

Value Co-Creation and Passenger Loyalty in the Context of the DART Model: The Mediating Role of Perceived Service Newness

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Abstract

The purpose of the study is to reveal the effect of value co-creation within the scope of the DART model, which consists of Dialogue, Access, Risk Assessment, and Transparency on perceived service newness and loyalty. In addition, it is aimed to determine the mediating role of perceived service newness between value co-creation and passenger loyalty. For this purpose, the data collected by the online and convenience sampling method from the passengers who travel airlines. The data is subjected to reliability analysis and confirmatory factor analysis in order to discover the variables that make up the dimensions in the study model. The relationship in the study model is evaluated by using partial least squares structural equation modeling (PLS-SEM) via the SmartPLS 3.0 package program. The findings show that value co-creation has an impact on the perceived service newness and loyalty. This study found also mediating effect of perceived service newness in the relation between value co-creation and loyalty. The study contributed the understanding of value co-creation from the passenger perspective to the value co-creation literature by using the DART model. The study also provides theoretical and managerial contributions to manage the value co-creation process effectively and efficiently.

Keywords: Value co-creation, perceived service newness, loyalty, DART model, passenger

1. Introduction

The airline industry, which is among the intangible service industries [1-2] has a significant impact on the world economy through direct and indirect ways. The increase in also the competitive threats in the airline industry, as well as the economic effects in the service sector [3], brought about the necessity of understanding the actors in the airline ecosystem. The concerns of service providers to provide high-quality service to customers in their ecosystems lead to the development of innovation culture and the

differentiation of the role of customers in the acceptance of these processes. Customers as one of the cornerstones of service innovation processes [4], participate in production processes as the co-creator of value by shaping processes related to perception and loyalty regarding innovation [5].

The developments in marketing thinking have transformed to the participation of customers in the production of goods and services instead of the traditional view of observing consumers and producers separately. This transformation shows

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that the value that consumers create with businesses in developing innovative services is an active collaboration. Customers' experiences and perceptions are at the forefront [6] to determine value on the basis of Service-Dominant (S-D) logic which defines customers not as passive buyers of value, but as actors playing an active role in value creation [7-8]. The influencing of the service produced by each individual who actively participates in the joint creation of value [9-10] helps businesses gain new competencies and move to a more competitive structure [11]. The DART model, which deals with the context of Dialogue, Access, Risk Assessment, and Transparency between the actors in the value co-creation process, is an important strategy for improving customer loyalty and facilitating the formulation of perceived innovation. As businesses establish a deep relationship with customers through interaction, the customer is expected to be the co-creator of value and contribute to the formulation of innovation strategy by businesses. The innovation strategy comprised by co-creating value will increase the scope of customer loyalty and will ensure that both parties gain in short and long-term interactions in today's competitive world. Along with there are few studies on the effect of the shared value creation process of airlines with their customers on customer loyalty, research on the mediating role of perceived service newness in these relationships is limited. The study plans to make an empirical contribution to the literature examining the connection between innovation and co-creation in a theoretical framework. This study empirically tests these relationships by asking the following research questions:

RQ1. Does value co-creation with their customer of the airline business have an impact on passenger loyalty?

RQ2. Does the value co-creation with their customer of the airline business have an impact on perceived service newness?

RQ3. Does perceived service newness mediate between value co-creation and passenger loyalty?

In this context, the study aims to examine the mediating role of perceived service newness on the

value co-creation process and passenger loyalty within the scope of the DART model. The second section of the study includes a literature review on value co-creation, perceived service newness, and customer loyalty. In the following sections, the methodology, findings, and implications of the study are presented.

2. Literature

Value Co-Creation

S-D logic which considers as a cornerstone of the interaction between actors in the production [12] shapes the value creation process differently from the goods-dominant logic. The value-based on S-D logic is co-created with customers, not in production and distribution processes [6]. The value created by interactive actions that take into account specific needs and wishes for both businesses and customers [13] transforms the customer beyond purchasing into a relational partner and a co-creator [14-5]. Co-creation, which consists of the contributions of the actors inside and outside the business in many aspects such as ideas, design, etc. [9-15] enables businesses to focus on processes that maximize customer participation in customizing their services [16]. Value, which is defined subjectively by the customer and the supplier, is also considered a concept that cannot be measured in monetary terms [17]. The value produced through collective actions and interactions is experienced subjectively [18].

According to the S-D logic, which argues that the relationship between actors is performed routinely and unconsciously, value co-creation consists of processes that include procedures, tasks, mechanisms, and interactions [8]. The co-created value as a result of the mutual interaction of the actors has been discussed by Prahalad and Ramaswamy (2004) within the scope of the DART model, which consists of the subtitles of Dialogue, Access, Risk Assessment, and Transparency. According to the DART model, all actors should become equal stakeholders by interactive cooperation and be ready to share information [19].

The concept of dialogue, which expresses the willingness for mutual interactions and common agreement between all actors in the service

ecosystem [20], especially affects the value co-creation as a result of feedback on service delivery. Mutual dialogue, which plays an important role in the recognition of consumer experience in the social, emotional, and cultural context of businesses, provides interaction, participation, equal communication, and learning opportunities for actors [21]. The value co-creation process is facilitated by access, which allows actors to have the information and/or skills to assist them to build their own experiences [22-20]. Providing actors with information at all stages of the co-creation process, from design to experience, will pave the path for effective co-creation [23]. Risk assessment, which expresses more information about costs and benefits to actors in the co-creation process, enables informed decisions about risks in the value co-creation process [20]. The fact that actors have detailed information about risks will lead them to take more responsibility in the management of these risks by increasing their perception of being a co-creator of value [22]. Transparency minimizes knowledge asymmetry between the actors, which is crucial given that these three basic concepts (dialogue, access, and risk assessment) play an active role in value co-creation [12]. The tendency of businesses to be more upfront and transparent in their interactions increases the willingness of customers to accept service quality [19]. The DART model plays a significant role in improving consumer attitudes and behaviors toward value co-creation by emphasizing the relevance of four fundamental aspects in the collaborative production of value by actors.

Value Co-Creation – Perceived Service Newness

Attitudes and behaviors developed by the actors in the DART model also allow for the co-creation of value and differentiation of the innovation strategy. As the relationship between actors strengthens as a result of effective interaction, innovation processes are formulated [24]. Innovation, which refers to the processes that lead to differentiation of service among businesses; defines businesses that have the ability to be prone to new ideas, services, processes and promotions [25-26]. While the traditional perspectives of innovation are based on technical and functional criteria, the service-oriented

innovation approach views the customer as a key participant in the production of value and expresses the presentation and development of new experiences [26]. Customer perception is the most significant factor in the emergence of an innovation [27]. Innovation processes determined by consumers' perceptions explain how new a product and/or service is. Perceived innovation, which expresses customer knowledge of the degree of innovation and the development of existing alternative products and/or services rather than innovations in the product's basic features [28], is effective in a business' value co-creation process with their customers in line with their capabilities. Businesses develop their innovative capabilities and meet customer demands as a result of mutual interactions with actors taking an active role in value co-creation [29-24]. As a result of interactions, customers play an active role in product and/or service development and innovation processes as both consumers and co-creators of value [30]. Mutual dialogues at every stage from product design to delivery improve interactive co-learning between actors [8-31]. Co-learning processes enable participation in steps such as design, development, quality and the accessibility of value chain and service information and the assessment of risks associated with the processes [32]. The parties will profit from the interactions between the actors. As a result, innovation processes will be possible if they are implemented in a way that leads to value co-creation, transparency, and the elimination of information asymmetry. Thus, there is a relationship between the value co-creation behavior and innovation in services with a S-D logic. In this context, the H₁ hypothesis of the study was developed as follows:

H₁: Value co-creation influences perceived service newness in a positive and significant way

Value Co-Creation – Loyalty

Customers' desire to establish long-term relationships with businesses and to recommend the business to others in the context of service marketing is defined as loyalty [33-34]. Loyalty supports the competitive advantages of businesses in the field they operate in and is shown among

intangible assets [35]. A high level of loyalty causes customers to prefer the same product and/or service providers as much as possible and to recommend these providers to their friends, family, etc. by developing positive attitudes towards them [36]. The loyalty that emerges through behaviors and attitudes offers opportunities for businesses to create a positive image perception and expand their sphere of influence. Customer loyalty, which is associated with rational and emotional contexts in the studies in the literature, can play a directly influential role in the context of interactional relationships [35-34]. Value co-creation is supported as a result of improved interaction between actors, and businesses acquire a sustainable competitive edge [37]. The interactive process that emerges as a result of the co-creation of value facilitates customers' access to the service system and to have sufficient information about the risks that may arise as a result of the process [38-39]. The fact that the information flow between the actors becomes symmetrical will lead to an increase in mutual trust and in loyalty in the value co-creation process. Therefore, the value co-creation process is expected to have a significant impact on loyalty:

H₂: Value co-creation influences loyalty in a positive and significant way

Perceived Service Newness (PSN) – Loyalty

While service innovation is defined as the launch of a new service or the extension of an existing one that benefits the organization [40], loyalty is expressed as the willingness and determination of customers to stay with a service provider and maintain a long-term relationship with the business [41]. Loyal customers have an emotional attachment to the products/services and no other business offering a better deal can attract their attention [42]. Because service innovation may readily boost customer loyalty, related research suggests that businesses should place a greater emphasis on innovative activities [43-44-45-46]. Thus, in order to effectively develop client loyalty, businesses must have an innovative understanding and work in this direction. As a result of the above-mentioned connected investigations and literature evaluations, the following hypothesis was formed:

H₃: Perceived service newness influences loyalty in a positive and significant way

Mediating Role of Perceived Service Newness (PSN)

Businesses provide service solutions in collaboration with their customers. By segmenting target customers and evaluating customer data, they may distinguish innovative customers. They communicate with customers and include them in current innovation processes to alter corporate operations. They also motivate people to participate in activities that will help them better their products and services [47]. Value co-creation with customers of organizations leads in service innovation, which makes customers more loyal to the business [48]. Service innovation enables businesses to establish a positive relationship by meeting the needs and desires of customers [49]. This reveals a positive effect of customer satisfaction on re-contracting and referral, which represent loyalty [50]. As a result, customers and service providers pay attention to the mediating role of perceived service innovation between value co-creation and customer loyalty. In this study, examining the mediating role of perceived service innovation between passenger loyalty and the value co-creation by airlines with their passengers, the following hypothesis is proposed:

H₄: Perceived service newness has a mediating role between value co-creation and loyalty.

3. Methodology

Research instrument

Dialogue (DIA-9 items), access (ACC-3 items), risk (RISK-7 items) and transparency (TRA-4 items) from Albinsson et al. (2016) [20] were adapted to measure DART model. This study is used perceived service newness (PSN-4 items) scale by Lowe and Alpert (2015) [28], and the loyalty (LOY-4 items) scale developed by Srinivasan et al. (2002) [51]. A five-point Likert scale was used to measure all the statements in the study (1 to “strongly disagree” and 5 to “strongly agree”).

Sampling and data collection

Data were collected from a sample of airline passengers by using an online survey. A total of 317 returns were received from the survey. However, 101 uncompleted and invalid questionnaires were excluded from the analysis. As a result, 216 responses were, finally, retained. In terms of demographics (Table 1), 47,2% of the respondents were female, whereas 42,1% were male and 10,6% were unanswerd. 25,0% of the respondents are in the 30-35 years, and 22,2% are in the 24-29 years of age group. 29,2% of the respondents worked in the private sector, 24,5% worked in a public institution, and 13,9% worked as self-employed. 20,4% of the respondents had an average monthly household income between 4000TL and 6000TL. The vast majority of participants (45,4 %) had a bachelor's degree, while 16,2 % had a master's degree and 10,2% had a Ph.D. degree.

Table 1. Demographic characteristics of the participants

Variable	Values	%	Variable	Values	%
Gender	Female	47,2	Age	18-23	11,1
	Male	42,1		24-29	22,2
	NA	10,6		30-35	25,0
Work	Public	24,5	Household Income	36-41	15,7
	Private	29,2		>42	13,9
	Self-employment	13,9		NA	10,6
	Other	21,3		<4000TL	24,5
Education	NA	10,6	4000-6000	20,4	
	High school	16,2	6001-8000	18,1	
	Bachelor	45,4	8001-10000	12,0	
	Master	16,2	>10000	13,4	
	PhD	10,2	NA	10,6	
	NA	10,6			

4. Results and Discussion

The validity and reliability of the variables were tested using factor analysis, and the PLS method

was employed in the study. The factor loads of each factor were found to be in agreement with the values established in the literature as a result of the variable factor analysis [52]. The study utilized composite reliability (CR), Cronbach's Alpha, and rho A with a cut-off value of 0.7 to determine the reliability. The findings show that all variables are reliable and valid, as shown in Table 2.

Table 2. Confirmatory factor analysis and reliability of constructs

Items	Loadings	AVE	α	CR	rho_A
DIA1	0,755				
DIA2	0,870				
DIA3	0,767				
DIA4	0,836				
DIA5	0,757	0,677	0,949	0,949	0,952
DIA6	0,724				
DIA7	0,884				
DIA8	0,880				
DIA9	0,909				
ACC1	0,826				
ACC2	0,858	0,645	0,841	0,844	0,850
ACC3	0,718				
RISK1	0,771				
RISK2	0,805				
RISK3	0,759				
RISK4	0,783	0,688	0,939	0,939	0,940
RISK5	0,731				
RISK6	0,799				
RISK7	0,812				
TRA1	0,689				
TRA2	0,767	0,641	0,873	0,876	0,881
TRA3	0,762				
TRA4	0,645				
PSN1	0,783				
PSN2	0,818	0,736	0,918	0,918	0,922
PSN3	0,931				
PSN4	0,893				
LOY1	0,729				
LOY2	0,868	0,700	0,901	0,903	0,908
LOY3	0,851				
LOY4	0,890				

Structural model

PLS-SEM (Least Squares-Structural Equation Modeling) analysis was performed using the SmartPLS 3.0 package program in order to test the working hypotheses in line with the data obtained from the questionnaire. PLS-SEM was preferred because it minimizes unexplained variance, is a non-parametric method and does not have a normal distribution condition [53]. The average value

extracted (AVE) was used to determine convergent validity, with a proposed cut-off of 0.5 [54-55]. The Heterotrait–Monotrait ratio (HTMT), which is defined as an estimate for factor correlation, was used to assess discriminant validity (more precisely, an upper boundary). HTMT shows established discriminant validity metrics in Monte Carlo simulations [56] and it should be smaller than the value of 1 [57]. As shown in Table 3 all HTMT values 0.84 and it assures discriminant validity.

Table 3. Discriminant validity

Fornell and Larcker	1	2	3	4	5	6
DIA	0.823					
ACC	0.690	0.803				
RISK	0.781	0.770	0.830			
TRA	0.629	0.784	0.807	0.800		
PSN	0.623	0.635	0.669	0.642	0.858	
LOY	0.492	0.448	0.557	0.469	0.655	0.837
HTMT	1	2	3	4	5	6
DIA						
ACC	0.687					
RISK	0.777	0.773				
TRA	0.627	0.791	0.811			
PSN	0.620	0.639	0.670	0.645		
LOY	0.497	0.451	0.558	0.472	0.650	

All variables' variance inflation factors (VIF) were less than the threshold value of 5 [53]. As a result, a critical threshold of predictor constructs has not been reached (Table 4).

Table 4. Inner VIF values of the structural model

	Loyalty
Loyalty	-----
DART model	2,036
Perceived Service Newness	2,036

Hypothesis Testing

The direct and indirect effects in the structural model were assessed using route coefficient through 5000 bootstrapping after factor analysis and goodness of fit testing. The direct and indirect

influence of the DART model on loyalty via perceived service newness is seen in Table 5.

Table 5. Results of structural equation modeling

Direct Hypotheses	Beta	t-value	p-value	Decision
DART → PSN	0.713	18.139	0,000	Supported
DART → Loyalty	0.185	2.020	0,043	Supported
PSN → Loyalty	0.523	5.598	0,000	Supported

Figure 1 also shows the findings of the route coefficients. The DART model has direct and positive effects on perceived service newness (H₁; β= 0.713, p<0.000) and loyalty (H₂; β= 0.185, p<0.043), according to the findings. Simultaneously, perceived service newness has a direct and positive effect on loyalty (H₃; β= 0.523, p<0.000).

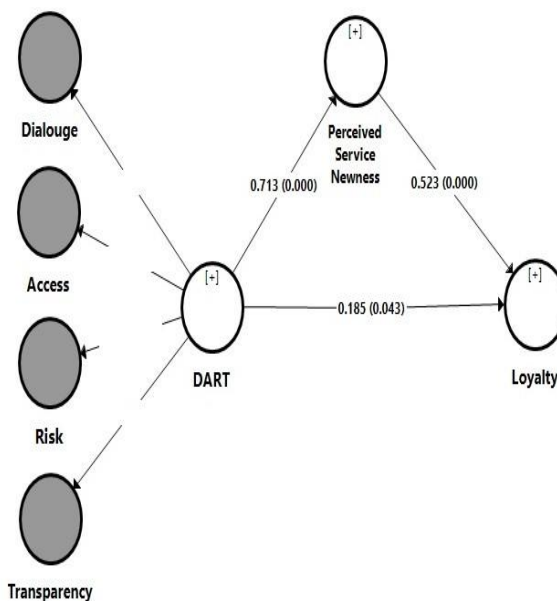


Figure 1. Structural Model

Mediating effect of perceived service newness

The bootstrapping approach was used to investigate the mediator effect [58] of perceived service newness on the DART model and loyalty relationship. The outcomes are shown in Table 6. The link between the DART model and loyalty is significantly mediated by perceived service

newness. As a result, the H₄ hypothesis was confirmed.

Table 6. Results of the mediation analysis

Mediation Hypotheses	Standardized Estimate	Lower	Upper	p-value	VAF value
DART →PSN→ Loyalty	0.373	0.234	0.527	0,000	0,668
Mediation effect	Partial mediation				
Decision	Supported				

5. Conclusion

The study aims to reveal value co-creation on perceived service newness and loyalty in the airline service system on the based S-D logic. In the study, the findings obtained by aiming to test the mediating role of perceived service newness between value co-creation and loyalty were examined under three main headings. First, passengers' perceptions of service innovation given by businesses as part of value co-creation were assessed. The findings show that the value co-creation has a statistically significant effect on the perceived service newness by the passengers. The service concept's unique characteristics in terms of service innovations, such as novelty and relative advantage, give new methods for the service provider to offer its value proposition. The increase in the interaction between airline companies and passengers will result in an increase in the perception of innovations. The value co-created with the passengers related to the service will also contribute to the service improvement and development processes by offering co-learning opportunities to the businesses. Increasing mutual information accessibility as a result of interaction between actors will enable more focus on processes such as product design, product development, and quality management [32]. Furthermore, symmetrical information sharing will facilitate to detect risks in airline-passenger interactions and to risk assessment of mutual sharing in service-related innovations. Therefore, it can be stated that the relationship between value co-creation and

perceived service newness is in line with the literature [4-59].

Secondly, the effect of value co-creation on customer loyalty was examined and the findings revealed that value co-creation affected customer loyalty statistically significant and positive. As the value co-creation behavior develops as a consequence of increased reciprocal interaction between the actors, airline businesses' short and long-term growth and competitiveness become stronger. The symmetry of information sharing in the interaction between the airline and the passenger and the accessibility of this information by the actors will ensure the continuation of customer loyalty by leading to the development of mutual trust [60]. The active role of passengers in the process of creating shared value will lead to the development of airline businesses and provide an opportunity to offer new, pioneering and impressive products and services [61]. As a result, existing passengers will be loyal, and potential passengers will choose the company. Reasons such as the high costs of abandoning service providers in the airline service system will lead to the perception of the passengers that the service meets their unique and hidden needs. Co-created value with passengers will contribute to improved loyalty to the airline and the ability to advise additional potential passengers at this time [62-63]. Furthermore, transparency in interaction processes will increase loyalty by lowering the barriers to risk assessment for all actors.

Finally, the mediated effect was evaluated in the study. In this context, the mediating role of perceived service newness in airline companies' value co-creation with passengers and loyalty trends were examined. The results show that the perceived service newness variable has a mediating role in the relationship between value co-creation and loyalty. In summary, the results of the research show that value co-creation is effective on passenger behavior. Therefore, determining the reasons for value co-creation and structuring improvement and development initiatives in this direction will improve customer loyalty and will help the customer to transform their perception of innovation into loyalty.

The equality of the participants in the airline service system, as well as the fact that both sides are vulnerable to disputes and tensions, is pre-acceptance in the dialogue process between the actors. In order to foster discussion toward equality and find scenarios that disclose and accept each participant's priorities, organizations must operationalize their relational responsibilities in dealing with their consumers as part of the value co-creation process [64]. Thus, the coordination of discourse and the synchronization of viewpoints and customized meaning discovery, which offers time and latency for dialogue, results in a shared resource for reciprocal knowledge flow and a mutual comprehension of priorities. The airline-passenger interactions are the most intense relationship networks in the airline service system, and these interactions benefit both parties by allowing them to participate in product and service development processes. Passengers' direct and indirect participation in the creation of new products and services will result in the development of new product and service processes perceptions. Passengers will begin to evaluate the business after experiencing the existing and new services offered in airline-passenger interaction. Web sites, airport desks, in-flight services, and other actors in the service system (employees) will become co-creators of value by companies as a result of stimuli such as the services given to passengers. Service-related reciprocal implicit learning processes create a perception of cognitive and affective value and service innovation in the memory of passengers [65]. In this context, the upfront, accessible, and transparent interactions between the actors will ensure that the information regarding the risks (the actors may face) is complete and will increase the perception of service innovation.

Understanding the influence of value co-creation processes on passenger loyalty as a result of interactions with actors in the airline service system will provide new insights on a variety of topics, including loyalty and purchasing habits. Increasing interaction with different passenger profiles and developing a more participatory value co-creation process will also affect the competitiveness of businesses and positively affect the development of

management styles and new business models. Loyalty, which is basically shaped by passenger experiences [66], will create an area of attraction for other potential passengers as a result of the continuation of airline-passenger interaction and mutual trust in the long run. Adopting the culture of value co-creation by service providers will help to use resources effectively by improving their competitiveness. Understanding that value co-creation by businesses and employees with customers leads to service innovation and customer loyalty may help airline management increase customer loyalty by developing stronger value co-creation strategies. It is necessary to reevaluate the mindset of the organization on the basis of S-D logic and to adopt this understanding to employees at all levels of the business.

There are limitations to the research findings that should be considered in future research, in addition to their theoretical and practical contributions. The first of these limitations is that the study used convenience sampling and online participation in the sample collection method. Expanding the sample to be selected for the model and reaching more participants are important for the generalizability of the study. Another limitation is that the effect of demographic variables used in the study model was not examined. In this context, the demographic characteristics of the participants and the addition of new variables in future studies will play an active role in seeking answers to different questions in the field.

Ethical Approval

Not applicable

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