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ORIGINAL EMPIRICAL RESEARCH

Winning your customers' minds and hearts: Disentangling the effects of lock-in and affective customer experience on retention

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Abstract

Building barriers to lock in customers and improving the affective customer experience are two key strategies employed by firms to enhance customer retention. Although pursuing the same goal, these strategies work differently: the former relies more on a calculative, cost–benefit approach to the exchange, while the latter promotes affective aspects of the relationship. Integrating experiential learning theory with social exchange theory, we provide a conceptual framework to understand the impact of lock-in and affective customer experience on customer retention, and the moderating role of relationship depth. Using a comprehensive data set for a sample of 13,761 customers covering all firms in one telecom market for two different services, we empirically test the framework via multinomial logit modeling. The results offer novel insights into the interplay between the two strategies. For poor affective customer experience (i.e., a score below five on a 0–10 scale), lock-in helps firms reduce customer churn (between 49.03% and 47.86%). However, the impact of lock-in decreases when affective customer experience improves and turns to be insignificant once the experience reaches the "acceptable level" (i.e., a score above seven on a 0–10 scale). Importantly, the separate and joint effects of the two strategies are stronger when there is a low relationship depth, and weaker when heavy relationships are established. The findings offer useful practical advice to manage these strategies in an efficient and optimal way.

Keywords Customer retention · Lock-in · Affective customer experience · Spillover effect · Multinomial logit models · Telecom industry

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Introduction

Customer retention has long been a top priority for marketers seeking to build successful relationships and create superior performance outcomes (Borah et al., 2020; Landsman & Nitzan, 2020; Neslin et al., 2006). The current economic landscape, marked by a global recession and intense competition between firms, emphasizes the centrality of building customer loyalty to keep businesses alive and sustain growth, while also raising important challenges about how to do that effectively in practice. More specifically, according to a survey developed by KPMG (2019), 78% of customers indicated that they would switch to companies with better offerings. Ascarza et al. (2018) noted the difficulties experienced by many top executives in achieving their retention goals, while recent evidence suggests that many retention initiatives do not produce the intended results. More worryingly, a recent survey conducted by Gainsight (2020) revealed that 77.5% of executives anticipated that their net

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retention rate would decrease by at least 3%, and possibly by more than 20%.

In practice, companies mainly resort to two central strategies for managing customer retention. One strategy is to lock customers into the relationship through actions that increase the termination costs of the exchange (e.g., bundling offerings and binding contracts), which can lead to retention through a calculative assessment of the costs and benefits of continuing the relationship (Ascarza et al., 2018; Calvo-Porral et al., 2017; Kashyap & Murtha, 2017; Nitzan & Ein-Gar, 2019; Seo et al., 2008). This approach to retention, known as lock-in, reflects a transactional focus. The other strategy is to improve affective customer experience, namely the component of customer experience that appeals to customers' inner feelings (Gentile et al., 2007; Rose et al., 2012; Schmitt, 1999). By definition, affective customer experience represents the holistic affective feelings (e.g., excitement, enjoyment, comfort, safety, and being entertained) (Kim & Perdue, 2013) that customers may have during their interactions with a firm.[1] Affective customer experience as a relational-focused strategy may impact retention through the positive affective feelings evoked in exchange relationships (Becker & Jaakkola, 2020; De Haan et al., 2015; De Keyser et al., 2020; Homburg et al., 2006).

A vast literature has accumulated on these two areas in recent years, providing empirical evidence that either lock-in or affective customer experience as a single strategy is vital for retaining customers. In practice, these strategies are frequently implemented together (e.g., in banking, telecommunications, and retailing) (Ascarza & Hardie, 2013; Calvo-Porral et al., 2017; Chen & Hitt, 2002; De Keyser et al., 2020; Nitzan & Ein-Gar, 2019). However, the ways in which customers process cognitive-related and affective-related information are different. A conceptual distinction between cognition-based and affect-based strategies will therefore be useful for theoretical investigations (Edwards, 1990; Panksepp, 2003) and will improve fundamental understanding of the relationships of these strategies (Panksepp, 2003). The distinction will also make it possible to address important practical questions about the strategic management of customer retention through lock-in and affective customer experience.

For example, if customers already have good affective experiences with a focal firm, should the firm also develop lock-in strategies to strengthen retention, or will investments in these more calculative/transactional strategies undermine the affective connection between the customer and the firm? Conversely, if customers who are not having good affective experiences stay in the relationship because of lock-in, should companies focus on improving affective experiences, or are these customers in a calculative mindset and unlikely to respond to such efforts? Matters are further complicated by the fact that consumers may connect at different levels with the firm depending on the relationship depth (i.e., the deepening of the customer's relationship with the firm through increased usage; Bolton et al., 2004). This raises the question of how the joint impact of lock-in and affective customer experience varies at different levels of relationship depth. For example, if a customer has a high-depth (low-depth) relationship with the firm, will they respond more (less) actively toward lock-in or affective customer experience? There is little doubt that firms significantly value these retention strategies, and understanding their joint impacts on retention is essential for developing more effective strategies and optimizing resource allocation (Kidwell et al., 2011; Kim & Kumar, 2018). However, as the literature overview in Table 1 shows, studies have examined lock-in and affective customer experience effects separately.

To bridge this important gap, we build on experiential learning theory and social exchange theory to provide an integrative conceptual framework for understanding the separate and joint impacts of lock-in (i.e., bundling offers and binding contracts) and affective customer experience (i.e., main effect and spillover effect across categories) on customer retention, as well as the moderating role of relationship depth. We use a unique panel data set from the telecoms industry in a major European country for a sample of 13,761 customers covering four years (2013–2016). The data set combines detailed information on customers' monthly retention decisions and churn behaviors across all companies in the market for two different services (mobile and broadband) with lock-in information (bundling offers and binding contracts) and perceived affective experiences. To test our research objectives empirically, we apply advanced multinomial logit modeling techniques and obtain two key findings. (1) There is a complex interplay between lock-in and affective customer experience in driving retention. Lock-in helps firms to reduce customer churn (on average from 11.86% to 1.07%)[2] when affective customer experience is

[1] Although the operationalization of affective customer experience does not explicitly capture its cognitive underpinnings, they are reflected in an indirect manner. For example, poor performance of the core product or service offering (such as slow connection speed) is likely to be unenjoyable, thereby negatively affecting enjoyment, the quality of entertainment, and affective customer experience. These considerations suggest that affective customer experience indirectly expresses the cognitive components of customers' core product or service experience.

[2] Churn rates were calculated as the average of the presence versus no presence of the two lock-in mechanisms (i.e., bundle and binding contract) while affective customer experience is poor (i.e., a score of 3 on a scale from 0 to 10).

Table 1 Literature review

Study		Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
								Main Aspects					
			Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
Customer experience focused	Arnould and Price (1993)	Examining the effect of extraordinary customer experiences	Observation and interview		Service	No	No	Yes	No	No	No	No	Customer satisfaction
	Barari et al. (2020)	Studying the impact of positive and negative customer experience on customer satisfaction and negative word-of-mouth (WOM)	Experiment	-	Online retailing	No	No	Yes	No	No	No	No	Customer satisfaction and negative WOM
	Brakus et al. (2009)	Developing brand experience measurement scales and examining its impact on customer satisfaction and loyalty	Structural equation model	-	Brand	No	No	Yes	No	No	No	No	Customer satisfaction and loyalty
	Brun et al. (2017)	Examining the impact of customer experience on loyalty from a multichannel perspective	Structural equation model	-	Service	No	No	Yes	No	No	No	No	Customer loyalty

Table 1 (continued)

Study		Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
								Main Aspects					
			Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
	De Haan et al. (2015)	Examining the relationship between customer experience and customer retention	Multilevel probit regression model	A bivariate probit model	Service	No	No	Yes	No	Yes	Yes	No	Customer retention
	Foroudi et al. (2016)	Understanding the effect of customer experience and innovation capability on reputation and loyalty	Confirmatory factor analysis Fuzzy set qualitative comparative analysis	-	Retailing	No	No	Yes	No	No	No	No	Loyalty and reputation
	Iglesias et al. (2019)	Examining the effect of sensory brand experience on brand equity through customer satisfaction and affective commitment	Structural equation model	Construct level correction (common method bias)	Service	No	No	Yes	No	No	No	No	Brand equity
	Liu et al. (2018)	Investigating customer response to service experiences that combine pleasure and pain	Experiment	–	Service	No	No	Yes	No	No	No	No	Consumer response

Table 1 (continued)

Study	Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
							Main Aspects					
		Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
McColl-Kennedy et al. (2019)	Providing a novel customer experience conceptual framework to better understand, manage, and improve customer experience	Data mining and design science research method	–	Service	No	No	Yes	No	Yes	No	No	–
McLean et al. (2018)	Examining the role of customer experience in relation to retailers' m-commerce mobile applications	Structural equation model	–	Mobile application	No	No	Yes	No	No	No	No	Customer satisfaction, positive emotion, and frequency of use
Morgan-Thomas and Veloutsou (2013)	Testing the impact of online brand experience on customer satisfaction and behavioral intentions and their joint influence on the formation of online brand relationship	Structural equation model, partial least squares	–	Online brand	No	No	Yes	No	No	No	No	Online brand relationship

Table 1 (continued)

Study		Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
								Main Aspects					
			Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
	Naylor et al. (2008)	Assessing the effect of transformational advertising on customers' retail experiences	Field study and controlled follow-up experiment	–	Retailing	No	No	Yes	No	No	No	No	Retail experience
	Ordenes et al. (2014)	Proposing a customer experience framework through a linguistic-based approach	Text mining	–	Service	No	No	Yes	Yes	No	No	No	–
	Poushneh and Vasquez-Parraga (2017)	Examining the impact of augmented reality on customer experience and its subsequent influence on customer satisfaction and willingness to buy	Structural equation model	–	Retailing	No	No	Yes	No	No	No	No	Customer satisfaction and willingness to buy
	Rose et al. (2012)	Demonstrating the effect of an optimum experience on customer behavior	Structural equation model, partial least squares	–	Online shopping	No	No	Yes	No	No	No	No	Online repurchase intention

Table 1 (continued)

Study		Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
								Main Aspects					
			Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
	Roy (2018)	Investigating the relevance of customer experience across service types, customer times from a dynamic perspective	Structural equation model	–	Service	No	No	Yes	No	No	No	No	Customer satisfaction, loyalty, WOM
	Schouten et al. (2007)	Assessing the impact of transcendent customer experience on customers' integration with a brand community	Pre-test/post-test quasi-experimental field experiment	–	Brand	No	No	Yes	No	No	No	No	Brand community integration
	Siqueira et al. (2020)	Investigating the role and impact of customer experience on WOM intentions by considering internal and external touchpoints as dimensions	Bayesian model	–	Service	No	No	Yes	No	No	No	No	WOM intention

Table 1 (continued)

Study		Focus of study	Method		Context	Lock-in		Perceptual metrics features				Relationship depth	Dependent variable
								Main Aspects					
			Main method	*Method for endogeneity*		*Bundling*	*Binding contract*	*Customer experience/ other metrics*	*Multiple category*	*Competitors*	*Cover entire market*		
	Söderlund and Sagfossen (2017)	Exploring the impact of customer experience on customer satisfaction by considering the role of supplier support and customer support	Experiment	–	Service	No	No	Yes	No	No	No	No	Customer satisfaction
	Srivastava and Kaul (2016)	Exploring the link between customer experience, loyalty and consumer spend	Structural equation model	–	Retailing	No	No	Yes	No	No	No	No	Share of wallet
	Zhang et al. (2017)	Investigating which customer experience elevates customer engagement and consequent WOM intentions in online brand communities	Structural equation model	–	Smartphone communities	No	No	Yes	No	No	No	No	Community engagement and WOM intention
Lock-in focused	Andrews et al. (2010)	Examining the effect of service bundles on switching intentions	Experiment	–	Service	Yes	No	–	No	No	No	No	Switching intention

Table 1 (continued)

Balachander et al. (2010)	Examining jointly the effect of price promotions and bundle discounts on customer defection, and thereby on profitability	Game-theoretic model	–	–	Yes	No	–	No	No	No	No	Customer defection
Becker et al. (2015)	Studying the impact of minimum contract durations on actual customer churn behavior	First stage logit model and Weibull proportional model	–	Telecommunications industry	No	Yes	–	No	No	No	No	Customer churn
Burnham et al. (2003)	Examining the antecedents and consequences of switching costs	Structural equation model	–	Service	Yes	Yes	Customer satisfaction	No	No	No	Yes	Intention to stay
Dong and Chintagunta (2016)	Studying the cross-category effects of satisfaction with financial services on retention behavior	Multivariate probit model; Bayesian estimation	A binary probit model	Financial service	No	No	Customer satisfaction	Yes	Yes	No	Yes	Customer retention and customer lifetime value

Table 1 (continued)

Foubert and Gijsbrechts (2007)	Assessing the effect of bundle promotions on purchase and customer switching	Multinomial logit choice model	–	Packaged goods	Yes	No	–	No	No	No	No	Purchase and customer switching
Giudicati et al. (2013)	Exploring the effect of social influence, relationship length, and contract on customer retention	Probit model and survival analysis	–	Service	No	Yes	–	No	No	No	No	Customer retention
Jones et al. (2007)	Examining the effect of different types of switching costs on relational outcomes	Structural equation model	A structural equation model	Service	Yes	Yes	Affective commitment; Emotion	No	No	No	Yes	Repurchase intentions and negative WOM
Kim and Yoon (2004)	Exploring the determinants of customer churn and customer loyalty	Binomial logit model	–	Telecommunications industry	No	Yes	Customer satisfaction	No	No	No	No	Customer churn

Table 1 (continued)

Malhotra and Malhotra (2013)	Exploring the switching behavior of mobile service customers with a focus on service quality, innovation, and lock-in strategies	Focus group interview and ordinary least squares (OLS) regression	–	Mobile service	No	Yes	-	No	No	No	No	Switching intention
Nitzan and Ein-Gar (2019)	Exploring the role of bundling in the linkage between payment method and customer defection	Experiment	–	Multiple service industries	Yes	No	Affective commitment	Yes	No	No	No	Customer defection
Tesfom et al. (2016)	Studying the impact of change from contract to non-contract and complementary upgrades on customer switching in different age groups	Chi-square tests	–	Telecommunications industry	No	Yes	-	No	No	No	No	Customer switching

Table 1 (continued)

	Wirtz et al. (2014)	Examining customer switching decisions in contractual service settings and contrasting the drivers of actual switching with those of switching intent	Generalized estimating equations	–	Mobile service	No	Yes	Customer satisfaction	No	Yes	No	Yes	Customer switching and switching intention
Current study		Improving the understanding of the separate and joint effects of lock-in and affective customer experience on customer retention, and how such effects might be further determined by relationship depth	Multinomial logit model	Propensity score matching	Telecom industry	Yes	Yes	Affective customer experience	Yes	Yes	Yes	Yes	Customer retention

poor (i.e., a score of 3 on a scale from 0 to 10). However, it is less relevant for retaining customers when the affective customer experience improves, and it becomes insignificant once the affective customer experience reaches an acceptable level (i.e., a score above 7 on a scale from 0 to 10). (2) The separate and joint effects of lock-in and the affective customer experience are moderated by the depth of the relationship, such that these effects are stronger when there is low relationship depth and weaker when a deeper relationship has been established. Specifically, given high relationship depth, lock-in may even backfire, with customer churn rising on average from 0.27% to 1.05% depending on whether affective customer experience is considered.

These findings enable us to go beyond prior research (e.g., Ataman et al., 2010; Kim & Kumar, 2018) to make several contributions to customer retention research and customer relationship management. First, and most notably, we provide an understanding of the interplay between lock-in and affective customer experience strategies in driving retention. Current practices are based on a narrow view of customer retention that focuses on one of the two central customer retention strategies. However, when the strategies are implemented jointly, the picture is very different, which indicates the need for a more nuanced understanding of their effects. Our work contributes to the literature by revealing *whether* lock-in and affective experiences strengthen or weaken each other (by revealing their joint impact on retention) and *when* these effects occur (by considering relationship depth), knowledge that is currently lacking in the literature. Second, our examination of the moderating role of relationship depth enables us to demonstrate systematically how the interplay between the two strategies varies at different levels of relationship depth. This will help firms to leverage the current status of the customer–firm relationship to derive more effective retention strategies. We provide quantified guidance for managers on how to optimally design their key marketing strategies (i.e., lock-in and affective customer experience), and which customers they should focus on in the application of these strategies to retain customers more effectively and increase financial accountability.

Theory and conceptual framework

In order to provide an understanding of the joint effects of lock-in and affective customer experience on retention, we use two key theoretical lenses: experiential learning theory and social exchange theory. Experiential learning theory (Kolb, 1984) illustrates a general idea about the role of affective customer experience with one product or service category and its spillover effect from other categories. However, this theory seldom mentions that the way in which customers process and learn from experiences depends fundamentally on the types of exchange relationships they have with firms (Witell et al., 2020); consequently, it requires supplementation by social exchange theory. In turn, social exchange theory allows us to determine and explore how the lock-in mechanisms that stimulate transactional exchange relationships can affect the impact of affective customer experience on customer retention. Importantly, it also enables us to investigate the moderating role of relationship depth in the impacts of lock-in and affective customer experience and their joint effects on customer retention.

Experiential learning theory

Experiential learning theory (Kolb, 1984) proposes that individuals learn through the experiences that they obtain from all parties, ranging from various product categories to multiple firms, including the competing alternatives. Such experiences can serve as a basis for reflection that allows the individual to obtain a wide range of information about various product categories provided by different firms (the reflection process). This information is later assimilated and distilled into abstract concepts, including the general perception of the experience with the focal firm (the conceptualization process), which can serve as a guide for carrying out actions, including the decision to stay with the focal firm or to switch to a competitor (the experimentation process). This theory suggests that, for a specific product or service, the customer's decision to remain in a current relationship or switch to a competitor will be affected by the experience of that particular product or service. We refer to this as the *main effect of the affective customer experience* on retention (Keiningham et al., 2020; Lemon & Verhoef, 2016). In addition, the theory acknowledges that customer retention in a product category can also be affected by experiences in other (related) categories with the focal firm, which we refer to as *affective customer experience spillover effects* (Balachander & Ghose, 2003; Danaher et al., 2020; Dong & Chintagunta, 2016).

Social exchange theory

Social exchange theory regards exchange relationships as ranging across a continuum from purely transactional relations (at one extreme) to reciprocal relationships (at the other extreme) (Day, 2000). Depending on the exchange relationships established, there are differences in how customers encode, reflect, and conceptualize the perceived experiences (Puccinelli et al., 2009; Witell et al., 2020). In transactional relationships, exchanges are based on formal binding agreements in which both customers and firms agree on the terms of the discrete exchange event that gives both partners the benefit of equal value (Molm et al., 2003). Lock-in thus occurs when customers remain in the exchange relationship

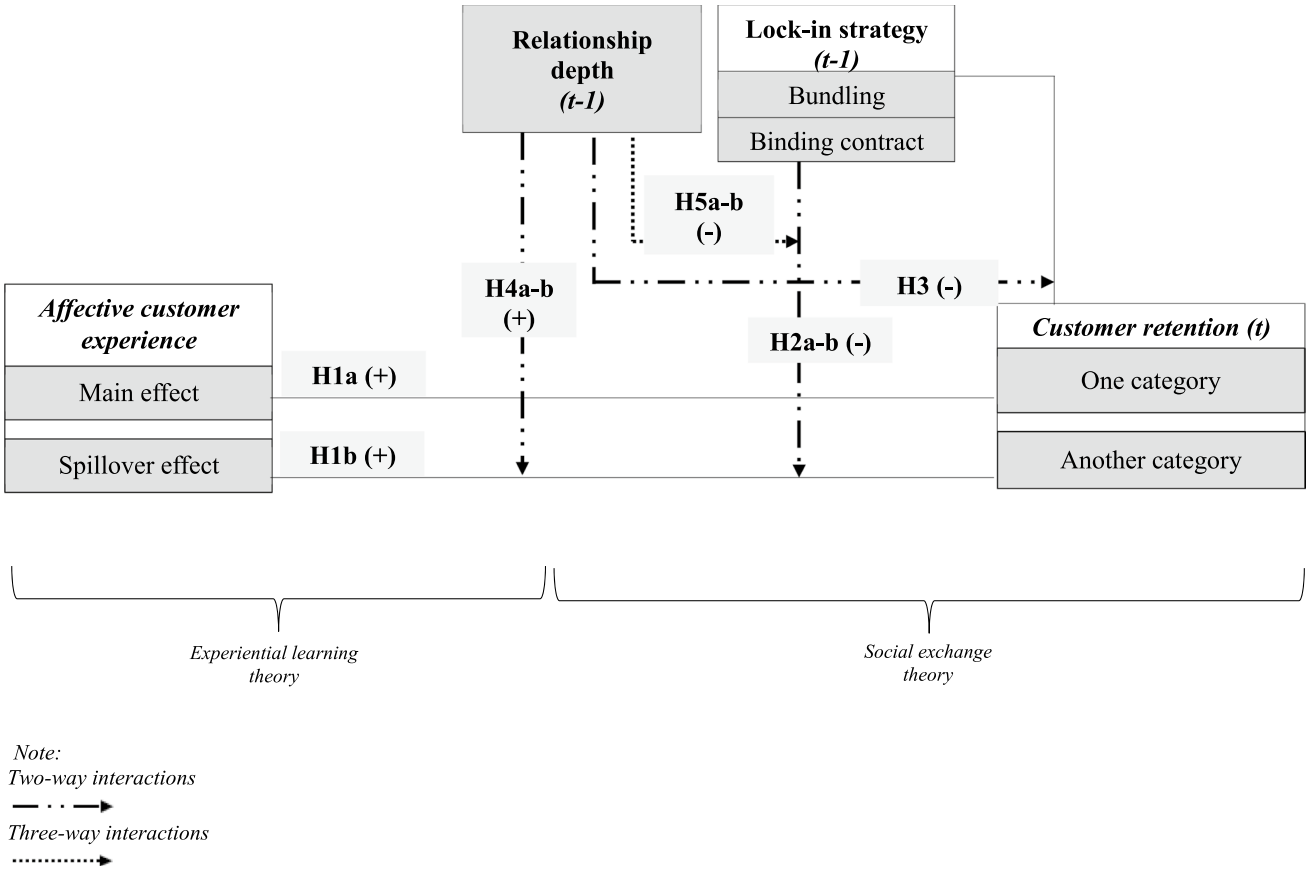


Fig. 1 Conceptual framework

because of monetary factors or economic incentives (e.g., bundling offers or binding contracts). Lock-in mainly promotes transactional relationships in which customers rely on calculative-based reasoning, which elicits an analytic, detail-oriented processing strategy through which they carefully weigh the balance between the profit obtained from continuing the relationship and the loss caused by leaving (Aggarwal & Law, 2005). Conversely, reciprocal relationships are derived from *relationship depth*, which is "the deepening of the customer's relationship with the firm through increased usage" (Bolton et al., 2004, p. 274) and reflects "the frequency of service usage over time" (p. 273). A deep relationship usually results from an ongoing process of exchanges and multiple interaction events between a customer and a firm (Witell et al., 2020), whereby the customer enjoys the psychological comfort of maintaining the deeply established exchange relationship (Bolton et al., 2004; Witell et al., 2020). Customers engaged in reciprocal relationships usually think in a broader, more abstract fashion, focusing on experiential benefits (Puccinelli et al., 2009). A figure (see Web Appendix A) has been elaborated to demonstrate the linkage between experiential learning theory and social exchange theory.

Having identified the two central customer retention strategies (lock-in and affective customer experience with its main and spillover effect), this study is concerned with understanding their joint effects on retention. In pursuit of this objective, first, and most importantly, we disentangle the effects of lock-in and affective customer experience and assess whether they strengthen or weaken each other. Second, we capture how the separate and joint effects of these strategies are determined by the depth of the established relationship, thereby addressing the question of when these effects take place. Figure 1 sets out the conceptual framework and the aforementioned effects.

Hypothesis development

Main effects of lock-in on customer retention

As suggested by Bolton et al. (2004), economic reward programs with their monetary benefits propositions may sound attractive to customers. Lock-in characterized by the monetary factors or economic incentives (e.g., bundling offers or binding contracts) are very likely to retain customers due to

the significant anticipated loss of benefits or switching barriers (Calvo-Porral et al., 2017; Malhotra & Malhotra, 2013). As there is accumulated evidence in the literature about the positive effect of lock-in on retaining customers (Blut et al., 2015; Johnson et al., 2003; Nitzan & Ein-Gar, 2019), we do not put forward specific hypothesis but instead empirically test this relationship. We will check the main effect (i.e., if it is indeed positive) for face validity.

Main effects of affective customer experience on customer retention

The importance of affective customer experience in retaining customers has long been recognized in the marketing literature (De Haan et al., 2015; De Keyser et al., 2020; Lemon & Verhoef, 2016). More specifically, this importance is reflected not only in the direct effect of delivering a good affective experience in one category offered by the focal firm, but also in delivering a good effect in a related category (Balachander & Ghose, 2003; De Keyser et al., 2020), that is, the spillover effect (Erdem & Sun, 2002; Janakiraman et al., 2009; Keller et al., 2020). Indeed, as noted previously, experiential learning theory clearly indicates that customer actions (e.g., switching decisions) are driven by grasping and transforming the concrete experiences acquired from all parties, including experiences from another product category. We therefore propose our first hypothesis:

H1 (a) Affective customer experience and (b) its spillover effect positively affect customer retention.

Joint effects of lock-in and affective customer experience on customer retention

Lock-in and affective customer experience Lock-in mechanisms are strategically designed to retain customers by offering incentives, such as providing various products in a single package at a discounted price (Kim et al., 2019; Nitzan & Ein-Gar, 2019) or using an add-on product to entice customers into contracts (Calvo-Porral et al., 2017; Malhotra & Malhotra, 2013). In line with the central premise of social exchange theory, such economic-benefit-focused offers are expected to encourage customers to engage in transactional relationships, in which they tend to rely on rational-calculative thinking to assess their relationships with firms, thereby decreasing their attention to affective aspects such as affective customer experience (Witell et al., 2020). This utilitarian concern stimulated by lock-in is devoid of affective connection with the firm (Gilliland & Bello, 2002), and it decreases the effectiveness of affective customer experience and its spillover effect on customer retention. In addition, where there is an established barrier to exit, customers may automatically continue the transaction with the focal firm until the expiration of the lock-in (Gilliland & Bello, 2002), regardless of the level of the perceived affective customer experience. As a result, lock-in may lead to customers being less experience-conscious within one category and another category (i.e., a spillover effect), thereby undermining the role that affective customer experience plays in retaining customers. Accordingly, we propose the following hypothesis:

H2 Lock-in strategies weaken the positive impact of (a) affective customer experience and (b) its spillover effect on customer retention.

The moderating role of relationship depth

Consistent with Bolton et al. (2004), relationship depth is one of the key indicators of relationship development. As the critical role of relationship depth in retaining customers, augmenting customer equity, and improving financial performance has been widely demonstrated by prior empirical research (e.g., Aurier & N'Goala, 2010; Burnham et al., 2003; Polo & Sesé, 2009), many firms have dedicated efforts in deepening current customer relationships. While the positive linkage between relationship depth and customer retention is straightforward, there is a lack of knowledge on how firm actions (i.e., lock-in) and the perceived affective customer experience may be assessed by customers under different relationship depth (Tarasi et al., 2013). As theoretically supported by social exchange theory, a deep relationship usually results from an ongoing process of exchanges and multiple interaction events between a customer and a firm (Witell et al., 2020). Depending on the degree of relationship depth, we expect that the way customers value economic-focused offerings and experiential benefits (Puccinelli et al., 2009) may also differ. Thus, it is essential to consider the moderating role of relationship depth under different situations (i.e., lock-in and affective customer experience).

Moderating role of relationship depth in the main effects of lock-in There is a broad consensus in the literature about the positive role of lock-in strategies in retaining customers (Blut et al., 2015; Johnson et al., 2003). Once customers are locked into an exchange relationship, they tend to remain with the focal firm. What remains unclear is how lock-in strategies might be perceived by customers if they have already established a strong relationship with the firm. When customers do business with firms, they are on the continuum of evaluating economic offerings (i.e., cognitive thinking), but they also want to feel good with the firm (i.e., affective feelings). However, the relative impact of these

factors as a function of primacy or dominance on customer decisions is different and varies across situations (Edwards, 1990). Lock-in strategies lead customers to focus more on economic gains in an exchange relationship with the firm (Stremersch & Tellis, 2002). As suggested by Bolton et al. (2004), economic reward programs, with their monetary benefits, may sound attractive to customers who are more calculative in orientation. However, customers attached to the firm because of a deeply established exchange relationship tend to appreciate more experiential benefits (Aggarwal & Law, 2005) and place less value on economic-focused offerings. Moreover, as social exchange theory indicates, given a deep relationship, customers are likely to establish a reciprocal exchange relationship with the firm (Gilliland & Bello, 2002). In a situation where customers are relational-oriented, lock-in as the economic-focused offering, which serves as a signal of a firm's intention to initiate or maintain the transactional relationship (Clark & Finkel, 2004), may erode the customers' liking for the firm (Bolton et al., 2004). In other words, customers who are locked in are mainly attracted by economic-focused offerings and are likely to expect a transactional-oriented relationship with the firm, which leads to less appreciation of high relationship depth. Therefore, we expect that the impact of lock-in on customer retention decreases with relationship depth:

H3 Relationship depth weakens the positive impact of lock-in on customer retention.

Moderating role of relationship depth in the main effects of affective customer experience Relationship depth is grounded on reciprocal relationships where customers and firms have gone through multiple interactions during an ongoing process of exchanges, thereby stimulating an implicit affective connection (Witell et al., 2020). As emphasized in social exchange theory, customers primed with norms of reciprocal relationships do not look for an immediate comparable payback and are relatively generous (Witell et al., 2020). Instead of paying attention to detailed and item-specific information about the firm to track the cost–benefit balance, customers who are attached to relational benefits are likely to process their interactions at a high level of abstraction, namely in terms of affective customer experience (Aggarwal & Law, 2005). Most importantly, social exchange theory highlights that, motivated by feelings of appreciation, people who are involved in reciprocal relationships often maintain a long-term relationship with a firm as a way of reciprocating the experiential benefits received. Hence, we propose the following hypothesis:

H4 Relationship depth strengthens the positive impact of (a) affective customer experience and (b) its spillover effect on customer retention.

Moderating role of relationship depth in the joint effects of lock-in and affective customer experience As noted above, the primacy or dominance of cognitive thinking (i.e., lock-in) or affective feeling (i.e., affective customer experience) varies across situations (Edwards, 1990). In line with the logic of social exchange theory, and given a deeply established relationship with the firm, customers are more likely to be oriented in line with their affective feeling. Logically, lock-in mechanisms geared to values that are explicitly economic are less likely to receive customers' attention (Witell et al., 2020). Indeed, as prior research indicates (e.g., Aggarwal & Law, 2005; Clark & Finkel, 2004), individuals who have established a deeper relationship with a firm tend to evaluate their interaction in a more abstract manner, focusing on intrinsic factors such as affective customer experience and relying less on economic judgment (Gilliland & Bello, 2002). Accordingly, we posit that the appreciation of affective customer experience arising from a deeply established relationship will decrease the dominance of lock-in strategies, thus weakening the negative moderating influence of lock-in on the effect of affective customer experience within one category on another category (i.e., spillover effect). In other words, when the relationship between the customer and the firm becomes more profound, the moderating impact of the lock-in strategy diminishes, since customers are now more relationship-focused and pay greater attention to affective customer experience:

H5 Relationship depth weakens the negative moderating role of lock-in in the positive impacts of (a) affective customer experience and (b) its spillover effect on customer retention.

Data and operationalization of variables

To test the proposed conceptual framework empirically, a unique and comprehensive data set from the telecoms industry in a European country was obtained from a leading consulting company. In the telecoms industry, it is common for firms to use bundle offers and binding contracts as explicit strategies to lock customers into exchange relationships. As usage levels indicate, many customers in this industry have developed deep relationships with a firm. The telecoms industry, therefore, provides an appropriate context in which to assess our proposed conceptual framework. The data set includes 13,761 customers who are representative of the selected market, which covers an entire country. The data set provides monthly individual customer-level information for a time window of 48 months (from January 2013 to December 2016) for two major telecommunication service categories: mobile and broadband. Although all the firms

operating in the industry in this time period (54 mobile service providers and 41 broadband service providers) are covered, the focus of this research is on the major companies in each service category.

The key strengths of this data set are its panel structure and the fact that it contains information about all the firms in the industry. These features allowed us to observe the dependent variable (customer retention) comprehensively by capturing the competing firms that customers used before switching to the focal firm in both service categories on a monthly basis. Accordingly, we included only customers whose service provider in each category was known. Consequently, our final sample consisted of 12,496 customers in the mobile service category and 11,097 customers in the broadband service category. Of these, 10,175 customers were active in both categories, and thus information about the service providers in both categories was recorded. This enabled us to obtain very rich insights that distinguish our study from previous research. As highlighted in Table 1, most studies have used panel data on retention for one specific firm (e.g., Anderson et al., 1994) or cross-sectional data from multiple firms (e.g., De Haan et al., 2015), and this generates only a partial view of customer switching decisions (Du et al., 2007).

For the set of independent variables, the data set combined transactional and perceptual information. The transactional information covered monthly measured objective information, which enabled us to capture lock-in. Lock-in strategies are represented by bundling offers and binding contracts. The two lock-in mechanisms that we focused on were those that (1) have conceptual and empirical support in the marketing literature (Becker et al., 2015; Murray & Häubl, 2007; Shapiro et al., 1998; Stremersch & Tellis, 2002), (2) have been widely implemented in practice by firms across a wide range of industries to lock their customers into the exchange relationship (Becker et al., 2015; Johnson et al., 2003; Malhotra & Malhotra, 2013; Nitzan & Ein-Gar, 2019; Stremersch & Tellis, 2002), and (3) are easily acted on or identified by managers (Malhotra & Malhotra, 2013; Stremersch & Tellis, 2002). The data set also provided information about relationship depth. In line with previous studies (Bolton et al., 2004), we took relationship depth to be "the deepening of the customer's relationship with the firm through increased usage" (p. 274).

As well as the objective information on relationship depth, we had data on customers' annual perceptual measures, which quantify the affective customer experience with the firm for each service category. The scale item (from 0 to 10) of Net Promoter Score (NPS) proposed by Reichheld (2003) is measured annually for affective customer experience. Collecting affective customer experience is challenging and costly (Venkatesan et al., 2019), and in real business practice (including in telecoms firms), affective customer experience information tends to be collected only annually. More specifically, affective customer experience is measured in December of each year for the mobile or broadband service provider that customers belong to at that moment and is then translated to the previous months. For example, if in December 2014 a customer rated the company as a 7 on a scale from 0 to 10, the experiences of this customer during 2014 were deemed positive. The adequacy of NPS as a measurement for affective customer experience has been acknowledged by previous studies from a theoretical perspective (Lemon & Verhoef, 2016; McColl-Kennedy et al., 2019) and is supported by empirical evidence (De Haan et al., 2015; Jussila et al., 2018; Mackintosh, 2015). Indeed, as emphasized by prior research (e.g., Keiningham et al., 2007; Mackintosh, 2015), the higher the NPS, the more delighted a customer is with the customer experience and the more happy to recommend it to a friend. This is also in line with the Reichheld's (2003, 2011) original intention of establishing the NPS. Specifically, Reichheld (2011) indicated that in practice what business leaders track, discuss, and manage each day are financial indicators, and that this focus frequently makes it difficult for firms to capture what customers are feeling. As illustrated in the study of Jussila et al. (2018), NPS is well correlated with affective customer experience. In particular, a lower NPS is related to negative feelings, such as disappointment, unconcern, and surprise, while a higher NPS is more correlated with positive feelings, including enthusiasm, peace, and contentment (Jussila et al., 2018).

The average response rates across the four interactions in the mobile and broadband service categories were 28.17% and 44.42%, respectively. To deal with missing data, we conducted mean replacement, a commonly used and well-established method (Kamakura and Wedel 2000).[3] For customers who did not participate in the survey in a given year, the average value for affective customer experience across customers from the same firm in the corresponding service category of that year was imputed to replace the missing value. Accordingly, we created a dummy variable that indicates whether the customer took part in the survey, which in our model captures potential deviations in behavior by customers who did not respond.

To test the conceptual framework rigorously, we supplemented our primary data set with a set of control variables gathered from multiple sources. In addition to customer

[3] In the robustness checks reported below, we further addressed missing values by using the multiple overimputation (MO) approach proposed by Venkatesan et al. (2019). We found that all the parameters remained in the same direction and were consistent with the originally estimated multinomial logit model (in which the missing values of affective customer experience were imputed via the mean replacement method).

demographic characteristics that were included in the primary data set (gender, age, number of members of the household, working status, and social class), we collected data on variables relating to firm characteristics (market share and advertising expenditures), which we obtained from the annual official report of the telecommunication sector in the corresponding market. We also collected context characteristics (acquisitions, new entrants, iPhone release dates, and social media mentions) from news websites and Google Trends. To increase the ease of interpretation and decrease the number of parameters, we recoded some of the control variables. Table 2 presents a summary of the variables included in our modeling framework and the descriptive statistics for each variable. In the following section, we provide additional details about the measurements for the key variables and their operationalization.

Methodology

Utility specification

To test the proposed conceptual framework and the associated hypotheses, we developed a set of multinomial logit models formulated using random utility theory (McFadden, 1973), with one model for each service category. This methodology allowed us to identify key determinants that affect customer retention probabilities across multiple firms (Elshiewy et al., 2017).

Following McFadden (1973), the model was derived as follows. Consider a set of customers $I = \{i|i = 1, 2, \ldots, I\}$ that faces a choice set of available alternatives, which can be denoted as $M = \{m|m = 1, 2, \ldots, M\}$, from each of the two service categories $S = \{s|s = j,k\}$, where j refers to the mobile service category and k represents the broadband service category. The customers' choices are observed over the period $T = \{t|t = 1, 2, \ldots, T\}$, where T represents the observation window. From each of the alternatives, the customer would obtain a level of utility; let $U_{imt} = \{U_{imjt}, U_{imkt}\}$ denote the overall utility in the mobile service category j and the broadband service category k that customer i would perceive from firm alternative m at time t. Researchers typically only observe actual customer choices and a set of attributes of the M alternatives (Elshiewy et al., 2017). Therefore, the utility of customer i for alternative m in each of the two service categories at time t is decomposed into the observable (deterministic) component and the unobservable component. The former is the true utility level perceived by customer i in the mobile and broadband service categories from the corresponding service provider m at time $t-1$, which can be formulated as $V_{imt-1} = \{V_{imjt-1}, V_{imkt-1}\}$. The latter is the error term associated with customer latent utility perceptions in the mobile service and broadband service categories, given as $\varepsilon_{imt} = \{\varepsilon_{imjt}, \varepsilon_{imkt}\}$, respectively; they follow an identical and independent (iid) Gumbel distribution. Most importantly, as noted previously, experiential learning theory suggests that customers tend to update their knowledge scheme through prior concrete experience within different product or service categories gained from the focal firm as well as from competitors. We thus assume that customers update the current overall utility level at time t on the basis of the previous affective customer experience in the mobile and broadband service categories received from the focal firm and observed from its competitors at the previous time period $t-1$.

We specify the utility that customer i derives from firm alternative m in the mobile service j and broadband service categories k at time t in Eqs. (1) and (2):

$$U_{imt} = V_{imt-1} + \varepsilon_{imt} \tag{1}$$

Equation 1 is further specified in Eq. (2) via attributes to express the influence of lock-in, affective customer experience, and relationship depth in customer latent utility perceptions in the mobile service and broadband service categories.

$$\begin{aligned}
U_{imt} &= \beta_{0m} + \beta_1 Bundling_{imt-1} + \beta_2 Contract_{imt-1} \\
&+ \beta_3 ACX_{imt} + \beta_4 SpilloverACX_{imt} \\
&+ \beta_5 Bundling_{imt-1} * ACX_{im} + \beta_6 Contract_{imt-1} * ACX_{imt} \\
&+ \beta_7 Bundling_{imt-1} * SpilloverACX_{imt} \\
&+ \beta_8 Contract_{imt-1} * SpilloverACX_{imt} \\
&+ \beta_9 RD_{imt-1} + \beta_{10} RD_{imt-1} * Bundling_{imt-1} + \beta_{11} RD_{imt-1} * Contract_{imt-1} \\
&+ \beta_{12} RD_{imt-1} * ACX_{im} + \beta_{13} RD_{imt-1} * SpilloverACX_{imt} \\
&+ \beta_{14} RD_{imt-1} * Bundling_{imt-1} * ACX_{imt} \\
&+ \beta_{15} RD_{imt-1} * Contract_{imt-1} * ACX_{imt} \\
&+ \beta_{16} RD_{imt-1} * Bundling_{imt-1} * SpilloverACX_{imt} \\
&+ \beta_{17} RD_{imt-1} * Contract_{imt-1} * SpilloverACX_{imt} \\
&+ \beta_{18} (ACX_{imt} - \overline{ACX_{(M-m)t}}) \\
&+ \beta_{19} (SpilloverACX_{imt} - \overline{SpilloverACX_{(M-m)t}}) \\
&+ \beta_{20} Controlmis_{imt} + \beta_{21} Firm_{mt} + \beta_{22} Context_{mt} \\
&+ \beta_{23} Demographic_{it} + e_{imt}
\end{aligned} \tag{2}$$

Lock-in $Bundling_{imt-1}$ is a customer-specific measure that reflects whether customer i is locked into the exchange relationship with firm m at time $t-1$, according to whether they have acquired the two service categories (mobile and broadband) in a bundled manner. $Contract_{imt-1}$ is a

Table 2 Descriptive statistics ($N = 656{,}208$)

Variable		Description	Measurement unit	Mean	SD
Dependent variable	*Customer retention (M/B)*	Monthly measured dummy variable: 1 = customer *i* remains with the focal firm for mobile/broadband service category at time *t*; 0 = otherwise	Monthly	.8704/.8983	.1064/.0937
Lock-in	*Lock-in (bundling)*	Bundling reflects whether customer *i* is locked into the exchange relationship with firm *m* at time *t − 1*, based on whether they have acquired the two service categories (i.e., mobile and broadband) in a bundled manner Monthly measured dummy variable: 1 = customer *i* has acquired both the mobile service and the broadband service from the same service provider; 0 = customer *i* has acquired only one service (i.e., mobile or broadband) from the provider	Monthly	.1465	.3536
	Lock-in (binding contract)	Binding contract is a customer-specific variable that refers to whether customer *i* is locked into the exchange relationship with firm *m* at time *t − 1* based on the number of months required at time *t − 1* to complete the initially agreed contractual length. This fluctuates between 0 and 36 months, varies across individual customers depending on different aspects, and decreases month by month	Monthly	5.4631	3.9523
Affective customer experience (CX)	*Affective CX (M)*	Affective customer experience of customer *i* of the focal firm's mobile services measured through NPS via a survey in December of each year from 2013 to 2016 (0 = very unlikely, 10 = very likely)	Yearly	7.5910	1.215
	Affective CX (B)	Affective customer experience of customer *i* of the focal firm's broadband services measured on a five-point Likert scale via a survey in December of each year from 2013 to 2016 (1 = very poor, 2 = poor, 3 = fair, 4 = good, 5 = very good). This measurement has been transformed to a scale ranging from 0 to 10 via the formula (CX_B_1) * 2.5	Yearly	7.411	1.4441

Table 2 (continued)

Variable		Description	Measurement unit	Mean	SD
Moderating role	*Relationship depth (M)*	Number of functions for which customer *i* uses their mobile device at time *t* – *1* (e.g., downloading music, videos, and games; listening to music; playing games; sending and/or receiving emails; internet navigation; taking and/or sending pictures)	Monthly	6.7884	7.4313
	Relationship depth (B)	Level of usage by customer *i* of the broadband service acquired from firm *m* at time *t* – *1*, measured in megabits per second	Monthly	27.8654	11.8460
Control variables	*Market share*	Percentage of total revenues that firm *m* accounts for over the whole market at time *t*	Quarterly	.2217	.15378
	Advertising expenditure (log)	Advertising investment from firm *m* at time *t*, transformed into a logarithm	Quarterly	11.8825	3.7951
	Social media mention	Frequency with which firm *m* is mentioned through associated keywords in social media channels at time *t*	Monthly	46.1783	20.9333
	iPhone release date	Dummy variable: 1 = a new iPhone is released in the telecom market at time *t*; 0 = otherwise	Monthly	.0978	.2970
	Acquisition	Dummy variable: 1 = if a firm in the telecom market has been acquired by another firm; 0 = otherwise	Monthly	.0427	.2023
	New entrants	Dummy variable: 1 = there are new firms entering the telecoms market at time *t*; 0 = otherwise	Monthly	.0404	.1968
	Gender	Dummy variable: 1 = female; 0 = male	Yearly	.5952	.4908
	Working status	Dummy variable: 1 = customer *i* is in employed status at time *t*; 0 = otherwise	Yearly	.4388	.4962
	Social class	Social class (low, medium, or high) that customer *i* belongs to at time *t*	Yearly	_	_
	Age	Age (in years) of customer *i* at time *t*	Yearly	42.7308	19.9295
	Householdsize	The number of family members of customer *i* at time *t*	Yearly	2.9827	.0015
	Competitive Affective CX (M/B)	Competitive affective customer experience in mobile/broadband services measured in December of each year from 2013 to 2016 by computing the difference between the mobile/broadband affective customer experience of customer *i* perceived from the focal firm and the average score for affective customer experience in the mobile/broadband service category for the rest of the competing firms	Yearly	.0055/.0135	.2334/.2387
	Dummy affective CX (M/B)	Dummy variable that indicates whether the customer has given a score for affective customer experience in the mobile/broadband service category	Yearly	.5918/.3725	.4915/.1664

Table 2 (continued)

Variable		Description	Measurement unit	Mean	SD
	Dummy binding contract	Dummy variable that indicates whether the customer has provided information about the length of a binding contract	Monthly	.6272	.4835
	Dummy relationship depth (B)	Dummy variable that indicates whether the customer has provided information about the usage level of the broadband service	Monthly	.3245	.4682
	Bill	Amount of money that customer *i* paid for the mobile and/or broadband services provided by firm *m* at time *t – 1*	Monthly	16.2047	38.0461
	Customer tenure	Length of relationship (in months) for customer *i* with firm *m* at time *t – 1*	Monthly	21.5323	28.5062
	Number of services	Number of services that customer *i* has acquired from firm *m* at time *t – 1*	Monthly	1.9408	1.2099

Note: Affective customer experience and lock-in related variables are measured in lagged form; (M) means mobile service category; (B) represents broadband service category
Affective CX means affective customer experience

[a]We transformed these figures to yearly retention rates, which gives retention rates of 87.0% (.9885^12) and 89.9% (.9911^12) for the mobile and the broadband service categories, respectively

[b]The information about binding contracts was captured for all customers. A positive value denotes the number of months remaining before the binding contract expires. A value of 0 indicates no binding contract (either because it has expired or because the customer never had one)

[c]As defined by Bolton et al. (2004), usage level is the mechanism through which the deep relationship between the customer and the firm is established, and a high usage level reflects increased inner motivation to develop a deeper exchange relationship with the firm

customer-specific variable that specifies whether customer *i* is locked into the exchange relationship with firm *m* at time *t – 1* based on the number of months required for customer *i* at time *t – 1* to complete the initially agreed contract length. This variable fluctuates between 0 and 36 months, varies across individual customers, and decreases month by month.[4] Lock-in can happen at any time once an individual becomes a customer of the firm. The measure does not only reflect the specific moment (month *t*) when customer *i* subscribes to a package of services (i.e., bundling) or is enticed into a binding contract. It also covers the whole period in which a customer remained with the lock-in mechanisms (i.e., for bundling, the time that customer *i* pays one single price for several service categories by month; for a binding contract, the number of months needed for customer *i* to complete the initially agreed contract length).

[4] This information has been captured for all customers. Those with a positive value have the corresponding number of months remaining before the binding contract expires. Those with the value 0 do not have a binding contract (either because the contract has expired or because there was no contract in the first place).

Affective customer experience ACX_{imt} and $SpilloverACX_{imt}$ in Eq. (2) capture the perceived affective customer experience of customer *i* with firm *m* at time *t* in one category and then in another category. As noted above, ACX_{imt} and $SpilloverACX_{imt}$ are measured annually in December and then translated to the previous months. For instance, if the affective customer experience was rated by one customer in December 2014 as 2, then the affective customer experiences of this customer during 2014 were taken to be poor (i.e., rated as 2) over that whole year. In the utility function of the mobile (broadband) service category, ACX_{imt} represents the direct effect of affective customer experience perceived from the mobile (broadband) services category, while $SpilloverACX_{imt}$ indicates the spillover effect of affective customer experience from the broadband (mobile) services category.

Relationship depth RD_{imt-1} refers to the degree of relationship depth at time *t – 1* with firm *m* in the corresponding service category. Drawing on prior research (Bolton et al., 2004), depth is measured in terms of the usage level of customer *i* in the acquired service category from firm *m* during time period *t – 1*.

Control variables To account for the influence of affective customer experience in customer retention, a set of control variables

was developed. Two variables were created to capture the extent to which the customer had a better (or worse, if the value was negative) affective customer experience than the average customer of the competing firms. The importance of the competitive experience effect has been established in previous studies (e.g., De Haan et al., 2015). Following the procedure of De Haan et al. (2015), the competitive experience effect in the mobile service category was obtained by transforming the means of the difference between the annually measured NPS of customer *i* with the focal firm in the mobile service category and the average NPS score for all of the focal firm's competitors. The same procedure was followed to calculate the competitive experience effect in the broadband service category. Therefore, $(ACX_{imt} - \overline{ACX_{(M-m)t}})$ and $(SpilloverACX_{imt} - \overline{SpilloverACX_{(M-m)t}})$ represent the yearly rated affective customer experience by customer *i* from focal firm *m* in one category and in another category (i.e., spillover effect) compared to the average value of the annually gauged affective customer experience of the competing firms in the corresponding service category.

Two dummy variables were created to indicate whether customers had responded to the survey question about their affective customer experience with firms in the mobile and broadband categories in December of each year. $Controlmis_{imt}$ are the variables that control missing data relating to affective customer experience and binding contract. $Firm_{mt}$, $Context_{mt}$, and $Demographic_{it}$ represent a vector of control variables including firm-related characteristics (market share, advertising expenditure, and social media mentions), context-related characteristics (acquisitions, new entrants, and iPhone release dates), and customer demographic information (gender, age, working status, and social class). Finally, as noted above, ε_{imt} is the error term.

In this study, we are especially interested in parameters β_3–β_8, which gauge the separate and joint effects of lock-in strategies and affective customer experience. We are also interested in parameters β_{10}–β_{17}, which measure the extent to which the impacts of lock-in and affective customer experience, and their joint effects might vary depending on the level of relationship depth. Of these, the parameters β_{10}–β_{11} capture the moderating role of relationship depth in the linkage between lock-in and customer retention. In the same vein, β_{12}–β_{13} correspond to its moderating impact on the main effects (i.e., direct and spillover effect) of affective customer experience on customer retention. Finally, parameters β_{14}–β_{17} capture how the joint effects of lock-in and affective customer experience differ with the depth of the established relationship, that is, the three-way interactions across lock-in, affective customer experience, and relationship depth.

Definition of choice probabilities and model estimation

The multinomial logit model, as its function form reflects, captures the possibility of customer *i* choosing firm *m* instead of the alternatives. For the estimation of the logit parameters, the maximum likelihood estimation method was applied. In order to represent choice probabilities, Eq. (3) was elaborated as follows:

$$Pr(Yimt) = \frac{exp^{V_{imt-1}}}{\sum_{m=1}^{M} exp^{V_{iMt-1}}} \tag{3}$$

Let $Y_{imt}=\{f_{it1}, f_{it2}, \ldots, f_{itM}\}$ denote the index vector of the firm alternatives chosen by customer *i* for the mobile and broadband service categories *j* and *k*, respectively. Consequently, $Pr\,(Y_{imt})$ represents the possibility of observing the choice profile that customer *i* would choose firm alternative *m* across the *M* alternatives at time *t* in the corresponding service category. Following Elshiewy et al. (2017), this possibility is conditioned as follows:

$$Pr(Y_{imt}|V_{imt-1}, \varepsilon_{ij}) = Pr(U_{imt-1} \geq maxU_{iMt-1}) \tag{4}$$

To demonstrate the contribution of the variables to explaining the variance in customer retention, we applied a hierarchy approach, introducing different categories of variables set by set. In total, three models were estimated. Model 0 is the baseline model that examines the impact of the control variables. Model 1 adds the main effects of lock-in, affective customer experience, and relationship depth. Model 2 also takes into account the joint effects of lock-in and affective customer experience and the moderating role of relationship depth. The same set of models was estimated for the broadband service category, yielding six models in total.

Findings

Model-free evidence

We provide some model-free evidence of our findings in Web Appendix B. To do this, we took the mobile service category as the reference category and used the unadjusted sample of 656,208 observations. We calculated the average switching rates, given the different situations in terms of (1) the main effects of affective customer experience, (2) the joint effects between lock-in and affective customer experience, and (3) the effects under the moderating role of relationship depth. Drawing on prior research (i.e., Fader & Hardie, 2010; Nitzan & Ein-Gar, 2019), the average churn rate was obtained by dividing the number of customers who left the providers by the number of active customers. In general, the patterns illustrated in Web Appendix B confirm the hypothesized relationships.

Overall model fit

The results of the regression models (Models 0–2) are presented in Table 3 as a series of nested models. The fit statistics

Table 3 Multinomial logit models estimation results (Eq. 2)

N_{Mobile} = 2,176,734 $N_{Broadbnd}$ = 1,784,657	Dependent variable: customer retention	Model 0		Model 1		Model 2		Hypotheses testing results
	Independent variables	M	B	M	B	M	B	
Main Effects	Lock-in (bundling)	–	–	**.174****	**.372*****	**1.517*****	**2.624*****	
	Lock-in (binding contract)	–	–	**.097*****	**.056*****	**.637*****	**.156*****	**-**
	Affective CX (M/B)	–	–	**.314*****	**.287*****	**.533*****	**.501*****	**H1a (S)**
	Affective CX spillover	–	–	**.194*****	**.093*****	**.224*****	**.153*****	**H1b (S)**
	Relationship depth (M/B)	–	–	**.009*****	**.036*****	**.449*****	**.170*****	**-**
Joint Effects between Lock-in and Affective Customer Experience								
Lock-in and Affective CX	Lock-in (bundling) * Affective CX (M/B)	–	–	–	–	**–.247*****	**–.113*****	**H2a (S)**
	Lock-in (binding contract) * Affective CX (M/B)	–	–	–	–	**–.063*****	**–.008*****	
	Lock-in (bundling) * Affective CX spillover	–	–	–	–	**.091*****	**–.177****	**H2b (PS)**
	Lock-in (binding contract) * Affective CX spillover	–	–	–	-	**–.015*****	**–.015*****	
Moderating Role of Relationship Depth								
	Relationship depth (M/B) * Lock-in (bundling)	–	–	–	–	**–.137****	**–.094*****	**H3 (S)**
Lock-in	Relationship depth (M/B) * Lock-in (binding contract)	–	–	–	–	**–.065*****	**–.016*****	
Affective CX	Relationship depth (M/B) * Affective CX (M/B)	–	–	–	–	**–.052*****	**–.016*****	**H4a (NS)**
	Relationship depth (M/B) * Affective CX spillover	–	–	–	–	**–.005*****	**–.004*****	**H4b (NS)**
Joint Effects of Lock-in and Affective CX	Relationship depth (M/B) * Lock-in (bundling)* Affective CX (M/B)	–	–	–	–	**.016****	**.007*****	**H5a (PS)**
	Relationship depth (M/B) * Lock-in (binding contract) * Affective CX (M/B)	–	–	–	–	**.007*****	–.0001	
	Relationship depth (M/B) * Lock-in (bundling)* Affective CX spillover	–	–	–	–	**.**003	**.**004	**H5b (PS)**
	Relationship depth (M/B) * Lock-in (binding contract) * Affective CX spillover	–	–	–	–	.0004	**.0004***	
Control Variables								

Table 3 (continued)

N_{Mobile} = 2,176,734 $N_{Broadbnd}$ = 1,784,657	Dependent variable: customer retention	Model 0		Model 1		Model 2		Hypotheses testing results
	Independent variables	M	B	M	B	M	B	
Competitive Affective CX	*Competitive affective CX (M/B)*	–	–	*2.192***	*1.084***	*2.144***	*1.107***	-
	Competitive affective CX (B/M)	–	–	*2.052***	*1.060***	*2.021***	*.886***	
Control Variables for Missing Data	*Dummy affective CX (M)*	–	–	*–.103***	*.026*	*–.143***	*–.005*	-
	Dummy affective CX (B)	–	–	*.352***	*–.373***	*.292***	*–.195***	
	Dummy binding contract	–	–	*.415***	*–.163***	*.165***	*–.239***	
	Dummy relationship depth(B)	–	–	–	*.03*	–	*–.381***	
Firm Characteristics	*Market share*	*–2.593****	*1.087****	*–1.565****	*1.703****	*–1.695****	*1.729****	-
	Advertising expenditure (log)	*.005**	*.006***	*.008***	*.010****	*.009***	*.011****	
Context Characteristics	*Social media mention*	*.009****	*.004****	*.006****	*.004****	*.006****	*.004****	-
	iPhone release	*.276****	*.216****	*.072*	*–.005*	*.022*	*–.061*	
	Acquisition	*.024*	*–.089**	*–.019*	*–.103**	*–0.02*	*–.097**	
	New entrants	*.463****	*.395****	*.284***	*.093*	*.257***	*.047*	
Customer Characteristics	*Gender (1 = female)*	*.535****	*.575****	*.202****	*.247****	*.015*	*.110***	-
	Working status (1 = active)	*.638****	*.645****	*.247****	*.177****	*.086**	*.025*	
	Social class (high vs. low)	*.048*	*.318****	*.230****	*.183***	*.083*	*.151**	
	Social class (medium vs. low)	*.538****	*.800****	*.374****	*.388****	*.160***	*.237****	
	Age	*0.066****	*.063****	*.027****	*.029****	*.011****	*.016****	
	Household size	*.819****	*.812****	*.276****	*.361****	*.097****	*.166****	
Intercept	*Intercept(firm1)*	*–.748****	*–.737****	*–.671****	*–.715****	*–.692****	*–.700****	-
	Intercept(firm2)	*–.881****	*–.377****	*–.632****	*–.214**	*–.666****	*–.213**	
	Intercept(firm3)	*–1.529****	*–3.319****	*–1.585****	*–3.516****	*–1.632****	*–3.543****	
	Intercept(firm4)	*–1.606****	*–.040*	*–1.389****	*.215*	*–1.413****	*.243*	
	Intercept(firm5)	*–2.415****	*–.317***	*–2.242****	*–.100*	*–2.290****	*–.088*	
	Intercept(firm6)	*–.759****	*–.765****	*–.894****	*–.784****	*–.918****	*–.753****	
Fit Statistics	Log-likelihood	–63,494.790	–46,531.650	–36,401.090	–32,379.810	–35,549.210	–32,021.960	-
	Degree of freedom	18	18	28	29	40	41	
	AIC	125,965.72	93,099.31	71,906.77	64,817.62	71,178.42	64,125.93	

Affective CX represents affective customer experience; Affective CX and lock-in related variables are measured in lagged form

Significant parameters for the hypothesized relationships are highlighted in bold: *$p < .1$; **$p < .05$; ***$p < .01$

(M) means mobile service category; (B) represents broadband service category

S, PS, and NS in the column of Hypotheses testing results represent supported, partially supported, and not supported, respectively

indicate that the addition of each set of variables improves the model fit significantly, confirming the incremental power of lock-in, affective customer experience, the joint effects between them, and their relative importance under the moderating role of relationship depth. Log-likelihood value and Akaike's information criterion (AIC; Akaike, 1998) were used to assess the adequacy of the three models. With log-likelihood, the higher the value, the better the fit of the model to the data; AIC indicates that the model with the lowest AIC is the optimal option. To assess whether our estimates were

affected by multicollinearity, we followed standard practice by computing variance inflation factor (VIF) scores for each regression. As shown in Web Appendix C, each of the VIFs was below the recommended cutoff of 10 (the maximum score is 5.70), which suggests that multicollinearity did not severely affect the regression results (Hair et al., 1998). Additionally Web Appendix, D shows the correlations between the key variables, which do not indicate multicollinearity.

Main effects of lock-in

Although we did not put forward any hypotheses about the main effects of lock-in on customer retention, we empirically tested this relationship. Consistent with prior research (Blut et al., 2015; Johnson et al., 2003; Nitzan & Ein-Gar, 2019), the results demonstrate the positive impacts of lock-in ($\beta^{M}_{1} = 1.517$, $P < 0.01$; $\beta^{B}_{1} = 2.624$, $P < 0.01$; $\beta^{M}_{2} = 0.637$, $P < 0.01$; $\beta^{B}_{2} = 0.156$, $P < 0.01$) on customer retention.

Main effects of affective customer experience

Affective customer experience H1a–b (+) For the linkages between the main effects of affective customer experience (i.e., direct effect and spillover effect) and customer retention (not hypothesized here), the results confirm the findings of previous studies. As shown in Table 3, there is a positive impact of affective customer experience on customer retention in both the mobile and broadband service categories ($\beta^{M}_{3} = 0.533$, $P < 0.01$; $\beta^{B}_{3} = 0.501$, $P < 0.01$). Affective customer experience within the other category (mobile/broadband) provided by the focal firm, that is, the spillover effect of affective customer experience, also has a positive and significant impact on customer retention in the other category (broadband/mobile) ($\beta^{M}_{4} = 0.224$, $P < 0.01$; $\beta^{B}_{4} = 0.153$, $P < 0.01$). Accordingly, H1a and H1b are confirmed.

Joint effects of lock-in and affective customer experience

Lock-in and affective customer experience H2a–b (–) As expected, the results show that customers who have acquired mobile and broadband services in a bundled form tend to remain with the focal firm regardless of the level of affective customer experience ($\beta^{M}_{5} = -0.247$, $P < 0.01$; $\beta^{B}_{5} = -0.113$, $P < 0.01$). With regard to binding contracts, because of the associated restrictions, customers have to remain with the focal firm, which reduces the importance of the main effects of affective customer experience ($\beta^{M}_{6} = -0.063$, $P < 0.01$; $\beta^{B}_{6} = -0.008$, $P < 0.01$). Therefore, we find support for hypothesis H2a. For H2b, all the hypothesized effects are in line with expectations ($\beta^{B}_{7} = -0.177$, $P < 0.01$; $\beta^{M}_{8} = -0.015$, $P < 0.01$; $\beta^{B}_{8} = -0.015$, $P < 0.01$), except for the interaction between bundling and spillover effect of affective customer experience in the mobile service category ($\beta^{M}_{7} = 0.091$, $P < 0.01$); therefore, this hypothesis is partially supported. One possible explanation for this result is that, as the mobile service is the dominant category, delightful affective customer experience from the broadband service category works as a memory trigger that easily evokes information activation and retrieval (Borah & Tellis, 2016), thereby enhancing the positive affective customer experience with the dominant category.

Moderating role of relationship depth

As the theoretical direction of the influence of relationship depth on customer retention is not unambiguous, no hypothesis has been established for this linkage. Still, we empirically test the relationship between relationship depth and customer retention. The results confirm the findings of prior research, indicating that relationship depth positively and significantly affects customer retention ($\beta^{M}_{9} = 0.449$, $P < 0.01$; $\beta^{B}_{9} = 0.170$, $P < 0.01$).

Moderating role of relationship depth in the main effects of lock-in H3 (–) With regard to the moderating role of relationship depth in the linkage between lock-in and customer retention, all the signs are in the expected direction and show significant influence ($\beta^{M}_{10} = -0.137$, $P < 0.01$; $\beta^{M}_{11} = -0.065$, $P < 0.0$; $\beta^{B}_{10} = -0.094$, $P < 0.01$; $\beta^{B}_{11} = -0.016$, $P < 0.01$), lending support to hypothesis H3. This means that lock-in strategies (in terms of bundling and binding contracts with their economic rewards, which are viewed as attractive offerings by most customers) are not likely to draw the same level of attention from customers who have developed a deeper relationship with the firm via high levels of usage.

Moderating role of relationship depth in the main effects of affective customer experience H4a–b (+) Following the argument of H4a and H4b, we expect that relationship depth will strengthen the impact of affective customer experience and its spillover effect on customer retention. Contrary to our expectations, we found negative and significant coefficients for these effects in both the mobile and the broadband service categories ($\beta^{M}_{12} = -0.052$, $P < 0.01$; $\beta^{B}_{12} = -0.016$, $P < 0.0$; $\beta^{M}_{13} = -0.005$, $P < 0.01$; $\beta^{B}_{13} = -0.004$, $P < 0.01$). We therefore reject hypotheses H4a and 4b. This suggests that for customers who have developed deep relationships with the focal firm, the role of affective customer experience and its spillover effect in retaining customers is still positive but becomes significantly weaker. A rationale for these patterns is that the marginal impact of improving affective customer experience decreases as the customer and the firm develop a deeper relationship.[5] According to the social

[5] We thank an anonymous reviewer for these suggestions.

psychology literature (Swann & Gill, 1997), and as emphasized by Verhoef et al. (2001), when customers use a service frequently or intensely, they tend to have more confidence in their own beliefs (presumably positive attitude) when evaluating their relationships with firms. Following this notion, the results of H4a and H4b suggest that the greater confidence inferred by continued use may lead to customers being increasingly insensitive toward the newly acquired affective customer experience. This may even alleviate a number of negative experiences until the established confidence is revised downward (Bolton, 1998; Bolton & Lemon, 1999).

Moderating role of relationship depth in the joint effects of lock-in and affective customer experience H5a–b (–) As proposed in H5a and H5b, we assume that relationship depth will weaken the negative moderating impact of lock-in strategies on the linkage between affective customer experience and its spillover effect on customer retention. Our argument is based on how customer value economic offerings (i.e., lock-in) and affective feelings (i.e., affective customer affective) vary across different situations (Edwards, 1990). Relationship depth may serve as a lever which leads customers to value the alternatives that induce positive affective feelings more than the offerings driven by cold deliberations (Witell et al., 2020). From our empirical results, we do indeed observe that relationship depth decreases the negative interactions between lock-in and affective customer experience in most circumstances ($\beta^{M}_{14} = 0.016$, $P < 0.05$; $\beta^{B}_{14} = 0.007$, $P < 0.01$; $\beta^{M}_{15} = 0.007$, $P < 0.01$), except for the linkages across relationship depth, binding contract, and affective customer experience in the broadband service category ($\beta^{B}_{15} = -0.0001$, $P > 0.1$). Hence, H5a is partially supported. The results also show, surprisingly, that the role of relationship depth is mainly insignificant in the situation where affective customer undergoes a spillover effect ($\beta^{M}_{16} = 0.003$, $P > 0.1$; $\beta^{B}_{16} = 0.004$, $P > 0.1$; $\beta^{M}_{17} = 0.0004$, $P > 0.1$), with the exception once again of the situation where a binding contract is deployed as the lock-in strategy in the broadband category ($\beta^{B}_{17} = 0.0004$, $P < 0.1$). Therefore, H5b is partially supported. According to prior research (e.g., Borah & Tellis, 2016; Lei et al., 2008), the extent to which a spillover effect occurs depends on information activation and retrieval. The underlying rationale for this result is therefore that, in a more deeply established relationship, customers have greater confidence in their own evaluations of the focal firm. Perceived affective customer experience from other product categories (i.e., spillover effect) as external information is less likely to draw customers' attention. As a consequence, relationship depth is less likely to affect the moderating impact of lock-in strategies on the linkage between affective customer experience spillover effect and customer retention.

Robustness checks

We ran a number of additional estimations to check the robustness of our results, focusing on (1) model alternatives with different variable specifications, samples, and methodologies; (2) endogeneity assessment, (3) customer heterogeneity, and (4) missing data. The results consistently demonstrate that the research findings are robust to these alternative measures, samples, and methodologies. Here, we summarize the robustness checks developed (further details are provided in Web Appendix E).

Model alternatives

We ran different models, including (1) several multinomial logit models with alternative specifications in key variables (i.e., affective customer experience, relationship depth, and customer switching) to check the robustness of the results; (2) one Tobit model to assess the ceiling effect of affective customer experience; and (3) a system of equations model via three-stage least squares (3SLS) to assess other intertwined effects among key variables. The set of multinomial logit models encompasses one estimation without control variables and three benchmark models whereby the measurement of relationship depth is replaced with alternative options (i.e., the customer's bill as an alternative measure for relationship depth, customer tenure as relationship length, and relationship breadth reflected in "add-on" buying) (Bolton et al., 2004), one with an accumulative measure of relationship depth, and one with a balanced sample between churners and non-churners.

The Tobit model, as highlighted by prior research (e.g., McBee, 2010; Wang et al., 2008), is considered a potential way to deal with the ceiling effect. Here, the potential ceiling affective customer experience data were deleted for the estimation to assess the ceiling effect of affective customer experience. Finally, we developed a system of equations model using three stage least squares (3SLS), which accounts for correlations between equations (Amemiya, 1985). This allowed us to determine other intertwined effects among key variables (i.e., lock-in, affective customer experience, and relationship depth).

Endogeneity assessment

A problem with studying lock-in empirically is that it is often not exogenous. Firms target certain customers with lock-in offerings as they believe that these customers will accept the offers. Customers accept the offers because they see benefits in them (e.g., a lower price), but they might already have the intention to stay longer with the firm,

which reduces the negative aspects of the lock-in. This endogeneity issue, as shown in Table 1, has rarely been addressed in previous studies of lock-in and affective customer experience. The few papers that have conducted an endogeneity assessment have simply developed a probit model or a structural model (e.g., De Haan et al., 2015; Dong & Chintagunta, 2016; Jones et al., 2007). In the present study, to control for the endogeneity bias across lock-in, affective customer experience, and customer retention, we adopted propensity score matching (PSM) via a greedy matching algorithm. This is a technique that has been widely applied in the literature to address endogeneity issues (Rosenbaum & Rubin, 1985) and has proved advantageous in many fields, including economics, medical studies, and marketing (Garnefeld et al., 2013; Rutz & Watson, 2019). The method has been used in prior research (Titus, 2007) specifically to address the problem of the limited distributional assumption of the errors inherent in the endogenous switching and independent variables estimation, which is similar to the situation under study here.

Customer heterogeneity

From the estimation results for the firm alternative specific intercept β_0 (Table 3), we found considerable heterogeneity in the intrinsic propensity to maintain the established exchange relationship with different firms. Unmeasured customer-specific factors may influence customer retention decisions. To account for customer heterogeneity, following the study of Gönül and Srinivasan (1993), we estimated two mixed multinomial logit models. In mixed logit models, customer heterogeneity is recovered by assuming that coefficients in the utility function are randomly distributed.

Missing data

We adopted different approaches to address the issue of missing data. First, we used the multiple overimputation (MO) approach from Venkatesan et al. (2019) to replace missing values for affective customer experience. This method was applied by Venkatesan et al. (2019) in a similar situation, namely when missing customer mindset metrics (e.g., affective customer experience) were imputed to solve the missing data and measurement problem. Second, for customers who do not participate in the survey for a specific year, affective experience was imputed using the individual customer's average score rather than the average values across customers when customers do not participate in the survey for a specific year. Third, to further tackle the issue of missing data, we developed a set of very conservative robustness checks. Among them, we estimated the model without observations in cases of missing values in affective customer experience. More conservatively, we estimated the multinomial logit models by keeping only customers who filled out the survey during the four-year covered study window. The results of the different approaches remain consistent with the patterns captured in the original multinomial logit models.

Implications

Research implications

This study integrates experiential learning theory with social exchange theory to offer a comprehensive framework of the linkages across lock-in, affective customer experience, and relationship depth in customer retention. The results show that, given poor affective customer experience, lock-in helps firms to reduce customer churn. However, the impact of lock-in decreases alongside improvement in affective customer experience, and it becomes insignificant when affective customer experience reaches the threshold level. More importantly, lock-in, affective customer experience, and their relationship vary depending on the level of relationship depth, being stronger when there is low relationship depth and weaker when a deeper relationship has been established. The proposed framework and associated findings go beyond previous studies (e.g., Ataman et al., 2010; Kim & Kumar, 2018), allowing us to contribute to the literature in the following ways.

First, despite the merits of previous studies in advancing knowledge about customer retention, the two key marketing strategies for managing retention (i.e., lock-in and affective customer experience) have largely been studied separately (see Table 1), leading to a fragmented view of the role played by each of them. By taking into account the joint effects on customer retention of different types of lock-in situations and various affective customer experience effects (i.e., direct and spillover effects), we address this important research gap. As highlighted in prior research, a conceptual distinction between cognition-based and affect-based strategies is useful for theoretical investigations (Edwards, 1990; Panksepp, 2003) as a means of improving the fundamental understanding of the relationships of different strategies (lock-in and affective customer experience). Our study provides a nuanced understanding of the effects of lock-in and affective customer experience on retention. In this way, we respond to a highly relevant yet hitherto unanswered research question, namely *whether* lock-in (transactional) and affective customer experience (relational) strengthen or weaken each other.

Second, having established the moderating role of relationship depth, we use it to determine the way in which the role of lock-in and affective customer experience and the patterns captured between them vary depending on relationship depth. Consistent with the central premise of social exchange theory, on the continuum of exchange relationships (from transactional to reciprocal), customers' reactions to lock-in and affective customer experience and their joint effects are different. Our research provides a nuanced understanding of the circumstances (i.e., relationship depth) under which these central marketing strategies can be more effective in retaining customers. For example, our findings show that the effectiveness of affective customer experience in retaining customers decreases when a deep relationship is captured between the customer and the firm, which indicates that the option of improving affective customer experience should be viewed from a nuanced perspective. Thus, we respond to another relevant yet unanswered research question, namely *when* the captured patterns between lock-in and affective customer experience happen.

Managerial implications

The results of this study allow us to address two issues of managerial interest for marketing practitioners. The first issue concerns *how* lock-in and affective customer experience, as crucial strategies in pursuit of the same goal (i.e., customer retention), can be optimally deployed under different circumstances. The second concerns for *whom* firms should implement their actions. The proposed guidelines can be generalized and applied in a large variety of contexts, given the prevalence of these marketing strategies in diverse industries and different product categories (e.g., Ascarza & Hardie, 2013; Chen & Hitt, 2002; De Keyser et al., 2020; Malhotra & Malhotra, 2013; Nitzan & Libai, 2011).

Optimal management of key strategies As noted above, there is a complex interplay between lock-in and affective customer experience, with variation that depends on different levels of relationship depth. The managerial implications derived from these findings cannot be represented in a simplified form but require a nuanced approach. Thus, to yield managerially substantive implications, we used combined sensitivity analysis with graphical representation (De Haan et al., 2018).[6] We established a set of threshold models in which sensitivity analysis (Shang et al., 2009) was conducted to predict customer churn given different scenarios (see Web Appendix F for details of the procedure): (1) main effects of affective customer experience; (2) joint effects between lock-in and affective customer experience; (3) interaction between lock-in and relationship depth; (4) interaction between affective customer experience and relationship depth; (5) joint effects between lock-in and affective customer experience given light relationship depth; and (6) joint effects between lock-in and affective customer experience given heavy relationship depth.

Figure 2 sets out the results of this analysis for each scenario.To facilitate the visualization of patterns captured under different scenarios, we present the scenarios corresponding to the spillover effect of affective customer experience in Web Appendix G.[7] We have presented the scenarios in three modules and provided illustrative examples to showcase the real-life applicability of the research findings, which are characterized by a high level of abstraction (e.g., Danatzis et al., 2021; Teixeira et al., 2019; Zaki & McColl-Kennedy, 2020). In this way, we identify the optimal combination of these strategies (i.e., lock-in, affective customer experience, and relationship depth) for reducing customer churn. This allows us to refine managerial practice with quantified guidance on how managers can apply the results of these models in a real business environment.

Module I: Main effects of affective customer experience (H1a–b) Panels A and B in Fig. 2 show that both the direct effect (reducing customer churn from 49.03% to 0.15%) and the spillover effect (reducing customer churn from 4.11% to 0.42%) of affective customer experience reduce customer churn. However, when affective customer experience is rated at around 7 on a scale from 0 to 10, customer churn is likely to be maintained at the same level. This suggests that, to retain customers in one service category, firms should take care of the affective customer experience not only in that category but also in other categories.

Module II: Joint effects between lock-in and affective customer experience (H2a–b) As demonstrated in Panels C and D of Fig. 2, given poor affective customer experience (i.e., a score below 5), lock-in helps firms to reduce customer churn (from 49.03% to 1.13% by bundling, or from 47.86% to 0.46% by means of a binding contract). This difference turns to be insignificant once the affective customer experience reaches the acceptable level (i.e., a score of 7 or above). This does not mean per se that affective customer experience is unimportant for this group. The lock-in does

[6] We thank an anonymous reviewer for suggesting sensitivity analysis, which helped us better illustrate the relationship between lock-in and affective customer experience.

[7] The scenarios are (2), (3), (4), (5), and (6).

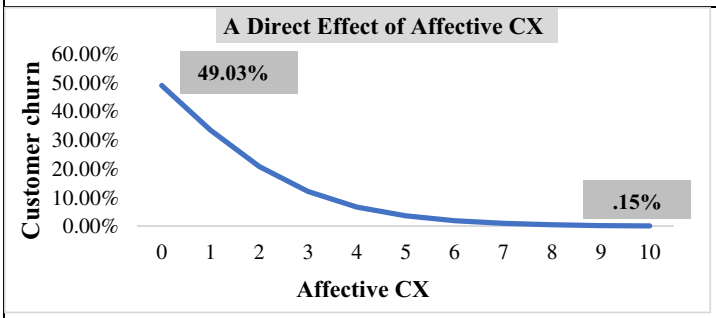
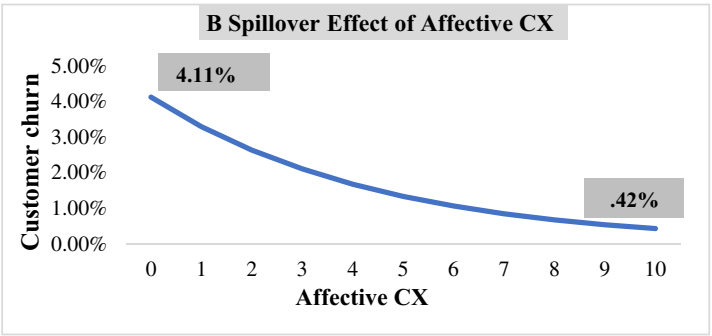
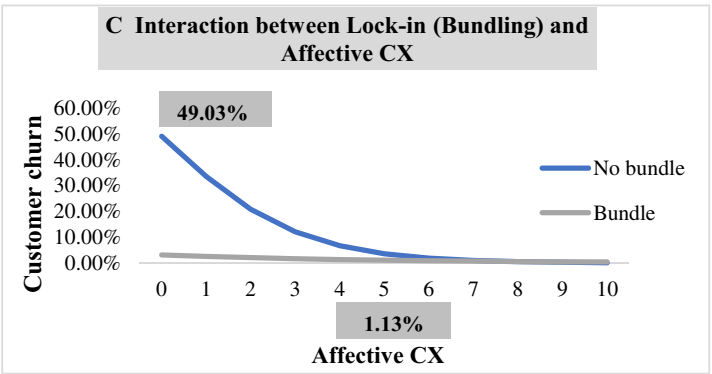
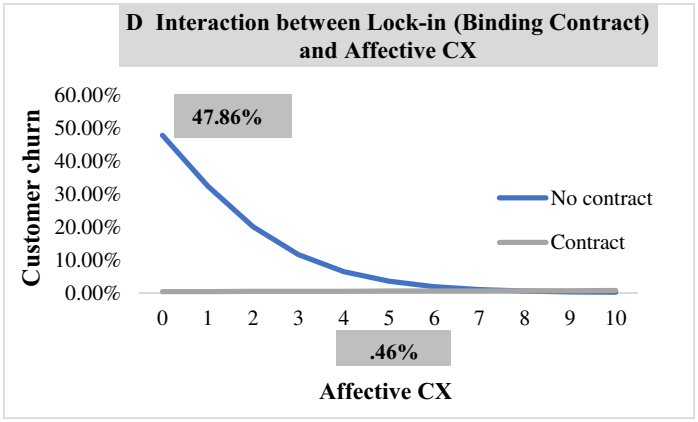
Scenarios	Illustrative examples
Main Effects of Affective CX	
	For example, customers have acquired mobile and broadband services from the focal telecom firm. Not only positive affective CX from the mobile service category, but also from broadband service category could reduce customer churn.
	
Joint Effects Between Lock-in and Affective CX	
	This example considers the case where customers have acquired two service categories (i.e., mobile and broadband) in a bundled manner or have accepted a binding contract. Given poor perceived affective CX, the customers might prefer to remain with the focal firm for a reasonable period until leaving is permissible under the terms of the lock-in. Here, bundling or a binding contract provides

Fig. 2 Projected customer churn under different scenarios via sensitivity analysis

limit the churn for customers with a poor affective customer experience. As soon as this lock-in comes to an end (e.g., the contract expires or the bundle is no longer relevant), the customer moves to the non-lock-in group, and affective customer experience suddenly becomes very important (as Panels C and D in Fig. 2 also indicate). Accordingly, we argue that lock-in provides firms with additional time to repair the affective customer experience before the expiration of the lock-in.

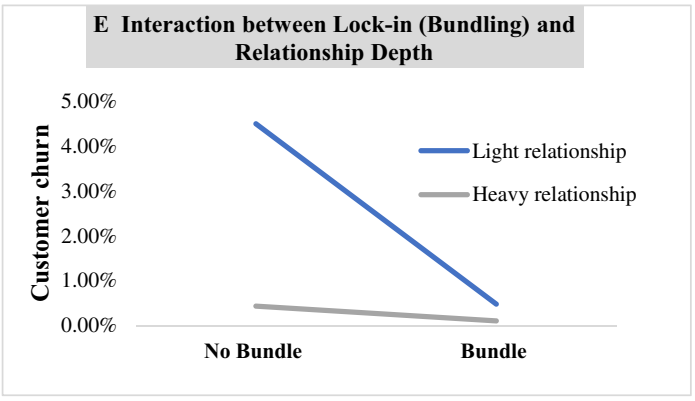
Module III: Effects under the moderating role of relationship depth Panels E, F, and G in Fig. 2 illustrate that when a customer develops a deep relationship with a firm (inferred by continued use), the role of lock-in and affective customer experience in reducing customer churn is weakened. However, given light relationship depth, lock-in and affective customer experience enhance customer retention. Similarly, Panels H and J (versus Panels I and K) of Fig. 2 demonstrate that the joint effects between lock-in and affective customer



firms some additional time to repair the affective CX before their expiration. However, some customers would rather invoke the penalty clause to leave as soon as possible.

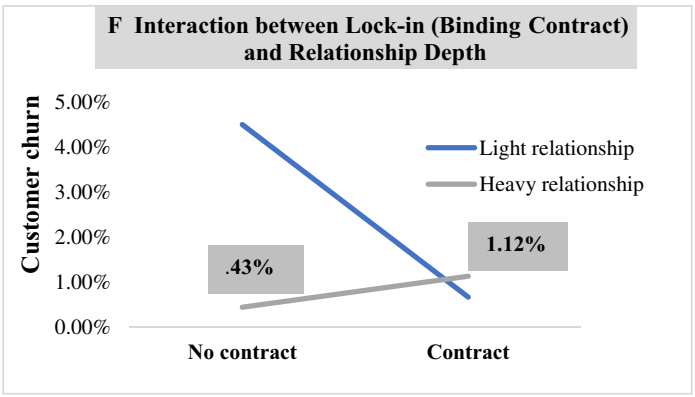
Where the affective CX is extremely good, customers are likely to stay with the focal firm regardless of whether they have accepted the bundling offer and/or a binding contract.

Effects Under the Moderating Role of Relationship Depth



This example considers a customer who has developed a deep relationship with the focal firm.

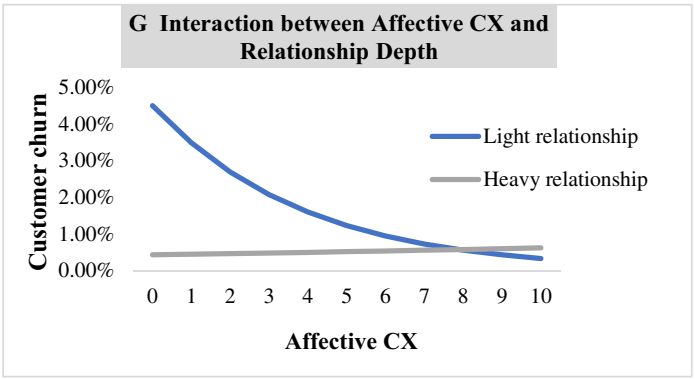
Through the deeply established relationship with the firm, such customer is likely to gain more confidence in their own beliefs about the firm. Eventually, this customer is prone to stay with the firm and less likely to pay attention to other aspects (i.e., offerings related to bundling offers or binding contracts or affective CX).

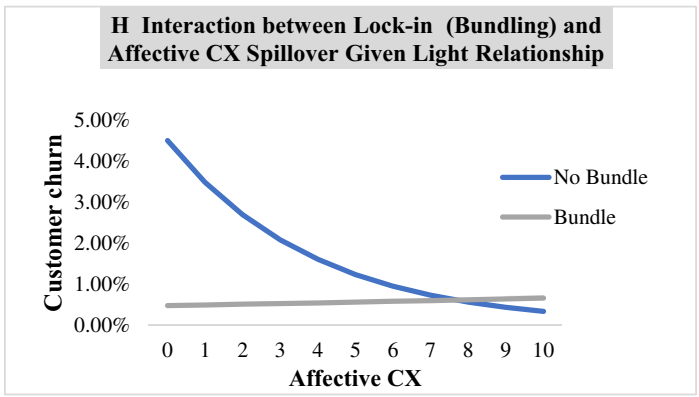


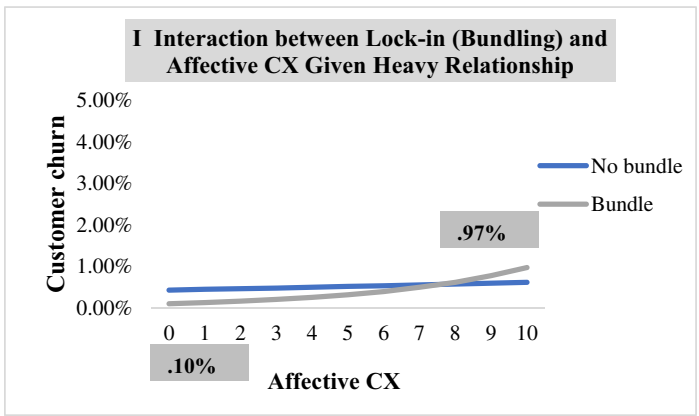
Importantly, as shown in panel F, such customer might view lock-in as signal of the firm's intention to develop the transactional relationship, thus triggering churn behavior.

Fig. 2 (continued)

experience tend to be more relevant under light relationship depth. This relevance attenuates once deeper relationships between customers and firms are established. Firms should therefore pay special attention to this aspect if they are to avoid unintended consequences. As shown in Panel I (versus Panel H) of Fig. 2, under a situation of high relationship depth, bundling can increase customer churn from 0.10% to 0.97% despite improved affective customer experience. This suggests that paying for a bundled package each month serves as a "reminder" to customers that firms are mainly interested in maintaining transactional relationships (Clark & Finkel, 2004). Indeed, as indicated in prior research (e.g., Prelec & Loewenstein, 1998; Soster et al., 2014), when consumers enter a transaction (e.g., making payment), they conduct a process of "mental accounting" in which they weigh up the expense incurred and the benefits acquired (Soman & Gourville, 2001; Soster et al., 2014). Among customers who perceive extremely good affective customer experiences,







This example focuses on two customers: one who has established a light relationship with the firm while another has developed a heavy relationship with the firm.

As noted above, once a deeper customer–firm relationship is built up, customers tend to be less sensitive to what lock-in is deployed by the firm and how affective CX is delivered.

Again, given a heavy relationship, firms should be careful with the counterproductive effect between lock-in and affective CX. As displayed in panel I, given a heavy relationship and positive affective CX, bundling can be viewed negatively by customers, since customers are mainly relational-oriented rather than transactional-oriented.

Fig. 2 (continued)

being locked in is not good, as it can be a sign that the firm is emphasizing a calculative approach and wants to limit the customer's freedom of choice (Gustafsson et al., 2005). Much empirical research in psychology and marketing has indicated that decreased perceptions of freedom of choice and control lead to negative psychological and emotional outcomes (Jones et al., 2007). Negative reactions of this type are more likely to occur when a customer establishes a deep relationship with a firm. In the context under study, the underlying reason could be that, for customers who use both mobile and broadband services heavily, their expectations may be very high, which leads to churn.[8]

Accordingly, given a deep relationship and delightful affective customer experience, lock-in may backfire. Drawing on these patterns, we suggest the following specific

[8] We thank an anonymous reviewer for this suggestion.

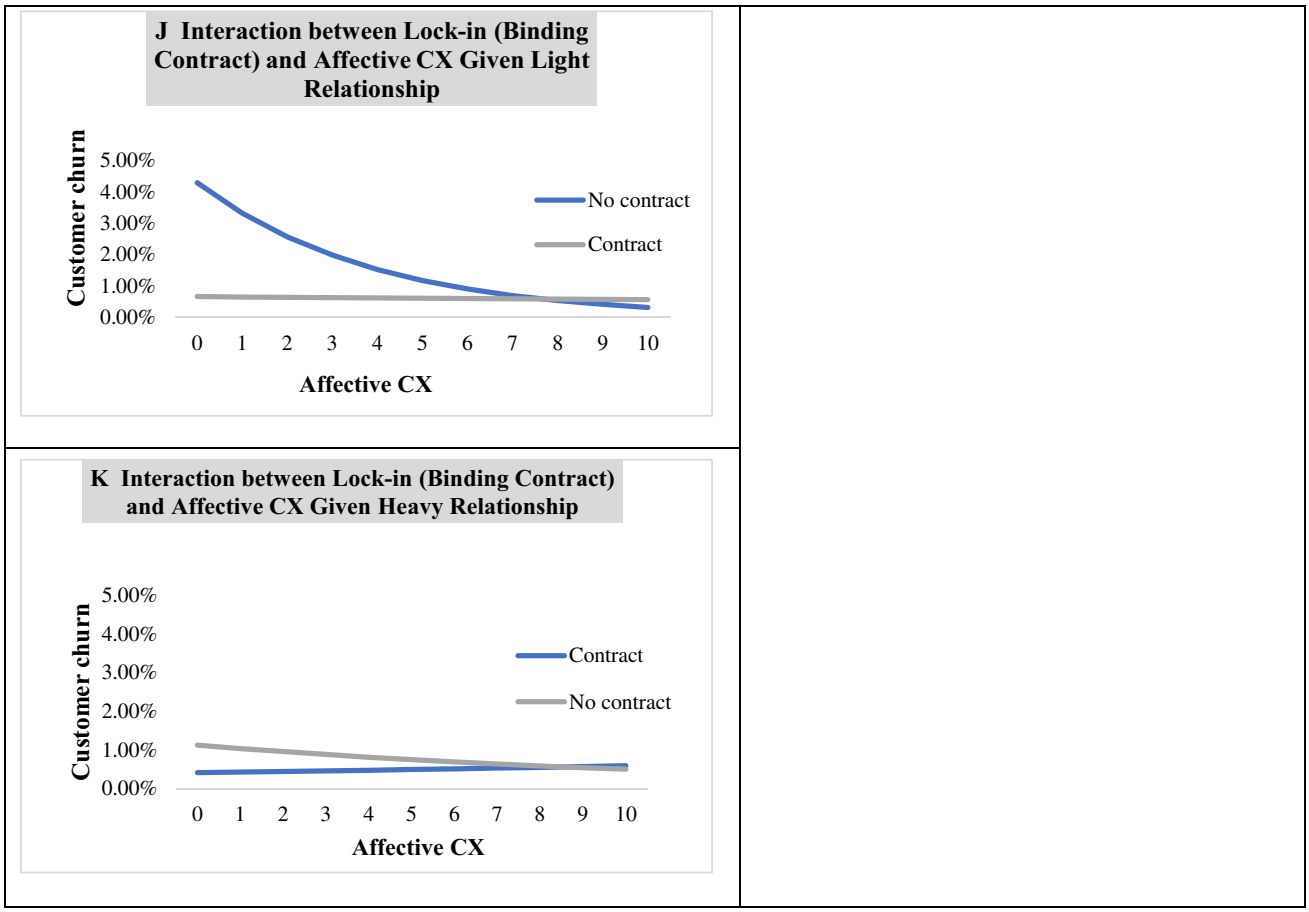


Fig. 2 (continued)

managerial guidelines for allocating resources in core strategies (i.e., lock-in and affective customer experience) to effectively win customers' hearts and minds under different situations.

- *The moderating role of relationship depth in the main effects of lock-in (H3).* Lock-in helps to retain customers who have a weak relationship with the firm. However, with a deeper relationship, lock-in may backfire. Indeed, given high relationship depth, a binding contract could increase customer churn from 0.43% to 1.12% (Panel F of Fig. 2).
- *The moderating role of relationship depth in the main effects of affective customer experience (H4a–b)* Delivering positive affective customer experience can effectively reduce customer churn, especially for customers who have weak relationships with the firm. However, for customers who have established deep relationships with the firm, a more nuanced perspective is required. Ensuring positive affective customer experience is necessary to maintain the established relationship. However, firms should be aware that the marginal effect of improving affective customer experience decreases as a deeper customer–firm relationship develops. Thus, for these customers, business managers should place the emphasis on ensuring an acceptable level of affective customer experience, allowing customers to rely on their confidence in assessing ongoing interactions. This emphasis should be mainly applied to the core category, since customers tend to be insensitive to affective customer experience perceived from other related categories.
- *The moderating role of relationship depth in the joint effects of lock-in and affective customer experience (H5a–b)* Both lock-in and affective customer experience help firms to enhance customer retention. Intuitively, the more the better, and therefore one might suggest that firms should always implement the two strategies simultaneously. Nonetheless, our research shows that managers need to follow a timeline, and that doing so is critical for balancing the short-term and long-term financial consequences of customer retention strategies. From a long-term perspective, improving affective customer experience should be considered as the core strategy for firms.

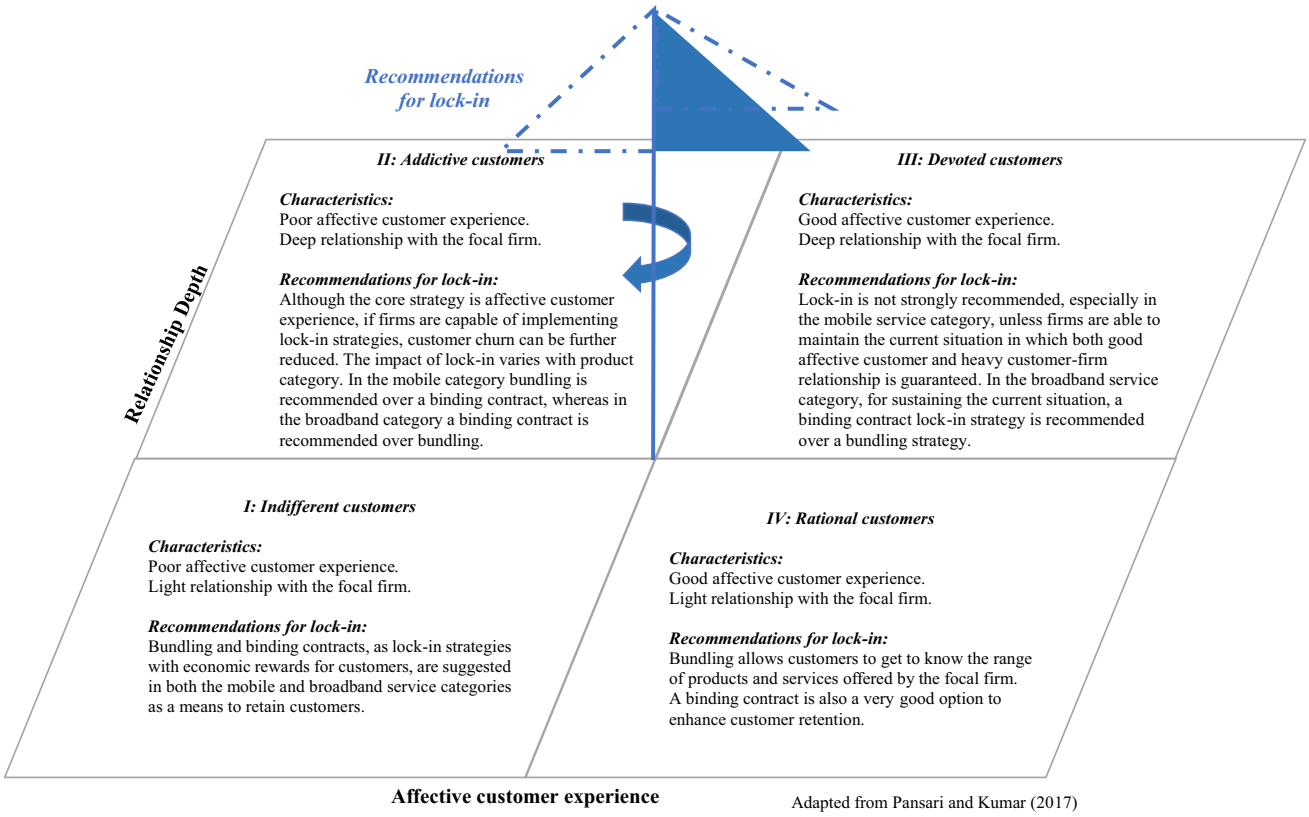


Fig. 3 Summary of managerial implications

Happy customers have better retention rates and are less price-sensitive. In addition, happy customers tend to complain less, which reduces the stress on the firm's operating infrastructure and helps to keep costs in check. Both prior academic research (e.g., Becker & Jaakkola, 2020; De Keyser et al., 2020; McColl-Kennedy et al., 2019) and business practice (Watermark Consulting, 2021) consistently highlight the importance of adopting a long-term approach in means dedicating efforts in improving affective customer experience. However, firms are not always able to provide excellent (or even acceptable) affective customer experience, and they may need time to improve the relevant internal processes. In the interim, lock-in mechanisms can be used. We thus argue that lock-in can serve as a stop-gap, providing firms with additional time to repair the affective customer experience before the expiration of a lock-in. Any decision to adopt such a strategy should take into account the firm's objectives and resource availability, since economic incentives might be a drain on firm resources.

Which customers firms should lock into exchange relationships Our findings also generate a detailed and insightful scheme that can guide managers in properly allocating their efforts according to customer segments. As Fig. 3 shows, these segments can be defined on the basis of affective customer experience and relationship depth. The affective customer experience can be low or high, and the relationship depth can be light or heavy. Drawing on Pansari and Kumar (2017), we designate quadrants I to IV as customers who are indifferent, addictive, devoted, and rational, respectively. Next, we consider how firms may adjust their implementation of lock-in strategies based on the main characteristics of each segment.

We categorize customers in quadrant I as indifferent because they tend to display a neutral disposition toward the firm due to a weak customer–firm relationship and poorly perceived affective customer experience. Thus, customers in this segment are more likely to switch to competitors when better options are available. Lock-in strategies (i.e., bundling offers and binding contracts) with economic rewards are recommended for retaining this segment of customers.

In quadrant II, customers are addictive; that is, despite bad affective customer experience, they maintain a close and familiar relationship with the focal firm. Such customers are more responsive to experiential aspects than to economic ones, with the result that they appreciate a firm's efforts to provide better affective customer experience. The core

strategy here is to improve affective customer experience, which enables a firm to move these customers to quadrant III. If a firm is also capable of implementing lock-in strategies, customer churn can be reduced further.

Customers in quadrant III are devoted, as they not only have a deep relationship with the firm but are also very happy with the delightful affective customer experience it provides. In this case, the deployment of a lock-in strategy is not recommended, since promoting economically attractive offerings can erode customers' positive feelings toward the firm. Lock-in should be applied only if the firm is able to maintain the current situation in which both positive affective customer experience and heavy relationship depth are guaranteed.

Finally, customers in quadrant IV are referred to as rational. Although these customers have had a positive affective customer experience with the firm, they also have a lighter relationship; their main reason for choosing a product is convenience (Pansari & Kumar, 2017). In these circumstances, a firm can opt for bundling, which familiarizes customers with the range of products or services it offers. A binding contract is also a good option for enhancing retention of customers in this quadrant.

Limitations and future research

We acknowledge several limitations of our study, and note that these indicate promising lines for future research. First, we measured affective customer experience using a single-item metric (the scale item of NPS in the mobile service category and a similar five-point Likert scale in the broadband category). Although simple measures are easily understood by marketing practitioners (Lemon & Verhoef, 2016), and the superior predictive power of NPS for customer retention in comparison to other perception metrics has been established (De Haan et al., 2015), we recommend that future research adopts other metrics. Second, we measured affective customer experience in annual terms in December of each year. In real business practice, as highlighted by Venkatesan et al. (2019), it is difficult and costly to collect affective customer experience information on a monthly basis, and yearly measurements are commonly used by companies. Nevertheless, future studies may seek to capture this information on a monthly basis, with a reduced sample size if necessary, in order to verify the proposed conceptual model. Third, we mainly focus on customers' inner feelings derived from affective CX, as opposed to specific customer-initiated or firm-initiated factors regarding the affective-related information. Although, our database does not provide information about these factors. We do believe that determining the impacts of these factors (i.e., factors related to the affective-related information) would make for a very interesting complement to our study in the future. This information may enable companies to design activities to increase customer retention based on lock-in, affective customer experience, and relationship depth. We acknowledge the difficulty of tracking and implementing such a system. However, we believe that, given the availability of advanced information and communication technology, there is a huge opportunity for service providers to expand the array of detailed records of customer transactions and perceptions (e.g., affective customer experience) (Du et al., 2007; Venkatesan et al., 2019). Fourth, our results reveal affective customer experience measured by the scale item of NPS positively and significantly affects customer retention. However, we acknowledge while confirming such positive linkage, it is necessary to check for profitability, since in prior research, NPS has shown to be an ineffective measure in terms of predicting future profitability (Baehre et al., 2022). Fifth and lastly, future studies should collect information about customers' perceptions of the focal firm's competitors. Compared to a quantitative approach based on the difference between the experience gained from the focal firm and the average value for the rest of the firms, this offers a better reflection of the influence of competitors.

Conclusions

By integrating experiential learning theory and social exchange theory, this study has developed an encompassing framework and used it to examine the separate and joint effects of two central strategies of customer retention, as well as to investigate how relationship depth determines customer perceptions of these strategies. To test the proposed model, we collected data from a major European telecoms industry for a sample of 13,761 customers, covering all firms in the telecoms market for two different services. We used multinomial logit models to test the proposed conceptual framework empirically. Our results demonstrate the complex interplay between lock-in and affective customer experience, which also varies according to the depth of the established relationship. By revealing these patterns, our study makes important contributions to both academic research and business practice.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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