

Paper Title: Linking path dependent lock-in and consumer lock-in in service relationships to elaborate the individual and social levels of lock-in

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Abstract

The individual decision is at the center of considerations of the path dependence conception, yet considerations so far have mostly focused on aggregate level effects constraining courses of action. Research on organizational path dependence advanced a conception of the lock-in process that identifies conditions for lock-in and the phases of the lock-in process. Consumer behavior and Service research point to the relevance of financial, procedural and relational factors constraining individuals; switching costs on the individual and social level can amount to consumer lock-in. This work combines both notions to progress an understanding of the individual level of path dependence and lock-in, the “*microconsumption*” aspect of path dependence. How can the mechanisms and characteristics identified in the path dependence conception from organizational research benefit research in consumer behavior and vice versa? By linking both areas this work models the individual lock-in process regarding social and individual. What implications have conclusions on the behavioral level for the path dependence conception? The individual lock-in conception offers a useful approach to explain, consumer persistence processes and consumer lock-in, as well as benefit path dependence in understanding individual level mechanisms.

1. Introduction

Lock-in is a central outcome of path dependent processes that have been identified on numerous levels (e.g. Beyer, 2010; Koch, Eisend, & Petermann, 2009; Schreyögg & Sydow, 2011). They all come down to a process, where decisions or actions in the past govern the action patterns in the present, leading to an irreversible course of action. Individual decisions are locked in to a course of action, without the individual necessarily being aware of this lock-in. The example of today's keyboard layout QWERTY shows that this course of action is not always up to us as individuals; rather we are locked in to this layout (David, 1985). But mechanisms reinforcing lock-in can come from different sources; global and aggregate as well as social and even individually cognitive. It is important to note that there is a distinction between mechanisms described for path dependent lock-in work on the aggregate market level regarding adoption or non-adoption. The focus of this work is on the factors influencing *individual lock-in* in a process that is reinforced by mechanisms only affecting the individual decision of defection or retention. These mechanisms are expected to work on the individual and social level, rather than the aggregate.

The concept of consumer lock-in implies that there are consumers whose commitment to a provider is not entirely voluntary. Research in services has identified satisfaction and commitment as central for loyalty and retention in relationship marketing (Morgan & Hunt, 1994; Rese, 2003). However these aspects vary individually and develop over the relationship process, in conjunction with experience and evaluation of a service. Next to the quality of a service, persistence of consumers in services is greatly dependent on individual fit as well as satisfaction and loyalty (Ladhari, 2009). In absence of these, switching barriers might accumulate, effectively locking consumers in. Consumers experiencing dissatisfaction, a lack of commitment or regret regarding a service may then be prevented from exiting the service relationship or switching providers.

The first part of this work elaborates on the path dependence mechanisms as an explanatory concept for lock-in. These are then matched with mechanisms reinforcing consumer lock-in, identified as switching barriers. A definition of individual lock-in is developed and linked to literature of both path dependence research and marketing research on loyalty and switching. These are central to understanding the sometimes counterintuitive behavior of individuals in general and consumers in services in particular. The concept is then embedded in a process model, with implications for both research and practice.

The goals of this work are to 1. Identify lock-in mechanisms in path dependence and match them with those found in consumer lock-in, 2. Derive an improved definition of what mechanisms lead to individual level lock-in and 3. Incorporate the described mechanisms into a process model, to explore and better understand the development of individual lock-in in general and for consumers in particular.

2. Path dependence – an explanation for lock-in in individuals?

The character of dynamic lock-in processes is reflected in a growing body of research on path dependence (David, 1985). Many parallels can be identified between this conceptualization and the lock-in phenomenon in consumers. Path dependent processes are governed by an actor's past decisions - while he may feel free to choose, he is actually constrained to a "*path*" due to his/her choice history and influenced by that of others. The

common examples refer to technological lock-in: The dominance of QWERTY Keyboard Layouts (David, 1985) and the prevailing of the VHS format compared to alternatives (Arthur, 1988). These technologies are assumed to turn out as suboptimal choices, yet there is lock-in on the market level to these technologies. As described for service relationships earlier, such a situation can also arise regarding the individual sequence of behavior or “*microconsumption*” (Aversi, Dosi, & Fagiolo, 1999). Here the individual is locked in and the negative effects also affect the individual.

The classic path dependence concept points to the relevance of *self-reinforcing mechanisms* as a cause of developing persistence over the course of the process resulting in lock-in. The scope of this concept includes *social dynamics* involving social interactions among economic agents (David, 2007). In his work on *Self-Reinforcing Mechanisms in Economics* (Arthur, 1988, 2004), professor William Brian Arthur describes his idea of dynamical systems in economics that work similar to those observed in physical and biological systems. He describes four such mechanisms - *large set-up or fixed costs*, *learning effects*, *coordination effects* and *adaptive (self-reinforcing) expectations* - as relevant for the development of technological *path dependence*. But the consideration of these mechanisms goes further than technologies (Arthur, 1989; David, 1985); similar effects have been identified for path dependence in institutions (North, 1990), in political processes (Pierson, 2000) and organizations (Schreyögg & Sydow, 2011; Sydow et al., 2009, 2005). The organizational path dependence conception left out *large set-up or fixed costs (economies of scale and scope)* and *network externalities* but added the aspect of *complementary effects*, further adding to a mix of mechanisms that appear to depend on the context of lock-in.

The mechanisms identified by Arthur can be described as follows. There are the initial and sunk investment costs incurred due to a technology choice that reinforce it. Learning occurs due to idiosyncratic experience in a given technology. Coordination with other agents on a choice benefits the technology down the road. Lastly, expectations due to experience and belief of agents reinforce the technology. The mechanisms are sequential along the process, reinforcing the choice and thus leading to persistence in that choice. While the individual persistence is said to be rational in the moment it occurs, Arthur (1988) admits that “*there may exist regret*” (p. 13).

Mechanisms that lead to lock-in share the feature that they entail continuous feedback over the course of the path “reinforcing” the initially good and rational choice. Technology adoption and distribution are governed by this mechanism on an aggregate level. As this work focuses on the individual process of becoming path dependent under *interdependence*, the intra- and inter-individual mechanisms are relevant. Pierson (2000) similarly employs the path dependence conception as “*social processes that exhibit increasing returns*”, where the *increasing returns* are caused by an increase of the benefits a current *activity* renders relative to other possible options. This activity may well be consumption of a particular service.

Describing the individual level of this process, research referring to path dependence has adopted such an angle. Evidence was found for the occurrence of path dependent behavior in consumer decision-making (Langer, 2011). The researcher considered an aspect of *social influence* in the form of adaptive expectations. The described social level effects are analogous to the idea of *interdependence* as a self-reinforcing mechanism. Focusing only on individual level effects, the work of Koch, Eisend, & Petermann (2009) showed the relevance of decision complexity for the development of individual path dependence and a

subsequent rationality shift that is the foundation for calling behavior path dependent. Some of the described self-reinforcing mechanisms from path dependence research are transferable to consumer relationships in the form of cognitive switching barriers.

Frank (2007) argues for application of the path dependence and lock-in concept on the consumption side of the economy, where positive feedback can lead to suboptimal consumption choices. He differentiates mechanisms by the level on which their feedback reinforces the path i.e. bars switching. Apart from the firm- and market level, the individual and social level mechanisms are identified. Mechanisms on these two levels are in the focus of this work as a trigger of individual lock-in. The mechanisms differentiate as follows: The *individual* level combines barriers that work on the personal level like characteristics, experiential aspects and investment in the consumer relationship. The *social* level incorporates barriers regarding interpersonal aspects of the service relationship. The following table summarizes these categorizations.

Author	Focus	Mechanism on the individual level	Mechanism on the social level
Langer (2011)	<i>Lock-in regarding repeated decisions in high-tech markets</i>	Complementary Effects Learning Effects	Adaptive Expectation Effects
Koch, Eisend, & Petermann (2009)	<i>Decision complexity as driver of locked in decision making</i>	Decision Complexity	-
Frank (2007)	<i>Lock-in to consumer preferences: meat consumption in western societies</i>	Rational taste formation Non-rational habit formation Learning Effects (knowledge and skill)	Bandwagon effect Social pressure

Table 1: Literature describing individual level mechanisms leading to lock-in.

3. Consumer relationships and switching barriers as lock-in mechanisms

The understanding of relational exchange between service providers and consumers has adopted a process view (Dwyer, Schurr, & Oh, 1987), focusing on the development and relational dynamics of the relationship phases rather than distinct transactions (Czepiel, 1990). Continuous-/long-term services are particularly interesting for process and relationship considerations, with early stages determining the relationship duration, i.e. decision to exit the relationship (Bolton, 1998).

Bendapudi and Leone (2003) differentiate between *dedication-based* and *constraint-based* reasons for relationship maintenance in the services context. Berry (1995) refers to such constraints as customer bonds and sees their highest potential in services that require a high degree of customization in the form of *financial*, *social* and *structural* bonds. In such primarily constraint based relationships, switching intentions are lower (Fullerton, 2003), but this loyalty is mostly based on perceived switching costs for consumers (e.g. Pick & Eisend, 2013). As Patterson & Smith (2003) state, switching costs can lead to customer retention despite reasons for disloyalty, effectively *locking in a customer*.

While satisfaction and commitment are identified central for retention in such relationships (Morgan & Hunt, 1994; Rese, 2003), the concept of lock-in implies that there are service consumers whose commitment to a provider is constraint based. In the types of services

relevant for this work, satisfaction, commitment and lock-in can develop at some point during the relationship process, effectively barring switching to alternatives.

Research identified switching as an attempt for cognitive dissonance reduction (Karakaya, 2000), particularly in post-decision processes such as evaluation (e.g. Zeleny, 1982). Consumer lock-in has also been described as a “*decreased propensity to search and switch after an initial investment*” (Zauberman, 2003, p. 405). In the case of lock-in, cognitive dissonance regarding maintenance of the relationship occurs over the course of the service relationship, which cannot be alleviated by exiting the relationship, leaving the consumer in cognitive dissonance (Festinger, 1962). Bloch & Richins (1983) describe that product importance positively affects the tendency to experience cognitive dissonance and to pursue dissonance reduction. These considerations make a strong case for cognitive dissonance due to switching barriers leading to consumer lock-in in the types of continuous service relationships considered in this work. Examples for such relationships include *legal services, management consulting and medical services* (Ruyter, Wetzels, & Bloemer, 1998).

Understanding the cognitive mechanisms constraining individuals in this way is central to comprehending the counterintuitive phenomenon of lock-in. This research contributes to this understanding by examining the lock-in process and drivers on the individual cognitive level in these types of service relationships that may extrapolate to the individual level. The conception of path dependence helps explain such phenomena.

Next to individual characteristics, expectations regarding a course of action are informed by the consumer’s history and are also expected to influence perceived switching costs (Burnham, Frels, & Mahajan, 2003). They must be considered as an overarching factor in consideration of the mechanisms leading to a form of individual lock-in. It is expected to be a phenomenon limited to some consumers and with an individual set of mechanisms reinforcing the lock-in for different individuals.

Associated self-reinforcing mechanism	Level	Mechanism description
<i>Large set-up or fixed costs</i>	Individual	Idiosyncratic initial and ongoing investment in relationship
<i>Learning effects</i>	Individual	Idiosyncratic learning regarding conduct
	Social	Reciprocal social learning over course of the relationship
<i>Coordination effects</i>	Social	Coordination with actors
<i>Adaptive Expectations</i>	Social	Interactive development of preferences

Table 2: Categorization of relationship mechanisms regarding respective reinforcement mechanism and affected level of individual lock-in.

Jones et al. (2000) examined *interpersonal relationships, perceived switching costs, and attractiveness of alternatives* regarding their relevance for customer satisfaction and retention. So while some of the terminology in marketing focuses on switching costs, these can also be understood in terms of termination barriers in service relationships (Bendapudi & Berry, 1997). Table 2 gives an overview of the mechanisms on these relevant levels and the self-reinforcing mechanisms that can be associated with them.

Researchers in services marketing refer to these mechanisms as *switching barriers*. According to Jones, Mothersbaugh, & Beatty (2000) switching barriers “*represent any factor, which makes it more difficult or costly for consumers to change providers*” (p. 261). Other researchers use the term switching costs synonymous with switching barriers,

distinguishing perceived *procedural*, *financial* and *relational costs* of switching (Burnham et al., 2003). The first two categories of costs are relevant as individual level effects that increase over the course of the relationship. Procedural costs are described as expenditure of time and effort, while financial costs involve the loss of financially quantifiable resources. Relational costs comprise interpersonal aspects, relevant on the social level. Figure 1 details the costs associated with each category.

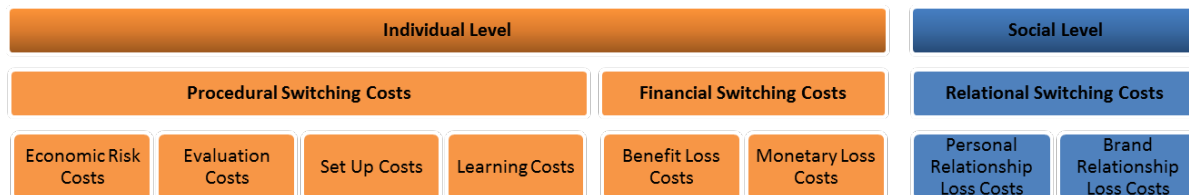


Figure 1: Typology of consumer perceptions of switching costs (Source: Based on Burnham et al., 2003)

The described broad categorization serves as a starting point for elaboration of these barriers in the case of the consumer lock-in process in service relationships. The findings support the notion that switching barriers lead to lock-in in consumption situations. Extrapolating from this categorization we move on to explore the process on the more general level. The differentiation between individual and social level however remains for a general conception of individual lock-in.

4. A definition of individual lock-in

As Schreyögg & Sydow (2011) point out, organizational lock-in is the fixation of a dominant pattern that develops quasi deterministic character. While they refer to new entrants to a field of action, it makes sense to think of the fixation on the individual level, where future actions are bound to replicate the path due to an accumulation of barriers. The definition of consumer lock-in by Zauberman (2003) refers to the phenomenon as *a consumers' decreased propensity to search and switch after an initial investment*. While this definition captures the general idea of switching barriers, it lacks detail and leaves out the negative aspects of lock-in: the incapacity to switch. As all actions entail sunk costs and ongoing idiosyncratic investment, for example in a service, they decrease propensity to switch (Arkes & Blumer, 1985). Lock-in however is stronger as it implies a cognitive inability to switch despite the experience of misfit along one or more dimensions.

Furthermore, the described barriers grow over a sequence of action to the point where lock-in occurs. In services they can be described as switching costs, which can culminate in lock-in if they become "*prohibitively expensive*" (Shapiro & Varian, 1999, p. 132). They may lead consumers to stay in a service relationship that doesn't meet their expectations and that they are not *satisfied* with (Bolton, 1998), for which they lack *commitment* (Fullerton, 2003), or the decision for which they *regret* (Tsiros & Mittal, 2000). The phenomenon is potentially unaware, as consumers make their decisions under influence of these barriers, given available information. The experience of lock-in only occurs to a consumer when they desire to switch a provider or exit a relationship. This is in line with the path dependence conception: "*At each stage an optimal choice is made under conditions of certainty, so there is no conventional inefficiency. But there may exist regret*" (Arthur, 1988). Indication of individual lock-in can thus be *regret* regarding a chosen path or *cognitive dissonance* regarding the path that is reduced when lock-in occurs, rationalizing the choice.

In case of service relationships the influence of barriers also depends on individual characteristics, preferences and expectations. As Bendapudi & Berry (1997) put it, “relationship maintenance may be a function of [a customer’s] idiosyncratic characteristics” (p. 24). Customer characteristics like demographics as well as stable individual preferences were found to moderate the relationship between satisfaction and loyalty (Mittal & Kamakura, 2001). Combined with the mechanisms locking in the consumer, this leads to the working definition of individual lock-in for this work from a consumer behavior perspective:

Individual lock-in is a situation of potentially unaware inability to exit or switch a course of action due to an entrenchment with increasing cognitive barriers on the individual and/or social level

The character of such lock-in processes has been the subject of research in path dependence (e.g. Schreyögg & Sydow, 2011). They point out that a) there is ambiguity due to the social nature of the context and b) that the process has accumulative nature and there is a threshold to reach before lock-in occurs. While having another focus it is applicable to the process of service relationships and co-creation. The importance of the mechanisms leading up to lock-in is stressed – in a consumer context these mechanisms are referred to as switching barriers that are raised during the entrenchment phase of the process (Shapiro & Varian, 1999).

5. Research exploring the lock-in process

Organizational path dependence research offers a framework describing the process of becoming locked-in (Schreyögg & Sydow, 2011). This process framework forms the basis of the model developed for the individual level process in this work. The researchers detail three consecutive and sequential phases with distinct features in this process that an organizational system goes through.

Phase I, the *preformation phase*, entails a broad scope of potential action where options are open, but a decision or action taken can mean a critical juncture – the entry of phase II. In this phase, referred to as the *formation phase*, self-reinforcing dynamics make this decision or action more and more irreversible. These dynamics have been described before and differ from those identified for technological path dependence, while following a similar - ever increasing - logic. While decisions outside of the path are still attainable, they are less and less probable – a path is evolving. Phase III is entered when the mechanisms reinforcing the path have increased to a point of *lock-in*, where the outcome is reproduced and flexibility is lost. This lock-in can be cognitive, normative and resource-based and the lock-in phase in the organizational context is less deterministic than technological lock-in, as it is more social and leaves room for variation.

Taking inspiration from organizational path dependence concepts serves as a novel explanation for rigidified courses of action in *consumers* and lead to a more differentiated understanding of *consumer lock-in*. The properties and consequences of individual path dependence as well as interdependence are of great interest for understanding consumer behavior in relationships. The terms coined in the concept of path dependence, like *history matters*, *small events* and *reinforcing mechanisms*, can also serve to explain constrained behavior and regret on the individual level. The impact of interdependence with the social surrounding on these processes, which has been somewhat evident in previous path dependence research, requires further elaboration (e.g. Frank, 2007).

Buyer-seller relationships have similarly been differentiated into phases and consumer lock-in similarly does not have deterministic character. Dwyer et al. (1987) introduce the phases of *awareness, exploration, expansion, and commitment*, with rising interdependence between buyer and seller. The case of such relational exchange transcends the idea of a sequence of events that make up the process of the relationship, where the events are connected and interdependent. The analogy to a marriage in this case is not far from the truth; *a restrictive trade agreement with high termination costs, which forecloses social and sexual options, brings expanded responsibility and demands* (Dwyer et al., 1987). Research in this field points out the importance of the mechanisms leading up to lock-in – in a consumption context referred to as switching barriers, as elaborated earlier. As Shapiro & Varian (1999) point out, lock-in occurs by virtue of the choices made by a consumer. After first selecting and sampling a product, the barriers to switching are raised during the entrenchment phase of the process. According to them “*the entrenchment phase culminates in lock-in when the switching costs become prohibitively expensive*” (p. 132).

6. The theoretical process model for service relationships

In the following the organizational framework is linked and adapted to the individual process of a service relationship. This theoretical model proposes that each individual consumer goes through a process of cognitive assessment of the service, following the decision for a service from a set of alternatives. Some individuals are expected to display a misfit along cognitive dimensions in this phase – cognitive dissonance (Festinger, 1962). Barriers in their perceived behavioral range then lead to lock-in - a situation of rigidity, making the consumer stick to the service and reduce cognitive dissonance.

In **Phase I** the individual is in consideration of available alternatives in the market, i.e. a unilateral consideration of exchange partners (Dwyer et al., 1987). Individual characteristics, past events - including the initial decision to evaluate alternatives and search - govern this process, rendering it “path dependent” (David, 2007). From a consumer decision making process perspective, this is the phase of problem recognition and information search (Hoyer & MacInnis, 2007). The initial choice is intentional (in the sense of a bigger event) but conditional and non-ergodic, as the choice is not made entirely free from available choices: history matters in that individual characteristics frame the achievable outcomes. This phase entails internal and external information search, while ex-ante evaluation of available service offerings and their fit are limited. This is why they are typically referred to as experience or credence goods (Darby & Karni, 1973).

The decision for a service provider then forms the *critical juncture*. It is the exclusive individual decision for one offering from the choices available. The concept stems from political research (Collier & Collier, 1991) but is readily applicable to individual decision making, where also legacy of a critical decision plays a crucial role for a current assessment (“history matters”). A high level of importance of the service makes the critical nature of the decision clear, the examples given in previous sections show that service decisions considered in this work are of high personal or financial significance.

When the individual enters the relationship – **Phase II**, referred to as the “*formation phase*”, begins (Sydow et al., 2009). This is equivalent to the sampling (Shapiro & Varian, 1999) or exploration phase (Dwyer et al., 1987), where “*termination of the fragile association is still*

simple” (p. 21). This phase is also referred to as the pre lock-in phase, as alternatives may still be viable, depending on entry barriers and the level of sunk costs encountered. These may also influence an early occurrence of *regret*. In the process of co-creation, the “*experience good*” elements of the service are evaluated. Over the course of the different stages of the process, the experience feedback influences individual assessments on different levels, including the *satisfaction* and *commitment*. Depending on the individual experience, cognitive dissonance rises along these dimensions.

Over the course of phase II, the described mechanisms come into effect. Ongoing investment of individual resources adds to the initial investment into the process, referred to as the expansion phase with deepening interdependence (Dwyer et al., 1987). This interdependence also plays out on the social level, with integration functioning as a barrier to switching. As explained in the previous sections, these individual and social level mechanisms accumulate with experience and time in the relationship.

In case of lock-in, individual assessments are expected to stabilize (**Phase III**), leading to an intention of persistence. Such behavioral persistence in the service relationship leads to lock-in (i.e. Johnson, Bellman, & Lohse, 2003). In this phase consumers can display bias in their evaluation of their decision and satisfice, as preferences evolve along the way (Aversi et al., 1999). The lock-in mechanisms are still in effect and rise, but have crossed a critical point at which the individual evaluation turn into favor for the service relationship. In order to reduce *cognitive dissonance* (Festinger, 1962), individual assessments like satisfaction and commitment normalize; leading into service consumer lock-in, as defined previously.

Phases II and III entail the *post-decision stages* as they are perceived in consumer behavior literature (Hoyer & MacInnis, 2007). These can contain *dissonance* and *regret*, *learning processes*, *satisfaction* or *dissatisfaction* and *disposition*. In line with Arthur (1988), regret can be considered a proxy for lock-in, even if satisfaction and commitment are average.

7. Conclusion and future research

This conceptual work makes contributions on three levels.

First the theoretical review showed that switching and exit barriers could lead to a state of consumer lock-in at a certain point of a service relationship. General models of relationships were mainly based on the trust, commitment and satisfaction aspects of relationship maintenance and loyalty. The combination of lock-in, caused by mechanisms of consumer cognition brings a more differentiated understanding to relationship maintenance research. The mechanisms develop over the course of a relationship and lock consumers into the relationship who have a propensity to terminate the relationship due to dissatisfaction. Consumers then are expected to satisfice with what they cannot change and reduce their cognitive dissonance – a phenomenon that can be observed in both technological and organizational lock-in.

Secondly the definition of individual lock-in and a model of the process are developed and embedded in service- and marketing relationship research on the one hand and path dependence research on the other hand. The definition is aimed at the phenomenon in services but can serve as a basis for similar definitions of lock-in regarding goods. The elaboration of the barriers on the individual and social level structures the understanding of

the drivers of such lock-in and can inform research in both consumption and non-consumption relationships. An adapted model could be used for industrial and organizational markets, where exit barriers are even more prevalent than they are in consumer markets (Dwyer et al., 1987). The combination of research streams generates insights for both sides, as the model motivates a closer examination of individual and social level effects in the understanding of individual path dependence.

For organizational path-dependence research, examining the described interdependence effects on the individual level extends the understanding of path dependent behavior on the individual and the group level, which are the basic unit of any higher-level path dependence (Sydow et al., 2009). The resulting model can help structure this individual level process. Research on this level has been limited, but some constituting features of individual have been identified and elaborated (Roedenbeck, 2011; Roedenbeck & Holtmann, 2009). The research approach proposed here can offer unique insights into the relevance of interdependence dynamics. While evaluating the common phenomenon of interdependence for its explanatory value in the development consumer lock-in, it goes beyond the idea of mere network externalities (Katz & Shapiro, 1985).

Network-based marketing with regards to consumer networks (Hill, Provost, & Volinsky, 2006) as well as effects of social influence (Cialdini & Goldstein, 2004) are also relevant for *consumer behavior*. The potential negative effect of such social influence, however, received limited consideration in previous research. The idea of constraints and lock-in in consumption can be systematized by employing path dependence theory. This can help to better understand how these effects occur and how consumers are led into constrained choice paths.

Lastly the supplied general model is adaptable for future empirical research and has managerial implications as well. Such research should focus on inefficient behavior on the individual level, as it can be observed in reality and has previously been conceptualized for research (Lee, Hwang, & Kim, 2005). Different types of services should be examined for their relevance of mechanisms on the individual and social level, with a longitudinal empirical approach promising the necessary detail for understanding the process. Also, dissatisfaction due to service failure and subsequent recovery may be worth pursuing regarding its implications for lock-in (Priluck & Lala, 2009). Research in this area can also help individuals making better choices by identifying rigidities regarding past and present consumption decisions and social processes they may be unaware of. A better comprehension of the reasons for – and the process behind – such behavior can help practitioners understand and alleviate its effects. Particularly in high-contact services, the identification, management and creation of processes that employ social and individual level mechanisms is a noteworthy implication. These can lock consumers into services, but a better understanding of them can also help identify consumers locked into competitive offerings.

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