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Consumer-brand relationships and brand loyalty in technology-mediated services

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ABSTRACT

The successful diffusion of broadband services has substantially contributed to economic growth in the last decade. Broadband markets are now in the maturity phase and therefore, competition for customers is intense. However, while companies invest heavily on customer acquisition, there are few efforts for customer retention through the development of profitable long-term brand relationships. This study aims to develop and test a model to investigate the effect of three brand relationship dimensions, namely brand trust; brand satisfaction (cognitive dimensions), and brand commitment (emotional/affective dimension) on brand loyalty (repurchase intentions; positive recommendations, and price tolerance) in the broadband services market. Results indicate that the cognitive aspects of brand relationships are the major drivers of behavioral intentions followed by the affective one. On the other hand, the affective aspect of brand relationships has a stronger effect on price tolerance, while trust has no direct effect. Managerial implications and suggestions for further research are discussed.

1. Introduction

Fixed broadband internet services are offered by internet service providers (ISPs) and are defined as the technology that allows access to internet content at very high speed and enables people to access information; products, and services available on the internet without temporal restrictions (Choudrie and Middleton, 2014). However, several reports have shown decreased satisfaction and loyalty for ISPs worldwide. For example, the ACSI (2014) reported that "*as the number of internet users grow, customer satisfaction with the services retreats, sliding 3.1% to an ACSI score of 63 – the bottom rating among 43 household consumer industries measured in the index*". Statista (2015) provides customer satisfaction statistics for ISPs in the U.K. Results show that satisfied and very satisfied customers dropped 4% (from 90% to 86%) between the first quarter of 2015 and the first quarter of 2010. Finally, the findings of Accenture's Global Consumer Pulse Research for 2013 (Accenture, 2013) for ISPs depicts the same picture since 32% (vs. 37% for 2012) of respondents declared that they are completely satisfied with the services offered; 23% (vs. 28% for 2012) felt loyal towards providers, and 23% (vs. 27% for 2012) had an intention to recommend their providers to others. This is mainly due to the fact that fixed broadband markets are currently in the maturity phase and therefore, service providers engage in intense competition for customers and use price as the main competitive tool. On the other hand, fixed broadband services diffusion has been shown to be a very critical factor for economic growth since a 10% increase in the penetration of fixed broadband services would increase GDP by 1.21% in developed economies (Minges, 2016).

Therefore, it is important for service providers to develop a sustainable competitive advantage in this highly competitive market such as brand-based differentiation (Sreejesh and Roy, 2015). In fact, recent studies show that consumers differentiate brands based on the relationships that they develop with them and highlight the importance of maintaining strong relationships with customers as a long-term marketing strategy (Veloutsou, 2015). Therefore, several researchers have investigated the nature of the brand relationship development process as well as the marketing-related outcomes of this process (e.g. Ashworth et al., 2009) using three different paradigms, namely brand relationship quality (Fournier, 1998); brand love (e.g. Tsai, 2011a, 2011b; Batra et al., 2012; Albert and Merunka, 2013), and brand commitment, which is based on interpersonal relationship theory (Tsai, 2011a, 2011b). However, most studies prefer to use brand commitment (interpersonal relationship theory) to model the establishment and development of effective brand relationships and investigate their effect on several brand loyalty manifestations including repeat purchase; customer advocacy, and price tolerance (e.g. Fullerton, 2005, 2011;

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Fritz et al., 2014). Brand loyalty is recognized as a critical brand performance measure for service firms (Keller, 1993; Chaudhuri and Holbrook, 2001), since it contributes to increased repurchase volume; better acquisition rates from positive word-of-mouth communication (Aksoy et al., 2013); lower customers' price sensitivity (Chaudhuri and Holbrook, 2001); reduced cost and capital investment requirements (Aaker, 1991; Oliver, 1999), and improved service providers' profitability (Hayes, 2008).

Although various studies in delivery of technological services (i.e. broadband internet services) rely on the development of consumer-brand relationships (Chiou, 2004; Lin and Ding, 2009; Ou et al., 2014; Thaichon et al., 2014; Balaji, 2015) to explain brand loyalty, they do not provide an integrated theoretical framework that explains how the different service brand relationship dimensions interplay to affect various brand loyalty manifestations (i.e. repeat purchase; customer advocacy, and price tolerance). Specifically, the direct effects of brand trust; satisfaction, and commitment on brand performance, either individually (e.g. Thaichon et al., 2014; Lin and Ding, 2009) or as composite constructs (Bruhn et al., 2012; Nyffenegger et al., 2014), has been the main focus of related research. However, the examination of simple bivariate links between any of the brand relationship components and brand performance outcomes may either mask or overstate the true relationship due to the bias created by omitted variables. Furthermore, several studies assume that brand commitment fully mediates the relationship between satisfaction; trust, and brand loyalty, meaning that only bonds based on emotional values directly affect brand performance (i.e. Hess and Story, 2005; Story and Hess, 2006; Esch et al., 2006; Chiou and Droge, 2006; Ou et al., 2014). Recent literature, however, suggests that both cognitive and affective factors are important for consumer-brand relationships and have different effects on brand performance (Nyffenegger et al., 2014; Sreejesh and Roy, 2015).

To address these issues, this study uses the brand commitment paradigm (Tsai, 2011a, 2011b), to propose and empirically test a comprehensive model that shows the effect of both cognitive and affective brand relationship dimensions on brand loyalty in the fixed broadband services industry in Greece. This model uses brand trust and brand satisfaction as the cognitive dimensions and affective commitment as the affective dimension of brand relationships and investigates their relative impact on three service brand loyalty indicators (i.e. repurchase intentions, positive recommendations, and price tolerance) both independently and in tandem.

The paper is structured as follows. First, we review relevant literature and develop appropriate research hypotheses and the conceptual framework; second, we present the research methodology; third, we present and discuss results, and finally we conclude with theoretical and managerial implications, limitations, and suggestions for further research.

2. Conceptual background and research hypotheses

This section is devoted to the analysis of all brand loyalty and brand relationships related concepts and the development of appropriate hypotheses about their interrelationships.

2.1. Paradigms of consumer-brand relationships

Fournier (1998) defines consumer-brand relationships as the psychological bonds that consumers form with brands. Three main different theoretical perspectives have been proposed to conceptualize and measure the development of consumer-brand relationships (Tsai, 2011a, 2011b). First, the brand relationship quality (BRQ) paradigm where BRQ is considered a higher-order construct reflecting partner quality; interdependence; intimacy; commitment; self-connection, and brand passion/love (Fournier, 1998). Second, the brand love paradigm where the way consumers relate to brands is explained by passionate love; emotional attachment, and self-brand connectedness (e.g. Carroll and Ahuvia, 2006; Albert et al., 2008, 2013; Tsai, 2011a, 2011b; Batra et al., 2012; Albert and Merunka, 2013; Fetscherin, 2014). Third, the brand commitment paradigm, where relationship commitment mediates the effects of interdependence (i.e. brand satisfaction) and social/communal (i.e. brand trust) dimensions of consumer-brand relationships on brand performance (e.g. Chaudhuri and Holbrook, 2001; Hess and Story, 2005; Esch et al., 2006; Tsai, 2011a, 2011b; Albert et al., 2013). The latter, which is a perspective of interpersonal relationship theory (Tsai, 2011a, 2011b), exploits the commitment-trust theory (Hennig-Thurau et al., 2002) to investigate the effect of customers' perception about the level of a consumer-brand relationship, on customer commitment and various brand loyalty manifestations (e.g. Fullerton, 2005; Ashworth et al., 2009; Aurier and N'Goala, 2010; Fullerton, 2011; Balaji, 2015).

Furthermore, brands offer both functional and emotional benefits that aim to create a unique and pleasurable experience for consumers (De Chernatony, 2010). Nyffenegger et al. (2014) argue that consumer-brand relationships have two types of dimensions, cognitive and affective and both influence brand loyalty. Based on these assertions, the brand commitment paradigm seems the best suited framework for investigating the effects of both the cognitive and affective dimensions of brand relationships on brand performance and has received considerable support by the branding literature (Hess and Story, 2005; Story and Hess, 2006; Ashworth et al., 2009; Papista and Dimitriadis, 2012; Fritz et al., 2014; Veloutsou, 2015). On the other hand, the other two paradigms present certain deficiencies in modelling brand relationships. More specifically, BRQ does not investigate how the cognitive and affective dimensions of brand relationships are related to each other and to brand performance, since it is conceptualized as a higher-order construct (e.g. Tsai, 2011a), and the brand love paradigm is based solely on affective or emotional dimensions to describe brand relationships.

This study uses the brand commitment paradigm (Tsai, 2011a; Papista and Dimitriadis, 2012; Ou et al., 2014; Veloutsou, 2015) to investigate the effect of both cognitive (brand trust and brand satisfaction) and affective (brand commitment) dimensions of consumer-brand relationships on different brand loyalty manifestations (repurchase intentions, positive recommendations, and price tolerance).

2.2. Research hypotheses development

Brand loyalty is defined as the extent of faithfulness of consumers to a particular brand, irrespective of the marketing activities of competitive brands (Oliver, 1999). Brand loyalty is included in the conceptualization of brand equity (Aaker, 1991; Keller, 1993; Yoo and Donthu, 2001), which is used in assessing brand performance. It is also used by practitioners and brand consultants as the most-frequently cited consumer-based criterion of brand success (De Chernatony et al., 2004). Previous research suggests that there are two types of brand loyalty: attitudinal and behavioral (Chiu et al., 2013). Behavioral loyalty expresses consumers' repurchase behavior for a specific brand, and attitudinal loyalty expresses consumers' attitude towards specific products or services (Kumar and Reinartz, 2006). The current study focuses on attitudinal loyalty because customers who seem behaviorally loyal can also be spuriously loyal as they may make repeat purchases because of certain situational constraints. Attitudinal loyalty manifests itself with a variety of indicators among which repurchase intentions; consumer willingness to recommend a service provider to other consumers, and price tolerance are the most commonly used (Vázquez-Casielles et al., 2009).

Trust is used to express a brand characteristic that inspires confidence in customers within a relationship (Chaudhuri and Holbrook, 2001; Delgado-Ballester et al., 2003; Brudvig, 2014). Becerra and Badrinarayanan (2013) assert that brand trust is composed of two sub-dimensions, cognitive and affective. Cognitive aspects

include expectation of brand reliability; consistency; competence, and predictability, while the affective aspects include expectations of brand integrity; honesty, and benevolence. Given that service brands are often corporate brands (Strandvik and Heinonen, 2013), both the service provider's (i.e. corporate expertise/competence) and the brand's characteristics (i.e. integrity and benevolence) are used by consumers to formulate brand trust beliefs. Based on Clark et al. (2010), there are three related, but distinct dimensions of trust: competence; integrity, and benevolence. Competence reflects customers' belief that the service provider has the knowledge; expertise, and skills required to fulfil their needs. Integrity expresses the brand's behavior including honesty; predictability; credibility, and dependability. Finally, benevolence shows the brand's willingness to help customers. The concept of trust is considered as an index composed by its causal sub-dimensions (Sanchez-Franco et al., 2009), and for that reason it is modelled as a second-order formative construct (Becker et al., 2012). Trust is essential in enhancing brand loyalty, especially in high-tech services where service delivery - related risks are perceived by customers as significant. When customers trust the service provider, they will continually use the service and will recommend the service provider to potential customers (Nyffenegger et al., 2014; Deng et al., 2010). Moreover, customers that experience trust in a service brand interaction, feel a reduced risk that they consider to be a benefit for which they are willing to pay a higher price (Nyffenegger et al., 2014). Hence the following are hypothesized:

H_1. Trust will have a positive effect on (a) repurchase intentions, (b) positive recommendations, and (c) price tolerance.

Customer satisfaction is defined as "*consumer's pleasurable fulfilment*" response (Oliver, 1999; p. 34). In other words, it expresses the favorable affective response of customers who find all past service encounters with their service providers rewarding; fulfilling, and stimulating (Brady et al., 2005). Many studies have shown that customer satisfaction affects customer loyalty. When customers are highly satisfied, they perceive the outcome of the exchange to be positive and, therefore, are willing to repurchase (Vázquez-Casielles et al., 2009); to recommend the provider to other consumers (Brown et al., 2005; Vázquez-Casielles et al., 2009), and to pay a premium price (Homburg et al., 2005a, 2005b; Vázquez-Casielles et al., 2009). Thus, we propose the following:

H_2. Customer satisfaction will have a positive effect on (a) repurchase intentions, (b) positive recommendations, and (c) price tolerance.

Commitment is the enduring desire to maintain a relationship. Relationship commitment is conceptualized either as a one-dimensional or a two-dimensional concept (Ou et al., 2014) split into affective commitment (based on loyalty and a feeling of belonging) and continuance commitment (based on rational evaluation). In this study, affective commitment, expressing consumers' free will to maintain their relationship with a brand based on their emotions about the brand, such as the feeling of belonging or respect, is used to represent customer's intention to support the longevity of the consumer-brand relationship.

A substantial body of research has demonstrated that customers' repurchase intentions and positive referrals are regarded as consequences of affective commitment (e.g. Nyffenegger et al., 2014; Thaichon et al., 2014; Sreejesh and Roy, 2015). Nyffenegger et al. (2014), based on research on interpersonal relationships, suggest that consumers with an emotional brand relationship (affective commitment) experience a higher value from this brand relative to competitive brands. As a result, they are more willing to invest in the brand; make sacrifices for that brand, and preserve interactions with the brand. Hence, the following hypotheses are proposed:

H_3. Affective commitment will have a positive effect on (a) repurchase intentions, (b) positive recommendations, and (c) price tolerance.

Furthermore, theoretical and empirical evidence suggests that trust antecedes brand satisfaction in traditional and electronic service settings (e.g. Chiou and Droge, 2006; Chiu et al., 2009; Kwortnik and Han, 2011; Balaji, 2015). This finding is based on cognitive consistency theory, which suggests that people attempt to behave in a consistent manner in order to be in a pleasant psychological state, therefore, it is expected that satisfaction would be greater in the presence of customer trusting beliefs (e.g. Balaji, 2015). Satisfaction, on the other hand, is an antecedent of affective commitment (Fullerton, 2011; Balaji, 2015), as the repeated pleasurable fulfilment of customer needs can lead to affectionate bonds with the brand (Vlachos et al., 2010). Finally, brand trust and commitment are the most important drivers of long-term consumer-brand relationships. Recent studies show that as customers' trust increases, the more committed to the brand they become (Aurier and N'Goala, 2010; Thaichon et al., 2014; Veloutsou, 2015; Sreejesh and Roy, 2015). Based on the aforementioned discussion, the following are hypothesized:

H_4. Trust will have a positive effect on (a) satisfaction, and (b) affective commitment.

H_5. Satisfaction will have a positive effect on affective commitment.

As far as the interrelationships among the different brand performance manifestations are concerned, previous studies provide evidence that repurchase intentions is an antecedent of positive recommendations (Petrick, 2004; Olaru et al., 2008) and price tolerance (Chaudhuri and Holbrooke, 2001; Srinivasan et al., 2002; Jaiswal and Niraj, 2011). Therefore we propose that.

H_6. Repurchase intentions will have a positive effect on (a) positive recommendations, and (b) price tolerance.

Taken together, suggest a mediating relationship, whereby brand satisfaction and brand relationship commitment mediate the impact of brand trust on brand loyalty manifestations. In other words, service providers will achieve better brand performance if they are able to effectively transform brand trust into brand satisfaction and commitment to gain customer loyalty (Aurier and N'Goala, 2010). Therefore, the following hypothesis is proposed for testing the mediating effects:

H_7. Brand satisfaction and commitment mediate in tandem the brand trust-brand loyalty relationship.

3. Research methodology

The population of fixed broadband internet users in Greece for 2014 was about 3 million with a penetration rate of 27.2%. The proposed model was tested with data collected from customers of fixed broadband service providers living in the Attica region, where about 50% of the total Greek population is residing. Since obtaining a comprehensive sample is difficult, a non-probabilistic sampling method was used to reach research participants. Research participants were selected from three shopping malls located in areas with different socioeconomic characteristics in terms of income and educational background in order to reach much of the heterogeneous population; avoid location-based bias, and ensure a wide spread of potential respondents. Also, in order to improve the representativeness of results, quota sampling was used with respect to gender and age since customers of different gender and age respond differently to marketing actions (Sheau-Fen et al., 2012). Twenty well trained students undertook data collection based on clear guidelines about sampling and research administration. Using a modified mall-intercept methodology (Rice and Hancock, 2005), potential respondents were contacted in the lounge area and were personally asked to complete a self-administered questionnaire. Contacts were made according to a pre-specified time schedule at different times of the day and days of the week in order for day and time related bias to be eliminated. The questionnaire was distributed to 800 consumers (270 in each mall) during the first quarter of 2014. Of the 800 completed questionnaires, 21 were eliminated due to incomplete data, leaving 779 questionnaires for data analysis. Using the Armstrong and Overton (1977) procedure, nonresponse bias was evaluated by comparing early respondents with late respondents for all constructs considered in this study. No significant differences were recorded at the 0.05 level of

significance.

The scales used to operationalize the concepts of the proposed model were adopted from different sources to suit the study. The trust scale that measures its three sub-dimensions of competence (COMP); integrity (INT), and benevolence (BEN) were adopted from McKnight et al. (2002). Affective commitment (COM) was measured using the scale proposed by Kwortnik and Han (2011). Finally, the scales proposed by Sanchez-Franco et al. (2009) were used to measure brand satisfaction and brand loyalty, where the latter comprises three main dimensions: repurchase intentions (RPI), positive recommendations (PREC), and price tolerance (PTOL). All items were measured on a seven-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree”.

Exploratory factor analysis and partial least squares path methodology (PLS-PM), an implementation of structural equation modelling (SEM) with Smart PLS 2.0 M3 (Ringle et al., 2005), were employed to examine the validity of our model and test the proposed hypotheses. PLS-PM was preferred over covariance-based SEM because statistical identification with formative models is difficult for covariance-based SEM methodologies, whereas PLS permits the simultaneous testing of hypotheses, while enabling the use of both reflective and formative constructs (Becker et al., 2012).

4. Empirical results

The majority of the 779 participants were male (55%). A 38% of respondents were less than 34 years old; 44% were in the 34–45 age group, and 18% were more than 55 years old. In terms of educational background 50% of respondents have a university degree. Also, 54% of respondents have a monthly income of less than €1000; 39% earn between €1000 and €2,000, and only 5% have a monthly income of €2000 or more.

The sample size of 779 respondents is considered to be adequate for PLS-PM implementation. In general, the most complex regression in PLS implementation will involve either the indicators of the most complex formative construct or the largest number of antecedent constructs leading to an endogenous construct. Based on Barclay et al. (1995), sample size requirements should be at least ten times the number of predictors from either of the above rules, whichever is greater. In our case, the larger number of antecedent constructs leading to an endogenous construct is four and the minimum sample size to run PLS-PM, based on the above rule, is 40 cases.

4.1. Measurement model assessment

The measurement model examines the relationship between manifest variables and latent variables. Exploratory factor analysis (EFA) was initially used to check the dimensionality of consumer-brand relationships and brand loyalty manifestations. Results indicate that benevolence and integrity as well as repurchase intentions and positive recommendations failed to load in different factors respectively. In accordance with the study of Sanchez-Franco et al. (2009) and the fact that brand trust is a second-order formative variable, the components of integrity and benevolence where combined to form the integrity_benevolence factor (INT_BEN). On the other hand, following the suggestions of Chiu et al. (2013), a second order reflectively measured construct, called Behavioral Intentions (BI), was created to reflect repurchase intentions and positive recommendations.

PLS was then used to confirm the EFA results. The test of the measurement model involves the estimation of reliability; convergent validity, and discriminant validity of the study's first-order constructs, which indicate the strength of measures used to test the proposed model (Hair et al., 2011). The reliability of all constructs was examined using the Cronbach's Alpha (CA) and Composite Reliability (CR) measures. Hair et al. (2011) suggest that a value of 0.70 provide adequate evidence for internal consistency. As shown in Table 1, CA and CR values of all measures included in the study exceed 0.92 and 0.94 respectively suggesting that all measures were good indicators of their respective components. The average variance extracted (AVE), which indicates the amount of variance that is captured by the construct in relation to the variance due to measurement error, was used to assess convergent validity. As depicted in Table 1, AVE values for all constructs exceed 0.72, which is much higher than the recommended cut-off value of 0.50 (Hair et al., 2011), suggesting satisfactory convergent validity.

Discriminant validity was assessed by comparing the square root of AVE extracted from each construct with the correlations among constructs. The findings provided strong evidence of discriminant validity among all first order constructs. As seen in Table 2, the square roots of AVE for all first-order constructs are higher than their shared variances (Hair et al., 2011).

The measurement quality of the second-order formative factor (i.e. brand trust) was tested following the suggestions by Diamantopoulos and Winklhofer (2001). First, the correlations among the constructs were examined. As shown in Table 2, the absolute correlation among the two first-order trust-related dimensions is 0.68. Although this correlation is relatively high, it still indicates that trust is better represented as a formative rather than a reflective second-order construct since the latter usually exhibit extremely high correlations (≥ 0.8) among their first-order factors (Pavlou and El Sawy, 2011). Second, both first-order trust-related components were found to have significant path coefficients in forming customer perception about trust. Results suggest that among the factors that form trust perception, integrity_benevolence ($\beta = 0.59$; $p < 0.001$) is the most important followed by competence ($\beta = 0.49$; $p < 0.001$). Finally, the variance inflation factors (VIF) were computed for these first-order trust dimensions to assess multicollinearity. Both VIF values of trust factors were found to be less than 10 suggesting that multicollinearity is not a concern for the trust construct (Diamantopoulos and Winklhofer, 2001).

CR and AVE measures are used to assess the reliability of behavioral intentions as a second-order reflective construct (Wetzels et al., 2009). CR and AVE for behavioral intentions equal 0.94 and 0.74 respectively, values which are well above the recommended thresholds of 0.70 and 0.50 respectively providing evidence of a reliable construct. Finally, the loadings of behavioral intentions on the first-order constructs exceed 0.90 (0.91 for RPI; 0.93 for PREC) and are significant at $p = 0.01$. All the above suggest that behavioral intentions reflect customers’ perception of their pre-specified sub-dimensions, namely repurchase intentions and positive recommendations.

4.2. Structural model assessment and results

The PLS-PM method was also used to confirm the hypothesized relationships between constructs in the proposed model. The significance of the paths included into the proposed model was tested using a bootstrap resample procedure (Hair et al., 2011). In assessing the PLS model, the squared multiple correlations (R^2) for each endogenous latent variable were initially examined and the significance of the structural paths was evaluated. After performing the PLS analysis, the structural model obtained is illustrated in Fig. 1.

Results indicate that the main driver of behavioral intentions is brand trust ($\beta = 0.43$; $t = 8.62$), followed by satisfaction ($\beta = 0.24$; $t = 5.15$) and commitment ($\beta = 0.22$; $t = 6.26$). Therefore hypotheses $H_{1a,b}$; $H_{2a,b}$; and $H_{3a,b}$ are confirmed. On the other hand, commitment ($\beta = 0.42$; $t = 10.60$) and behavioral intentions ($\beta = 0.30$; $t = 6.51$) and, at a lesser extent, satisfaction ($\beta = 0.13$; $t = 2.77$) affect customer's price tolerance. The impact of trust on price tolerance is insignificant ($\beta = -0.04$; $t = -0.81$), meaning that trust affects price tolerance only indirectly through satisfaction; commitment, and behavioral intentions. These results confirm H_{1c}; H_{2c}, and H_{6b} but not H_{3c}. Finally, satisfaction partially mediates the trust-commitment relationship, since the effects

Table 1
Items' descriptive statistics and first-order constructs' psychographic properties.

Latent variable	Items	MV	SD	Std. loadings	Std. error	Critical ratio	Cronbach's alpha	CR	AVE
Integrity Benevolence	BEN1	4.80	1.44	0.80	0.02	37.56	0.94	0.95	0.72
	BEN2	5.33	1.36	0.83	0.02	48.72			
	BEN3	5.01	1.40	0.87	0.01	68.54			
	INT1	5.22	1.32	0.89	0.01	82.77			
	INT2	5.46	1.27	0.88	0.01	72.73			
	INT3	5.47	1.28	0.83	0.02	39.58			
	INT4	5.29	1.37	0.85	0.02	52.46			
Competence	COMP1	5.52	1.23	0.92	0.01	97.34	0.94	0.96	0.85
	COMP2	5.54	1.19	0.94	0.01	115.40			
	COMP3	5.42	1.32	0.93	0.01	98.72			
	COMP4	5.58	1.43	0.90	0.01	78.45			
Satisfaction	SAT1	5.08	1.69	0.93	0.01	97.74	0.95	0.96	0.83
	SAT2	5.00	1.71	0.94	0.01	160.40			
	SAT3	5.02	1.70	0.94	0.01	117.32			
	SAT4	4.44	1.78	0.91	0.01	86.05			
	SAT5	4.88	1.58	0.84	0.02	39.67			
Commitment	COM1	3.51	1.77	0.86	0.01	65.41	0.92	0.94	0.76
	COM2	3.62	1.89	0.90	0.01	71.98			
	COM3	3.68	1.79	0.90	0.01	71.96			
	COM4	3.67	1.88	0.87	0.02	57.44			
	COM5	3.65	1.76	0.83	0.01	55.77			
Repurchase Intentions	RPI1	4.99	1.57	0.90	0.01	63.01	0.92	0.95	0.86
	RPI2	4.98	1.60	0.94	0.01	121.37			
	RPI3	5.25	1.48	0.94	0.01	137.20			
Positive Recommendations	PREC1	4.96	1.66	0.95	0.01	129.60	0.94	0.96	0.89
	PREC 2	4.71	1.77	0.95	0.01	111.33			
	PREC 3	5.01	1.71	0.94	0.01	135.83			
Price Tolerance	PT1	3.14	1.84	0.95	0.01	125.40	0.96	0.97	0.93
	PT2	3.14	1.93	0.97	0.00	271.80			
	PT3	2.91	1.85	0.97	0.00	216.72			

Note: Mean value (MV); Standard deviation (SD); Composite reliability (CR); Average variance exchange (AVE).

Table 2
Correlations among the first-order constructs and discriminant validity assessment.

	INT_BEN	COMP	SAT	COM	RPI	PREC	PTOL
Integrity-Benevolence (INT-BEN)	**0.85**						
Competence (COMP)	0.68	**0.92**					
Satisfaction (SAT)	0.61	0.74	**0.91**				
Commitment (COM)	0.61	0.44	0.60	**0.87**			
Repurchase intentions (RPI)	0.63	0.56	0.55	0.51	**0.93**		
Positive recommendations (PREC)	0.65	0.61	0.70	0.62	0.69	**0.95**	
Price tolerance (PTOL)	0.52	0.41	0.56	0.66	0.53	0.61	**0.96**

Note: AVE for each construct is given at the diagonal entries.

of trust on satisfaction (β = 0.75; t = 34.13) and commitment (β = 0.33; t = 8.03), as well as that of satisfaction on commitment (β = 0.35; t = 9.08) are statistically significant, and thus $H_{4a,b}$ and H_5 were supported. The proposed model explains 56% of the variance in satisfaction; 41% of variance in commitment; 62% of variance in behavioral intentions, and 52% of variance in price tolerance.

The test on the mediation hypothesis H_7 uses the procedure proposed by Hayes (2013) having as input the latent variable scores obtained in PLS analysis. The procedure is implementing bootstrapping (with 5000 resamples) to test the statistical significance of the mediation effect. As shown in Table 3, the total indirect effect of brand trust on behavioral intentions (β = 0.31; t = 6.20) is significant and is decomposed into three different partial indirect effects, all of which are statistically significant at the 5% level, given that no 95% confidence interval contains zero. This suggests that satisfaction and commitment partially mediate the trust-behavioral intentions link. Moreover, the total indirect effect of trust on price tolerance (β = 0.57; t = 13.3), as shown in Table 3, is also statistically significant and is decomposed into seven different partial indirect effects, all of which are statistically significant at the 5% level, since no 95% confidence interval contains zero. This suggests that satisfaction; commitment, and behavioral intentions fully mediate the trust-price tolerance link. The investigation of partial indirect effects shows that satisfaction and commitment also mediate the trust-price tolerance link since the relevant effect is also statistically significant (β = 0.11; t = 5.50). The above results support the validity of hypothesis H_7, that satisfaction and relationship commitment serially mediate the trust-brand loyalty link.

5. Theoretical and managerial implications

This study provides valuable insights regarding the effect of both cognitive and affective dimensions of consumer-brand relationships on brand loyalty in the fixed broadband internet services' context. The results of the study have a number of important implications for both theory and practice.

The contribution of this study to the extant literature is threefold. First, following the suggestions of Nyffenegger et al. (2014) and

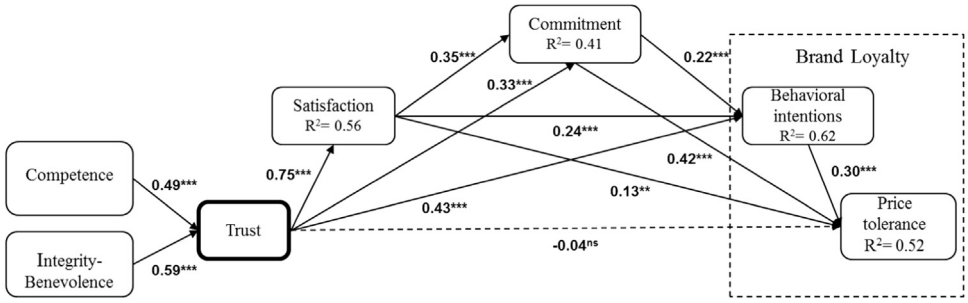

Fig. 1. Structural model's results (*** p < 0.001, ** p < 0.05).

Table 3
Serial mediation analysis results.

Path	Effect	Std. error	95% Confidence Interval
TOTAL Trust-Behavioral Intentions	**0.31**	**0.05**	**(0.22, 0.39)**
1. Trust-Satisfaction-Behavioral intentions TR-SAT-BI	0.18	0.04	(0.10, 0.26)
2. Trust-Satisfaction-Commitment-Behavioral intentions TR-SAT-COM-BI	0.06	0.01	(0.03, 0.09)
3. Trust-Commitment-Behavioral intentions TR-COM-BI	0.07	0.02	(0.04, 0.11)
TOTAL Trust-Price Tolerance	**0.57**	**0.05**	**(0.47, 0.68)**
1. Trust-Satisfaction-Price Tolerance TR-SAT-PTOL	0.10	0.04	(0.02, 0.19)
2. Trust-Satisfaction-Commitment-Price Tolerance TR-SAT-COM-PTOL	0.11	0.02	(0.07, 0.15)
3. Trust-Satisfaction-Behavioral intentions-Price Tolerance TR-SAT-BI-PTOL	0.05	0.02	(0.03, 0.10)
4. Trust-Satisfaction-Commitment- Behavioral intentions - Price Tolerance TR-SAT-ACOM-BI-PTOL	0.02	0.01	(0.01, 0.03)
5. Trust-Commitment- Price Tolerance TR-COM-PTOL	0.14	0.03	(0.09, 0.20)
6. Trust-Commitment- Behavioral intentions-Price Tolerance TR-ACOM-BI-PTOL	0.02	0.01	(0.01, 0.04)
7. Trust-Behavioral intentions-Price Tolerance TR-BI-PTOL	0.13	0.03	(0.08, 0.20)

Sreejesh and Roy (2015), the proposed model considers both consumers' cognitions and emotions about technology-mediated service brands as dimensions of the consumer-brand relationship. More specifically, customers' cognitions about service brands were measured by brand trust and brand satisfaction, while affective commitment was used to measure customers' emotions about service brands. Secondly, the model validates the different impact of trust; satisfaction, and commitment on three brand loyalty indicators: repurchase intentions; positive recommendations, and price tolerance (Aurier and N'Goala, 2010; Nyffenegger et al., 2014). The effect of brand commitment on behavioral intentions is lower than those of trust and satisfaction and therefore, we conclude that the affective dimension of consumer-brand relationships plays a secondary role in this case. Thus, if firms want to enjoy positive word of mouth and repurchase intentions, they should focus on the management of cognitive dimensions of relationships. On the other hand, consumers' price tolerance is highly related to brand commitment (affective dimension of relationships) while the effect of trust is insignificant. Therefore, trust and satisfaction are not enough for the consumer to become less sensitive to price increases. Price tolerance increases when emotional bonds are formed with the brand. Thirdly, the current study confirms the partial mediating role of commitment (affective dimension) in the relationship between the cognitive dimensions of consumer-brand relationships (trust and satisfaction) and brand loyalty indicators. This means that the presence of emotional bonding between customers and brands positively enhance the impact of their service brand cognitions on all brand performance indicators (Sreejesh and Roy, 2015).

From a practical point of view, findings suggest that consumer-oriented brand development activities enhance customers' perceptions about internet service providers' competence; integrity, and benevolence. These perceptions have to be efficiently converted into brand satisfaction; brand commitment, and brand loyalty. To achieve this, internet service providers have to utilize both classical (i.e. customer communication policy; after sales service, complaint handling processes etc.) and contemporary CRM approaches (i.e. web-enabled interactive tools; service automation, work-force automation etc.) to establish and develop a relationship-oriented culture in their business. As a result, such activities will help fixed broadband internet service providers to grow their customer base by reducing attrition rates; limit the revenue leakage from lost customers, and lower the cost of acquiring new customers. Finally, due to the effect of economic recession and increased competition, special attention should be given to customers' price sensitivity. When providers have strong consumer-brand relationships, in terms of commitment and loyalty, customers will overlook possible higher prices for the sake of their service providers' overall relationship performance. However, results show that trust by itself does not affect price tolerance directly. This means that if customers only trust providers, they will not necessary lower their price sensitivity. Price tolerance increases only when trust leads to primarily satisfaction, and then positive behavioral intentions or commitment (Aurier and N'Goala, 2010). This finding agrees with previous research on the quality of relationships where the dimensions of trust; satisfaction, and commitment are used to operationalize a higher order construct of relationship quality (Athanasopoulou, 2009). This is also evident in the serial mediation effects that were shown to be significant. Trust affects more significantly both behavioral intentions and price tolerance through satisfaction and commitment.

6. Limitations and suggestions for further research

This study, despite the significance of its findings, has a number of limitations. First, this is a cross-sectional study and therefore, it is not possible to consider temporal changes in the research constructs. A longitudinal study on the subject is necessary in order to clarify the effects of temporal changes. Secondly, the use of a non-probability sampling method does not ensure the full generalisation of results. The proposed model can be used for further research using a random sampling approach that will result in a more representative sample of

the investigated population. Moreover, future research can incorporate other variables into the proposed framework to enhance its predictive performance and to provide a better understanding of the customer decision-making process. For example, future studies can investigate the effects of perceived brand value; customers' positive and negative switching costs; calculative commitment, and the attractiveness of rival offerings on brand loyalty and the possible moderating effects of the length of consumer-brand relationships.

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