Building brand value co-creation in online transportation services: A serial mediation approach

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A B S T R A C T

This study aims to examine the impact of customer ethical perception on brand value co-creation in online transportation services through the role of serial mediation of customer-brand identification, overall satisfaction and transportation application commitment. This research was conducted on 300 generations Y and Z online transportation services users in the Province of Bali, Indonesia. Partial least square-structural equation modeling (PLS-SEM) was used for analysis purposes. It was found that customer ethical perception does not directly affect brand value co-creation. On the other hand, satisfaction mediates the influence of customer ethical perception on brand value co-creation. We then found that customer-brand identification and transportation application commitment mediate the influence of customer ethical perception on brand value co-creation serially. This study is the first to examine the role of serial mediation by using three variables namely customer-brand identification, satisfaction and transportation application commitment on the effect of customer ethical perception on brand value co-creation.

1. Introduction

Consumer awareness and concern about the importance of business ethics have prompted many businesses to prioritize ethical standards in their operations (Singh et al., 2012). It was claimed that business ethics significantly influence consumer behavior, such as privacy and transaction security (Román & Cuestas, 2008; Yang et al., 2019). In addition, companies that implement business ethics effectively deliver accurate product or service information (Park et al., 2017).

In recent years, the emergence of new transportation technology has increased the popularity of online transportation services (Duy Quy Nguyen-Phuoc et al., 2020). Online transportation services have altered how individuals travel worldwide (Liu et al., 2022). Along with the spread of smartphone applications, online transportation has become a significant form of travel in many cities across the world (Murphy & Usher, 2015). Although the global usage of online transportation has expanded dramatically, there have been few studies examining the relationship between customer ethical perception and brand value co-creation in online transportation (Nadeem et al., 2020, 2021; Nadeem & Al-Imamy, 2020). Brand value co-creation is the production of brand value by all stakeholders through network linkages and social interaction (Merz et al., 2009).

In online transportation services, brand value co-creation is influenced by consumers' ethical judgments of application performance (Nadeem et al., 2020, 2021). According to the findings of Nadeem, et al. (2020), the customer ethical perception of online transportation services comprises consumer privacy, transaction security, and reliability. Consumer privacy is a crucial component of their ethical perceptions in the online environment (Agag, 2019; Cheng *et al*., 2014). Román and Cuestas (2008) stated that privacy concerns include collecting personal consumer data and sharing information with third

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parties. The quality of the relationship between companies and consumers will be enhanced with a better perception of privacy (Agag & El-Masry, 2016). According to Bush et al. (2000), internet-related ethical issues consist of privacy, fraud, and trade security. Users are required to provide information regarding personal data that has the potential to be used for commercial purposes during registration. Consumers who wish to purchase goods or online services value transaction security highly (Patel & Patel, 2018). Satisfaction is positively affected by a better perception of security during transactions (Kim *et al*., 2011). Furthermore, reliability pertains to consumers' confidence in accurately placing orders using online transportation applications (Wolfinbarger & Gilly, 2003).

Interestingly, previous studies have shown contradictory findings about the relationship between customer ethical perception and co-creation of brand value. According to the findings of Nadeem et al. (2020), customer ethical perception affects brand value co-creation. Williams and Aitken (2011) then stated that consumer participation in brand value co-creation increases when businesses are conducted in accordance with ethical values that motivate consumers. Moreover, customer engagement is contingent on consumers' positive ethical judgments of online platforms so that they can stimulate repeat purchases and profitable suggestions (Román & Cuestas, 2008). Similarly, the findings of Wang et al. (2019) indicated that customer privacy substantially affects trust, improving brand value co-creation in social commerce. On the other hand, several previous empirical studies showed contradictory findings. The results of Nadeem and Al-Imamy (2020) showed that ethical perception had no significant effect on brand value co-creation. This is supported by Limbu et al. (2012) who stated that the company's website ethics do not have a direct impact on the revisit intention of customers.

The difference in the results of previous studies, provides a gap for further research to be carried out by including mediating variables. In this study, the mediating variable customer-brand identification is proposed in bridging the inconsistency of the influence of customer ethical perception on brand value co-creation. Customer-brand identification is a psychological state of consumers, where consumers perceive a unified identity with the company (Ashforth & Mael, 1989; Bhattacharya & Sen, 2003; Lam et al., 2013). In addition to the mediation of customer-brand identification, this study proposes a mediating variable of satisfaction. Elbeltagi and Agag (2016) have studied ethical conduct in e-commerce and found that customer ethical features in online applications positively affect satisfaction. Furthermore, customer brand identification and satisfaction were found to positively affect customer commitment. It was obtained that customer brand identification has a significant effect on customer commitment (Hashim & Tan, 2015; Fatma & Rahman, 2017; Su *et al.,* 2016). Customer commitment is the willingness of a customer to sustain a long-term connection (Su et al., 2016). A study conducted by Hashim and Tan (2015) determined that satisfaction affected commitment. Thus, this study aims to investigate the role of serial mediation of customer brand identification and transportation application commitment on the influence of customer ethical perception on brand value co-creation. We will also investigate the role of serial mediation of satisfaction and transportation application commitment on the influence of customer ethical perception on brand value co-creation.

The objectives of the present study are firstly to investigate the effect of customer ethical perception on brand value co-creation. Secondly, to examine the mediating role of customer-brand identification in the effect of customer ethical perception on brand value co-creation. Thirdly, to examine the mediating role of overall satisfaction in the effect of customer ethical perception on brand value co-creation. Fourthly, to examine the mediating role of transportation application commitment in the effect of customer ethical perception on brand value co-creation. Subsequently, to consider the serial mediating effect of customer-brand identification and transportation application commitment in the effect of customer ethical perception on brand value co-creation, and ultimately, to consider the serial mediating effect of overall satisfaction and transportation application commitment in the effect of customer ethical perception on brand value co-creation.

2. Literature Review

2.1 Brand Value Co-Creation in Online Transportation Services

Globally, the proliferation of online transportation has been promoted by the development of mobile communication technologies (Fauzi & Sheng, 2020). Online transportation is an on-demand mobility service connecting private vehicle drivers with clients desiring a particular travel (Fielbaum & Tirachini, 2020). Online transportation is also a platform that allows customers to hail and pay for a ride from a professional or part-time driver via an app (Clewlow & Mishra, 2017). Online transportation redefines the idea of car access by separating it from car ownership (Alemi et al., 2019). Both passengers and drivers should have an internet connection on their smartphones. Accordingly, drivers are provided passengers' locations via a global positioning system (GPS) (Nguyen-Phuoc et al., 2020). In online transportation services, the fare and duration of the trip are provided in the application before the passenger meets the driver (Nguyen-Phuoc et al., 2021).

Online transportation services contribute to the solution of transportation issues in low and middle income nations by connecting passengers directly with nearby drivers (Duy Q. Nguyen-Phuoc et al., 2021). Consumers can do brand value co-creation in online transportation by giving good reviews, providing feedback and recommendations that can be further utilized by other consumers as well as by the service providers themselves (Nadeem et al., 2020). Brand value co-creation is based

on Service Dominant Logic (SDL) theory from Vargo and Lusch (2004) which views that the basis of exchange are intangible/operant resources such as knowledge and skills instead of tangible goods (operand resources). Brand value co-creation refers to the process of value creation in which customers wish to contribute in enhancing a company's products or services (Kleinaltenkamp et al., 2017).

2.2 Customer Ethical Perception

Ethical perception has become an interesting topic in various contexts (Cheung & To, 2020). Ethics are the assessment of right and improper conduct (Gaski, 1999). Consumers' ethical perceptions in online environments refer to their perceptions of the duties of online transportation service providers to be honest, fair, and confidential in their interactions with customers (Roman, 2007). Ethical perception strongly influences satisfaction and loyalty (Limbu et al., 2011); (Limbu et al., 2012) Ethical conduct incorporates a comprehensive code of ethics, accurate and exhaustive product or service information (Park et al., 2017). This study uses 3 dimensions of ethical perception including consumer privacy, transaction security and reliability as used in (Nadeem et al., 2020)

2.3 Customer-Brand Identification

Brands operating in a highly competitive services market, must establish identification-based relationships capable of fostering strong and quality customer attachments (Bruwer et al., 2019). Customer identification can occur at the level of companies, brands, groups or other customers (Bagozzi et al., 2012). Customer–brand is a psychological condition in which consumers feel, comprehend and evaluate their ownership of a brand (Lam et al., 2013). Customer-brand identification includes cognitive, affective and evaluative aspects (Hendri Tajfel & Turner, 1986). The theoretical basis of customer-brand identification is Social identity which was developed by (Henri Tajfel, 1974). According to Social Identity Theory, a person distinguishes himself from others by affiliating with a group that is regarded as possessing valued features. Customer identification was found to have an effect on commitment (Rather & Hollebeek, 2019; Zhou et al., 2012). Customer identification is a relational component that can aid brands in boosting their value co-creation strategies and competing with their competitors (Itani, 2020). Moreover, identification is viewed as a deliberate, selected behavior prompted by customers' ethical opinions of a brand (Javed et al., 2019).

2.4 Overall Satisfaction

Satisfaction is a person's pleasure or displeasure arising from comparing the perceived performance of a product or service to their expectations (Keller & Kotler, 2016). If the performance or experience is less than expected, the customers are dissatisfied. On the other hand, they are satisfied when it meets their expectations. Satisfaction as a customer's overall evaluation based on the purchase and consumption experience with a product or service (Anderson et al., 2004). Satisfaction describes an individual's perception of positive emotions arising from evaluating procedures and outcomes related to specific products and services (Bhattacherjee, 2001). Different consumers have varying degrees of pleasure with the same product or service (Ueltschy et al., 2007).

Satisfaction with transportation services refers to the cognitive-affective state of clients as determined by their service-use experiences (van Lierop et al., 2018). Customers who are satisfied with the online transportation service are willing to recommend their experiences to others (van Lierop & El-Geneidy, 2016). Satisfaction affects the future behavior of customers towards products/services (San Martín et al., 2019). Satisfaction with online transportation applications is an important factor in encouraging consumers to participate in brand value co-creation. Passenger satisfaction indicates a passenger's experience after obtaining a service relative to their expectations (Li et al., 2019).

2.5 Transportation Application Commitment

The definition of commitment is the desire to maintain a relationship (Morgan & Hunt, 1994). Commitment is also stated as a long-lasting desire to preserve a cherished relationship (Moorman et al., 1993). Commitment is then defined as the willingness to initiate and execute actions that assure the maintenance of a long-lasting commercial partnership (Blois, 1996); (Gruen, 1995). Customer willingness to promote positive word-of-mouth about the company will be positively affected by customer commitment (Fierro et al., 2014). Commitment in online transportation services is the user's commitment to online transportation applications which are currently favorites. In this study, the term transportation application commitment is used.It was found that customer commitment affects consumers' intention to repurchase (Antwi, 2021). This is also supported by the results of (Balla et al., 2015).

2.6 Hypothesis

2.6.1 The Impact of Customer Ethical Perception on Brand Value Co-creation

Ethics are one of the key aspects that greatly affect consumer behavior (Yang et al., 2019). Ethical behavior is a complicated and multidimensional subject for the study of behavior (Roman, 2007). Ethical conduct includes a comprehensive code of ethics, accurate and exhaustive product or service information, as well as respect for others (Park et al., 2017). Most frequently cited ethical concern in internet marketing is transaction security (Elbeltagi & Agag, 2016). The next most frequently

mentioned ethical issues are illegal activities such as fraud, hacking, privacy, and truth of information on the internet (Elbeltagi & Agag, 2016).

This study employs three elements of ethical perception, including consumer privacy, transaction security and reliability as used in (Nadeem et al., 2020). Privacy concerns about the use of application-based services are related to the personal data obtained at the beginning of the registration process (Lutz et al., 2018). Misuse of personal information by firms, such as the sale of personal consumer data to third parties for marketing purposes, causes consumers to suffer unwanted losses (Miyazaki dan Fernandez, 2000). Transaction security is the consumer's perception that transactions carried out are safe and do not cause financial losses (Nadeem & Al-Imamy, 2020). Subsequently, reliability is when consumer orders in the online transportation are processed quickly and the contact/complaint service listed in the application is correct (Wolfinbarger & Gilly, 2003). Nadeem *et al.*, (2021) found that customer ethical perception had a significant positive effect on brand value co-creation. Brand value co-creation is the willingness of consumers to be involved in certain interactions, which can be in the form of sharing experiences and activities related to certain brands. Ethical perceptions are positively related to positive word-of-mouth, which reflects brand value co-creation (Cheung & To, 2020). In online transportation services, co-created value enables service providers to better serve consumer requirements and preferences (Nadeem & Al-Imamy, 2020). The first hypothesis proposed in this study is as follows:

H$_1$: Customer ethical perception has a positive effect on brand value co-creation.

2.6.2 The Role of Customer-Brand Identification Mediation on the Effect of Customer Ethical Perception on Brand Value Co-creation

Customer-brand identification is in accordance with the Social Identity Theory developed by Henri Tajfel, (1974), which states that a person distinguishes himself from others by attaching himself to a group that is considered to have valued characteristics. A study conducted by Fatma and Rahman (2017) found that consumer-perceived ethicality has a positive effect on brand identification. It was also obtained that the level of consumer identification with a brand will encourage consumers' willingness to tell positive things about the brand to others (Popp & Woratschek, 2017; Tuškej et al., 2013). Itani (2020) showed that customer-brand identification influences customer-to-customer value co-creation positively. Identification encourages consumers to engage in value co-creation by interacting more, offering support when necessary, and maximizing value. Siu et al. (2014) stated that customers who identify with the company generally support the product or service and maintain the company's reputation. Ethical perceptions have a direct and positive impact on consumer–corporate identification, the better the level of consumer ethical perceptions at the corporate level, the greater the impact on consumer–corporate identification (Javed et al., 2019). Thus, the second hypothesis proposed in this study is outlined as:

H$_2$: Customer-brand identification mediates the effect of customer ethical perceptions on brand value co-creation.

2.6.3 The Role of Overall Satisfaction Mediation on the Effect of Customer Ethical Perception on Brand Value Co-creation

Sulphey and George (2017) examined the relationship between ethics and customer satisfaction. They found that that customer perceptions of ethics and business values were positively related to customer satisfaction. The study of Limbu et al. (2011) found that consumer perceptions of online retailer ethics are significant predictors of satisfaction. In addition, it was concluded that the satisfaction variable positively affects brand value co-creation (Tajvidi et al., 2021; Wang & Hajli, 2014). Consumers who feel satisfied after using the service tend to share positive experiences with other customers (Nadeem et al., 2020). Thus, consumer desire to participate in brand value co-creation is significantly influenced by their level of pleasure with online transportation services. However, it may be difficult for application owners to provide uniform training for drivers in online transportation services which raises the possibility of passenger dissatisfaction with the service quality. Thus, possible rules for drivers are advised for improved service, involving evaluation of the platform's information. Based on prior empirical research, the following hypothesis is offered in this study:

H$_3$: Overall satisfaction mediates the effect of customer ethical perceptions on brand value co-creation.

2.6.4 The Role of Transportation Application Commitment Mediation on the Effect of Customer Ethical Perception on Brand Value Co-creation

Co-creation of brand value is affected by consumer commitment. Hajli et al. (2017) found that commitment is positively related to consumers' willingness to participate in brand co-creation. Commitment was found as a mediating variable on the effect of ethical sales behavior on loyalty (Tuan, 2015). Additionally, there is a positive relationship between consumer perceptions of online retailing ethics and customer commitment. Furthermore, customer commitment was found to have a direct positive influence on repurchase intention (Elbeltagi & Agag, 2016). Therefore, this study proposes the following hypothesis:

H$_4$: Transportation application commitment mediates the effect of customer ethical perception on brand value co-creation.

2.6.5 The Role of Serial Mediation

It was claimed that customer ethical perception has a significant influence in enhancing consumer identification with a firm or brand (Javed et al., 2019; Roy et al., 2019). The better the consumer ethical perception of the brand, the greater the influence on customer-brand identification. There is an impact on online transportation services consumers' willingness to build self-identity with the brand when they receive honest services. Customer ethical perception was also found to be an important antecedent for consumer satisfaction (Elbeltagi & Agag, 2016; Kwon Choi & Moon, 2014; Limbu et al., 2011; Nadeem et al., 2020; Sulphey & George, 2017). Furthermore, it was found that customer commitment is influenced by customer-brand identification (Ran & Zhou, 2019) and customer satisfaction (Limbu et al., 2011; Sulphey & George, 2017). Tuškej et al. (2013) found that consumers who have identified themselves with a brand have a tendency to commit to the brand and are willing to do positive word of mouth. According to Fatma and Rahman (2017), positive ethical judgments of a business can boost consumer identification with the business, hence fostering commitment and loyalty. Consequently, the following hypotheses will be tested:

H_5: Customer-brand identification and transportation application commitment serially mediate the effect of customer ethical perception on brand value co-creation.

H_6: Overall satisfaction and transportation application commitment serially mediate the effect of customer ethical perception on brand value co-creation.

3. Method

Data collection was carried out through an online survey using google form on generations Y and Z in the Province of Bali, Indonesia. The study was conducted in the Province of Bali considering that there are many local online transportation companies (Kojek Bali Online, T-Jek Online and Gianyar Jek) that offer similar services to big players such as Gojek and Grab. In addition, the number of Generations Y and Z with a large population in Bali can be used as a segment with high purchasing power. The survey begins with screening questions to ensure that the respondents meet the inclusion criteria. Only Generation Y and Generation Z respondents who were born between 1981-2003 and have used online transportation services could continue to fill the questionnaire. Respondents were also asked about their favorite online transportation service. The population in this study is infinite.

In obtaining representation in each district/city, data on the number of generations Y and Z of the Bali Central Statistics Agency is used as a sample frame. To encourage participation, an e-wallet of IDR 50,000 for 30 randomly selected respondents was provided. PLS-SEM was used to analyze the survey data in this study. The reason for using the PLS-SEM method is that there is a direct and indirect causal relationship between the five variables in the research model (Ghozali, 2021).

4. Result

4.1 Respondent Characteristics

The demographic features of the respondents are displayed in Table 1. It was discovered that the female gender is greater than the male gender, in which 62 percent versus 38 percent, respectively. Respondents with a high school diploma and a student employment are predominant, and their income/pocket money is less than IDR 1.500.000. This is consistent with prior research showing that the majority of online transportation service users are technologically aware youngsters.

**Table 1**
Respondent Characteristics

Classification		Frequency	Percentage
Gender	Female	186	62
	Male	114	38
Education	Senior High School	167	55.7
	Diploma	14	4.7
	Bachelor	111	37.0
	Postgraduate	8	2.7
Occupation	Private employees	80	26.7
	Civil servant	10	3.3
	Self-employed	37	12.3
	Student/Student	153	51.0
	Other	20	6.7
Income/Pocket Money per month	Less than IDR 1.500.000	164	54.7
	IDR1.500.000-IDR 2.500.000	74	24.7
	IDR2.500.001-IDR 5.000.000	48	16.0
	More than IDR 5.000.000	14	4.7
	Amount	**300**	**100**

4.2 Measurement Model

Table 2
Measurement Model Evaluation

Constructs	Items	Loadings	CA	Rho_A	CR	AVE
Customer Ethical Perception (Dimension 1: Privacy)	PR1	0.856				
	PR2	0.840	0.841	0.843	0.894	0.678
	PR3	0.791				
	PR4	0.804				
Customer Ethical Perception (Dimension 2: Transaction Security)	TS1	0.860				
	TS2	0.880	0.851	0.856	0.900	0.693
	TS3	0.749				
	TS4	0.835				
Customer Ethical Perception (Dimension 3: Reliability)	RL1	0.856				
	RL2	0.872	0.825	0.841	0.885	0.661
	RL3	0.655				
	RL4	0.851				
Customer-Brand Identification (CBI)	CBI1	0.819				
	CBI2	0.884	0.870	0.870	0.911	0.720
	CBI3	0.872				
	CBI4	0.817				
Overall Satisfaction (OS)	OS1	0.864				
	OS2	0.908	0.849	0.852	0.909	0.768
	OS3	0.858				
Transportation Application Commitment (TAC)	TAC1	0.872				
	TAC2	0.905	0.869	0.869	0.920	0.792
	TAC3	0.892				
Brand Value Co-creation (BVC)	BVC1	0.891				
	BVC2	0.898	0.870	0.870	0.911	0.720
	BVC3	0.930				
	BVC4	0.816				

Table 2 presents the loading factor values, Cronbach's Alpha (CA), composite reliability (CR) and Average Variance Extracted (AVE). Cronbach's Alpha (CA) value was used to test internal consistency. CA values are in the range of 0.825 to 0.870 and rho_A is in the range of 8.43 to 0.870 which exceeds the recommended limit value of 0.7 (Hair et al., 2017). Thus, the results of this study confirm the reliability in the internal consistency of the construction model. Convergent validity for the outer model was tested based on loading factors, CR and AVE. The results show that all loading factor values have exceeded 0.7. All CR values have also shown a high level of reliability, exceeding 0.7. The AVE values of all examined constructs have exceeded 0.5, according to the threshold recommended by (Fornell & Larcker, 1981). Smart PLS test results are shown in Fig. 1.
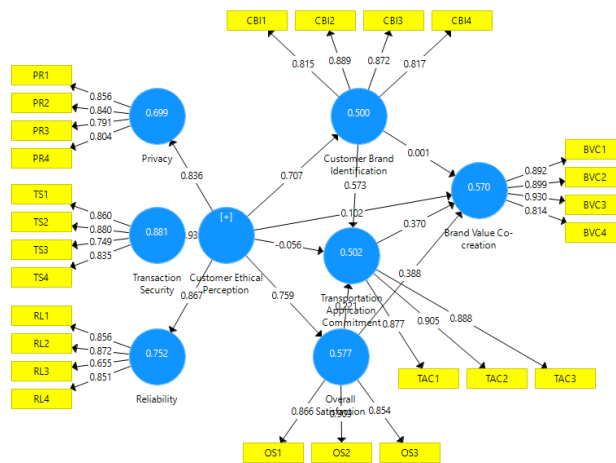
Fig. 1. Output Smart PLS

4.3 Hypothesis Testing

Our model was tested using Smart PLS, a component-based structural equation modeling tool. In conclusion, three hypotheses were received (H3, H5 and H6) and three hypotheses were rejected (H1, H2 and H4). The specifics of the standardized path coefficients and t-values for each hypothesis are provided in Table 3.

Table 3
Test of Direct and Indirect Effects

Hypothesis	Original Sample	Standard Deviation	T Statistics (|O/STDEV|)	P Values	Decision
H1: CEP→BVC	0.102	0.069	1.467	0.143	Rejected
H2: CEP→CBI→BVC	0.001	0.079	0.009	0.993	Rejected
H3: CEP→OS→BVC	0.168	0.069	2.443	0.015	Received
H4: CEP→TAC→BVC	-0.021	0.024	0.865	0.388	Rejected
H5: CEP→CBI→TAC→BVC	0.150	0.047	3.225	0.001	Received
H6: CEP→OS→TAC→BVC	0.062	0.028	2.185	0.029	Received

This research contradicts previous studies which have stated that ethical perception has a substantial impact on brand value co-creation (Cheung & To, 2020; Nadeem *et al*., 2020; Tajvid *et al*., 2019; Morosan, 2015). However, this study's findings are consistent with those who found that ethical attitudes did not have a direct impact on brand value co-creation (Nadeem & Al-Imam, 2020; Limbu *et al*., 2012). The discovery that customer-brand identification did not mediate the relationship between consumer ethical perception and brand value co-creation led to the rejection of the second hypothesis. The unique role of customer-brand identification as a mediator has not been able to encourage consumers to co-create brand value. In addition, the findings indicate that satisfaction is a moderating element in the relationship between customer ethical perception and brand value co-creation. These findings indicate that consumer satisfaction plays a crucial role in co-creating brand value with consumer involvement. The third hypothesis is therefore acceptable. The significant value of the transportation application commitment mediation variable is greater than 0.05, thus the fourth hypothesis is rejected. These findings imply that consumer commitment is incapable of mediating the effect of customer ethical perception on the co-creation of brand value.

The results of studying the role of serial mediation customer-brand identification and transportation application commitment indicate very interesting findings. The results of the single mediation test for customer-brand recognition and transportation application commitment were insignificant. However, when the two elements are placed in series or sequence, they have a significant effect on the co-creation of brand value. We also found that serial or sequential mediation of customer-brand identification and transportation application commitment is able to bridge the influence of customer ethical perception on brand value co-creation. Thus, this study illustrates that customer ethical perception can increase customer-brand identification, leading to transportation application commitment and brand value co-creation. Furthermore, the role of serial mediation overall satisfaction and transportation application commitment shows p values of 0.029 <0.05 so that the sixth hypothesis is accepted. Thus, it can be stated that overall satisfaction and transportation application commitment serially mediate the influence of customer ethical perception on brand value co-creation.

5. Implication

5.1 Theoretical Implication

The findings of this study contribute to the literature on customer ethical perception by investigating the role of serial mediation of customer-brand identification, overall satisfaction and commitment to transportation application on the influence of customer ethical perception on brand value co-creation. Although the significance of customer ethical perception has been the subject of an increasing number of studies, very few have examined online transportation services (Nadeem et al., 2021; Nadeem & Al-Imamy, 2020). Therefore, the current study contributes to expanding the literature on customer ethical perception in online transportation services.

This study's findings highlight the significance of serial mediation of customer-brand identification and transportation application commitment in determining the impact of consumer ethical perception on brand value co-creation. The findings of the single mediation test were not statistically significant, but when the mediates were placed sequentially, the results were statistically significant. Thus, the results of this study enrich the Social Identity Theory adopted by customer-brand identification. Previous studies have investigated the role of single mediation on the influence of customer ethical perception on brand value co-creation (Nadeem & Al-Imamy, 2020). This study elaborates the role of serial mediation of customer-brand identification and transportation application commitment. This study also enriches research that examines serial mediation of satisfaction and transportation application commitment on the influence of customer ethical perception on brand value co-creation.

5.2 Managerial Implications

The mediation of satisfaction has a significant role in enhancing the co-creation of brand value. Service providers must pay close attention to areas of consumer pleasure, as satisfaction with online transportation services is a significant component in increasing consumers' participation in co-creation of brand value. In online transportation services, it may be difficult for application owners to provide uniform training for drivers, hence increasing the possibility of passenger dissatisfaction with the quality of service they receive. Therefore, drivers are incentivized to deliver better services, including thorough

information verification via the app. Customers perceive transaction security as the most important ethical factor, hence service providers must supply consumers with safe payment media. The study results can provide inputs to online transportation managers to improve services with integrity and to design effective strategies to meet passenger needs. Thus, it is expected that customers will be pleased to do brand value co-creation by sharing positive experiences or recommending services to others.

6. Conclusion

This study found that brand value co-creation is not directly impacted by consumer ethical perception. satisfaction mediates the influence of customer ethical perception on brand value co-creation. The impact of consumer ethical perception on brand value co-creation serially mediated by customer-brand identification and transportation application commitment. This study is the first to explore serial mediation by using three factors, namely customer-brand identification, satisfaction, and commitment to transportation application on the effect of customer ethical perception on brand value co-creation.

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