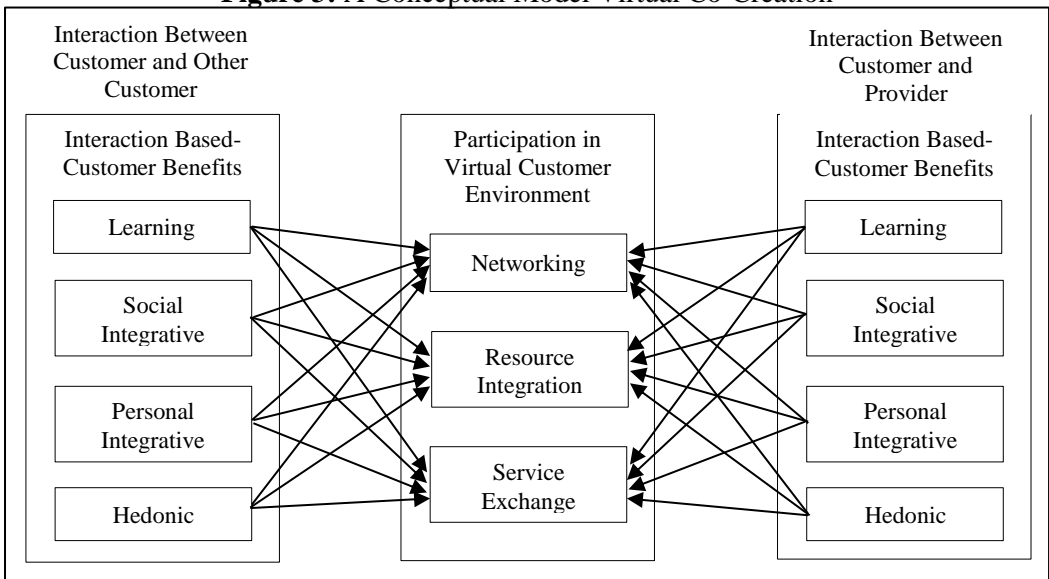


Source: adopted from Goda & Kijima (2015)

2.3. Virtual Co-Creation: A Conceptual Model

This research aims to understand customers’ motivation to participate in virtual co-creation with other customers and Provider in order to support hijab product development. We develop a conceptual model by integrating the four benefits that theoretically motivate individuals to participate in VCEs (i.e. learning benefit, social integrative, personal

Figure 3: A Conceptual Model Virtual Co-Creation



integrative, and hedonic benefits) and the value co-creation activities (i.e. networking, resource integration, and service exchange). This integration is expected to give insight about the interaction among internal and external stakeholders toward better performance and business sustainability more clearly. The whole conceptual model of virtual co-creation is explained by figure 3. This research does not have hypothesis to be proven since it is categorized as exploratory quantitative research.

3. METHODOLOGY

3.1. Data Collection

Data for this research were collected by distributing survey questionnaires in online media by using Google form and visiting customers directly. The questionnaire was developed in several steps. First, we selected existing indicators to measure each variable carefully. Then, we discussed with service science experts to get comments and suggestions to develop the indicators. A test for questionnaire readability also was done before it was distributed to the respondents. Validity and reliability tests were done in this research before the data was analyzed by using partial least square - structural equation model (PLS-SEM).

The indicators of the questionnaire were measured by using a Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree). The number of subjects more than 30 and less than 500 is appropriate for most research (Roscoe in Sekaran, 2006). Data were obtained from 100 female respondents chosen by purposive sampling. Respondents of this research were customers of hijab fashion industry in Bandung City, Indonesia.

3.2. Measures

Table 1 presents the summary of operational variables. The indicators in Table 1 are explained in the general term as the guideline to develop items of the questionnaire. We developed the items of the questionnaire by considering the context of hijab fashion industry and type of interaction (customer-and-customer interaction and customer-and-provider interaction).

The analysis of the conceptual model is separated into two parts. The first part examines the relationship between the exogenous and endogenous variables of customer-and-customer interaction. The second part examines the relationship between the exogenous and endogenous variables of customer-and-provider interaction. The authors believe that both types of interactions are different. Regarding to the type of VCEs, Porter & Devaraj (2014) explained that provider and customer has different goal to involve in VCEs. Fostering relationship with customers, facilitating service among customer, gaining marketplace insights, and enhancing profitability become Providers' goal in VCEs. While, from customer point of view, they involve in VCEs to interact around a similar interest. Those differences trigger difference treatment when customer involve in customer-and-customer interaction and customer-and-provider interaction. It might also create different expectation from both type of interaction.

Further, to analyze the structural model, this research uses 18 indicators to evaluate the interaction of customer-and-customer in virtual co-creation and 16 indicators to evaluate the interaction of customer-and-provider in virtual co-creation.

Table 1: Summary of Operational Variables

Variable	Indicators	Sources
Learning	<ul style="list-style-type: none"> Enhancing knowledge about product Enhancing knowledge about advances product Obtaining solution about specific product-usage problem 	Franke & Shah (2003); Nambisan & Baron (2007)
Social Integrative	<ul style="list-style-type: none"> Expanding social network Enhancing the sense of belongingness 	Nambisan & Baron (2007); Shamim & Ghazali (2014)
Personal Integrative	<ul style="list-style-type: none"> Enhancing status/reputation Deriving satisfaction from influencing distribution of information Deriving satisfaction from influencing product usage Deriving from influencing product design 	Hertel, Niedner, & Hermann (2003); Nambisan & Baron (2007)
Hedonic	<ul style="list-style-type: none"> Entertainment Interesting content Hobby 	Franke & Shah (2003); Nambisan & Baron (2007)
Networking	<ul style="list-style-type: none"> Willingness to have interaction/discussion Willingness to cooperate 	Vargo (2014); Goda & Kijima (2015)
Resource integration	<ul style="list-style-type: none"> Willingness to share information Willingness to use technology 	Vargo (2014); Goda & Kijima (2015)
Service exchange	<ul style="list-style-type: none"> Willingness to exchange knowledge Willingness to exchange competencies/skills 	Vargo (2014); Goda & Kijima (2015)

4. RESULTS

Structural equation modeling using partial least squares (PLS) was used in analyzing the data. It involves two steps: 1) assess the measurement model to test the validity and reliability of each indicator, and 2) assess the structural model to test the relationship between variables by investigating the effect size and t-value. The validity of the indicators is measured by evaluating the factor loadings, which should be at least 0.7 and, and the average variance extracted (AVE), which should be at least 0.5. Reliability is measured by evaluating the composite reliability, which should be at least 0.7 (Indrawati & Marhaeni, 2015). It is shown that all of the indicators are valid and reliable based on the above-mentioned criteria. There are two indicators of hedonic benefits that have factor loadings lower than 0.7 (0.683 and 0.640 each). In this case, the authors do not drop them given that this research is still in the development or exploratory process (Sholihin & Ratmono, 2013). Factor loadings around 0.5 – 0.6 are still tolerated.

In PLS, the structural model is measured by evaluating the R^2 and effect size (path coefficients). The value of R^2 indicates the variance of endogenous variable explained by

exogenous variables. There are three parameters of R^2 such as 0.67 (good model), 0.33 (moderate model), and 0.19 (poor model). The effect size represents the influence level of each exogenous variable to the endogenous variable. It also has three categories such as 0.02 (poor level of influence), 0.15 (average level of influence), and 0.35 (strong level of influence). Those effect sizes should have a t-value of at least 1.65 and 1.32 respectively to be considered significant at the 95% and 90% of confidence interval (Indrawati & Marhaeni, 2015). In order to assess the structural model, this research used 500 iterations in the calculation process by using SmartPLS 3.0.

4.1. Customer-and-customer Virtual Co-creation

Figure 4 and Table 2 presents the result of the structural equation modeling for customer-and-customer interaction in virtual co-creation. The result shows that Networking is only influenced positively by Social integrative and Hedonic. Learning, Personal integrative and Hedonic are positively and significantly related to Resource integration and service exchange while Social integrative is negatively and significantly related to Resource integration.

Compared to other exogenous variables, Hedonic gives the highest influence on all of the endogenous variables. Social Integrative has a negative influence on Resource integration. Moreover, based on the R^2 value, the whole model of virtual co-creation in term of customer-and-customer interaction can be categorized as a moderate model, indicating that the model has moderately substantial power to predict customers' motivation for virtual co-creation through interacting with other customers.

Table 2: Effect Size, T-value, and R^2 for Customer-and-customer Interaction in Virtual Co-creation

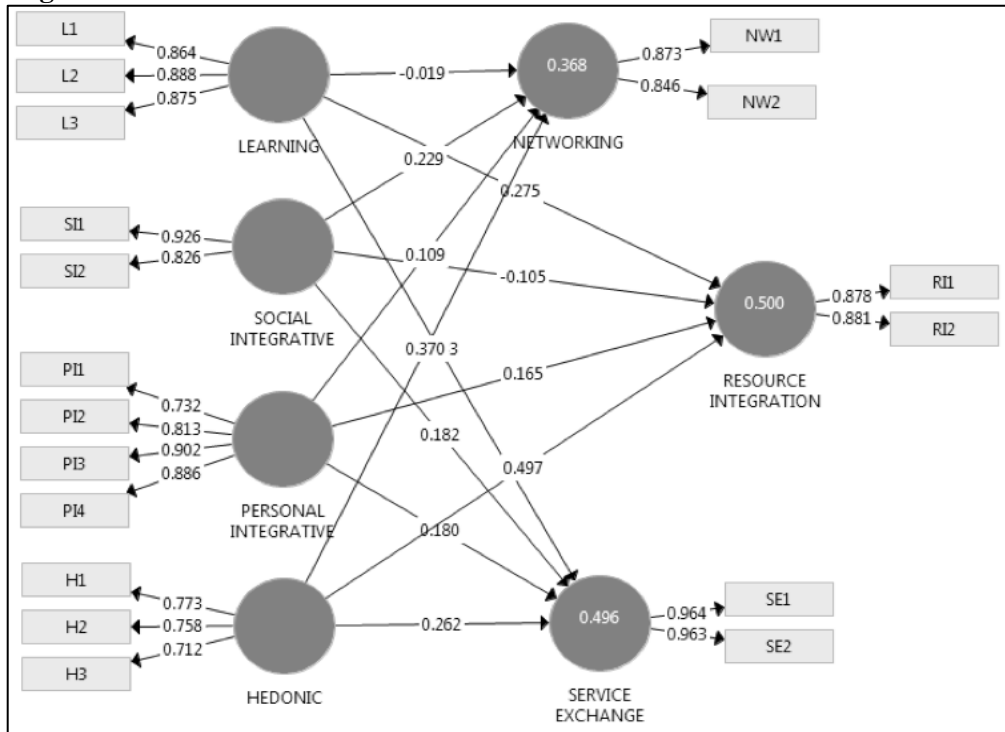
Relationship between Variables	Effect size	t-value	R^2
Learning → Networking	-0.019 ^{ns}	0.210	36.80%
Social Integrative → Networking	0.229*	1.597	
Personal Integrative → Networking	0.109 ^{ns}	0.839	
Hedonic → Networking	0.370**	3.258	
Learning → Resource Integration	0.275**	3.670	50.00%
Social Integrative → Resource Integration	-0.105*	-1.423	
Personal Integrative → Resource Integration	0.165**	1.697	
Hedonic → Resource Integration	0.497**	5.056	
Learning → Service Exchange	0.233**	3.005	49.60%
Social Integrative → Service Exchange	0.182 ^{ns}	1.117	
Personal Integrative → Service Exchange	0.180*	1.366	
Hedonic → Service Exchange	0.262**	2.994	

Notes: *0.9 significant level; **0.95 significant level; ns means not significant

4.2. Customer-and-provider Virtual Co-creation

The result of the second structural equation modeling analysis explains the relationship between endogenous variables and exogenous variables for customer-and-provider interaction, shown in Figure 5 and Table 3. The result shows that Learning, Social

Figure 4: PLS Result for Customer-and-customer Interaction in Virtual Co-creation



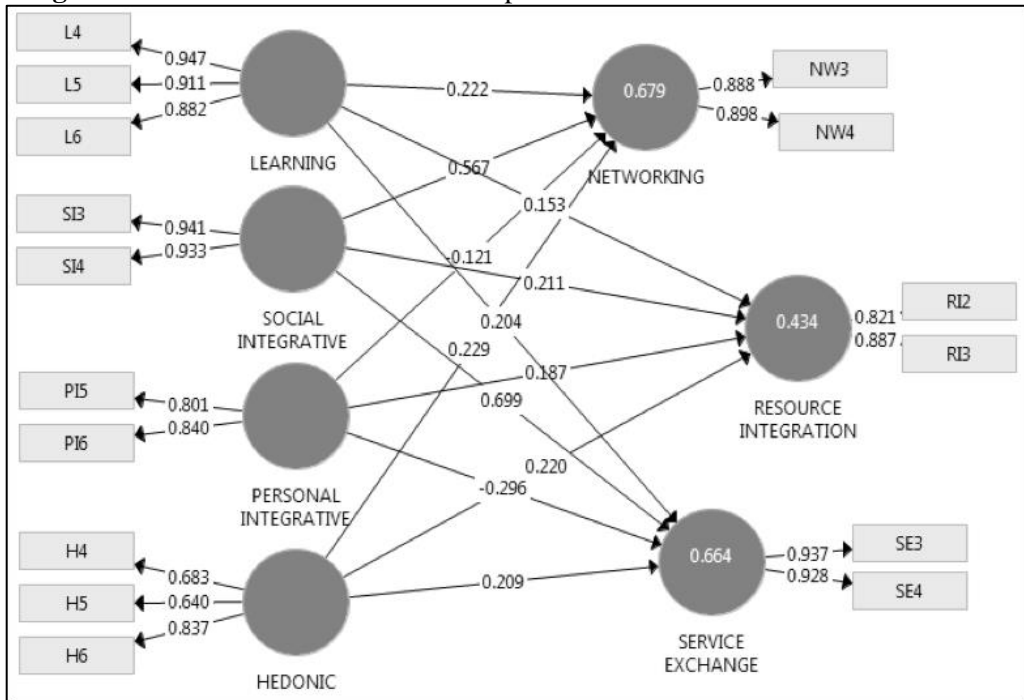
integrative, and Hedonic are positively significant toward Networking, Resource integration, and Service exchange while Personal integrative is positively significant toward Resource integration and negatively significant toward Service exchange. Unfortunately, personal integration is not significant toward Networking.

Table 3: Effect Size, T-value, and R² for Customer-and-provider Interaction in Virtual Co-creation

Relationship between Variables	Effect size	t-value	R ²
Learning → Networking	0.222**	3.189	67.90%
Social Integrative → Networking	0.567**	5.921	
Personal Integrative → Networking	-0.121 ns	-1.009	
Hedonic → Networking	0.229**	2.335	
Learning → Resource Integration	0.153**	2.080	43.40%
Social Integrative → Resource Integration	0.211**	1.660	
Personal Integrative → Resource Integration	0.187*	1.374	
Hedonic → Resource Integration	0.220**	2.438	
Learning → Service Exchange	0.204**	2.686	66.40%
Social Integrative → Service Exchange	0.699**	7.714	
Personal Integrative → Service Exchange	-0.296**	-3.727	
Hedonic → Service Exchange	0.209**	2.442	

Notes: * 0.9 significant level; **0.95 significant level; ns means not significant

Figure 5: PLS Result for Customer-and-provider Interaction in Virtual Co-creation



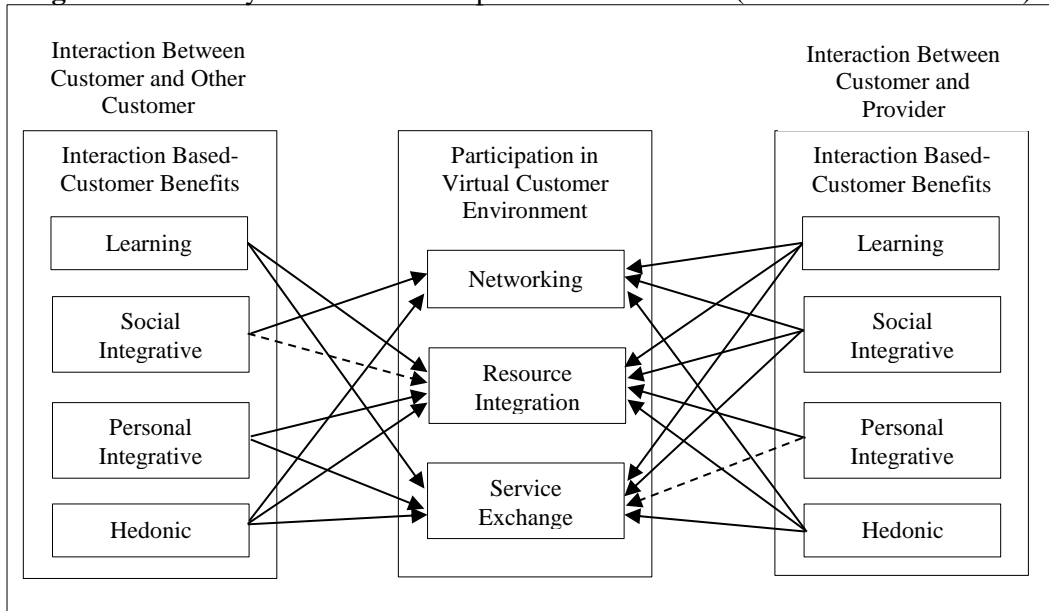
In this model, it is found that Networking and Service Exchange are most influenced by Social Integrative, while Resource Integration is most influenced by Hedonic. Moreover, according to the R^2 value, this entire model can be categorized as a moderate model, except the sub-model of Networking (which can be categorized as a good model). This result indicates that the model has substantial power to predict customers' motivation for virtual co-creation through interacting with Provider.

5. DISCUSSION

5.1. Summary of Research Findings

The whole result of this research indicates that the models of virtual co-creation (one for customer-and-customer and one for customer-and-provider interaction) have power to predict customers' motivation for virtual co-creation with other customers and provider. In summary, the resulting relationships between customer motivation (perceived benefits of virtual co-creation) and virtual co-creation activities based on PLS-SEM are shown in Figure 6. Solid arrows in Figure 6 indicate positive and significant relationship between exogenous and endogenous variables while dashed arrows indicate negative and significant relationship between exogenous and endogenous variables.

Basically, the variables for the customer-and-customer interaction model are same as the variables for the customer-and-provider interaction model. The difference between both

Figure 6: Summary of the Relationships between Variables (Two Models Combined)

models is the relationship between exogenous and endogenous variables. For customer-and-customer interaction, at the first stage of virtual co-creation cycle (Networking), the greater the opportunity to expand their social network and enhance the sense of belongingness with other customer(s), the greater the willingness to discuss and cooperate with other customer(s) in product development process virtually. Furthermore, the more entertaining and interesting the content of the virtual co-creation platform, the greater the willingness to discuss and cooperate with other customer(s) in product development process virtually. Whereas, customers do not appear to expect to get more knowledge about the product and ignore the impact toward their reputation and their power to influence other customer(s) given that Learning and Personal Integrative benefits have no significant impact on customer involvement in networking. It implies that a virtual co-creation platform needs to provide more visibility of peer customers' value and increase the opportunity for customer networking (i.e. Social integrative benefits), and create interactive experiences through interesting contents (i.e. Hedonic benefits).

For the second stage (i.e. Resource integration), all of the four benefits have significant effect toward resource integration. In order to derive customer involvement at the second stage, it is important to create a virtual co-creation platform that will enhance customers' knowledge about the product(s) and solve specific problems related to hijab product usage (i.e. Learning benefits). Regarding the Personal integrative benefits, it is also noticed that a virtual co-creation platform should support the customers to enhance their reputation in their social network and give them a chance to obtain satisfaction by influencing other customers (i.e. distribution of information and product-usage). This can be realized by connecting the customers in virtual co-creation platform to the larger online customer forum based on their interests and expertise. Customers also consider the content provided in a virtual co-creation platform as a Hedonic benefit. The greater the benefits in the three

aspects (i.e. Learning, Personal integrative, and Hedonic), the greater the willingness of customers to share their information and related resources toward product development process virtually. On the contrary, the lack of Social integrative benefits will increase customers' willingness to share their information and related resources toward product development process virtually. Social Integrative benefits entail the customers' social network and their sense of belongingness to the other customers. It may indicate that, at the second stage of virtual co-creation cycle, the product context rather than the social context assumes primacy given that the interaction effect of Social Integrative is found to be negative.

At the third stage (i.e. Service exchange), almost all of the benefits have a positively significant effect toward Service Exchange, except Social Integrative. It implies that the greater the Learning, Personal Integrative, and Hedonic benefits, the greater the willingness to exchange their knowledge, skills, and competencies to support product development process virtually.

For customer-and-provider interaction, Learning benefits, Social Influence, and Hedonic benefits are positively significant toward all virtual co-creation stages (Networking, Resource Integration, and Service Exchange). Therefore, the greater the Learning, Social Integrative and Hedonic benefits, the greater the willingness of customers to discuss and cooperate with other customers, the willingness to share their information and related resources, and the willingness to exchange their knowledge, skills, and competencies to support product development process virtually. Personal integrative has no significant effect toward Networking but is positively significant toward Resource Integration and negatively significant toward Service Exchange. It implies that in Resource Integration stage, the product context, as well as the social context, assumes primacy. At the end, a virtual co-creation platform needs to consider all of the four benefits to reach the third stage of the virtual co-creation cycle for both customer-and-customer interaction and customer-and-provider interaction. It is also intended to manage customer participation in the next virtual co-creation cycle in order to create another new value.

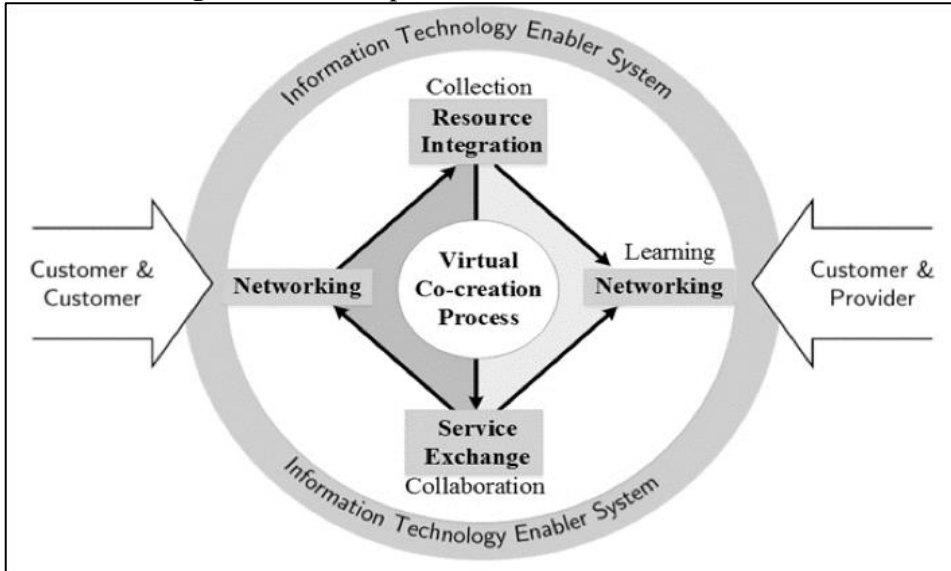
5.2. *Virtual Co-creation Model (VCM)*

A conceptual model of virtual co-creation, as seen in Figure 7, is the finding of this research. It has been developed and refined to include three main sections: 1) stakeholders of virtual co-creation, 2) relationship between customers' motivation and value co-creation activities, and 3) enablers of virtual co-creation model.

The *first* aspect of this model focuses on describing the stakeholders involved in virtual co-creation and their interaction. The main stakeholders in this model are provider and customer. The model accommodates both interactions between provider and customer and interactions between customer and customer. For example, for the customer-and-provider interaction, Nike was able to could increase their market share around 61% in 2009 through maintaining the relationship between provider and customer (Ramaswamy & Ozcan, 2014). In addition, the customer-and-customer interaction also becomes the focus of this model. This interaction becomes important because customers can influence other customers through word of mouth. Particularly in the context of Indonesia, Marketeers (2013) mentions that around 70% of customers believe in the recommendation given by

people close to them (e.g. friend, family, etc.). Overall, both customer-and-provider and customer-and-customer interactions are important to a business ecosystem and sustainability.

Figure 7: A Conceptual Model of Virtual Co-creation



The *second* aspect of this model explains the customers' motivation to be involved in virtual co-creation. Provider who develops virtual co-creation needs to understand the customers' motivation to gain insight into developing the menu or attractiveness of a virtual co-creation platform. The result of this research shows that by understanding their customers' motivation in each level of virtual co-creation interaction, provider is expected to gain more customer involvement in product development process as a benefit. It can be in terms of idea generation, product evaluation, promotion, and others. Customers also expect to gain benefits in terms of easiness to get information related to product-usage, expand their network, enhance their knowledge, reputation, and so on. Further, given that this virtual co-creation process is practiced based on benefits for all the stakeholders, provider will also get benefits from their interaction with their customers. It can be in terms of feedback, suggestions, or product evaluation from customers. Particularly, it is important to gain customer involvement in the first step of virtual co-creation through networking.

Another result shows that provider needs to know that the customers' motives in customer-and-customer interaction can be different from their motives in customer-and-provider interaction. In customer-and-customer interaction, customers may only want to gain social integrative and hedonic benefits by doing networking. Based on this, provider needs to develop a virtual co-creation platform that supports their customers to expand their social network, enhance the sense of belonging, enjoyment, and entertainment. While in customer-and-provider interaction, customers may not only expect to gain social integrative and hedonic benefits, but they also want to gain learning benefits. This means

that provider needs to provide information that can enhance the knowledge of customers about products and solutions to their problems in their virtual co-creation platform.

The *third* aspect of this model explains the enablers of virtual co-creation. As in the previous explanation, the Internet and ICT have developed rapidly over the world. These technological aspects become potential and important enablers to realize virtual co-creation. The Internet will allow stakeholders to interact with each other across geographical areas with lower costs. The ICT will enable stakeholders to access the virtual co-creation in terms of website, mobile apps, or other possible social media (Ramaswamy & Ozcan, 2014). Both enablers will be the differentiating aspects between value co-creation and virtual co-creation. In value co-creation, the Internet and ICT are less important, because the main activities are done face to face. In virtual co-creation, the Internet and ICT become the most important aspects that enable stakeholders to collaborate virtually.

This model is developed in the context of the hijab fashion industry in the city of Bandung, Indonesia. The hijab fashion industry in Indonesia is growing rapidly. It has a large potential market to be penetrated since Indonesia has a large population of Muslims. Although Bandung is targeted to be a barometer of Islamic fashion of the world in 2020, only few research have used the hijab fashion industry in Bandung as a case study. Moreover, information about the hijab fashion industry is also difficult to find (e.g. the structure of competition and cooperation in the hijab fashion industry, the market leader of the hijab fashion industry, the product life cycle of hijab fashion etc.). Therefore, this research is developed to find the cooperation structure in the hijab fashion industry in terms of virtual co-creation.

This conceptual model of virtual co-creation, as seen in figure 7, can be extended to industries that have similar characteristics with the hijab fashion industry in Bandung, Indonesia, for instance, the culinary industry and small and medium enterprises (SMEs) in Indonesia or other countries with no information about the structure of cooperation in terms of virtual co-creation.

5.3. *Limitations and Future Directions*

This study uses an exploratory quantitative approach. It aims to formulate the relationship between exogenous and endogenous variables of this study. Therefore, this study has no hypothesis to be proven.

In this research, the authors developed a model of virtual co-creation in the hijab fashion industry in Bandung, Indonesia as the case study and used the customers' point of view as the source of data. Overall, the research contributes to enhance the understanding of the implication of customer interaction (both customer-and-customer interaction and customer-and-provider interaction) in the hijab fashion industry for virtual co-creation process. However, customers are also likely to have different natural tendencies to interact in virtual co-creation in a different context. Therefore, although the basic structure of benefits in virtual co-creation are expected to be the same, the relative impact of the different benefits are likely to differ with regard to the possibility of different natural tendencies in terms of customer interaction.

Future work is expected to give more empirical evidence from the practical aspects of this virtual co-creation model. The next research should generate ideas from the provider, government, community and other stakeholders' point of view to get a deeper analysis of virtual co-creation model by using in-depth interview or focus group discussion.

6. CONCLUSION

Customers' motivation in virtual co-creation for customer-and-customer interaction is shown to be slightly different from customers' motivation in virtual co-creation for customer-and-provider interaction. By understanding their customers' motivation in both levels of virtual co-creation interaction, provider is expected to gain more benefits from customer involvement in product development process such as idea generation, product evaluation, promotion, and others. Customers also expect to gain benefits in terms of easiness to get information related to product-usage, expand their network, enhance their knowledge, reputation, and so on.

To involve the customer in virtual co-creation, a virtual co-creation platform needs to develop attractiveness that enables the expansion of social network and enhancement of a sense of belongingness between customers and provider, enjoyment, and interesting content. Further, a virtual co-creation platform also needs to provide information to enhance knowledge about product development and usage. In addition, a virtual co-creation platform needs to provide attractiveness that can support the customers and provider to enhance their reputation, derive satisfaction from influencing product usage to other customers and product development.

Overall, this research presents an extension to an existing virtual co-creation model, with three main aspects: 1) stakeholders of virtual co-creation, 2) relationship between customers' motivation and value co-creation activities, and 3) Internet and ICT as enablers of virtual co-creation model. Future work is expected to give more empirical evidence from the practical aspects of this virtual co-creation model using in-depth interviews and observation in the hijab fashion industry.

ACKNOWLEDGEMENT

This research is supported by the Indonesian Endowment Fund for Education (LPDP) Scholarship.

REFERENCES

- Durmaz, Y., & Diyarbakirlioglu, I. (2011). A theoretical approach to the strength of motivation in customer behavior. *Global journal of Human Social Science*, *11*(10), Online ISSN: 2249-460X Print ISSN: 0975-587X
- Franke, N., & Shah, S. (2003). How communities support innovative activities: Exploration of assistance among users of sporting equipment. *Research Policy*, *32*(1), 157-178.
- Goda, K., & Kijima, K. (2015). Modeling service ecosystem innovation. *Journal of Business and Management Science*, *3*(3), 85-91.

- Government of the Province of West Java. (2015, November 3). Bandung kiblat busana Muslim. *Government of the Province of West Java*. Retrieved April 21, 2016, from <http://www.jabarprov.go.id/index.php/news/14696/2015/11/03/Bandung-Kiblat-Busana-Muslim>
- Grace, N. (2016, April 11). Perubahan Pasar Hijab Dikalangan Konsumen Menengah Muslim. *Gulalives*. Retrieved April 25, 2016, from: <http://www.gulalives.co/2016/04/11/perubahan-pasar-hijab-dikalangan-konsumen-menengah-muslim/>
- Hertel, G., Niedner, S., & Hermann, S. (2003). Motivation of software developers in open source projects. *Research Policy*, 32(7), 1159-1177.
- Indrawati, & Marhaeni, G. A. M. M. (2015). Predicting instant messenger application adoption using a unified theory of acceptance and use of technology 2. *Proceedings of the 5th International Conference on Computing and Informatics, ICOCI 2015* (pp. 772-778). Istanbul, Turkey.
- Lusch, R. F., & Vargo, S. L. (2014). *Service-dominant logic premises, perspective, possibilities*. New York, NY: Cambridge University Press.
- Marketeers. (2013, March 22). *Sebanyak 70 persen konsumen percaya merek via rekomendasi teman*. Retrieved June 15, 2016, from <http://marketeers.com/sebanyak-70-persen-konsumen-percaya-merek-via-rekomendasi-teman/>
- Mayangsari, L., Novani, S., & Hermawan, P. (2015). Batik Solo industrial cluster analysis as entrepreneurial system: A viable co-creation model perspective. *Procedia – Social and Behavioral Science*, 169, 281-288.
- Ministry of Industry of Indonesia. (2016a). *Fashion dunia tertarik bangun kawasan industri di Serpong*. Retrieved April 21th, 2016, from Ministry of Industry of Indonesia website: <http://www.kemenperin.go.id/artikel/5217/profil/71/kode-etik>
- Ministry of Industry of Indonesia. (2016b). *Mimpi Indonesia: kiblat fashion Muslim dunia*. Retrieved April 21, 2016, from <http://www.kemenperin.go.id/artikel/4051/Mimpi-Indonesia:-Kiblat-Fashion-Muslim-Dunia>
- Nambisan, S., & Baron, R. A. (2007). Interaction in virtual customer environments: Implications for product support and customer relationship management. *Journal of Interactive Marketing*, 21(2), 42-62.
- Porter, C. E., Devaraj, S., & Daewon, S. (2014). A test of two models of value creation in virtual communities. *Journal of Management Information System* 30(1), 261-292
- Ramaswamy, V., & Ozcan, K. (2014). *The co-creation paradigm*. Renwood City: Stanford University Press.
- Sekaran, U. (2006). *Research method for business* (2nd Edition). Jakarta: Salemba Empat
- Shamim, A., & Ghazali, Z. (2014). A conceptual model for developing customer value co-creation behaviour in retailing. *Global Business and Management Research: An International Journal*, 6(3), 185-196.
- Sholihin, M., & Ratmono, D. (2013). *Analisis SEM-PLS dengan WarpPLS 3.0 untuk hubungan nonlinier dalam penelitian sosial dan bisnis*. Yogyakarta: ANDI.
- Spohrer, J., & Maglio, P. (2008). The emergence of service science: toward systematic service innovation to accelerate co-creation of value. *Production and Operations Management*, 17(3), 238-246.