How Relationship Age Moderates Loyalty Formation: The Increasing Effect of Relational Equity on Customer Loyalty

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The Increasing Effect of Relational Equity on Customer Loyalty

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In this article, the authors focus on the concept of relational equity, that is, the customer perception of distributive justice *within a continuous customer-provider relationship.* The authors investigate the influences of relational equity on attitudinal loyalty and behavioral loyalty. Moreover, they test the hypothesis that relationship age moderates the impact of relational equity on loyalty, adopting a cross-sectional design and data from a sample of Italian customers of mobile phone services ($N = 461$). Relational equity is recognized as a significant determinant of customer loyalty over and above satisfaction and trust effects, and its influence increases along with relationship age. From a managerial point of view, results suggest that loyalty programs should be tailored according to the age of the relationship. Moreover, particular care should be devoted to monitoring perceived relational equity, especially in longer-term relationships.

Keywords: *loyalty; relational equity; relationship age; trust; satisfaction*

Firms continually devote huge investments to customer loyalty programs in several service markets, such as airlines (Smith et al. 2003), retailing (Wright and Sparks 1999), financial services (Bolton, Kannan, and Bramlett 2000), and telecommunications (Johnson, Herrmann, and Huber 2006). Aggressive competitors and variety-seeking behavior of consumers, however, jeopardize the effectiveness of such investments (Verhoef 2003).

Accordingly, marketing scholars have extensively investigated customer loyalty and have stressed the relevance of achieving both attitudinal and behavioral loyalty to develop long-term, profitable relationships (Dick and Basu 1994; Garbarino and Johnson 1999; Gronroos 1994; Oliver 1999). In fact, the need to identify the determinants of customer loyalty has stimulated an extensive research stream, which has shown how constructs such as *satisfaction* (Bloemer and Kasper 1995; Lam et al. 2004), *trust* (Agustin and Singh 2005; Garbarino and Johnson 1999), and *value* (Sirdeshmukh, Singh, and Sabol 2002) influence customer loyalty. These constructs have generally been found to have a positive effect on attitudinal loyalty and repurchase intentions.

Despite such a significant effort, the literature on relationship marketing has devoted little attention to the role of *perceived equity within a continuous relationship* in developing customer loyalty. In this article, we apply Oliver and Swan's (1989) definition of equity to continuous customer-provider relationships. Accordingly, we refer to *relational equity* as the customer perception of the proportionality between her or his own benefit-cost ratio and the firm's benefit-cost ratio *within a continuous customer-provider relationship.* In market relationships, customers may adopt a serial perspective to assess outcomes (i.e., benefits) obtained as well as inputs (i.e., costs) invested in a relationship (Ganesan 1994) and evaluate the reciprocity of the outcome-input ratios throughout a series of customer-firm encounters (Bagozzi 1995). We argue that relational equity represents a critical construct

in building long-term relationships with specific reference to highly competitive, transparent markets. In such contexts, information is diffuse and easily available to customers, who are thus able to evaluate equity terms *subjectively* (i.e., their own and provider's benefits and costs). In line with these arguments, we propose that relational equity is a key driver of attitudinal and behavioral loyalty, over and above the effects of other relational constructs—that is, *satisfaction* and *trust.*

We also investigate how relationship age moderates the effects of relational equity on attitudinal and behavioral loyalty. There are reasons to believe that the effect of relational equity on customer loyalty increases along with the age of the relationship. First, long-term customers have usually developed greater knowledge and learning regarding the firm's offer (Alba and Hutchinson 1987; Kalwani and Nayarandas 1995; Szmigin and Bourne 1998). Second, customers are increasingly aware of the value they have created over time for the firm (Dwyer, Schurr, and Oh 1987). Therefore, one might suppose that long-term customers are even more able to assess and be concerned with the equity of the relationship. This would suggest that the effect of relational equity on customer loyalty may increase along with relationship age.

We contribute to the customer loyalty literature by proposing and testing a conceptual model of the effects of relational equity on attitudinal and behavioral loyalty and the moderating role of relationship age on these effects. This enables us to appreciate the relevance of customer serial evaluations in both short-term and long-term relationships. In a manner dissimilar to the approach employed in the consumer behavior literature, which has proposed that equity perception affects transaction-based satisfaction (Oliver and Swan 1989; Smith, Bolton, and Wagner 1999), we adopt a relationship marketing perspective and argue that relational equity has an independent and direct effect on customer loyalty, over and above the satisfaction contribution. Despite not being the core focus of this research, we also control for the effects of satisfaction and trust on customer loyalty (Anderson and Sullivan 1993; Chaudhuri and Holbrook 2001; Fornell et al. 1996; Sirdeshmukh, Singh, and Sabol 2002) and test how these effects change with relationship age.

From a managerial point of view, an understanding of the role of relational equity in loyalty formation can suggest guidelines for loyalty program design and management. Therefore, we contribute to customer relationship management (CRM) and practice by emphasizing how customers' perceptions and evaluations—within a continuous relationship—may be concerned with the equity of a series of encounters rather than a single transaction.

The article is organized as follows. First, based on relationship marketing and equity theory, we present a conceptual model of customer loyalty and specify the research hypotheses. Second, we describe the research design and measures. Third, we show results of regression analyses and structural equation modeling and test the hypotheses. Finally, we discuss findings and propose implications for loyalty research and management.

Conceptual Model

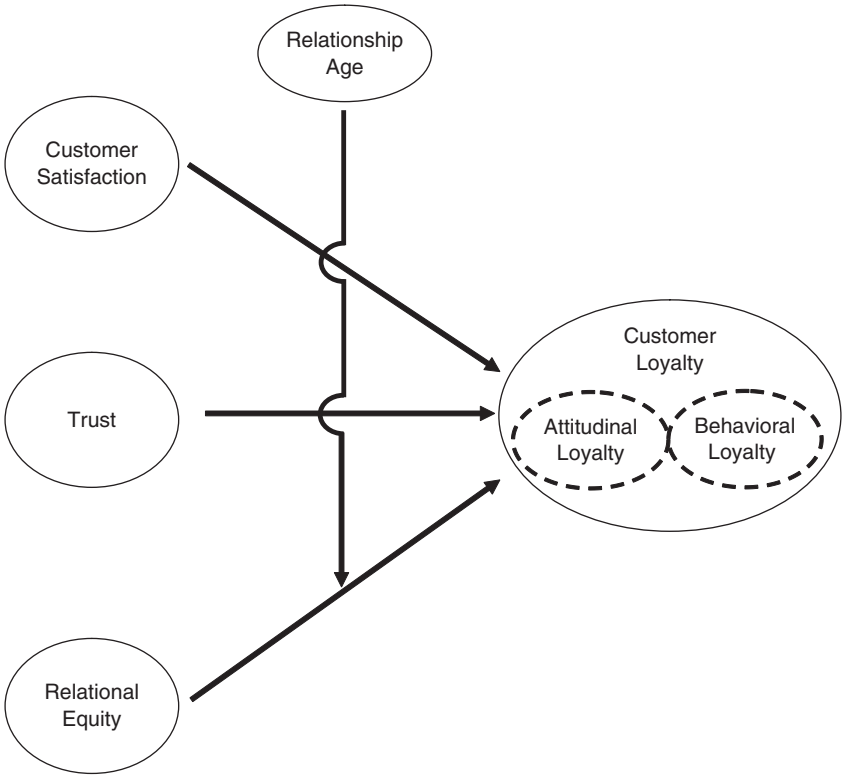
Building on contributions of relationship marketing (Dwyer, Schurr, and Oh 1987; Ford 1980; Gronroos 1994) and equity theory (Austin, McGinn, and Susmilch 1980; Blau 1964; Homans 1961), we hypothesize that relational equity positively influences both attitudinal and behavioral (Dick and Basu 1994) dimensions of customer loyalty. Moreover, our conceptual model assumes that such effects increase along with relationship age.

We include other well-acknowledged determinants of customer loyalty in our conceptual framework. Specifically, we consider the effects of customer satisfaction (Oliver 1997) and trust (Morgan and Hunt 1994), which are by far the most studied determinants of customer loyalty (e.g., Chaudhuri and Holbrook 2001; Lam et al. 2004; Sirdeshmukh, Singh, and Sabol 2002). Including satisfaction and trust in our model allows us to test our main hypotheses—concerning the effect of relational equity on customer loyalty—reducing the risk of omitted variable bias (Wittink 1988). We expected to find significant and positive effects of satisfaction and trust on both attitudinal and behavioral loyalty and thus to offer further support to previous studies. We also tested the hypothesis that the effect of satisfaction on customer loyalty decreases with the age of the relationship, whereas we expected to find that the effect of trust on customer loyalty increases with relationship age (Garbarino and Johnson 1999). To summarize (see Figure 1), we define customer loyalty—considering both its attitudinal and behavioral dimensions—as the chief dependent variable and relational equity, satisfaction, and trust as independent variables. In what follows, we substantiate and present our hypotheses.

Customer Loyalty

The literature on customer loyalty has emphasized how loyal customers promote firm and shareholder value (Reichheld 1996, 2006; Srivastava, Shervani, and Fahey 1998). Accordingly, many studies have been directed at defining the loyalty construct and exploring its dimensions.

Figure 1
A Conceptual Model of Customer Loyalty



In his seminal study, Day (1970) proposed that brand loyalty is expressed by a strong commitment to the brand and repetition of purchasing behavior. Similarly, Jacoby and Chestnut (1978) assumed that brand loyalty is manifested by a nonrandom behavioral response expressed over time by a decision-making unit with respect to one or more alternative brands as a function of an evaluative process. Later, Dick and Basu (1994) synthesized the former contributions and explicitly distinguished between an attitudinal dimension of loyalty, which is expressed by a favorable attitude toward a firm or a brand (relative to other firms offering the same product or service), and a behavioral one, which consists of repeated buying behavior. Dick and Basu argued that both dimensions are critical for representing *true loyalty* rather than a spurious form of loyalty based on mere repeated buying behavior.

Many scholars have analyzed the related concept of *commitment,* which Moorman, Deshpandé, and Zaltman (1992) defined as "an enduring desire to maintain a valued relationship." This definition of commitment emphasizes an attitudinal dimension based on a psychological sense of attachment to the relationship (also see Morgan and Hunt 1994). Although some authors have shown that commitment influences measures of behavioral loyalty (Fullerton 2003; Garbarino and Johnson 1999), there is a considerable overlap between the constructs of commitment and customer loyalty. As Assael (1995) noted, brand loyalty is manifested not simply by repeated purchases but also by a *commitment* to the brand arising from a favorable attitude. Similarly, Chaudhuri and Holbrook (2001) claimed that attitudinal loyalty *is* the level of commitment of the customer toward the brand. Oliver (1999, p. 34) stressed that loyalty consists in "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future." On these bases, we conclude that the concept of commitment significantly overlaps with the loyalty domain. Therefore, we focus on the attitudinal and behavioral dimensions of loyalty and exclude commitment from our framework to avoid any potential conceptual overlapping.

Relational Equity

An overlooked construct that may have a role in determining customer loyalty is perceived equity. Based on equity theory and the social psychology literature (Adams 1963; Austin, McGinn, and Susmilch 1980; Homans 1961), Oliver and Swan (1989) defined a fairness dimension of equity in terms of *distributive justice,* namely focusing on the proportionality between the outcome-input (or benefit-cost) ratios experienced by the two parties of a dyad. This idea was expressed by Oliver (1997) as follows:

$$\frac{O_s}{I_s} \propto \frac{O_c}{I_c}$$

where O = outcomes, I = inputs or investments, s = self, c = comparison person, group, or entity, $\propto$ = proportional operator.

Based on this conceptualization, some scholars have considered equity as a determinant of transactional satisfaction. Empirical evidence presented by Oliver and Desarbo (1988) and Oliver and Swan (1989) has indeed demonstrated a significant effect of equity perception on satisfaction. These studies did not, however, consider the role of equity within a long-term relationship and specifically in building customer loyalty.

Following a relational perspective, Szmigin and Bourne (1998) suggested that perceived equity may critically determine the evolution of a customer-provider relationship. In an attempt to follow this direction, we integrate the Oliver and Swan conceptualization of equity into a relationship marketing view (Dwyer, Schurr, and Oh 1987; Gronroos 1994). Therefore, we focus on *relational equity,* which is defined as *customer perception* of the proportionality between her or his own benefit-cost ratio and the provider's benefit-cost ratio within a continuous relationship.[1] We maintain that a customer's perception of relational equity is based on the principle of reciprocity (Bagozzi 1995). This means that the parties in a relationship accept short-term costs because of expectations of future compensation (greater benefits or lower costs) and serial equity (Ganesan 1994).

Oliver (1997) stressed that the conceptualization of equity based on outcome or input evaluations is more reasonable in those contexts in which individuals can easily assess the outcomes and inputs of the two parties. In accordance with this idea, we believe that relational equity is more relevant in boosting customer-provider relationships in highly competitive, transparent markets. Specifically, customers are thought to assess relational equity *subjectively* based on *perceptions* of the equity components to the extent to which

a. Customers have access to information on providers' investments and revenues because of providers' communication and marketing effort;
b. Customers are involved in service usage and thus motivated to consider both parties' ratios;
c. There are no switching costs.

Indeed, most research has proposed that motivated customers are able and willing to assess their own benefits and costs in market relations (Gronroos 1997; Parasuraman 1997; Woodruff 1997). Moreover, in highly competitive markets, providers make huge investments in communication and loyalty programs, which signal to customers the effort made by providers in managing relationships (Bell et al. 2002; Bolton, Kannan, and Bramlett 2000). Finally, in continuous relationships, customers are aware of the value they generate for a provider through repeated buying behavior and word of mouth (Anderson 1998; Reichheld 1996). Given the aforementioned conditions, we argue that customers form an overall perception of relational equity, which can influence their willingness to continue a relationship with a provider.

We wish to stress that the proposed conceptualization of relational equity follows a *distributive, dyadic* perspective. Oliver and Swan (1989, p. 22) claimed that "equity/inequity frameworks are unique in that they are based on an explicit consideration of the outcomes of both parties to the exchange, rather than the outcome of the buyer taken alone." This aspect discriminates equity from other concepts such as perceived value and payment equity.

Perceived value has long been identified as the "consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml 1988, p. 14). Therefore, and different from the dyadic perspective that characterizes equity, perceived value concerns a one-sided, or *monadic,* assessment. Despite the fact that *both* are based on customer perceptions, perceived value regards *only* the O_s/I_s ratio, whereas equity concerns *both* the O_s/I_s and the O_c/I_c ratios. Although some research has treated equity and value in a similar fashion (Olsen and Johnson 2003), we believe that the two concepts differ with regard to the entities considered in customer assessments.

Bolton and Lemon (1999) defined *payment equity* in terms of the fairness of economic benefits in relation to economic costs. These authors stress that payment equity is a narrow dimension of the broader construct of equity. Payment equity is different from distributive equity because the former focuses on the assessment of economic aspects related to a single part in an exchange whereas

the latter concerns a consumer perception of distributive justice based on the outcome-input ratios of both parties. Indeed, measures of payment equity (Verhoef, Franses, and Hoekstra 2002) have much in common with quality over price conceptualizations of value (e.g., Monroe 1990). Moreover, in this research, relational equity differs from both perceived value and payment equity because of the serial perspective that we adopt in our conceptualization.

On the basis of this conceptual analysis, we claim that in highly competitive, transparent markets relational equity may have a relevant role in determining the stability and durability of relationships and hence loyalty. In particular, a more positive perception of relational equity would be expected to increase attitudinal loyalty because customers who feel they are treated fairly throughout the relationship will reinforce their favorable attitude toward the provider even in comparison to potentially satisfying competitors (Szmigin and Bourne 1998). Moreover, a stronger perception of relational equity is thought to boost behavioral loyalty because of the customers' expectations of reciprocity. This means that customers will increasingly repurchase from a relationally equitable provider because they expect that greater purchases will be rewarded with higher value within the relationship (Ganesan 1994). Therefore, we hypothesize,

Hypothesis 1 (H1): Relational equity has a positive influence on (a) attitudinal loyalty and (b) behavioral loyalty.

Other Determinants of Customer Loyalty

Satisfaction. Customer satisfaction is the expression of a judgment that a product or service has provided or is providing a pleasurable level of consumption-related fulfillment (Oliver 1997). An extensive literature has verified the role of satisfaction in determining postpurchase attitudes and intentions and has demonstrated that satisfied customers engage in repurchase behavior (e.g., Anderson and Sullivan 1993; Fornell et al. 1996). Moreover, several authors have shown that satisfaction affects the customer attitude toward the brand or firm (e.g., Bloemer and Kasper 1995; LaBarbera and Mazursky 1983). Therefore, we expect to find positive effects of satisfaction on attitudinal and behavioral loyalty.

Trust. Trust is defined as a perception of confidence in the partner's reliability and trustworthiness (Garbarino and Johnson 1999; Morgan and Hunt 1994). Many studies have emphasized the central role of trust in moving from discrete market transactions to continuous relationships (Blois 1999; Dwyer, Schurr, and Oh 1987). Empirical studies generally support a positive effect of trust on customer loyalty (Singh and Sirdeshmukh 2000). Customers trusting a firm tend to purchase that firm's products and services systematically because of evidence of reliability in delivering expected value over time (Sirdeshmukh, Singh, and Sabol 2002). Moreover, Chaudhuri and Holbrook (2001) argued and empirically demonstrated that trust positively influences attitudinal loyalty "because trust creates exchange relationships that are highly valued" (p. 83). Thus, we expect to find a positive effect of trust on attitudinal and behavioral loyalty.

The Moderating Role of Relationship Age

The relationship marketing literature proposes several dynamic models of customer loyalty (Dwyer, Schurr, and Oh 1987; Oliver 1999) that assume an evolution of relationships over time. Oliver (1999) argued that customer loyalty evolves, along with relationship age, from weak to robust forms based on different mechanisms. Some studies have investigated this idea and explored how the effects of customer loyalty determinants interact with relationship age. Table 1 summarizes the major findings.

This research is concerned with the interaction between relational equity and relationship age in determining customer loyalty, which previous studies have failed to analyze. There are reasons to believe that the effect of relational equity on customer loyalty may increase along with the age of the relationship. Indeed, as relationship age increases, customers can collect progressively even more information about a service offer system and a provider (Kalwani and Nayarandas 1995) and become more self-confident about the capability of evaluating the provider's behaviors (Alba and Hutchinson 1987; Gill, Swann, and Silvera 1998). Moreover, because of greater knowledge about their relationship with a provider, long-term customers usually recognize that they generate extra value for the provider through repeated purchases over time, word of mouth, and cross-buying (Reichheld 1996; Srivastava, Shervani, and Fahey 1998). Accordingly, we argue that relational equity perception becomes increasingly salient for customers as they are progressively more sensitive to the proportionality of their own benefits-costs ratio and the provider's benefits-costs ratio. Therefore, we hypothesize that the effects of relational equity on attitudinal and behavioral loyalty will be moderated by relationship age. Formally,

Hypothesis 2 (H2): The effects of relational equity on (a) attitudinal loyalty and (b) behavioral loyalty increases along with relationship age.

Table 1
Studies on the Moderating Role of Relationship Age

Study	Independent Variable (Direct Effect)	Time Variable	Dependent Variable	Context	Findings
Bolton (1998)	Satisfaction (+)	Ln (months of service usage)	Relationship duration	Cell phone services	The positive effect of satisfaction is enhanced by relationship age
Garbarino and Johnson (1999)	Satisfaction (+) Trust (+)	Relationship orientation: occasional customers vs. consistent subscribers	Repurchase intentions and commitment	Theatre	Effects of satisfaction and trust depend on relationship orientation
Grayson and Ambler (1999)	Trust (+)	Relationship length	Advertising Usage	Marketing research services (business to business context)	The positive effect of trust is decreased by relationship length
Verhoef, Franses, and Hoekstra (2001)	Satisfaction (0) Payment equity (0)	Ln (relationship duration)	Cross-buying	Financial services	The effect of satisfaction is enhanced by relationship age; the effect of payment equity is decreased by relationship age
Verhoef, Franses, and Hoekstra (2002)	Satisfaction (+) Trust (+) Payment equity (+) Affective commitment (+) Calculative commitment (0)	Ln (relationship age)	Customer referrals	Insurance services	No effect is moderated by relationship age
Verhoef, Franses, and Hoekstra (2002)	Satisfaction (0) Trust (0) Payment equity (+) Affective commitment (+) Calculative commitment (0)	Ln (relationship age)	Number of service purchased	Insurance services	The effects of satisfaction and affective commitment are enhanced by relationship age; the effect of calculative commitment is decreased by relationship age
Verhoef (2003)	Satisfaction (0) Payment equity (0) Affective commitment (+) Loyalty program (+) Direct mailing (+)	Ln (relationship age)	Customer retention; customer share development	Financial services	The effect of satisfaction is enhanced by relationship age

In satisfaction studies, Verhoef, Franses, and Hoekstra (2002) analyzed how relationship age moderates the effects of satisfaction on customer referrals and the number of services purchased and found only a weak, positive interaction in the satisfaction → number of service purchased relation. Bolton (1998) found a significant, positive interaction between satisfaction and experience in determining the duration of a customer-provider relationship in the cell phone business. Verhoef, Franses, and Hoekstra (2001) and Verhoef (2003) have found similar moderating effects on cross-buying and on customer retention and customer share development, respectively. Other studies have argued that satisfaction is a necessary but not sufficient condition for building customer loyalty (Jones and Sasser 1995; Neal 1999). In fact, Agustin and Singh (2005) found a weak, decreasing effect of satisfaction on loyalty. Garbarino and Johnson (1999) showed that for occasional theatre customers, but not for consistent subscribers, satisfaction positively affects commitment (attitudinal loyalty) and repurchase

intentions. This last piece of evidence is consistent with theories on loyalty development (e.g., Oliver 1999), which suggest that satisfaction may have a differential effect on loyalty over time. Based on a relationship marketing perspective, one might hypothesize that satisfaction is a stronger determinant of loyalty in early stages of a customer-firm relationship than in later stages. In early relationships, the effect of satisfaction on customer loyalty is mainly a direct one, whereas over time such effect is supposed to be mediated by other evaluations and perceptions (e.g., trust—Garbarino and Johnson 1999). Therefore, we expect a negative moderating effect of relationship age in the satisfaction-loyalty link:

Hypothesis 3 (H3): The effects of satisfaction on (a) attitudinal loyalty and (b) behavioral loyalty decreases along with relationship age.

Among those who have studied trust effects, Verhoef, Franses, and Hoekstra (2002) did not find a reliable interaction between trust and relationship age in determining customer referrals and the number of the services purchased. However, adopting multi-item scales of customer loyalty, Garbarino and Johnson (1999) showed that trust affects repurchase intentions and commitment (attitudinal loyalty) only for consistent subscribers, whereas these effects are not significant for occasional customers. This evidence, which indicates that long-term customers base their loyalty on trust perception, is again consistent with relationship life-cycle models (Oliver 1999). The most advanced forms of loyalty are significantly based on trust. Thus, we expect to find that relationship age will make the effect of trust on customer loyalty increase over time.

Hypothesis 4 (H4): The effects of trust on (a) attitudinal loyalty and (b) behavioral loyalty increases along with relationship age.

Research Design

Setting

As suggested in the previous section, the ideal context to test our conceptual model should show high levels of competition, diffuse information among customers about offers and marketing investments, and substantial customer involvement in service usage. Based on these criteria, we collected data on mobile phone services in Italy.

This context manifests some peculiar characteristics. First, almost all customers purchase mobile phone services from a focal provider, namely, the one from which customers purchase the majority of their mobile phone services, with no formal or long-term contract. Rather, Italian customers normally buy a prepaid phone card ("SIM card") that contains the customer credit for making phone calls, sending text messages, and using value-added services. SIM cards can be recharged by buying further credit at several points of sale. Switching costs are very low, as customers may easily change providers by buying a new SIM card at a cost of about 10 euros.

Second, since the late 1990s, the Italian market for mobile phone services has achieved incredibly high rates of penetration and sales. Figure 2 shows the penetration percentage from 1995 to 2006 of mobile phone usage for Italian households. Since 2000, this figure has exceeded 80%. These data provide evidence of the extreme popularity of mobile phone services in Italian households.

Third, competition among the three major players is extremely intense, given the low customer switching costs. Figure 3 displays market shares of the three major competitors in the Italian mobile phone services business. The market share trend shows decreasing concentration and intense competition dynamics. In fact, the Herfindahl-Hirschman index decreased, between 2000 and 2006, from 3956 to 3066.[2]

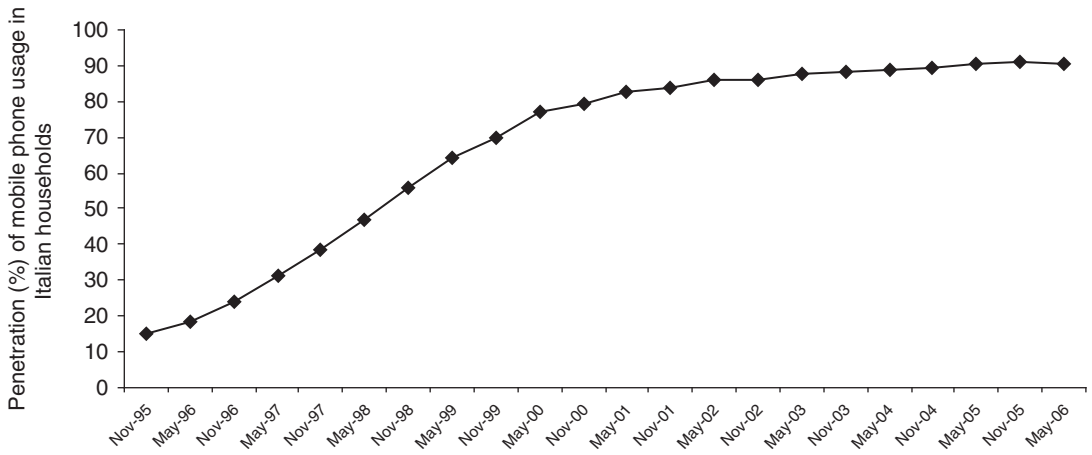
Fourth, all of the three major competitors have been systematically investing in both communication and loyalty programs (Marzocchi and Costabile 2003). As an example, Vodafone has one of the most successful loyalty programs in Europe (Addis et al. 2002) and accounts for more than 10 million registered customers. This renders customers knowledgeable about offers and the marketing efforts of competitors.

Finally, Italian consumers are generally involved in the consumption of mobile phone services. In effect, and despite the fact that prices have gradually decreased (see http://www.agcom.it/provv/c_p_306_05_CONS/contributi/TIM.pdf), expenditures of Italian households on phone services have systematically increased in the past decade, as shown in Figure 4. Moreover, peculiar social dynamics (e.g., space- and time-free communication with others, emulation needs, etc.; Addis et al. 2002) have further boosted mobile phone usage and involvement in consumption.

Sample

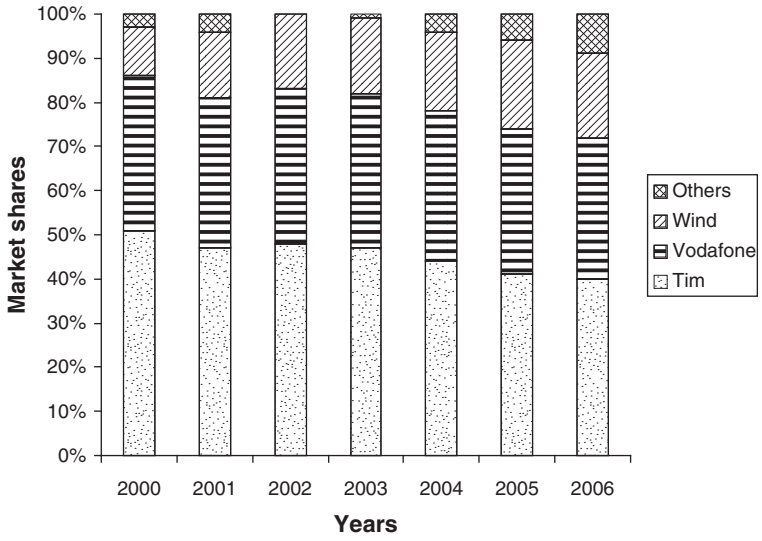
We collected data during June 2001. Considering the very high levels of penetration of mobile phone services in Italy, we thought a convenience sampling strategy would be a good compromise between the goals of efficiency

Figure 2
Penetration (%) of Mobile Phone Usage for Italian Households



Source: GfK-Eurisko data reported in "The Wind Case Study" at http://www.premiomarketing.com.

Figure 3
Market Shares in the Mobile Phone Services Business in Italy

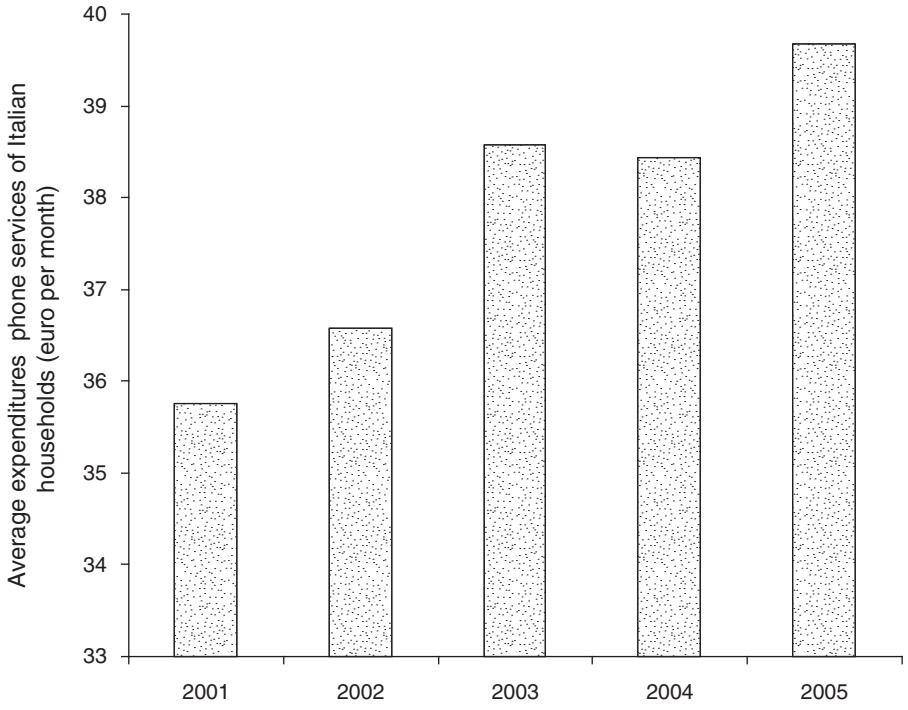


Source: Italian Authority for the Communication Industry data, available at www.agcom.it/provv/c_p_306_05_CONS/ contributi/TIM.pdf.

and sample representativeness. The authors coordinated the data collection and used personal social networks to obtain the largest possible sample. Research assistants and fellows personally administered a questionnaire containing the relevant measures in several Italian towns. Attention was paid to obtain sufficient variety in geographic, age, and gender distributions. Such an approach allowed us to acquire a large sample of mobile phone services customers. Table 2 compares data for (a) the Italian population between 16 and 65 years old in 2001, which can be considered a good proxy of the mobile phone services demand, and (b) our sample.

Table 2 shows that our convenience sample is sufficiently representative of the population in terms of gender and geographic distribution but suffers from an overrepresentation of the younger classes and an underrepresentation

Figure 4
Average Expenditures for Phone Services of Italian Households (Euros per Month)



Source: Italian Institute of Statistics data, available at http://www.istat.it.

Table 2
Population and Sample

Descriptors	Population (16 to 65 Years Old)	Sample
N	38,441,781	461
Gender		
Male (%)	49.71	50.33
Female (%)	50.29	49.67
Age (*M*, *SD*)	40.07 (13.75)	28.71 (8.13)
16 to 23 (%)	13.53	24.95
24 to 30 (%)	15.64	43.60
31 to 40 (%)	23.66	21.04
41 to 50 (%)	19.88	8.46
51 to 65 (%)	27.29	1.95
Area of residence		
Northern Italy (%)	44.87	41.87
Southern Italy and islands (%)	55.13	58.13

Source: Data for the Italian population are from the Italian Institute of Statistics, available at http://www.demo.istat.it.

of the elder classes. However, the annual report on social dynamics in Italy conducted by Censis (the Center for Social Studies and Research Institute; data available at http://www.censis.it) shows that, in 2001, 72.8% of the Italian population used cell phones and that this figure rises to 87% when considering people younger than 29 years old. Therefore, the fact that younger people tend to make heavier use of mobile phone services suggests that our sample can be considered as an acceptable representation of the demand.

Respondents were customers of the three major mobile phone services providers in Italy. Following previous studies (e.g., Steenkamp, Batra, and Alden 2003), we include in the subsequent analyses two dummy variables to control for provider-specific effects (e.g., quality, coverage, reputation) that could have biased the results.

Measurement Scales

We specified all the items in a 7-point scale format and with reference to the customer focal provider. This choice was motivated by the fact that in Italy a certain number of mobile phone customers purchase services from multiple providers. In the reminder of this section, we present measurement scales for the constructs.

Previous studies have not proposed a widely shared measure of equity. Based on Oliver and Swan's (1989) definition of equity, we developed a new measurement

scale of relational equity. Oliver and Swan analytically measured the buyer outcomes and inputs as well as the seller's outcomes and inputs. All of the items were measured as buyer perceptions. Each of these elements was modeled to influence a fairness dimension of equity. Such an extensive measurement model of equity assumes that outcomes and inputs *form* equity (Diamantopoulos and Winklhofer 2001). In a business-to-business (BtB) context, Kumar, Scheer, and Steenkamp (1995) measured synthetically distributive justice by asking customers to evaluate how fair their own benefits were compared to their own costs as well as a supplier's costs and benefits (five items, composite reliability = .78). Being anchored to the customer benefits, Kumar et al.'s items can be considered *reflective* measures of equity. In fact, these items share a common reference base. We decided to adopt the Kumar et al. measurement approach of equity because of its greater manageability within a research design focused on the *effects* of relational equity rather than the *determinants* of relational equity. We adapted the Kumar et al. items to a customer-provider relationship context and defined a first list of three items, describing how fair customer benefits were within the relationship with the focal provider relative to (a) customer costs, (b) provider benefits, and (c) provider costs. We excluded two of the Kumar et al. items that were not usable in a business-to-consumer (BtC) service context.

To obtain further directions for measuring relational equity, we conducted personal interviews with four students (two female, age $M = 22.50$). Content analysis of responses suggested including six items describing overall perception of relational equity (two items), proportionality of the customer and provider benefits, absence of provider opportunism, provider problem-solving activities, and provider caring for customers' interests. Moreover, some respondents suggested the inclusion of items on comparisons between customer benefits and benefits of other providers' customers as well as benefits of the focal provider other customers. On the basis of a brainstorming with two experts in consumer behavior and measurement scale development, we excluded some items because of redundancy (two overall items) or insufficient content validity (provider problem-solving activities and provider caring for customers' interests). Moreover, the experts suggested excluding those items that could have been too difficult to evaluate for respondents (benefits of other providers' customers and benefits of the focal provider's other customers) or that could have reduced discriminant validity relative to other constructs (no opportunism relative to trust). At this stage, we retained five items descriptive of relational equity (see Table 3). A reliability analysis carried out on these five items showed a Cronbach's alpha of .85 and item-to-total correlations larger than .63.

Consistent with the definition of Dick and Basu (1994), we measured attitudinal loyalty as the customer's attitude toward the focal provider relative to competitors. On the bases of qualitative interviews, we defined six items concerning the customer attitude toward the focal provider compared to competitors about service quality, ability to match customers' needs, new value-added services, customer care, clarity of communication, and completeness of offer and communication. A reliability analysis conducted suggested the exclusion of the item on overall service quality, which showed a low item-to-total correlation (.24). The final attitudinal loyalty scale included five items and was shown to be internally consistent ($\alpha = .84$, item-to-total correlations larger than .52).

Behavioral loyalty was measured by two 7-point Likert-type items describing repurchase intentions (Lam et al. 2004) and positive word-of-mouth (Sirdeshmukh, Singh, and Sabol 2002). Cronbach's alpha indicated that the behavioral loyalty measurement scale was internally consistent ($\alpha = .81$, $r = .68$).

We measured customer satisfaction by a 7-point item describing satisfaction with the provider (Shankar, Smith, and Rangaswamy 2003) and three semantic differential items describing affective responses (displeased-pleased, discontent-content, sad-happy; Oliver 1993). Cronbach's alpha showed that the satisfaction measurement scale was internally consistent (a = .80, item-to-total correlations larger than .51).

On the basis of the definitions proposed by Morgan and Hunt (1994) and Garbarino and Johnson (1999), we measured trust by four 7-point Likert-type items describing the provider's reliability and trustworthiness as well as the provider's capability in keeping promises and systematically meeting customer expectations. Cronbach's alpha showed good levels of internal consistency of the trust measurement scale ($\alpha = .88$, item-to-total correlations larger than .61).

Relationship age was measured by asking respondents to indicate how long (years and months) they had been customers of their focal provider (average in years = 3.17, $SD = 1.66$). Following previous studies (e.g., Verhoef, Franses, and Hoekstra 2002), we computed the natural logarithm of relationship age.

Validity Checks

We conducted a confirmatory factor analysis to get evidence of convergent and discriminant validity of the

Table 3
Descriptive Statistics and Confirmatory Factor Analysis Results

Item	*M*	*SD*	Standardized Loading	Construct	Average Variance Extracted	Composite Reliability
Attitude toward focal provider in comparison to competitors: ability to match customers' needs	4.35	1.09	.56	Attitudinal Loyalty	.53	.84
Attitude toward focal provider in comparison to competitors: new value-added services	4.43	1.14	.50			
Attitude toward focal provider in comparison to competitors: customer care	4.52	1.12	.73			
Attitude toward focal provider in comparison to competitors: clarity of communication	4.49	1.13	.87			
Attitude toward focal provider in comparison to competitors: completeness of offer and communication	4.45	1.09	.88			
Positive word of mouth	4.70	1.32	.85	Behavioral loyalty	.68	.81
Repurchase intentions	4.80	1.28	.80			
Overall relationship fairness	4.18	1.39	.82	Relational equity	.54	.85
How fair own benefits relative to own costs	4.18	1.25	.82			
How fair own benefits relative to provider's benefits	3.79	1.44	.65			
How fair own benefits relative to provider's costs	4.19	1.20	.64			
Proportionality of customer and provider benefits	4.02	1.27	.73			
Overall satisfaction[a]	4.86	1.00	—	Satisfaction	.57	.80
Displeased vs. pleased	4.77	1.04	.72			
Discontent vs. content	4.32	1.13	.79			
Sad vs. happy	4.46	1.04	.75			
Service always how I expect	4.18	1.18	.66	Trust	.64	.87
Reliable provider	5.00	1.20	.82			
Provider keeps promises	4.66	1.28	.79			
Trustworthy provider	4.88	1.17	.89			

Note: All factor loadings are significant at the $p < .0001$ level. Measurement model fit: $\chi^2(142) = 377.52$, $p < .001$; CFI = .98, GFI = .92, RMSEA = .06.

a. Item excluded from the final measurement model because of significant cross-loadings.

measurement scales. Results showed an acceptable model fit, $\chi^2(160) = 500.61$, $p < .0001$; comparative fit index (CFI) = .97, goodness-of-fit index (GFI) = .90, root mean square error of approximation (RMSEA) = .07. A closer inspection of results, however, showed significant modification indices and substantial expected cross-loadings concerning the overall satisfaction item relative to trust, behavioral loyalty, and relational equity. This indicated a serious threat to discriminant validity. Therefore, we decided to exclude this item from the satisfaction scale. The revised measurement model, $\chi^2(142) = 377.52$, $p < .001$; CFI = .98, GFI = .92, RMSEA = .06, showed a significant improvement of fit, $\Delta\chi^2(18) = 123.09$, $p < .0001$, and, more important, no substantial cross-loadings.

We tested for convergent validity by checking that all items significantly (all *t*-values larger than 10.76) and substantially (all standardized parameters larger than .50) loaded onto the expected latent construct. Moreover, all constructs showed satisfactory levels of average variance extracted (AVE; all AVE values > .52) and composite reliability (all composite reliability values > .79). We checked the condition for discriminant validity among constructs suggested by Fornell and Larcker (1981). All AVEs were larger than any squared correlation among

Table 4
Correlations Among Latent Constructs

	Attitudinal Loyalty	Behavioral Loyalty	Relational Equity	Satisfaction	Trust
Attitudinal loyalty	1.00				
Behavioral loyalty	.33	1.00			
Relational equity	.37	.64	1.00		
Satisfaction	.37	.54	.51	1.00	
Trust	.43	.62	.59	.58	1.00

Note: All correlations are significant at the $p < .001$.

constructs (largest squared correlation = .41), suggesting that discriminant validity was achieved. At this stage, we computed factor scores for the five constructs that are error free and can be used for further analyses. Table 3 reports means and standard deviations for all measures as well as confirmatory factor analysis results. Table 4 shows correlations among latent constructs.

Findings

To test our hypotheses, we estimated two multiple regression models, one for each dimension of customer loyalty that acted as a dependent variable. We used error-free factor scores as input data for the constructs. Moreover, we included in each model (a) the natural logarithm of relationship age, (b) two brand dummies, and (c) three interaction terms computed by multiplying each of the relational equity, satisfaction, and trust factor scores and the z scores of the natural logarithm of relationship age. The latter terms allowed us to test the moderating role of relationship age (Baron and Kenny 1986). Using a z score transformation of the natural logarithm of relationship age in the computations of the interaction terms allows for reducing potential multicollinearity problems.

Table 5 reports results of the two regression models. Results support H1a and H1b. In fact, relational equity positively influences attitudinal loyalty ($\beta = .15$, $p < .01$) as well as behavioral loyalty ($\beta = .38$, $p < .01$). Moreover, we found support for the idea that the effect of relational equity on customer loyalty increases along with relationship age. The interaction term between relational equity and the natural logarithm of relationship age is positive and significant in both the attitudinal loyalty ($\beta = .13$, $p < .05$) and the behavioral loyalty ($\beta = .08$, $p < .05$) models, thus providing support for H2a and H2b. As expected, satisfaction positively influences both attitudinal loyalty ($\beta = .16$, $p < .01$) and behavioral loyalty ($\beta = .19$, $p < .01$). Results support the positive effects of trust on attitudinal loyalty ($\beta = .24$, $p < .01$) and behavioral loyalty ($\beta = .27$, $p < .01$) as well.

We found partial support for the hypothesis that the effect of satisfaction on customer loyalty decreases along with relationship age. The interaction term between satisfaction and the natural logarithm of relationship age is negative and significant in the behavioral loyalty model ($\beta = -.09$, $p < .05$) and provides support for H3b. Despite showing the expected negative sign, the same parameter does not approach significance in the attitudinal loyalty model ($\beta = -.07$, $p > .20$), thus failing to support H3a. We will return to this result later.

We did not find support for the moderating effect of relationship age in the trust-to-loyalty paths. In both the attitudinal loyalty ($\beta = -.02$, $p > .70$) and the behavioral loyalty ($\beta = .01$, $p > .90$) models, the interaction term between trust and the natural logarithm of relationship age resulted basically equal to zero, thus showing that the effect of trust on customer loyalty is not time dependent. This evidence does not provide support for H4a and H4b.

The effect of relationship age does not have any independent effect on customer loyalty. Furthermore, the effect of brand name was not significant, thus excluding any confounding brand-specific effects on loyalty formation.

Robustness Analyses

To assess the robustness of results, we conducted a set of auxiliary analyses. First, we verified that the two models do not suffer multicollinearity problems by computing variance inflation factor (VIF) and condition indices. In both models, the highest VIFs equal 4.03 and concern the dummy variables, whereas the highest condition index equals 7.65. Both values are well below the threshold suggested in the literature (e.g., Hair et al. 2005) and indicate no multicollinearity problems.

Second, we conducted a White test of the null hypothesis of homoskedasticity in both the attitudinal loyalty ($F = 56.32$, $p < .001$) and the behavioral loyalty ($F = 21.86$, $p > .10$) models. We found that in the attitudinal loyalty model the assumption of homoskedasticity cannot be accepted and that error terms are heteroskedastic. Accordingly, we estimated the attitudinal loyalty model

Table 5
Results of Regression Analyses

	Attitudinal Loyalty Model (R^2 = .24)		Behavioral Loyalty Model (R^2 = .53)	
Independent Variable	Std. Parameter	Hypothesis Check	Std. Parameter	Hypothesis Check
Relational equity	.15*	H1a supported	.38*	H1b supported
Satisfaction	.16*	—	.19*	—
Trust	.24*	—	.27*	—
Ln relationship age	–.09	—	.06	—
Dummy Brand 1	.19	—	.03	—
Dummy Brand 2	.24	—	.12	—
Relational equity × relationship age	.13**	H2a supported	.08**	H2b supported
Satisfaction × relationship age	–.07	H3a not supported	–.09**	H3b supported
Trust × relationship age	–.02	H4a not supported	.01	H4b not supported

*$p < .01$. **$p < .05$. Other parameters are not significant.

with the White-consistent error covariance matrix, which does not impose homoskedasticity. Findings were virtually unchanged, thus offering further support for the regression analyses results.

Third, one might argue that the two dependent variables (attitudinal loyalty and behavioral loyalty) can be correlated. Therefore, estimating separate models could cause biased parameters. We simultaneously estimated the two models in a structural equation model framework (Byrne 1998) to account for a potential correlation between the error terms of the two regression models. Having ascertained the unidimensionality and discriminant validity of the constructs, we partially aggregated the measures according to a procedure proposed by Bagozzi and Heatherton (1994). Specifically, we computed two indicators per construct by averaging even-numbered and odd-numbered items. This procedure allowed us to reduce the measurement model complexity and to obtain cleaner results related to the structural model, which is the focus of this analysis. Moreover, measure aggregation allowed us to reduce bias because of the violation of the multivariate normality assumption that was found in the data (Bandalos 2002). To model interaction terms, we used the two-step approach suggested by Ping (1995), which produces robust estimates and was applied in previous studies of relational constructs (e.g., Lam et al. 2004). Moreover, the Ping method implies the computation of a single indicator of latent interaction terms. Therefore, the Ping method provides greater manageability and reduces the risk of nonconvergence problems. Specifically, we used the following formulas,

$$xz = (x_1 + x_2)z_1 \quad (1)$$

$$\lambda_{xz} = (\lambda_{x_1} + \lambda_{x_2})\lambda_{z_1} \quad (2)$$

$$\theta_{\delta_{xz}} = (\lambda_{x_1} + \lambda_{x_2})^2\phi_x\theta_{\delta_z} + (\lambda_z)^2\phi_z(\theta_{\delta_{x1}} + \theta_{\delta_{x2}}) + (\theta_{\delta_{x1}} + \theta_{\delta_{x2}})\theta_{\delta_z} \quad (3)$$

to model indicators (xz), factor loadings (λ_{xz}), and error variances ($\theta_{\delta xz}$) of the latent interaction terms. Results showed a good model fit, $\chi^2(62) = 144.23$, $p < .0001$; CFI = .98, GFI = .96, RMSEA = .05. Parameter estimates are presented in Table 6, and the results are basically the same as those in the regression analyses, thus providing further support for the presented results. In this structural equation model, we included the well-acknowledged effect of satisfaction on trust (e.g., Agustin and Singh 2005), which indeed proved to be significant and substantial ($\beta = .63$, $p < .001$).

Finally, we acknowledge that our analyses are based on cross-sectional data. Despite the good model fit, one cannot exclude the possibility that other possible causal representations among the constructs would be consistent with the data as well. To gather further support for our conceptualization, we used the structural equation model framework to compare the proposed model with two rival models by means of information criteria (Akaike information criterion [AIC] and consistent Akaike information criterion [CAIC]), which allow comparisons between non-nested models (Byrne 1998). The model showing the lower information criterion represents the better one.

Rival Model 1 assumed (a) a direct effect of relational equity on satisfaction, (b) direct effects of satisfaction on trust, attitudinal, and behavioral loyalty, (c) direct effects of trust on attitudinal and behavioral loyalty, (d) brand dummies and relationship age effects, and (e) the interaction terms concerning satisfaction and trust. Rival Model 1 showed larger AIC and CAIC than the proposed model ($AIC_{model} = 289.92$, $CAIC_{model} = 669.80$; $AIC_{rival1} = 473.16$, $CAIC_{rival1} = 760.63$). Therefore, we conclude that the proposed model outperforms Rival Model 1. Rival Model 2 assumed (a) a direct effect of relational equity on trust, (b) a direct effect of satisfaction on relational equity,

Table 6
Results of Structural Equation Model

Independent Variable	Trust (R^2 = .40) Std. Parameter	Attitudinal Loyalty (R^2 = .27) Std. Parameter	Behavioral Loyalty (R^2 = .52) Std. Parameter
Relational equity	—	.14**	.35*
Satisfaction	.63*	.17**	.19**
Trust	—	.31*	.31*
Ln relationship age	—	–.05	.04
Dummy Brand 1	—	.13	.01
Dummy Brand 2	—	.14	.07
Relational equity × relationship age	—	.13**	.11**
Satisfaction × relationship age	—	–.04	–.12**
Trust × relationship age	—	–.05	.01
Correlation ζ1 – ζ2	.01		

Note: Model fit: $\chi^2(62) = 144.23$, $p < .0001$; CFI = .98, GFI = .96, RMSEA = .05.
*$p < .01$. **$p < .05$. Other parameters are not significant.

(c) direct effects of trust on attitudinal and behavioral loyalty, (d) brand dummies and relationship age effects, and (e) the interaction term concerning trust. Rival Model 2 showed larger AIC and CAIC values than the proposed model ($AIC_{model} = 289.92$, $CAIC_{model} = 669.80$; $AIC_{rival2} = 484.59$, $CAIC_{rival2} = 720.66$). Therefore, we conclude that the proposed model also outperforms Rival Model 2. To summarize, the proposed causal representation fits the data better than alternative, rival models.

Discussion

Results of regression analyses show that, in highly competitive and transparent contexts, relational equity is a relevant determinant of customer loyalty and that its effect increases along with the age of the relationship. As we expected, the effect of satisfaction on behavioral loyalty decreases over time. However, we did not find support for the same moderating effect in the attitudinal loyalty model. Contrary to our expectations, trust shows a time-independent effect on customer loyalty. These results proved to be robust to diverse statistical diagnostics.

Arguably, the most relevant finding concerns the effect of relational equity on customer loyalty. We produced insights on the overlooked role of long-term reciprocity in continuous market relations. Results show that the effect of relational equity on customer loyalty is over and above those of satisfaction and trust. Our results are in line with Olsen and Johnson's (2003) findings, which show a significant effect of cumulative equity on behavioral loyalty only for customers with no reason to complain. One might speculate that in a context with low switching costs (e.g., the Italian mobile phone services market), customer loyalty is driven mainly by customers' perceptions of satisfaction, trust, and relational equity, and therefore longer-term customers might have fewer reasons to complain.

We found that the positive effect of satisfaction on behavioral loyalty decreases along with relationship age. This finding is consistent with evidence provided by Garbarino and Johnson (1999), who found that satisfaction positively influences loyalty for occasional customers but not for long-term customers. We speculate that in the late stage of a customer-provider relationship, satisfaction effects on behavioral loyalty might be mediated by other constructs. Indeed, we found a robust effect of satisfaction on trust in the structural equation model framework. In turn, trust resulted a consistent determinant of behavioral loyalty. Considering that the direct effect of satisfaction on behavioral loyalty decays as relationship age increases, we believe that trust could completely mediate the satisfaction effect on behavioral loyalty in the advanced stages of customer-provider relationships (Singh and Sirdeshmukh 2000). Results show that the effect of satisfaction on attitudinal loyalty does not depend on relationship age. One might speculate that our measures of satisfaction, which are mainly attitudinal and emotional in nature (Oliver 1993), could have generated this result by overemphasizing the role of satisfaction in forming attitudinal loyalty throughout the duration of the relationship.

The effect of trust on customer loyalty is positive and time independent. This evidence is not consistent with

our hypotheses and Garbarino and Johnson's (1999) findings relative to occasional versus long-term buyers. Verhoef, Franses, and Hoekstra (2002) did not find a significant moderating role of relationship age on the effects of trust on customer referrals and the number of services purchased. They claim that time-independent effects of trust could be related to BtC contexts. Similarly, we speculate that in highly competitive, transparent contexts, trustworthiness and reliability represent critical qualities for providers to gain customer loyalty throughout the development of the entire relationship. Furthermore, given the diffuse information available for consumers and consistent with Iacobucci's (1992) framework, we consider mobile phone services to have both search and experience qualities. One might claim that in these contexts of consumption consumers are consistently sensitive to provider reliability and promise keeping.

Theoretical Contributions

Our research focuses on the concept of relational equity and demonstrates that it is a significant determinant of customer loyalty, with an increasing intensity along with relationship age. We argue that relational equity might be considered as a critical determinant of customer loyalty, particularly in those contexts in which customers are well informed about providers' offer systems and involved in service usage.[3] The Italian mobile phone services market has manifested these characteristics.

We claim that the increasing influence of relational equity on customer loyalty is due to the greater knowledge of long-term customers about the firm processes and revenue model (Kalwani and Nayarandas 1995) as well as the customers greater awareness of the value they generated from the firm's financial perspective. Thus, long-term customers are more sensitive to the reciprocity of value creation (Szmigin and Bourne 1998) and value sharing (Wilson 1995) and are inclined to base their loyalty on relational equity.

Compared to other studies that analyzed the moderating role of relationship age (Grayson and Ambler 1999; Verhoef, Franses, and Hoekstra 2002), we contribute to the loyalty literature along different avenues. First, our model includes relational equity as a determinant of customer loyalty that is based on a dyadic and serial perception about a customer-provider relationship rather than constructs (e.g., value, payment equity) that refer only to an individual's benefits and costs assessment. This point was suggested by Oliver and Swan (1989) but was not applied by previous studies on equity. Olsen and Johnson (2003) offered preliminary evidence that in certain situations cumulative equity can boost behavioral loyalty. However, the authors defined and measured cumulative equity in terms of a monadic evaluation rather than from a dyadic, distributive perspective. We treat relational equity applying a relationship marketing perspective (e.g., Dwyer, Schurr, and Oh 1987) that emphasizes the importance of reciprocity and long-term orientation in continuous relationships (Bagozzi 1995). Second, our model concerns effects of relational equity, satisfaction, and trust, as well as the moderating effect of relationship age, on *both* attitudinal and behavioral dimensions of customer loyalty. Verhoef, Franses, and Hoekstra (2002) focused instead on customer referrals and the number of services purchased, which are both behavioral measures of customer loyalty. Finally, our analysis focuses on BtC contexts and differs from Grayson and Ambler's (1999) research, which concerns a BtB setting. To the best of our knowledge, our framework represents a first attempt to analyze the effects of both attitudinal and behavioral loyalty determinants along with relationship age in a BtC context.

As minor contributions, our research offers further insights into the roles of satisfaction and trust in loyalty formation along with relationship age. We partially corroborate the results of Garbarino and Johnson (1999), who found that satisfaction positively affects attitudinal loyalty and repurchase intentions only for occasional customers (i.e., short-term relationships). Moreover, our data are consistent with the findings of Verhoef, Franses, and Hoekstra (2002) regarding the trust effect on customer referrals and add further support to the idea that trust positively and consistently influences customer loyalty.

Our model could be interpreted according to an evolutionary view of customer loyalty (Evanschitzky and Wunderlich 2006; Lemon, Barnett White, and Winer 2002; Oliver 1999). In particular, considering the taxonomy of constructs proposed by Law, Wong, and Mobley (1998) and Edwards and Bagozzi (2000), one might speculate that, from a static perspective, customer loyalty can be conceptualized as a *latent construct* that represents the common variance shared by attitudinal loyalty and behavioral loyalty indicators (e.g., attitude toward the provider relative to competitors, repurchase intentions, word of mouth). From a dynamic perspective, on the other hand, customer loyalty can be viewed as an *aggregate construct* that derives from the sedimentation of its determinants. That is, relational equity, satisfaction, and trust generate customer loyalty over time. We found evidence that the contribution of satisfaction to loyalty formation tends to decrease along with relationship age, whereas that of relational equity tends to increase. Such

a consideration can be useful for those research designs that are in a position to measure all of the relevant customer loyalty determinants.

Managerial Implications

Results of our regression analyses imply that loyalty programs might be designed considering the age of customer-provider relationships. Many loyalty programs do not consider the age of relationships and fail to differentiate CRM actions across short-term and long-term customers. Many companies still tend to promote "loyalty to prizes" rather than "loyalty to brands," thus obtaining only a weak, spurious loyalty (Roehm, Bolman Pullins, and Roehm 2002). Successful companies, such as Vodafone in Italy and Tesco in the United Kingdom, rely on the age of the relationship to differentiate both CRM practices and loyalty programs. Vodafone offers special services and prizes to its long-term customers even if they do not reach the "heavy user" status. Tesco rewards its customers based on the cumulated value they generate over time, thus implicitly basing loyalty programs on the age of the relationship.

Results suggest that customer relationship managers should monitor perception of relational equity along with relationship age. This means that they should reward long-term customers, who often generate the majority of profits. Managers have to check carefully any action that could create a perception of inequity (e.g., offering large discounts only to new customers) and risk disappointing their long-term customers. Vodafone and Tesco launch special offers and promotions for long-term customers *before* extending such promotions to the whole market to promote a "sense of exclusivity" for loyal customers.

Adopting an evolutionary perspective, we claim that loyalty programs should be considered as an instrument to nourish relationships and not to stimulate short-term buying behavior as a regular promotion program (Wirtz, Mattila, and Lwin 2007). We advise managers to consider the idea of differentiating CRM programs based on relationship age and to avoid any incremental benefit to new customers that does not correspond to a proportional advantage for long-term customers.

Limitations and Directions for Future Research

Our study suffers from some limitations that could be addressed in future research. First, we conducted a cross-sectional analysis. The study of loyalty dynamics in customer-provider relationships, however, would require a longitudinal design. Second, we report evidence from a single service industry and country. To ensure further external validity to our conceptualization, applications in other settings are required. Future research might thus test the model in different contexts and through longitudinal designs. Such directions would further support the evolutionary study of loyalty and shed light on relationship dynamics (Folkman Curasi and Norman Kennedy 2002; Oliver 1999). Third, our measures of behavioral loyalty tap intentions but do not reflect real behaviors. However, research on the intention-behavior relation (e.g., Petty and Cacioppo 1986) has proposed that highly involved individuals (e.g., those in the context investigated) tend to show substantial consistency in behaving as intended. Future research could test our hypotheses using indicators of manifest behavior. Fourth, the development of the measurement scale of relational equity did not include a pilot study that could have added further insights into the scale properties. Moreover, one might argue that relational equity indicators may be *formative* rather than *reflective.* Future research might want to explore this issue and to engage in a deeper discussion of relational equity measurement. Fifth, although our convenience sample shows an acceptable representativeness of the market, future research might want to adopt random samples to exclude any potential selection bias. Finally, the exclusion of possibly relevant constructs, such as reputation (Ganesan 1994), might have biased our results. For instance, short-term customers can indeed base their attitude toward the firm on indirect referrals rather than personal experience.

Despite such limitations, this research contributes to the customer loyalty literature by showing that relationship age does indeed matter and that relational equity may be a relevant determinant of continuity, particularly in the advanced stages of the relationship.

Notes

1. Relational equity differs from the concept of customer equity, defined by Rust, Lemon, and Zeithaml (2004, p. 101) as "the total of the discounted lifetime values summed over all of the firm's current and potential customers." In fact, relational equity, as discussed here, concerns customer perceptions, whereas customer equity refers to a monetary entity.

2. The Herfindahl-Hirschman Index (HHI) is a measure of concentration in an industry and is defined as the sum of the squares of the market shares of each firm in the industry (Hirschman 1964). Higher values of the HHI indicate higher concentration in the industry.

3. One might argue that customers of mobile phone services may base their relational equity perception on payment equity (e.g., Verhoef, Franses, and Hoekstra 2002), which considers the fairness of economic benefits and costs and is thus thought to require a simpler evaluation. To test this idea, we conducted additional regression analyses substituting the relational equity score with the item "how fair own benefits

relative to own costs" as an indicator of payment equity. Results show that the effect of relational equity is stronger than that of payment equity in both the attitudinal loyalty model ($\beta_{relational\ equity} = .15$, $p < .01$; $\beta_{payment\ equity} = .09$, $p > .05$) and the behavioral loyalty model ($\beta_{relational\ equity} = .38$, $p < .001$; $\beta_{payment\ equity} = .25$, $p < .001$). Moreover, all of the criteria suggested in the literature to compare non-nested models favor relational equity vis-à-vis payment equity in both the attitudinal loyalty model (adj. $R^2_{relational\ equity} = .22$, Akaike information criterion [AIC] $_{relational\ equity} = 2.61$, Bayesian information criterion [BIC] $_{relational\ equity} = 2.70$; adj. $R^2_{payment\ equity} = .21$, AIC $_{payment\ equity} = 2.62$, BIC $_{payment\ equity} = 2.71$) and the behavioral loyalty model (adj. $R^2_{relational\ equity} = .53$, AIC $_{relational\ equity} = 2.11$, BIC $_{relational\ equity} = 2.20$; adj. $R^2_{payment\ equity} = .48$, AIC $_{payment\ equity} = 2.21$, BIC $_{payment\ equity} = 2.30$). Therefore, we conclude that relational equity perception is not based only on the item "how fair own benefits relative to own costs" but rather concerns a wider domain that customers of mobile phone services may be able to process. We thank an anonymous reviewer for raising this issue.

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