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Understanding how O2O service synergies drive customer continuance intention: a study of OTAs and hotels

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ABSTRACT

This study broadens the understanding of how online-to-offline (O2O) service synergy enhance customer satisfaction and further drive customer continuance intention. Drawing on the self-regulatory process, halo effect, and the O2O business model, this study is the first to investigate the interconnected relationship between online service quality and the perceived value of offline services in relation to online and offline satisfaction. The findings reveal that online service quality and the perceived value of offline services are crucial antecedents of customer satisfaction, resulting in increased customer continuance intention to use online services.

KEYWORDS

Online-to-offline (O2O); service synergy; service quality; perceived value; customer satisfaction; customer continuance intention

Introduction

With the rapid growth in Internet users worldwide, most conventional offline companies have begun to expand their business channels and encourage their customers to use online services. For instance, companies in the travel industry (e.g. hotels) seek to gain additional revenue from customers who purchase their services online. Statista (2019) predicted that by 2023 almost 700 million people will make hotel bookings online. This represents a major opportunity for hotels to increase their sales of services online. However, most hotels, instead of building and managing their own platform, prefer to partner with online travel agencies (OTAs) that provide them with online booking services. According to the Direct Booking Survey by Avvio (2019), almost all the hoteliers surveyed (93%) work with OTAs. By collaborating with OTAs rather than using their own platforms, hotels may obtain greater benefits. For example, OTAs can attract numerous customers worldwide to hotels by promoting and selling hotel rooms online.

This study adopted the online-to-offline (O2O) business model to elucidate the mechanism of cooperation between the services of OTAs and hotels' offline services. In the context of O2O,

customers search for hotel information and book and pay for hotel services online through OTA platforms; subsequently, they experience these services offline when visiting the hotel. When investigating the relationship between the services of OTAs and hotels' offline services in the O2O environment, understanding the synergistic effects between these two services in influencing customer behavioral intention is crucial. Such an understanding is valuable in academic and practical contexts. Several studies have investigated the cooperation between OTAs and hotels (Chang et al., 2018, 2019; Lee et al., 2013; Ling et al., 2014, 2015; Long & Shi, 2017; Ye et al., 2019). However, studies on the impact of O2O service synergy between OTAs and hotels on consumer continuance intention remain scarce.

OTAs cooperate with hotels not only to attract new online customers but also to retain customers. Hence, if the customer was satisfied with the quality of an OTA's online service, with the perceived value of a hotel's offline services, or both, they might engage in continuance behavior by using the same OTA's services to rebook the same hotel's services. Thus, exploring in greater depth the role of each service in enhancing customer satisfaction and further

influencing customer continuance intention is imperative.

When investigating O2O service synergy, the satisfaction that customers derive from their experience when dealing with each service (i.e. online or offline service) as well as the cooperative relationship between these two services should be considered. Although numerous studies have addressed customer satisfaction with offline and online services (Chang et al., 2018; Cheng et al., 2018; Fan & Yang, 2015; Hult et al., 2019; Shankar et al., 2003), only Chang et al. (2018) specifically examined satisfaction with each service from two companies. However, to the best of our knowledge, no study has investigated the extent to which online and offline services synergistically determine online and offline satisfaction.

To bridge the aforementioned research gaps, this study constructs a research model to broaden the understanding of O2O service synergy between two types of companies (OTAs and hotels) and measures the strength of the effect of their synergies in driving customer behavioral intention. Specifically, this study investigates the extent to which the quality of OTAs' online services and the perceived value of hotels' offline services enhance customers' satisfaction toward both services and in turn influence customers' continuance intention to use OTAs' services to rebook the hotel in the future. This study helps extend the literature by considering the O2O business model not as a simple service solution from a single company but as a synergetic service process that encompasses online booking and offline experience delivered by two different companies.

This study makes valuable contributions in two manners. From a theoretical perspective, this study proposes an integrative model by drawing on the self-regulatory process (Bagozzi, 1992), the halo effect (Thorndike, 1920), and the O2O business model to provide in-depth insights into how service synergy between two types of companies enhance customer satisfaction and further drive customer continuance intention. Moreover, this study is the first in the customer satisfaction literature to investigate the interconnected relationship between online service quality and perceived value of offline services in relation to online and offline satisfaction. This study further examines the effects of this satisfaction on customers' online services continuance intention.

From a practical perspective, this study provides suggestions to hotel managers on how to enhance the perceived value of their offline services and collaborate

with OTAs as online service providers to promote and sell their services through these platforms. Furthermore, OTA managers can use the current findings to improve the service quality of their platforms and determine which hotels would be viable business partners. Focusing on building more synergetic partnerships with hotels that can increase customer satisfaction with their services would be beneficial to OTAs and help them to attract more online customers.

Theoretical background and literature review

Self-regulatory process theory

Bagozzi (1992) proposed the self-regulatory process theory to explain the relationship between customer attitude and behavioral intention. For the attitude–intention relationship, Bagozzi (1992) argued that appraisals of outcome-desire units lead to specific emotions that stimulate coping responses in which intentions are directed toward specific actions. The self-regulatory framework has been widely applied in single channel contexts in consumer behavior research, including offline hospital services (Gotlieb et al., 1994), online shopping services (Chang et al., 2009; Chang & Wang, 2011), mobile value-added services (Zhao et al., 2012), online hotel reservations (Polites et al., 2012), email services (Ranganathan et al., 2013), social networking sites (Lin et al., 2014; Liu et al., 2019), and apparel mobile commerce (Chi, 2018). Only Yang et al. (2017) applied this framework to a multichannel context in online-cum-mobile retail; however, their study used only one company as the research subject. Therefore, by using multiple companies (hotels and OTAs) as research subjects, the current research contributes to the literature by drawing upon the self-regulatory framework to investigate how service synergies drive customer continuance intention.

In Figure 1, the online services quality and the perceived value of offline services reflect the cognitive evaluation of the consumption experience as part of the appraisal process in Bagozzi's framework. Customer satisfaction, both online satisfaction and offline satisfaction, reflects emotional reactions to the appraisal process. Furthermore, customer continuance intention reflects a coping response that refers to satisfied customers' continued use of online services. Therefore, the research model in this study is developed by generally hypothesizing that appraisal processes (i.e. service quality and perceived value) lead to customer

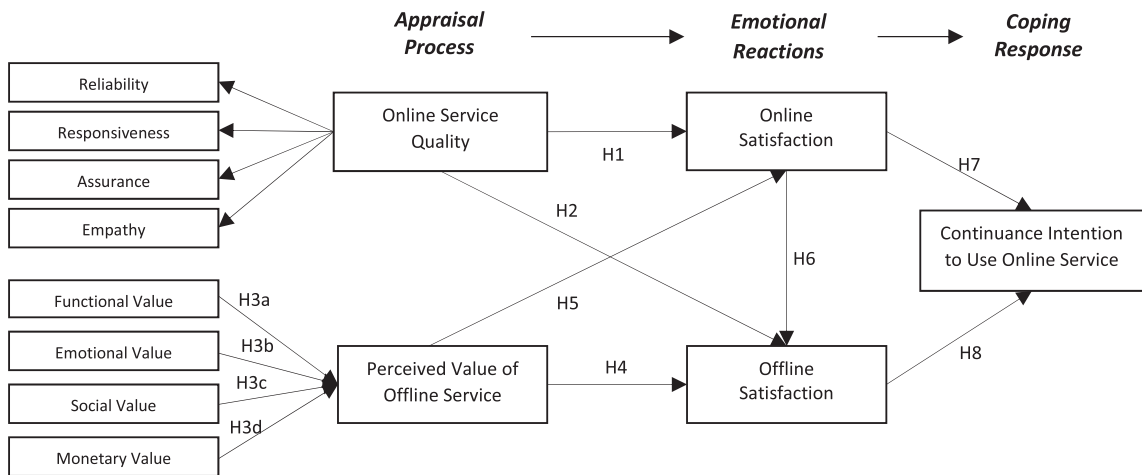


Figure 1. Research model.

emotional reactions (i.e. online and offline service satisfaction), which in turn drive coping responses (i.e. customer continuance intention).

Service quality

Service quality is defined as the degree of the comparison between customers' perception and their expectation of services' performance (Parasuraman et al., 1988). SERVQUAL, a widely used instrument in marketing literature to measure customer expectations and perceptions of services, is commonly adopted to measure information system (IS) service quality. Parasuraman et al. (1988) introduced five dimensions of SERVQUAL, namely tangibles, responsiveness, reliability, empathy, and assurance. Some related IS studies (Carr, 2002; Gorla et al., 2010; Kettinger & Lee, 2005) have applied only four dimensions of the SERVQUAL; the tangibles dimension was not included in this study because Pitt, Watson, and Kavan (1995) reported that it had low reliability.

The SERVQUAL model has been widely used for determining service quality in the context of online channels (Devaraj et al., 2002; Gefen, 2002; Kim et al., 2004; Zhou et al., 2009). In this context, service quality measures have been applied to examine the factors that determine the success of a website (Yang et al., 2009). Zhou et al. (2009) emphasized the importance of website service quality in influencing customer online repurchase behavior. Their findings confirmed that service quality has significant positive effects on consumer trust and satisfaction, leading to repurchase intention. Jeon and

Jeong (2017) also suggested that maintaining the service quality of websites is crucial to retaining customers and encouraging revisits.

In this study, online service quality refers to the quality of online hotel booking services provided by OTA platforms. Reliability, responsiveness, assurance, and empathy dimensions were adopted to measure the quality of OTAs' services. The reliability dimension measures the extent to which OTA platforms provide expected services and strive to continually improve the services provided to customers. The responsiveness dimension measures the extent to which OTA platforms supply prompt services and offer assistance to customers. The assurance dimension corresponds to the ability of OTA platforms to build and instill customer confidence. The empathy dimension refers to the ability of OTA platforms to offer personal care and attention to their customers.

Related studies have indicated strong correlations among the aforementioned four dimensions of SERVQUAL (Chang et al., 2019; Gorla et al., 2010; Zhou et al., 2009). In this case, the four dimensions of SERVQUAL are driven by the same underlying high-order factor; if the OTA platform provides high-quality online hotel booking services to consumers, it reflects its related dimensions. Therefore, in this research, online service quality is treated as a reflective second-order construct.

Perceived value

Perceived value can be regarded as a customer's overall assessment of all aspects regarding the

expectation and confirmation of the utility of a service or product (Zeithaml, 1988). The four value dimensions recommended by Sweeney and Soutar (2001), who argued that emotional, functional, monetary, and social values are the main perceived value dimensions, are mostly applied in studies on customer purchase behavior.

The multidimensional value perspective is often adopted in the service context because this perspective considers the sociological and psychological aspects of customer experiential consumption (Sweeney & Soutar, 2001; Williams & Soutar, 2009; Zeithaml, 1988). Customer perceived value in experiential consumption is related to value-in-use; hence, most studies have adopted customer perceived value in the context of offline consumer behavior (Overby & Lee, 2006; Prebensen & Xie, 2017).

This study conceptualizes the perceived value of offline services as a multidimensional construct that comprises four dimensions, namely functional, emotional, social, and monetary values. Functional value is the value obtained from the hotel's performance and the quality of its services. Emotional value is derived from the feelings experienced while making use of hotel services. Social value is measured by the ability of a hotel's services to improve customer's self-concept. Monetary value is the perceived cost savings resulting from the use of a hotel's services.

In this study, the perceived value of offline services is also considered a formative second-order construct because formative constructs are a composite of multiple dimensions (Petter et al., 2007). In this instance, each dimension captures distinct aspects of the perceived value of hotels' services; these are operationalized using particular measurement items for each dimension. The combination of these variant dimensions defines the construct of the perceived value of hotel services. However, these indicators are not necessarily correlated. For example, a pleasant emotional response and a favorable functional response may increase the perceived value of hotel services, even in the absence of corresponding increases in monetary or social value.

Customer satisfaction

Customer satisfaction can be conceptualized as cognitive based, emotion based, or both (Yang et al., 2017; Zhao et al., 2012). For example, Chang et al. (2009) described satisfaction as the psychological reaction of the customer with respect to their prior experience,

whereas McKinney et al. (2002) defined customer satisfaction as an affective state representing an emotional response to a service experience. On the basis of the self-regulatory process, this study refers to customer satisfaction as an emotional reaction resulting from an appraisal process. A similar conceptualization was used by Lin et al. (2014) in examining the impact of appraisal factors on social networking users' emotional reactions and continued use.

The current study differentiates between customer satisfaction with online services (online satisfaction) and satisfaction with offline services (offline satisfaction). Online satisfaction refers to a customer's satisfaction when using an OTA's services to book a hotel, whereas offline satisfaction refers to a customer's satisfaction when experiencing a hotel's services offline.

Continuance intention

Bhattacharjee (2001b) regarded continuance intention as similar to consumers' repurchase intention because both are influenced by the consumers' experience during initial use (of a product or service). In the IS usage literature, users' IS continuance intention is determined primarily by their satisfaction with prior IS use. In the consumer behavior literature, satisfied consumers continue using services, whereas dissatisfied users discontinue using them or switch to alternative services (Bhattacharjee, 2001a, 2001b; Oliver, 1980).

Several studies have provided additional support for the proposed connection between satisfaction and continuance intention. Lin et al. (2014) revealed that satisfaction is a key determinant of social networking site continuance intention. Moreover, Li and Liu (2014) demonstrated that customers decide whether to continue or discontinue their use of online travel services by considering their satisfaction with the use of such services. Shang and Wu (2017) further revealed that continuance intention would lead to the purchasing of products only if mobile shopping satisfied the customers' needs. Therefore, in the present study, customers' continuance intention is conceptualized as a function of customers' satisfaction with online and/or offline services.

O2O services

The concept of O2O was first introduced by Rampell (2010), who defined it as a business model that

directs online customers to offline environments. O2O is a new e-business model that has attracted business and academic attention because it involves applying the convenience benefit of online services to offline realities (Pan et al., 2017; Roh & Park, 2019). The O2O model enables consumers to search and purchase products or services online and then consume them in offline stores or venues (Moon & Armstrong, 2019; Xiao et al., 2019).

Through establishing online sales and offline service cooperation, OTAs and hotels can interplay simultaneously to achieve the O2O model (Long & Shi, 2017). This study adopts the concept of O2O to explain the mechanism of cooperation between OTAs' services and hotels' offline services. In this case, customers search for hotel information, book a hotel, and pay for hotel services online through OTA platforms; subsequently, they experience these services offline when visiting the hotel.

Halo effect

The halo effect, first proposed by Thorndike (1920), refers to the tendency that evaluations of the individual dimensions of an object are influenced by the holistic impression of the object. Numerous consumer behavior studies in multichannel contexts have applied the halo effect to examine whether customers' impressions of an object in one channel positively influence their impressions or feelings in another channel (Bock et al., 2012; Chang et al., 2019; Chu et al., 2016; Jin et al., 2010; Kwon & Lennon, 2009; Lu et al., 2011; Yang et al., 2013). Similarly, Chong and Wong (2005) posited that satisfaction with one attribute may be the result of a positive halo effect caused by high satisfaction with another attribute or even by high overall satisfaction with the service.

In this study, OTAs cooperate with hotels by providing online hotel booking services through their platforms. The halo effect is used to explain how customer perceptions when booking hotel services using OTAs' services can be extended to satisfaction when experiencing hotel services offline. Conversely, the halo effect is also used to explain how customer perceptions when experiencing hotel services offline can be transferred to satisfaction with OTAs' services because the customer initially booked the hotel services from the OTA platform. This study adopts the concept of the halo effect to explain the interconnected relationship between the antecedent of

online satisfaction to offline satisfaction and the antecedent of offline satisfaction to online satisfaction.

Research hypotheses and model

On the basis of the literature review in the previous section, we developed a research model by mapping conceptual constructs to the theoretical framework, as depicted in Figure 1.

Online service quality and customer satisfaction

Several IS studies have reported that service quality positively affects customer satisfaction (Chang et al., 2018; DeLone & McLean, 2003; Kim et al., 2007; Olorunniwo et al., 2006; Zhou et al., 2009). In the present study, online service quality is interpreted as the quality of online hotel booking services provided by OTA platforms. Customers experience service support from the OTA platforms that help them book a hotel room. Hence, online satisfaction increases if the OTA platforms provide high-quality service, such as additional assistance to help customers book their hotel rooms.

The experiences that customers gain from one domain (offline or online service) can influence their evaluations of the other domain (Bhatnagar et al., 2003). In this case, customer perceptions when booking hotel services using OTA services can be extended to satisfaction when experiencing hotel services offline. If customers are impressed by the information on a hotel's services provided on an OTA platform when they are booking the hotel services, they are likely to have a positive perception of all the hotel's offline services. This positive perception can be extended when customers experience the hotel's services offline, thus enhancing offline satisfaction. Therefore, we propose the following hypotheses:

- H1. Online service quality has a significant positive effect on online satisfaction.
- H2. Online service quality has a significant positive effect on offline satisfaction.

Four dimensions of value and perceived value of offline services

In this study, the perceived value of offline services is interpreted as the assessed overall value derived from hotel services. All value dimensions are derived from

Sweeney and Soutar (2001). If customers perceive a higher functional value, their overall perceived value of hotel services is likely to also be higher. Therefore, hotel services should be well designed and have satisfactory quality standards and consistent quality to provide high functional value to customers (Chang et al., 2018). Moreover, customers' overall perception of value derived from hotel services is likely to be higher if the hotel provides higher emotional value. Thus, hotels should provide pleasure, comfort, and enjoyment to customers and use their services to prompt a high emotional value perception of hotel services (Chang et al., 2018). In addition, hotels should provide customers with services that build their customers' positive impression and help them gain social approval when using such services (Chang et al., 2018). Customers may sense an increase in self-esteem when using hotel services; this in turn increases their overall perceived value of hotel services. Hotels should also offer economic benefits to those who use their services (Chang et al., 2018). Customers may evaluate the economic benefits they obtain when using a certain hotel's services. Hence, if a hotel enhances the monetary value of its services, customers are likely to perceive an overall increase in the value of hotel services. Therefore, we propose the following hypotheses:

H3a. Functional value has a significant positive effect on the perceived value of offline services.

H3b. Emotional value has a significant positive effect on the perceived value of offline services.

H3c. Social value has a significant positive effect on the perceived value of offline services.

H3d. Monetary value has a significant positive effect on the perceived value of offline services.

Perceived value of offline services and customer satisfaction

Related studies (Kuo et al., 2009; Lin & Wang, 2006; Lu & Hsiao, 2010) have observed the influence of perceived value on customer satisfaction. Moreover, several studies on the travel industry have explored perceived value as a major determinant of customer satisfaction (Gallarza & Saura, 2006; Lee et al., 2007; Tam, 2004). Lam and Erramilli (2004) argued that the perceived value of services can increase customer satisfaction as well as enhance the utility of such services. Thus, offline satisfaction increases if hotels provide

high-value services. Jin et al. (2010) revealed that the impression that customers have of offline services can serve as a halo effect, affecting customers' satisfaction level toward online services. Similarly, studies have demonstrated that customer attitudes toward the image of one company have a halo effect on their evaluation of the image of another company (Chang et al., 2018; Song et al., 2010; Yang et al., 2013). In this case, if a customer has a strong positive image of the hotel while experiencing the hotel's services offline, they are likely to have a positive image of the OTA because the hotel was specifically marketed by the OTA. Thus, a positive image can be transferred to enhance online satisfaction. We propose the following hypotheses:

H4. The perceived value of offline service has a significant positive effect on offline satisfaction.

H5. The perceived value of offline service has a significant positive effect on online satisfaction.

Customer satisfaction and continuance intention to use online services

Customer satisfaction is widely adopted as a determinant factor of customer behavioral intention (Chang et al., 2018; Kuo et al., 2009; Lin et al., 2014; Liu et al., 2019). Customer satisfaction with one service is derived from stable causes such as service quality; accordingly, the same outcome (i.e. satisfaction) is anticipated when the customer experiences another service (Jin et al., 2010). This study postulates that customers who are satisfied with one company's services are more likely to be satisfied with other companies' services. When customers have high satisfaction with the services provided by OTAs, they tend to exhibit a relatively high satisfaction with the partnering hotels' offline services.

Related studies have posited that satisfaction has a positive relationship with continuance intention (Deng et al., 2010; Li & Liu, 2014; Lin et al., 2014; Liu et al., 2019; Shang & Wu, 2017; Zhao et al., 2012). High satisfaction with an online service indicates that consumers are likely to use such an online service again (Bhattacharjee, 2001a). Moreover, when customers' satisfaction is positively confirmed for one service, customers are more likely to continue their patronage of the service (Li & Liu, 2014; Zhou, 2011). Therefore, if customer satisfaction in using OTA websites for booking hotels is enhanced, the continuance intention to use such channels to

rebook hotels might increase. Customer satisfaction with hotels can reinforce the image of OTAs, given that hotels are marketed by OTAs (Chang et al., 2018). Therefore, customers' continuance intention to rebook hotels using OTA platforms might be enhanced if they are satisfied with hotel services. Thus, we propose the following hypotheses:

H6. Online satisfaction has a significant positive effect on offline satisfaction.

H7. Online satisfaction has a significant positive effect on the continuance intention to use online services.

H8. Offline satisfaction has a significant positive effect on the continuance intention to use online services.

Research methodology

Instrument development

Each construct in this study included measurement items that were identified on the basis of prior studies. Measurement items for online service quality were adapted from Gefen (2002). Responsiveness, reliability, empathy, and assurance were used to measure the service quality of OTA platforms. Items used to measure the perceived value of hotel services were adapted from Sweeney and Soutar (2001). Four dimensions were used, namely emotional, functional, monetary, and social values. In this study, the perceived value of hotel services and the service quality of OTA platforms are treated as second-order constructs. Measurement items obtained from Bhattacharjee (2001b) were used for measuring online and offline satisfaction. The behavioral intention scale developed by Moon and Kim (2001) was adapted to measure the continuance intention to use an online service. The questionnaire was designed according to the items to be measured for each construct. Seven-point Likert scales, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), were used to measure all items. Measurement items for each construct in the present study are provided in Table A.1.

Sample and data collection

The research sample comprised customers of 10 hotels from four well-known hotel chains in Indonesia: Accor (two hotels), Archipelago International (two hotels), Santika Indonesia (three hotels), and Tauzia Hotel Management (three hotels).

Empirical data were gathered through offline and online (mixed-mode) surveys of hotel customers who affirmed that they had booked hotels through OTA platforms. Mixed-mode surveys have frequently been adopted to compensate for the weaknesses of each individual approach (De Leeuw, 2005; Guise et al., 2010). In the current study, the mixed-mode approach involved using an offline survey (i.e. paper-based survey) for some respondents and an online survey (i.e. web-based survey) for others in the same sample; the questionnaire content was the same in both surveys. The mixed-mode approach helped increase the response rate in this study, in line with previous findings (Converse et al., 2008; Guise et al., 2010). Several studies have also reported that the introduction of a secondary mode increases responsiveness, with evidence that first employing the paper mode (offline), followed by the web mode (online), is particularly effective (Beebe et al., 2007; Converse et al., 2008).

This study had two respondent selection criteria: (1) having used an OTA platform at least once to book a hotel and (2) having stayed at the targeted hotel for at least one night. A total of 300 offline questionnaires were distributed between September and November 2018, yielding 126 responses. A second round of questionnaire distribution was conducted using online questionnaires between October and November 2018, yielding 179 responses. A comparison of the demographic variables of the respondents in the two rounds indicated no statistical differences. Therefore, we merged the two datasets, yielding a total of 305 responses. Responses with invalid data were excluded. The final sample consisted of 279 valid surveys.

Female respondents accounted for 65.9%, and participants aged 18–25 years accounted for 59.9%. Participants who had a bachelor's degree accounted for 55.9%, and 49.8% earned a monthly income of up to three million rupiahs. Detailed respondent demographic information is presented in Table A.2.

Results

Partial least squares structural equation modeling (PLS-SEM) is commonly used to analyze research models. Related studies have used PLS-SEM to analyze complex models with latent variables as well as the relationships between these variables. PLS-SEM was used in the present study because this technique can be applied to a small sample size to

test a research model with high complexity (Chin, 1998). In addition, according to Hair et al. (2019), PLS-SEM can be used when the path model includes formatively measured constructs (i.e. perceived value of offline services in this study).

Data analysis was performed using SmartPLS 3.0 to examine structural and measurement models. The measurement model was investigated to test convergent and discriminant validity for all items and constructs. Subsequently, the structural model was assessed to test the hypotheses proposed in the research model. Common method bias analysis was also conducted to assess potential bias during the data collection process in relation to the instruments used and data collection methods.

Measurement model

This study evaluated the measurement model by testing its reliability, convergent validity, and discriminant validity. Reliability was assessed using Cronbach's α . Cronbach's α values for each construct ranged from 0.817 to 0.932 (Table 1). The recommended level for Cronbach's α is ≥ 0.7 . Thus, reliability was supported in this study.

This study used three criteria to examine convergent validity: all factor loadings > 0.7 (Chin, 1998), composite reliability (CR) > 0.7 (Chin, 1998), and average variance extracted (AVE) > 0.5 (Fornell & Larcker, 1981). The results are displayed in Table 1. The factor loading values ranged from 0.745 to 0.946, thus exceeding 0.7. The CR values for each construct ranged from 0.891 to 0.949, thus exceeding 0.7. The AVE values ranged from 0.716 to 0.852, thus exceeding 0.5. Therefore, the measurement model indicated sufficient convergent validity.

Discriminant validity was tested using the Fornell–Larcker and heterotrait–monotrait (HTMT) criteria. Using the Fornell–Larcker criterion involves comparing the square root of the AVE with the correlations between it and all of the other constructs (Fornell & Larcker, 1981). The value of the square root of the AVE for each construct was higher than its correlations with other constructs (Hair et al., 2019; Table 2). Moreover, the HTMT values were less than 0.9 (Henseler et al., 2015; Table 3). Therefore, the measurement model demonstrated favorable discriminant validity.

To minimize the possibility of common method bias, this study conducted a Harman's single-factor test. Common method bias might be a legitimate

concern if the common latent factor contributes to more than 50% of the variance (Podsakoff et al., 2003). The result indicated that the factor accounted for less than 50% of the variance in this study. The items in the datasets loaded significantly onto more than one principal component, indicating no single dominant factor (Podsakoff et al., 2003). This means that common method bias was likely not a serious concern in this study.

Structural model

The structural model in this study was assessed by testing the hypothesized relationships between all constructs. Functional value ($\beta = 0.128$, $p < 0.05$), emotional value ($\beta = 0.444$, $p < 0.001$), social value ($\beta = 0.489$, $p < 0.001$), and monetary value ($\beta = 0.157$, $p < 0.05$) exhibited significant positive effects on the perceived value of offline services (Figure 2). Therefore, H3a, H3b, H3c, and H3d are supported. The online services quality ($\beta = 0.528$, $p < 0.001$) and perceived value of offline services ($\beta = 0.351$, $p < 0.001$) exhibited significant positive effects on online satisfaction, thus supporting H1 and H5; online services quality and perceived value of offline services explained 64.3% of online satisfaction's variance. Online services quality ($\beta = 0.143$, $p < 0.05$) and perceived value of offline services ($\beta = 0.511$, $p < 0.001$) also had a significant positive effect on offline satisfaction, thus supporting H2 and H4. The path from online satisfaction ($\beta = 0.265$, $p < 0.001$) to offline satisfaction exhibited a significant positive effect as hypothesized, thus supporting H6. The model explained 69.2% of offline satisfaction's variance. Online satisfaction ($\beta = 0.382$, $p < 0.001$) and offline satisfaction ($\beta = 0.313$, $p < 0.001$) significantly and positively affected the continuance intention to use online services, thus supporting H7 and H8. Both customer satisfaction types explained 41.8% of the variance in the continuance intention to use online services.

Age, gender, monthly income, and education were selected as control variables. Age ($\beta = -0.056$, $p < 0.05$) and gender ($\beta = -0.088$, $p > 0.05$) had no significant positive effects. Education ($\beta = 0.059$, $p > 0.05$) had a positive effect, but it was nonsignificant, and monthly income ($\beta = 0.132$, $p < 0.05$) had a significant positive effect on the continuance intention to use online platforms. When all control variables were included in the proposed research model, the results indicated that the variance in continuance intention

Table 1. Reliability and convergent validity.

| Construct | Item | Factor loadings | Cronbach's alpha | CR | AVE |
|--|------|-----------------|------------------|-------|-------|
| Reliability (RLB) | RLB1 | 0.889 | 0.895 | 0.927 | 0.761 |
| | RLB2 | 0.885 | | | |
| | RLB3 | 0.885 | | | |
| | RLB4 | 0.829 | | | |
| Responsiveness (RSP) | RSP1 | 0.910 | 0.932 | 0.949 | 0.787 |
| | RSP2 | 0.907 | | | |
| | RSP3 | 0.917 | | | |
| | RSP4 | 0.864 | | | |
| | RSP5 | 0.835 | | | |
| Assurance (ASR) | ASR1 | 0.893 | 0.913 | 0.939 | 0.793 |
| | ASR2 | 0.917 | | | |
| | ASR3 | 0.888 | | | |
| | ASR4 | 0.864 | | | |
| Empathy (EPT) | EPT1 | 0.830 | 0.906 | 0.934 | 0.781 |
| | EPT2 | 0.875 | | | |
| | EPT3 | 0.896 | | | |
| | EPT4 | 0.929 | | | |
| Functional Value (FV) | FV1 | 0.904 | 0.913 | 0.945 | 0.852 |
| | FV2 | 0.946 | | | |
| | FV3 | 0.920 | | | |
| Emotional Value (EV) | EV1 | 0.745 | 0.900 | 0.926 | 0.716 |
| | EV2 | 0.857 | | | |
| | EV3 | 0.861 | | | |
| | EV4 | 0.893 | | | |
| | EV5 | 0.867 | | | |
| Social Value (SV) | SV1 | 0.876 | 0.925 | 0.947 | 0.816 |
| | SV2 | 0.896 | | | |
| | SV3 | 0.921 | | | |
| | SV4 | 0.921 | | | |
| Monetary Value (MV) | MV1 | 0.854 | 0.817 | 0.891 | 0.732 |
| | MV2 | 0.884 | | | |
| | MV3 | 0.827 | | | |
| Online satisfaction (ONS) | ONS1 | 0.894 | 0.923 | 0.945 | 0.812 |
| | ONS2 | 0.888 | | | |
| | ONS3 | 0.928 | | | |
| | ONS4 | 0.895 | | | |
| Offline satisfaction (OFS) | OFS1 | 0.847 | 0.900 | 0.930 | 0.77 |
| | OFS2 | 0.871 | | | |
| | OFS3 | 0.909 | | | |
| | OFS4 | 0.881 | | | |
| Continuance Intention to Use Online Service (CI) | UOC1 | 0.945 | 0.909 | 0.943 | 0.847 |
| | UOC2 | 0.944 | | | |
| | UOC3 | 0.870 | | | |

to use online platforms did not significantly increase (from 41.8% to 44.3%).

Discussion

This study examined how O2O service synergy enhance customer satisfaction and further drive customer continuance intention. Customers search for hotel information, book hotels, and pay for hotel services online through OTA platforms; subsequently, they experience such services offline when visiting the hotel. Thus, the present study specifically investigated (1) the interconnected relationship between the quality of OTAs' services and the perceived

value of hotels' offline services in relation to online and offline satisfaction as well as (2) the effects of online and offline satisfaction on customers' continuance intention to use online services.

The results of the data analysis demonstrated that all hypotheses are supported. Online service quality displayed a significant positive effect on online satisfaction, which in turn influenced the continuance intention to use online services. When consumers are satisfied with OTA platforms, they are likely to rely more on service quality to form their continuance intention to use such channels to rebook hotels. This means that high-quality OTA services can enhance online satisfaction. This finding also implies that

Table 2. Fornell–Larcker criterion.

| | RLB | RSP | ASR | EPT | FV | EV | SV | MV | ONS | OFS | CI |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Reliability (RLB) | 0.872 | | | | | | | | | | |
| Responsiveness (RSP) | 0.775 | 0.887 | | | | | | | | | |
| Assurance (ASR) | 0.685 | 0.716 | 0.891 | | | | | | | | |
| Empathy (EPT) | 0.720 | 0.703 | 0.736 | 0.884 | | | | | | | |
| Functional Value (FV) | 0.501 | 0.482 | 0.468 | 0.488 | 0.923 | | | | | | |
| Emotional Value (EV) | 0.481 | 0.489 | 0.463 | 0.473 | 0.633 | 0.846 | | | | | |
| Social Value (SV) | 0.426 | 0.413 | 0.381 | 0.528 | 0.430 | 0.524 | 0.904 | | | | |
| Monetary Value (MV) | 0.461 | 0.410 | 0.439 | 0.499 | 0.462 | 0.499 | 0.446 | 0.855 | | | |
| Online satisfaction (ONS) | 0.677 | 0.629 | 0.654 | 0.744 | 0.454 | 0.580 | 0.577 | 0.477 | 0.901 | | |
| Offline satisfaction (OFS) | 0.621 | 0.562 | 0.574 | 0.657 | 0.555 | 0.675 | 0.660 | 0.483 | 0.728 | 0.877 | |
| Continuance Intention to Use Online Service (CI) | 0.572 | 0.521 | 0.507 | 0.508 | 0.449 | 0.412 | 0.431 | 0.404 | 0.610 | 0.591 | 0.920 |

when a customer's satisfaction with an OTA's online service for booking hotel services increases, the customer's continuance intention to use such online services to rebook the same hotel services also increases. This result further validates the findings of previous research (Bauer et al., 2006; Chang et al., 2018; Kim et al., 2007; Olorunniwo et al., 2006; Zhou et al., 2009), highlighting a positive effect between service quality and customer satisfaction. This result is also consistent with some previous studies that suggested increased customer satisfaction with an online service increases contributes to increased customer continuance intention (Bhattacharjee, 2001a; Li & Liu, 2014; Zhou, 2011).

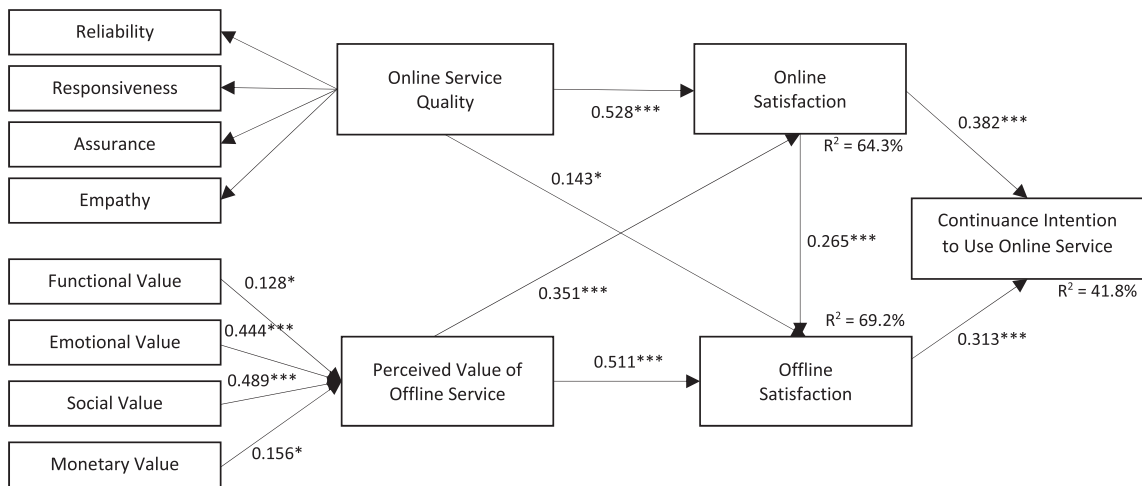
Functional, emotional, social, and monetary values significantly affected the perceived value of offline services, which in turn affected offline satisfaction and further influenced the continuance intention to use online services. These findings support the four dimensions of value proposed in the perceived value concept of Sweeney and Soutar (2001). These findings are also consistent with some related studies (Gallarza & Saura, 2006; Lee et al., 2007; Tam, 2004) that reported that perceived value is a major determinant of customer satisfaction. This result

implies that high perceived value of a hotel's services can increase offline satisfaction. If customers are satisfied with a hotel's services, they may opt to visit the hotel again in the future, which in turn enhances their continuance intention to use the OTA platform to rebook the hotel. Overall, this result further supports the suggestion of Bhatnagar et al. (2003) that customers' experiences when using offline services can affect their behavior toward online services.

The current study further revealed that online service quality has a positive effect on offline satisfaction and the perceived value of offline services significantly affects online satisfaction. These findings are indicative of the interconnected relationship between the antecedent of online satisfaction to offline satisfaction and between the antecedent of offline satisfaction to online satisfaction. If customers are impressed with a hotel's service information provided on the OTA's platform when they book the hotel's services, they are likely to have a positive perception of all the hotel's offline services. This positive perception can be extended when these customers experience the hotel's services offline, thus enhancing their offline satisfaction. Moreover, if customers have a strong positive image of the hotel when

Table 3. Heterotrait–monotrait ratio criterion.

| | RLB | RSP | ASR | EPT | FV | EV | SV | MV | ONS | OFS | CI |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| Reliability (RLB) | | | | | | | | | | | |
| Responsiveness (RSP) | 0.848 | | | | | | | | | | |
| Assurance (ASR) | 0.756 | 0.775 | | | | | | | | | |
| Empathy (EPT) | 0.798 | 0.763 | 0.806 | | | | | | | | |
| Functional Value (FV) | 0.553 | 0.520 | 0.511 | 0.534 | | | | | | | |
| Emotional Value (EV) | 0.537 | 0.535 | 0.512 | 0.523 | 0.707 | | | | | | |
| Social Value (SV) | 0.467 | 0.446 | 0.414 | 0.579 | 0.468 | 0.572 | | | | | |
| Monetary Value (MV) | 0.531 | 0.462 | 0.501 | 0.575 | 0.527 | 0.579 | 0.513 | | | | |
| Online satisfaction (ONS) | 0.745 | 0.679 | 0.711 | 0.813 | 0.493 | 0.632 | 0.624 | 0.548 | | | |
| Offline satisfaction (OFS) | 0.691 | 0.614 | 0.633 | 0.729 | 0.611 | 0.748 | 0.723 | 0.557 | 0.798 | | |
| Continuance Intention to Use Online Service (CI) | 0.635 | 0.567 | 0.557 | 0.559 | 0.494 | 0.458 | 0.470 | 0.460 | 0.666 | 0.654 | |



Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Figure 2. Results.

experiencing the hotel's services offline, they are likely to have a positive image of the OTA because the hotel was specifically marketed by the OTA. Hence, the positive image can be transferred to enhance online satisfaction.

This study also observed that online satisfaction has a significant positive effect on offline satisfaction. This means that customer satisfaction when booking hotel services by using OTAs' services tends to influence their satisfaction when experiencing hotel services offline. This finding is in accordance with several previous studies (Jin et al., 2010; Wallace et al., 2004; Yang et al., 2013) that have suggested that customers who are satisfied with one company's service are more likely to be satisfied with another company's services, as long as the two companies cooperate to provide interconnected services. The current results further support the finding of previous research (Chang et al., 2018), which reported the existence of a halo effect in the online–offline service relationship.

Contributions to theory and practice

Theoretical contributions

This study makes a major theoretical contribution by providing in-depth insights, based on the self-regulatory process (Bagozzi, 1992), halo effect (Thorndike, 1920), and O2O business model, into how service synergy between two types of companies enhances customer satisfaction and further drive continuance

intention. This substantially contributes to the literature in three essential domains. First, this is the first study to extend the existing research by applying the self-regulatory process as the main framework to investigate the extent to which online service quality and perceived value of offline services (appraisal processes) enhance customers' satisfaction (emotional reactions) and in turn influence customers' continuance intention to use online services (coping responses). Second, this study adopts the O2O business model to explain the mechanism of cooperation between OTAs and hotels in achieving service synergies through the establishment of online sales and offline service experiences. Finally, this study employs the halo effect to further examine the extent to which online and offline services between two types of companies interact to determine online and offline satisfaction in a synergistic manner.

In particular, this is the first study to consider the interconnected relationship between the antecedent of online satisfaction to offline satisfaction and between the antecedent of offline satisfaction to online satisfaction. This study highlights that online service quality has a significant positive effect on offline satisfaction and the perceived value of offline services has a significant positive effect on online satisfaction; hence, online service quality and the perceived value of offline services are reliable predictors of customer satisfaction in the O2O environment.

This study also extends related studies on customer satisfaction by highlighting that online satisfaction with one company can enhance offline

satisfaction obtained from another company in a synergistic manner. Although a prior study (Chang et al., 2018) suggested that high satisfaction with online channels did not guarantee high satisfaction with offline channels, the results of the present study indicate that customer satisfaction with online services significantly affects customer satisfaction with offline services.

This study also offers other contributions to the literature by confirming the direct relationship between offline satisfaction and continuance intention to use online services. Customers book hotel services by using OTAs and subsequently experience hotel services offline when visiting the hotels. If customers are satisfied with hotel services, they may decide to visit the same hotel again in the future and rebook its services using the same OTA. Thus, these results suggest that customer satisfaction with hotels can help improve the perception they have of OTAs, given that customers booked these hotels through OTA platforms.

Practical contributions

From a practical perspective, this study helps OTA and hotel managers strengthen their understanding of service synergies to attract not only new online customers but also to retain current customers. This study provides suggestions to OTA managers on how to improve the quality of online hotel booking services on their platforms. The current results suggest that OTAs should develop a reliable and responsive platform, build customer confidence (assurance dimension), and demonstrate care (the empathy dimension) for their customers. When customer satisfaction with OTA platform usage increases, customers are likely to use such online services again – their mean continuance intention to use the services of OTAs to rebook hotels increases.

The current findings provide direction to hotel managers on how to enhance the perceived value of their offline services. Hotel services should be well designed, have satisfactory quality standards, and provide pleasurable experiences to customers. Hotels should also provide customers with services to arouse a favorable impression in these customers as well as offer economic benefits to customers when they use hotel services. Higher customer satisfaction with hotel services leads to an increased continuance intention to rebook hotels using the OTA platform.

In the context of O2O service synergies, OTAs should identify hotels that may be advantageous business partners. For OTAs, focusing on building more strategic partnerships with hotels that can increase customer satisfaction with their services would be beneficial. OTAs should work closely with hotels by offering them recommendations or suggestions to help them improve their services; such suggestions may help increase customers' offline satisfaction. Moreover, hoteliers should select suitable OTAs for the marketing and selling of their services online. Hotels should cooperate with OTAs by supplying accurate, complete, and relevant information, which may enhance customers' satisfaction with using online hotel booking services on OTA platforms. In sum, OTA–hotel cooperation can increase customer satisfaction through both online and offline services, thus resulting in an enhanced continuance intention to use OTAs' services to rebook hotel services.

Conclusions and limitations

This study broadens the understanding of how O2O service synergy enhance customer satisfaction and further drive customer continuance intention. The current findings reveal that the synergy of OTAs' online services and hotels' offline services can enhance customer satisfaction with both services and in turn influence customer continuance intention to use OTAs' online services to rebook the hotel. By applying an integrative model based on Bagozzi's (1992) self-regulatory process, Thorndike's (1920) halo effect, and the O2O business model, this study offers a substantial contribution to the literature.

This is the first study to extend the literature by adopting the self-regulatory process as the main framework to investigate the extent to which OTAs' online service quality and the perceived value of hotels' offline services (appraisal processes) enhance customer satisfaction (emotional reactions) and in turn influence customer continuance intention to use OTAs' services (coping responses). Moreover, the present study is the first to investigate the interconnected relationship between the antecedent of online satisfaction to offline satisfaction and between the antecedent of offline satisfaction to online satisfaction. The results suggest that online service quality and the perceived value of offline services are reliable predictors of customer satisfaction in the O2O environment. These findings confirm that the O2O business model can be used to explain the

mechanism of cooperation between OTAs and hotels in achieving service synergies through the establishment of online sales and offline service experiences. Moreover, these findings validate the halo effect on OTAs' services and hotels' offline services.

The current findings provide direction for hotel and OTA managers on how to enhance customer satisfaction through their service synergies to ultimately increase customers' intention to rebook hotel services using OTA platforms. The management of OTAs should continue to improve the quality of their platforms that provide online hotel booking services. Moreover, hotel managers should continue to improve the quality of their offline services to provide an enhanced experience for customers. Hotels should also cooperate with OTAs to increase customers' satisfaction when they use the services of OTAs, and OTAs should cooperate with hotels to increase customers' satisfaction when they use hotels' offline services.

This study has some limitations. First, hotels and OTAs were selected as research subjects in the context of the travel industry. Future studies may adapt this research model to other industry contexts. Second, this study employed data collected in Indonesia. Further research may examine other countries to validate the current findings. Third, this study examined the halo effect of online and offline services between two categories of companies in the O2O environment. Future studies may investigate the reciprocal relationship between online satisfaction and offline satisfaction. Finally, this study measured customers' behavioral intentions to continue using online services; future studies may measure customers' actual behaviors when using online and offline services.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix

Table A1. Measurement items of relevant constructs.

| Construct | Measurement Items | Sources |
|-------------|---|--------------|
| Reliability | 1. This OTAs is trustworthy 2. This OTAs wants to be known as one who keeps promises and commitments | Gefen (2002) |

(Continued)

Table A1. Continued.

| Construct | Measurement Items | Sources |
|------------------|--|---------------------------|
| Responsiveness | 3. I trust this OTAs keeps my best interests in mind | Gefen (2002) |
| | 4. I feel relaxed when using this OTAs | |
| | 1. Information on the OTAs is complete | |
| | 2. Information on the OTAs is easy of understanding | |
| | 3. Information on the OTAs is personalized | |
| Assurance | 4. Information on the OTAs is relevant | Gefen (2002) |
| | 5. Information on the OTAs is secured | |
| | 1. The OTAs is available | |
| | 2. The OTAs is reliable | |
| | 3. The OTAs has fast response time | |
| Empathy | 4. The OTAs is useful | Gefen (2002) |
| | 1. The OTAs provides services with empathy | |
| | 2. The OTAs provides responsive services | |
| | 3. The OTAs provides accurate services | |
| Functional Value | 4. The OTAs provides reliable services | Sweeney and Soutar (2001) |
| | 1. The hotel services have consistent quality | |
| | 2. The hotel services are well designed | |
| | 3. The hotel services have acceptable standard of quality | |
| Emotional value | 1. I would enjoy the hotel services | Sweeney and Soutar (2001) |
| | 2. I would like to experience the hotel services | |
| | 3. I would feel relaxed experiencing the hotel services | |
| | 4. The hotel services would make me feel good | |
| | 5. The hotel services would give me pleasure | |
| Social value | 1. Using the hotel services would help me to feel acceptable | Sweeney and Soutar (2001) |
| | 2. Using the hotel services would improve the way I am perceived | |
| | 3. Using the hotel services would make a good impression on other people | |
| | 4. Using the hotel services would give me social approval | |

(Continued)

Table A1. Continued.

| Construct | Measurement Items | Sources |
|---|--|----------------------------|
| Monetary value | 1. The hotel services are reasonably priced | Sweeney and Soutar (2001b) |
| | 2. The hotel services offer value for money | |
| | 3. The hotel services are the good choice for the price | |
| Online satisfaction | 1. Using the OTAs platform makes me feel satisfied | Bhattacharjee (2001b) |
| | 2. Using the OTAs platform makes me feel pleased | |
| | 3. Using the OTAs platform makes me feel contented | |
| Offline satisfaction | 1. Experiencing the hotel services makes me feel satisfied | Bhattacharjee (2001b) |
| | 2. Experiencing the hotel services makes me feel pleased | |
| | 3. Experiencing the hotel services makes me feel contented | |
| Continuance intention to use online service | 1. When booking this hotel, I will use the OTAs on a regular basis in the future | Moon and Kim (2001) |
| | 2. When booking this hotel, I will frequently | |

(Continued)

Table A1. Continued.

| Construct | Measurement Items | Sources |
|-----------|--|---------|
| | use the OTAs in the future | |
| | 3. When booking this hotel, I will strongly recommend others to use the OTAs | |

Table A2. Respondent characteristics.

| Measure | Item | Frequency | Percentage (%) |
|----------------------|---------------------------|-----------|----------------|
| TOTAL | | 279 | 100.0 |
| Gender | Female | 184 | 65.9 |
| | Male | 95 | 34.1 |
| Age | 18–25 years | 167 | 59.9 |
| | 26–35 years | 69 | 24.7 |
| | 36–45 years | 17 | 6.1 |
| | 46–55 years | 18 | 6.5 |
| | 56–65 years | 8 | 2.9 |
| Education | over 65 years | 0 | 0.0 |
| | Senior High School degree | 23 | 8.2 |
| | Associate degree/Diploma | 29 | 10.4 |
| | Bachelor's degree | 156 | 55.9 |
| | Master's degree | 69 | 24.7 |
| | Doctoral degree | 2 | 0.7 |
| Monthly Income (IDR) | less than 1 million | 72 | 25.8 |
| | 1–3 million | 67 | 24.0 |
| | 3.1–5 million | 48 | 17.2 |
| | 5.1–7 million | 32 | 11.5 |
| | 7.1–10 million | 34 | 12.2 |
| | more than 10 million | 26 | 9.3 |