Proceeding Book of ***The 6th ICMEM 2021****, 11-13 August 2021, Bandung, Indonesia*
ISBN*: 978-623-92201-2-9*

The Implementation of Interaction in the Value Co-Creation Process during Remote Work

Tiara Neysa Amadea* and Shimaditya Nuraeni

School of Business and Management, Institut Teknologi Bandung, Indonesia

E-mail address: tiara_neysa@sbm-itb.ac.id

Abstract - **Since the beginning of 2020, remote work has increased rapidly by companies due to the pandemic, giving employees the flexibility to choose where they work (e.g. home, coffee shop, etc.) However, the new way of work limits some interaction in terms of frequency or intention, which is important to develop value co-creation strategies between the company and customers/users, which results in value creation that benefits each other. Value co-creation is essential for helping start-up companies to remain competitive in the industrial market. This research studied the e-commerce, ride-hailing, and fintech start-up companies that should be agile in adapting to a dynamic market while facing the challenge from the pandemic hit. The interactions in the value co-creation process are assessed with the DART (dialogue, accessibility, risk-benefit and transparency) aspect from Prahalad and Ramaswamy (2004) concept. The findings highlight the differences perspective between company and customers concerning to interaction in value co-creation process, and value co-creation mediates partially the relationship between remote working and job satisfaction.**

Keywords – **Interaction (DART), Job Satisfaction, Remote Working, Start-Up, Value Co-Creation.**

I. INTRODUCTION

A. Background

Interaction is an occasion when two or more people communicate with each other, also react, and affect each other. We cannot avoid interaction in daily life because fundamentally, humans are social beings that always need communication. Interaction applies in many aspects, from trivial matters such as having a dialogue with friends; to complex things, for instance, negotiating in business that involves a group or organization. In business, interactions are classified as complicated matters. The communication activities are generally connecting internally and externally to other firms [13], therefore, the business can run well.

Through interaction and the Service-Dominant (S-D) logic concept, which focuses on service-centered, whereas knowledge and skills are ubiquitous that can be generated by all participants, can be used to optimize the business. In Service-Dominant (S-D), both customers and firms have their roles to get knowledge and skills. The firms are obligated to gather information as much as possible through dialogue or interaction [33] that involves the customers' and emphasize on customers' perspective [27]. Therefore, firms and customers are able to create value that benefits each other.

The understanding of the value stated here is something that is considered essential or beneficial to firms or customers. However, there is a significant difference between the firms' and customers' values. Customers measure the value according to the product's worth to other alternatives [7]. Contrarily, the firms aim to profit maximization to run the business. Despite the contradiction, firms' and customers' value has an intersection area that can be managed by both parties. At this rate, firms can increase adaptability and survivability [33] of the company. Besides, it is beneficial for customers and the company as an outcome of the Service-Dominant (S-D) logic concept [31].

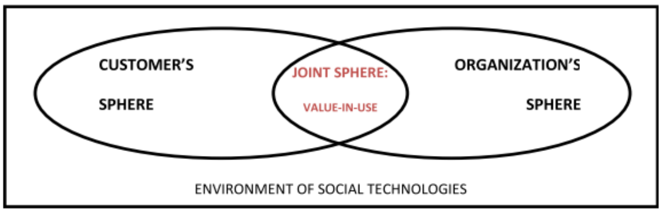

Fig. 1. Process of Co-Creation
Source: Skaržauskaitė (2013)

Within value co-creation, these intersection areas of values can be actualized that is called value-in-use as a result of an integrated dialogical process between firms/organizations and customers [31] (see Figure 1). Value co-creation is defined as a combination or joint creation to generate value between the firms and the customers [28]. In the value co-creation concept, all stakeholders have the ability to participate actively in managing to extend the resources whether contributing tangible or intangible resources by their differences in perspectives of value and how they create value [6]. In order to co-create value, the firms and customers must implement interaction during the process of value co-creation.

Interaction partakes a crucial role in the value co-creation process, reference [32] suggests that value co-creation is an interactional process and requires an integration of resources within and among service systems [33]. Considering interaction is critical, the researcher highlight how value-in-use fosters interaction, which can be assessed by the firm and customers. Table I summarizes several studies collected from reference [29] of literature review about value-in-use in both dimensions. As observed in Table I, five conceptual frameworks have

***ISBN**: 978-623-92201-2-9*

TABLE I
LITERATURE REVIEW

Title and Authors	Concept Value Co-Creation
Managing Co-Creation of Value (Payne, Storbacka and Frow, 2008)	Value Co-Creation Framework consists of: (1) Customer Processes → Relationship experience: emotion, cognition, behavior (2) Supplier Processes → Co-creation & relationship experience design: co-creation opportunities, planning and implementation metrics (3) Encounter processes → communication encounter, usage encounters, and service encounter
Value Co-Creation Model of Service Innovation: Symbiotic Hypergame Analysis (Novani and Kijima, 2010)	Four phases: (1) co-experience the service process; (2) co-define through mutual understanding between customer and provider; (3) Co-elevation (entity focused); (4) co-development (relation focused)
Co-Creation Experiences: The Next Practice in Value Creation (Prahalad and Ramaswamy, 2004b)	- Building blocks of interaction between the customers and firm: (1) Dialogue; (2) Access; (3) Risk-Benefit; (4) Transparency - Firm-consumer interaction consists of three elements: (1) The firm and (2) consumer as collaborators and competitors; (3) the intersection area is the market, where both parties co-create experiences of unique value
The Dark and Bright Side of Co-Creation (Gebauer, Füller and Pezzei, 2013)	Conceptual model of user behavior in online innovation communities: Sense of Community, Triggers (dis-/satisfaction with outcome, co-creation experience), Fairness, Behavior (WOM, WTP)
Competing through service: Insight from service-dominant logic (Lusch, Vargo and O'Brien, 2007)	Collaboration which shaped from (1) service that is provided directly/indirectly through an object; (2) reoriented toward conversation and dialogue with customers; (3) and value proposition that created by both parties; (4) finally planted with value networks and processes

been chosen from reference [29] pertaining to value-in-use by both dimensions (firms and customers) that facilitate the interaction in the value co-creation process. The plausible conceptual framework will be used in this research in the manner appropriate for the purposes of this research and capable of being measured concurrently by both parties in order to comprehend the realization of value co-creation. To begin with, the study from [27] proposes a conceptual framework in managing value co-creation and accentuates the roles of customers and suppliers that consist of customer processes which claim as the dynamic and interactive processes. However, this model by from reference [27] meant that application of value co-creation cannot be compared, due to the different measurements in supplier and customers. Second, reference [22] posits four phases to explain the service innovation process, including co-experience, co-definition, co-elevation, and co-development. However, the conceptual framework presented by reference [22] does not explicitly consider the practical activities to facilitate the experience that may create an interaction between customers and the firm.

Reference [9] developed a conceptual framework of user behavior in online innovation communities, including the triggers aspect, co-creation experience, fairness, and the sense of community which leads to the behavior of members in the community. The conceptual framework of reference [9] meant to be measured the conflict management of innovation community members. Hence, this conceptual framework does not relevant to this study since this research does not investigate a particular community and its behavior. Finally, the researcher agrees with reference [18] processes of value co-creation, however, it is still vague how to measure on every stage.

In accordance with reference [22] in the co-define stage that customers and firms must have mutual understanding after the co-experience stage (see Table I). Using conceptual framework by reference [28], the researcher enables to compare the perspectives of each party regarding the service quality, whether both parties have the same understanding by how the company provides service and how the company receives it which is measured by DART or dialogue, access, risk-benefit, and transparency, thus allowing them to interact in a way that benefits both parties.

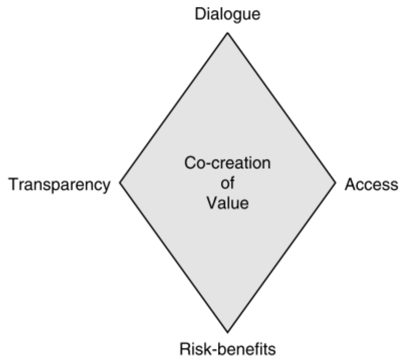

Fig. 2. Building Blocks of Interaction for Value Co-Creation
Source: Prahalad and Ramaswamy (2004)

Reference [28] develops four aspects to build interaction in the value co-creation process, it is called building blocks of co-creation. There are dialogue, access, risk-benefits, and transparency (DART) components (see Figure 2). Firstly, the dialogue is an interaction in the form of communication for both parties that implies a deep engagement. However, the dialogue requires the

***ISBN**: 978-623-92201-2-9*

same access and transparency to information to make a meaningful dialogue. Hence, customers have the ability to assess and act based on the risk-benefit of action and decision. Nevertheless, it can also be the inhibiting factor during the interaction process that leads to an incompletely successful value co-creation, if the four factors do not adequately execute.

Further, managing resources to create values can be implemented by either start-up or mature companies. Nevertheless, there are fundamental differences between mature and start-up companies in managing resources. Mature companies generally have a stable condition that is caused by enormous capital, and many routines incorporated by companies, but prevent the agility of companies in order to respond to their surroundings. Compared to mature companies, start-up companies have less stability, either financially and operational [19]. On the other hand, start-up companies tend to focus on rapid learning and adjustment to market changes [3].

During the COVID-19 pandemic, many companies both start-up and mature companies in Indonesia, are not solely struggling to keep their position in the market. Besides, both of them experience the same thing regarding the workforce employed by the company. Reference [19] supports the idea that mature companies have more ability to persevere during the COVID-19 pandemics that caused the remaining resources allocated supposing to restore and balance the company's condition agitated by the pandemic and acquire opportunities from their tremendous resources. Then, what about the start-up companies? The start-up companies capture the advantages of their capabilities in rapid learning and adaptation during the pandemic. Therefore, start-up companies can amplify the market advantages with a value co-creation strategy that focuses on customers' perspectives.

Within the remote work policy, each employee has different impacts on how they perform their job duties that are caused by various aspects. For example, accessibility influences the employees' ability in doing their job tasks on the internet due to the remote location, the availability of facilities, and equipment. Hence, in this situation, the company plays a vital role in facilitating all the work-related equipment (e.g., laptop, computer, printer, internet connection) and provides the information needed to support all job tasks while working remotely. This can assist employees in effectively conducting remote work, at the same time also help the employees in delivering value co-creation process [30] that could represent the job satisfaction of the employee.

B. Problem Statement

Amid the pandemic, many start-up companies are battling in maintaining their position in the market. This pandemic can be categorized as an environmental element challenge for start-up companies. Numerous challenges emerge as a result of the multiple changes that occur. For instance, the customers' habits that change their preferences in selecting products/services in the market due to economical and habitual reasons, as consequences, the businesses require to adjust to the new habit to remain their position in the market. Thus, start-up companies should be agile and adapt to the market situation in order to stabilize the company that can assist by applying collaboration with a customer called value co-creation concepts like the business strategy [17; 30]. This may lead to potentially indirectly helping the company to leverage its market position and enhance the value proposition of the company to its competitor.

Besides, there is a change in the new ways of working, and the interaction may decrease due to the time spent working at home [5]. On the contrary, reference [31] claims in the journal the consequences of joint activities or value co-creation are an admirable of interaction between the parties to have the same access and transparency to the information to build a proper interaction [28]. In point of fact, not everyone has similar accessibility to the information in their own place. That eventually affects the level of transparency and risk-benefit measurement of the individual. Hence, the dialogue does not properly implement. That implies the interaction in the value co-creation process is arduous to be met between the employee and customers' during the remote working policy. Another consequence of the limitation is the direct interaction during remote work also surmises to influences the degree of job satisfaction of employees. Therefore, this research will examine different perspectives on value co-creation in terms of interaction between the employees and the customers, and the implication of remote working, value co-creation, and job satisfaction.

Thus, this research is expected to answer these questions in the following below.

1. How is the difference in perspective between employees in the company and customers in the interaction of value co-creation process occurrence Start-Up industries during remote working?
2. What is the relationship between remote working on the value co-creation process regarding interaction?
3. How does remote working impact the job satisfaction of start-ups' employees?
4. What is the relationship between remote working, value co-creation, and job satisfaction?

In order to answer the research questions, the researcher developed these hypotheses based on the purpose of this study.

H1. Customers' Perspective of Value Co-Creation has a significant difference to Employees' Perspective in Interaction of Value Co-Creation Process during Remote Working.

H2. Remote Working has a correlation with Interaction in Value Co-Creation Process.

H3. Remote Working has a significant influence on Value Co-Creation.

ISBN: 978-623-92201-2-9

H4. Value Co-Creation has a significant influence on Job Satisfaction.
H5. Remote Working has a significant influence on Job Satisfaction.
H6. Value Co-Creation Mediates the relationship between Remote Working and Job Satisfaction.

II. METHODOLOGY

A. Research Methodology

The research methodology is aimed for the researcher to construct the problem, objectives and find data to answer the question. For this research, the researcher uses quantitative methodology through a questionnaire distributed online as a method to gather the primary data and information from the target respondent. Further, secondary data is also used from journals, papers, and articles available on the internet. The researcher implements the non-random sampling method for customers and employees' respondents that is purposive sampling or judgmental sampling. Purposive sampling is used when the sample size will be small, which this method has required specifications for the sample and who fulfill these criteria that can be respondents of this research [26].

B. Sampling and Population

The population of the target respondent of this research is divided into two types. The first subject is young-adult ages (18-35 years old) who work at a Start-Up Company in ride-hailing, e-commerce, and financial technology (FinTech) industries. The second subject is people ages 18-35 years old as customers or users in ride-hailing, e-commerce, and financial technology (FinTech) industries in Indonesia.

Further, the customers respondent is targeted in the minimum ratio of observations to variables is 5:1 [11]. Since there are 19 variables for the customers, hence the minimum of the observation is in the total of 95 respondents that targeted the customers or users of the three industries (ride-hailing, e-commerce, and financial technology (FinTech) industries). As for employees' target respondents, the researcher uses a small sample size, with a total of 30 respondents [11] in order to get proper normality of the data. This number was chosen because the researcher considers that reaching employees in these industries (ride-hailing, e-commerce, and financial technology (FinTech) industries) may not be possible to gather large samples during the pandemic rather than obtaining customer respondents. Finally, this research collected 33 of employees' respondent and 145 of customers' respondent

Young-adult employees are selected due to Start-Up companies tending to employ young-adult ages. Moreover, young-adult substantially contributes to the creation, which is essential for the growth of Start-Up companies [24]. This research takes place in Greater Jakarta, Bandung, and Surabaya areas.

C. Research Measurement and Variable

There are a total of three variables in this research, including.

1) *Value Co-Creation* is a combination of joint resources integrating actors to generate a value between the company and the customers [28, 8]. It creates value that is beneficial for customers and the company as an outcome of the Service-Dominant (S-D) logic concept. There are building blocks of interaction to facilitate the customers' experience during value co-creation, that composes of four aspects [28]: that are:

a. *Dialogue* also implies an interactive process for learning, knowledge sharing, and development to the extent of getting a new stage of understanding between companies and consumers [4, 24]. Dialogue entails interaction, engagement, and a proclivity to act on both sides.
b. *Access.* Access is the ability to obtain information and tools. As mentioned before, accessibility is one of the aspects that can hinder the dialogue between the company and the customer.
c. *Risk-Benefit.* It is about the probability of whether the benefits and the compromise risks. Based on the reference [28], risk-benefit is a course of action and decision. The risk-benefit of the employees and the customers is determined by the three aspects previously, which are dialogue, access, and transparency.
d. *Transparency.* Transparency refers to the openness of firms' information to the public. Transparency to the information regarding the company/products/services could be easier for the customers and the employees themselves to judge and make decisions.

2) Remote Working. People who work remotely are known as remote workers, which is anyone who is based at home and uses it as their main place of work at least for two days [21]. Besides, remote work also implies the workers have the flexibility to decide the location to perform their tasks, it can be at home, co-working spaces, or coffee shops [2].

3) Job Satisfaction. Job satisfaction depicts as a set of a feeling and faith about the current job [10]. The positive or negative feelings influence their traits toward the company and their work quality on their job. In terms of value co-creation, reference [29] proclaims that job satisfaction could underpin value co-creation's theoretical foundation. In value co-creation concept that involves active participation from customers and company, not solely emphasizing the customers, but the employees' perspective in the value co-creation that needs active participation is worth considering.

III. RESULTS

A. Validity and Reliability

This study uses Pearson Correlation to measure each question's validity in the questionnaire distributed to the target respondent. The researcher decided to utilize 30 respondents from each group to conduct the validity test before continuing for the next steps. The higher the correlations designate the overlap of information, so the validity estimates are likely to be valid [23]. Thus, the Pearson correlation coefficient yielded above the critical value of Pearson correlation of n=30 at 0.05 significance level is 0.361 for both groups.

In order to display the reliability, the researcher implements Cronbach alpha for each construct. With a temporary number of respondents in the amount of 30 respondents from each group to test the internal consistency of each construct. The Cronbach alpha test yielded a score between 0.798 and 0.906 as high to an excellent level of reliabilities. Unless the score of Cronbach alpha for remote working variable value is classified to moderate level of reliability [12], that has amounted to 0.567. Hence, all constructs in this study have acceptable reliabilities.

B. Differences Perspective of Employees and Customers in Value Co-Creation Process

The two samples t-test is executed to examine the value co-creation occurrence in perspective between start-up employees and customers. The two-sample test used is the Mann-Whitney test due to violating the normality of customers' data and homogeneity of variances using ANOVA in the amount of 0.021 ($p < 0.05$). Mann-Whitney test is a non-parametric test when the assumptions are not met [12]. Besides, this test can be used in small sample sizes [20]. With the total respondent of 33 samples of employees and 145 samples of customers collected are being summarized into mean rank and the sum of rank that is illustrated in Table II.

TABLE II
DATA SUMMARY

Group	N	Mean Rank	Sum of Rank
Employees	33	106.59	3517.5
Customers	145	85.51	0.880

TABLE III
MANN-WHITNEY TEST RESULT

	Value Co-Creation
Mann-Whitney U	1828.5
Asymp. Sig. (2-tailed)	0.035
Exact Sig (2-tailed)	0.034
Exact Sig. (1-tailed)	0.017

Table II shows the data summary of two populations, with the mean rank of employees and customers correspondingly 106.59 and 85.51. It implies that the mean rank of employees' start-up companies regarding interaction in the value co-creation process during remote working is more remarkable than customers' mean rank. Further, Table III depicts the Mann-Whitney test result between the perspective of interaction measured by the DART component between the employee of Start-Up companies and customers during the remote working policy. Within the sample size of this research, it is not appropriate to use a p-value of asymptotic significance. Therefore, it is recommended to overlook the exact sig. (2-tailed) value [15] that is amounted to 0.034. The Mann-Whitney test result reiterates that it rejects the null hypothesis, and there is a statistically significant difference between employees and customers/users since the significance of the Mann-Whitney test is equal to 0.034 ($p < 0.05$).

However, if the samples are equal, both employees and customers utilized 33 respondents, Mann-Whitney test yielded no significant difference in the interaction of value co-creation during remote working. It indicates that the higher the samples have resulted in a substantial difference between the two groups.

C. Correlation between Remote Work and Value Co-Creation

The following step measures the relationship between remote working situations and value co-creation in terms of interaction. Thus, the researcher wants to find out more about the relationship between remote working and value co-creation and which factors most influence the quality of value co-creation during remote working by using Pearson correlation. Table IV delineates the result of the Pearson correlation between two variables.

TABLE IV
PEARSON CORRELATION RESULT

Var. 1	Var. 2	Correlation Coef.	Sig.	Result
(Remote Working) RW	Value Co-Creation (VCC)	0.521**	0.002	Significant
RW	Dialogue	0.54**	0.001	Significant
RW	Accessibility	0.476**	0.005	Significant
RW	Transparency	0.281	0.113	Not Significant
RW	Risk-Benefit	0.367*	0.036	Significant

**significant at the 0.01 level; *significant at the 0.05 level

Table IV exhibits that there was a moderate, and positive correlation between remote working and value co-creation, which was statistically significant amounted to 0.521 of correlation coefficient at 0.01 level. Thus, the researcher delves deeper, which component of value co-creation has the most correlation in a remote working situation. Dialogue resulting in a score of 0.54 as the strongest correlation component that is statistically significant at 0.01 level. Followed by accessibility with a moderate correlation that accounted for 0.476 that is statistically significant at 0.01 level, and risk-benefit with a weak correlation score of 0.367, which is statistically significant at 0.05 level. Otherwise, transparency is the only component that has no correlation in remote working circumstances that cannot be generalized to the population. In conclusion, there is a strong correlation between the remote working policy used by the company and the implementation of value co-creation, with supported by three components including dialogue, accessibility, and risk-benefit that can be generalized to the population.

***ISBN**: 978-623-92201-2-9*

D. Relationship of Remote Working, Value Co-Creation, and Job Satisfaction

First, the researcher executed regressions to comprehend the impact of each variable on another that separated into two models that report in Table V. In the first model, remote working (RW) plays as independent, whereas value co-creation (VCC) is the dependent variable.

$$\textit{Value Co-Creation (VCC)} = 1.442 + 0.567RW \quad (1)$$

Equation 1 presents that remote working (RW) has a positive relationship to value co-creation (VCC) and statistically significant with p-value of 0.002 ($p < 0.05$) [11]. Further, the amount of 27.2% of the variance in the measure of value co-creation can be predicted by the model (see Table V).

The second model, remote working (RW) and value co-creation (VCC) perform as independent, whereas job satisfaction act as the dependent variable. Equation 2 denotes the regression of the second model.

$$\text{Job Satisfaction (JS)} = 0.070 + 0.556\text{RW} + 0.438\text{VCC} \quad (2)$$

Equation 2 shows that remote working and value co-creation has a positive relationship with job satisfaction. In addition, p-value of remote working and value co-creation correspondingly 0.010 and 0.025 ($p < 0.05$), which statistically have significant influence on job satisfaction [11]. In the amount of 47.5% of variance that is accounted to be measured by the model (see Table V*)*.

TABLE V
REGRESSIONS RESULT

Model		Unst. Coef Beta	Stand. Coef. Beta	Sig.	R-squared	Adj. R-squared
1	Constant	1.442		0.009	0.521	0.248
	RW	0.567	0.521	0.002		
2	Constant	0.07		0.907	0.475	0.440
	RW	0.556	0.425	0.010		
	VCC	0.438	0.364	0.025		

The next stage is to assess the magnitude of the relationships between variables and analyze esteem co-creation as mediating variables utilizing path analysis. Continuing from the previous regression results (regression models I and II) to construct the path diagram which shows the importance of predictor variables or standardized beta value of each variable that resulted in Figure 3.

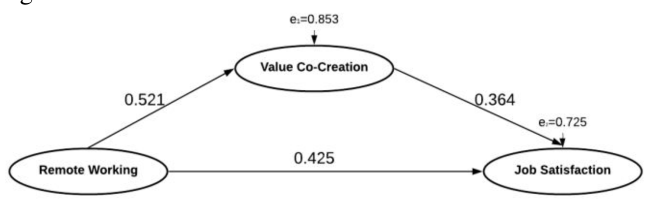

Fig. 3. Path Diagram

Figure 3 describes that remote working (RW) has a standardized beta value of 0.521 to value co-creation (VCC) and 0.425 to job satisfaction (JS). In contrast, value co-creation (VCC) as mediating variable has 0.364 importance to job satisfaction (JS) variable. The path diagram is used to calculate the direct and indirect effects of variables. The findings are shown in Table VI.

TABLE VI
DIRECT, INDIRECT AND TOTAL EFFECT IN PATH ANALYSIS

Paths	Direct	Indirect	Total
Remote Working (RW) → Value Co-Creation (VCC)	0.521	-	0.521
Value Co-Creation (VCC) → Job Satisfaction (JS)	0.364	-	0.364
Remote Working (RW) → Job Satisfaction (JS)	0.425	0.19	0.615

According to Table VI, remote work has the highest total effect on job satisfaction in the amount of 0.615, derives from the total direct effect of 0.425, and the indirect effect of remote working is 0.19 (0.521x0.364). Thus, it can be seen that the z test (comparison between direct and indirect effect) of the direct effect of remote working to job satisfaction is greater than the value of the indirect effect (0.425>0.19), which means the z test is not significant. Otherwise, since remote working and job satisfaction variables are significant, therefore it can be concluded as partial mediation as a presence of direct effect [14].

TABLE VI
HYPOTHESIS RESULT

Hypothesis	Results
H1. Customers' Perspective of Value Co-Creation has a significant difference to Employee's Perspective of Interaction in Value Co-Creation Process during Remote Work	Supported
H2. Remote Working (RW) has a Significant Correlation on Value Co-Creation (VCC)	Supported
H3. Remote Working (RW) has a Significant Influence on Value Co-Creation (VCC)	Supported
H4. Value Co-Creation (VCC) has a Significant Influence on Job Satisfaction (JS)	Supported
H5. Remote Working (RW) has a significant influence on Job Satisfaction (JS)	Supported
H6. Value Co-Creation (VCC) Mediates the Relationship Between Remote Working (RW) and Job Satisfaction (JS)	Supported

IV. DISCUSSION

This study was intended to gain a deeper understanding of the implementation of interaction in value co-creation during remote work policy in employees' perspective of start-up companies in Indonesia and its implication on job satisfaction. Several key findings for further discussion arise from this research regarding the occurrence of value co-creation during remote work and its effect on job satisfaction. First, the results of this investigation show the differences of interaction in value co-creation between employees and customers that are measured by DART (dialogue, accessibility, risk-benefit, and transparency) aspects. It was observed that the customers perceive lower than the employees perspective since the employees regard that they give something more in order to interact with customers that were shown from the Mann-Whitney test result (see Table III). In conclusion, value co-creation in terms of interaction does not carry out optimally yet.

Second, it is statistically evident that remote working has a moderate correlation in delivering the throughout of value co-creation from the employees' perspectives. Thus, the four components measured an interaction in the value co-creation process, including dialogue, accessibility, risk-benefit, and transparency, drive the significant correlation of remote working and value co-creation components. The dialogue component accounts for most remote working associates with value co-creation. Indeed, dialogue is the most substantial value co-creation aspect that requires an actual involvement between the company and customers [31]. Reference [4] also supports that dialogical interaction is the fastest way of learning collaboratively and thus generates value. However, dialogue cannot run optimally, especially during the new way of work that almost all interaction takes advantage of the internet.

It is followed by accessibility and transparency with respectively have a moderate and weak correlation with remote working. Dialogue is a critical one, however, if it is not followed by the accessibility to information regarding the product/service, the co-creation process hardly to happen. Reference [1] argues that the company must strive to facilitate access to generate and deliver their product or service offerings more accessible to customers. Hence, customers will be better able to make decisions and take action in the value co-creation process if they are aware of the risks and benefits support by access to information of product/service during remote working. Thereby, the lack of accessibility during remote working also affects how the company facilitates the information regarding the risk-benefit of products/services. Nevertheless, transparency is one of the components that are not significant to remote working situations. It means that the transparency component has no correlation with the remote working situation. It might be caused by the transparency indicates the company's integrity and a form of commitment to be transparent to the public [1], instead of under particular working conditions.

Third, Reference [31] claims the consequences of collaboration are admirable of interaction between the parties that support by DART aspect to build a proper interaction. On the other hand, in remote working situations, many companies adapt to the new ways of working. As a consequence, the interaction decreases and is limited to interaction through virtual communication. Therefore, the admirable interaction is arduous to be met. It is aligned with the findings in this study that remote working situations impact the interaction in the value co-creation process.

Fourth, value co-creation has an influence on the level of employees' job satisfaction due to participation from customers that might leverage the employees' achievements, and boost self-esteem [16]. This result is consistent with reference [34] findings that the active involvement of customers in the value co-creation process could reduce employees' stress on their job and improve job satisfaction. To conclude, the value co-creation process that needs active participation affects the level of job satisfaction to some extent.

The fifth, remote working policy makes employees have flexibility where they work lead them to rely upon their abilities. As a matter of fact, each individual possesses different skills pertaining to technology and information. Therefore, the company plays a crucial role in helping the employees in adapting the new way of working. This aligns with the result of this study that remote working situation has an impact on job satisfaction level. For example, how the company facilitates their employees during the remote working policy, the management support to employees, etc.

Finally, the relationship between remote working, value co-creation and job satisfaction is that the value co-creation partially mediates the relationship between remote working and job satisfaction with the presence of a direct effect. Three variables including remote working, value co-creation, and job satisfaction evidently have significance to each other. However, it should be noted that value co-creation is not the only cause that makes job satisfaction significantly increases, besides value co-creation also involves customers during the process. A lot of things outside this study that affect more to job satisfaction.

V. CONCLUSION

Many start-up companies struggling to keep their position in the market. Remote working surmises an aspect that inhibits the value co-creation between companies from the employee to the customers. The study's objectives were achieved by utilizing a quantitative methodology, and it can be concluded as follows.

Through the findings of this research, that there are differences in perspective of realization of value co-creation process in terms of interaction. Additionally, there are influences between remote working towards value co-creation. It is evident that remote working has a moderate correlation to delivering value co-creation by the company. Thus, after the researcher delves deeper into the components that also have a correlation with remote working which are dialogue, accessibility, and risk-benefit components of interaction in the value co-creation process. This means value co-creation needs to be improved during the pandemic in order to keep the company's position in the market.

Last but not least, value co-creation (VCC) partially mediates between remote working (RW) and job satisfaction (JS). Three variables which are remote working, value co-creation, and job satisfaction evidently have significance to each other. Nevertheless, it should be noted that there are numerous factors that influence job satisfaction more than value co-creation that were not investigated in this study.

ACKNOWLEDGMENT

The author acknowledges Shimaditya Nuraeni as author's supervisor for her insightful and constructive advice during this research, and also thank you for its financial support of this study.

REFERENCES

[1] Albinsson, P. A., Perera, B. Y., & Sautter, P. T. (2016). DART scale development: Diagnosing a firms readiness for strategic value co-creation. *Journal of Marketing Theory and Practice*, *24*(1), 42–58. https://doi.org/10.1080/10696679.2016.1089763

[2] Allen, T. D., Golden, T. D., & Shockley, K. M. (2015). How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*, *16*(2), 40–68. https://doi.org/10.1177/1529100615593273

[3] Andrén, L., Magnusson, M., & Sjölander, S. (2003). Opportunistic adaptation in start-up companies. *International Journal of Entrepreneurship and Innovation Management*, *3*(5–6), 546–562. https://doi.org/10.1504/ijeim.2003.003942

[4] Ballantyne, D., & Varey, R. J. (2006). Creating value-in-use through marketing interaction: The exchange logic of relating, communicating and knowing. *Marketing Theory*, *6*(3), 335–348. https://doi.org/10.1177/1470593106066795

[5] Blok, M. M., Groenesteijn, L., Schelvis, R., & Vink, P. (2012). New ways of working: Does flexibility in time and location of work change work behavior and affect business outcomes? *Work*, *41*(SUPPL.1), 2605–2610. https://doi.org/10.3233/WOR-2012-1028-2605

[6] De Silva, M., & Wright, M. (2019). Entrepreneurial co-creation: societal impact through open innovation. *R and D Management*, *49*(3), 318–342. https://doi.org/10.1111/radm.12362

[7] Fontanella, C. (2020, April 9). *What Is Customer Value? (& How Your Business Can Generate It)*. HubSpot. https://blog.hubspot.com/service/customer-value

[8] Frow, P., Nenonen, S., Payne, A., & Storbacka, K. (2015). Managing Co-creation Design: A Strategic Approach to Innovation. *British Journal of Management*, *26*(3), 463–483. https://doi.org/10.1111/1467-8551.12087

[9] Gebauer, J., Füller, J., & 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. https://doi.org/10.1016/j.jbusres.2012.09.013

[10] George, J.M. and Jones, G.R. (2008). Understanding and managing organizational behavior. Fifth ed. Pearson.

[11] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate Data Analysis. In *Pearson*. https://doi.org/10.4324/9781351269360

[12] Hinton, P., McMurray, I., & Brownlow, C. (2004). SPSS Explained. In *SPSS Explained*. https://doi.org/10.4324/9780203642597

[13] Holmlund, M. (2004). Analyzing business relationships and distinguishing different interaction levels. *Industrial Marketing Management*, *33*(4), 279–287. https://doi.org/10.1016/S0019-8501(03)00057-9

[14] Iacobucci, Dawn (2008) *Mediation Analysis*, *SAGE Publication*.

[15] Karadimitriou, S. M., & Marshall, E. (2015). Mann-Whitney U Test. *Sheffield Hallam University*. https://doi.org/10.4135/9781412983907.n1115

[16] Loades, S. T. (2018). *The Impact of Value Co-Creation: A Service Employee Perspective*.

[17] Löfberg, N., & Åkesson, M. (2018). Creating a service platform – how to co-create value in a remote service context. *Journal of Business and Industrial Marketing*, *33*(6), 768–780. https://doi.org/10.1108/JBIM-10-2015-0202

[18] Lusch, R. F., Vargo, S. L., & O'Brien, M. (2007). Competing through service: Insights from service-dominant logic. *Journal of Retailing*, *83*(1), 5–18. https://doi.org/10.1016/j.jretai.2006.10.002

[19] Ma, H., Lang, C., Sun, Q., & Singh, D. (2020). Capability development in startup and mature enterprises. *Management Decision*. https://doi.org/10.1108/MD-03-2020-0313

[20] Nachar, N. (2008). The Mann-Whitney U: A Test for Assessing Whether Two Independent Samples Come from the Same Distribution. *Tutorials in Quantitative Methods for Psychology*, *4*(1), 13–20. https://doi.org/10.20982/tqmp.04.1.p013

[21] Nickson, D., & Siddons, S. (2012). Remote working: Linking people and organizations. *Remote Working: Linking People and Organizations*, 1–215. https://doi.org/10.4324/9780080474168

[22] Novani, S., & Kijima, K. (2010). *Value co -creation model of service innovation: symbiotic hypergame analysis*. 2–12.

[23] Odom, L. R., & Morrow, J. R. (2006). What's this r? A correlational approach to explaining validity, reliability and objectivity coefficients. *Measurement in Physical Education and Exercise Science*, *10*(2), 137–145. https://doi.org/10.1207/s15327841mpee1002_5

[24] Ouimet, P., & Zarutskie, R. (2014). Who works for startups?The relation between firm age, employee age, and growth. *Journal of Financial Economics*. https://doi.org/10.1016/j.jfineco.2014.03.003

[25] Palma, F., & Hong, S. G. (2014). Triggers that increase co-creation risks: A consumer perspective. *Lecture Notes in Electrical Engineering*, *279 LNEE*(2011), 261–271. https://doi.org/10.1007/978-3-642-41674-3_38

[26] Panacek, E. A., & Thompson, C. B. (2007). Sampling methods: Selecting your subjects. *Air Medical Journal*, *26*(2), 75–78. https://doi.org/10.1016/j.amj.2007.01.001

[27] Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*. https://doi.org/10.1007/s11747-007-0070-0

[28] Prahalad, C. K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & Leadership*, *32*(3), 4–9. https://doi.org/10.1108/10878570410699249

[29] Ranjan, K. R., & Read, S. (2016). Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science*. https://doi.org/10.1007/s11747-014-0397-2

[30] Ratten, V. (2020). Coronavirus (covid-19) and social value co-creation. *International Journal of Sociology and Social Policy*. https://doi.org/10.1108/IJSSP-06-2020-0237

[31] Skaržauskaitė, M. (2013). Measuring and Managing Value Co-Creation Process: Overview of Existing Theoretical Models.

Social Technologies. https://doi.org/10.13165/st-13-3-1-08

[32] Vargo, S. L., & Lusch, R. F. (2008). Service-Dominant Logic" Continuing the Evolution. *Article in Journal of the Academy of Marketing Science*. https://doi.org/10.1007/s11747-007-0069-6

[33] Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*. https://doi.org/10.1016/j.emj.2008.04.003

[34] Volvic Chen, C. C., Chen, C. J., & James Lin, M. J. (2015). The impact of customer participation: The employee's perspective. *Journal of Business and Industrial Marketing*, *30*(5), 486–497. https://doi.org/10.1108/JBIM-06-2012-0104