

# Customer Loyalty of Fixed-Broadband Provider in Indonesia : The Role of Service Quality for Internet Service Providers and Customer Relationship Management Quality

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## Abstract

This study attempted to evaluate the mediating role of CRM (Customer Relationship Management) quality in discovering the effects of the variables in service quality for internet service providers on customer loyalty. The service quality on internet service providers are network quality, customer service & technical support, information & website support and privacy & security. Data was obtained from 476 respondents of fixed-broadband ISP (Internet Service Provider) users at Indonesia on April 2020. The SmartPLS 3.0 Software was carried out to exam the hypotheses using bootstrapping method of 5000 random samples. The results of the analysis indicated that the mediating role of customer relationship management quality has strong impact on service quality to customer loyalty. Moreover, the contribution of this research from the modelling of the mediation will be usefull for any internet providers who wants to deploy their strategy to increase their customer loyalty.

**Keywords :** *Service quality, Network Quality, Customer Service & Technical Support, Information Quality, Security & Privacy, Customer relationship management quality, Fixed-Broadband, Internet Service Provider, SmartPLS*

## 1. Introduction

Nowadays, the need of using internet is essential for everyone in the world to stay connected. The number of internet users are highly increasing in years. Internet is existed because the existence of internet service providers (ISP). Especially For Fixed-Broadband Internet, there are several ISP at Indonesia. Indihome (stands for Internet Digital Home) is one of several Fixed-Broadband ISP at Indonesia (state-owned), which has the biggest market share, above 70%.

For some scholars and practitioners of marketers may realize the substance of Customer Loyalty, which possess a strategic design in all aspect in industry of services (Cooil et al., 2007; Gustafsson et al., 2005). Nevertheless, only a small number of investigations have evaluated how different aspects of Internet service providers' (ISP) service quality would affect their customers' loyalty (Vlachos and Vrecho-poulos, 2008).

Internet users in Indonesia increased by 10 percent last year. Globally, the rise of technology-enabled services caused attention in services literature has shifted to measurement and operationalisation issues in service quality (Carlson and O'Cass, 2011; Ganguli and Roy, 2010). The earliest of service quality model was introduced by

Parasuraman et al. (1985), in which SERVQUAL being referred as (1) tangibles; (2) reliability; (3) responsiveness; (4) assurance; and (5) empathy. In addition to SERVQUAL, E-S-QUAL has been developed by Parasuraman et al. (2005) as an attempt to fully capture service quality in the new information age. Furthermore, E-S-QUAL emphasising on service providers who operates via platform of internet (Vlachos and Vrechopoulos, 2008) and not for those whose industry provides internet connection and platform for online B2B (Business-to-Business) and B2C (Business-to-Consumer) activities.

Nonetheless, Telecommunications SERVQUAL can not adequately be calculated by SERVQUAL nor E-S-QUAL (He and Li, 2010) due to these scales lack of potentiality in addressing specific issues related to high-tech ISPs.

The intention of this investigation are: firstly, set up the relationships between ISP's service quality dimensions and customer loyalty. Secondly, to go into the probable mediating variables that will rise customer loyalty in telecommunication industry, especially for internet service providers (ISP).

## **2. Conceptual Model, Literature Review and Hypotheses development**

### *2.1. Customer Relationship Management (CRM) Quality*

The concept of CRM is about developing relationship, retaining customers and generate loyalty, and making profit from loyal customers instead of non-loyal customers which is not advantageous than loyal customers (Zeithaml et al., 1996). The major activities of CRM includes attracting, developing, and maintaining victorious customer relationships over time (Berry, 1995). There are 2 crucial dimensions of CRM Quality, that is Trust and Commitment, that have essential role in developing and maintain victorious relations (Garbarino and Johnson, 1999; Morgan and Hunt, 1994). Trust and commitment also acknowledged as a likely mediators of service evaluation elements on customer loyalty (Hennig-Thurau et al., 2002).

Previous research showed that Trust is directly and firmly associated to behavioural intention (Sirdeshmukh et al., 2002). Similar to trust, commitment also has a direct positive effect on behavioural intentions, and also relationship (Chaudhuri and Holbrook, 2001). Trust related customer's confidence about quality and reliability of the firm's offered services. Attitudinal and affective components of commitment are used to assess the level of customer's commitment (Chaudhuri and Holbrook, 2001). Thus, this study uses CRM Quality as a 2 dimensional construct of trust and commitment.

## 2.2. Customer Loyalty

Customer loyalty is probably one of many measurements to predict success of any organization. By definition, loyalty means strong commitment to continually rebuy or re-patronize a certain product or services in the future, resulting in repetitive expenditure of the same brand (Oliver, 1999). Lots of literature showed that trust and commitment impact on customer loyalty. For example, trust will increase when customers consistently receive qualified service and cause long term relationship with the firm (Balaji, 2015). Furthermore, commitment is considered as a, essential element to build customer loyalty (Hur et al., 2013). From these insight, we predict that CRM quality influence customer loyalty. Consequently, we hypothesize that :

**H1** : CRM Quality is positively related to customer loyalty

## 2.3. ISP's service quality dimensions

Previous study had been conducted to assess overall service quality in telecommunication industry which related to stable and strong network quality (Lai et al., 2009), readiness of customer service and support team (Aydin and Özer, 2005), informative website support (Thaichon et al., 2013), and high levels of privacy and security that is perceived by customers (Roca et al., 2009).

Network quality plays a significant role of service in telecommunication industry (Lai et al., 2009). Network quality involves the speed of downloading and uploading (Vlachos and Vrechopoulos, 2008).

Moreover, when customer faces any difficulties about the connection, they often look up for help to customer service and technical staff. A research conducted in Turkish Telecommunication industry proved that handling complaint from the customers contributed to overall service quality (Aydin and Özer, 2005).

The use of IT Tools, for example Website support, will increase efficiency and the effectiveness of Information delivered to customers (Ganguli and Roy, 2010). Information which has characteristics of clear, up to date, and relevant may help customers to obtain the information and enable effective decision making (Hsieh, 2013).

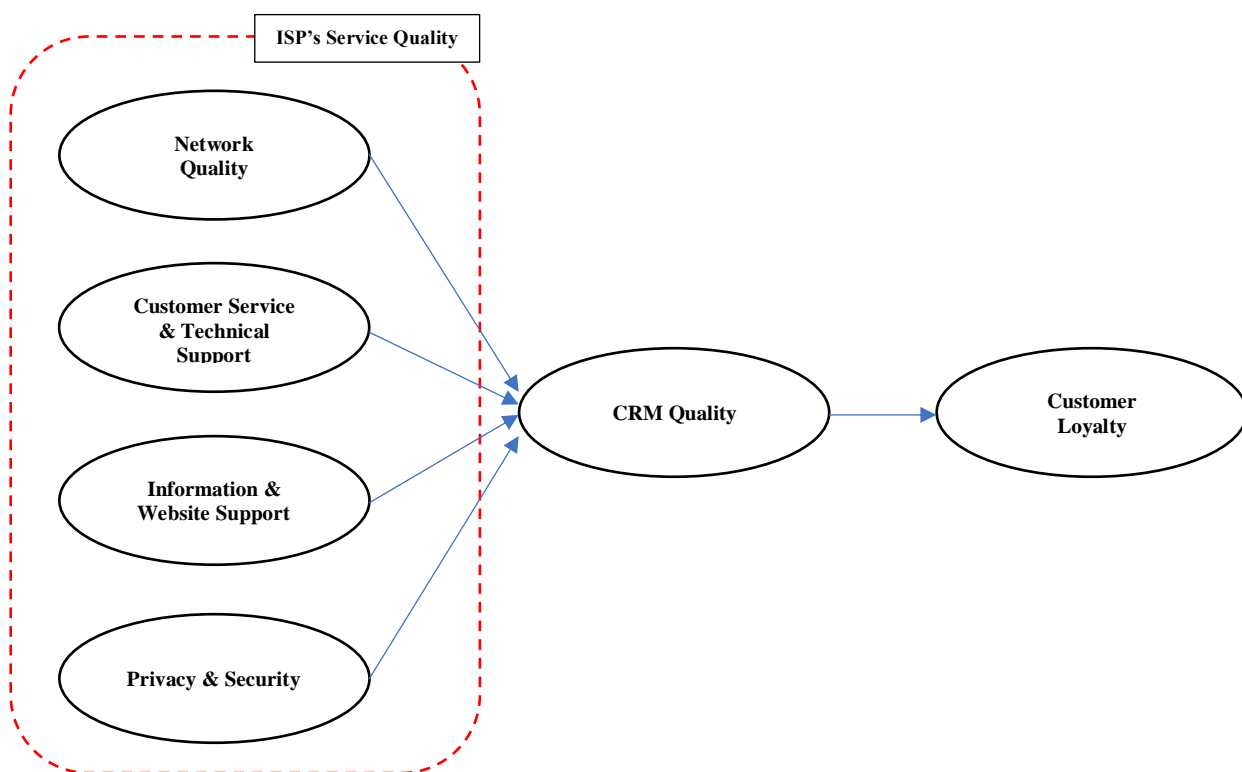
Customers are still vulnerable at low level of risk in purchasing, even though purchasing from reputable service providers in relation to their security practices (Roca et al., 2009). Security refers to the transaction processed is safe, which includes payment transactional and confidential information (Chang and Chen, 2009; Thaichon et al., 2014). Privacy refers to confidential data customers transmission on high-tech services (Özgüven, 2011). Thereby, we hypothesize that :

**H2** : Network Quality positively affects Customer Loyalty through the mediating role of CRM Quality

**H3** : Customer Service & Technical Support positively affects Customer Loyalty through the mediating role of CRM Quality

**H4** : Information & Website Support positively affects Customer Loyalty through the mediating role of CRM Quality

**H5** : Privacy & Security positively affects Customer Loyalty through the mediating role of CRM Quality



**Fig.1.** Conceptual Model

### 3. Research methodology

#### 3.1. Data collection and sample

The respondents on this research are users who have interacted with customer service, seen the marketing advertisement of, and opened the online website of this ISP (Indihome). Indihome is a leading fixed-broadband ISP in Indonesia. To test the hypotheses, an online survey was deployed in all regions of Indonesia. In total of 1264 questionnaires were distributed, only 476 questionnaires that met those requirements

(have interacted with customer service, have seen the marketing advertisement of, and have opened the online website of this ISP). These 476 data then will be used for data analysis. About 59% of the respondents are male and most (63.4%) were in the 20 – 29 age group, 30% were in 19 years old or below, 4% were in the 30 – 39 age group, 2.1% were in the 40 – 49 age group, and 0.5% were 50 years old or above.

**Table 1**

(Sample structure)

<b>Demographics Profile</b>	<b>(%)</b>
<b><i>Gender</i></b>	
Male	59.2
Female	40.8
<b><i>Age</i></b>	
< 19	30.0
20 – 29	63.4
30 – 39	3.9
40 – 49	2.1
50 +	0.6
<b><i>Education</i></b>	
Senior High School	1.2
Bachelor's degree	64.3
Postgraduate degree or higher	34.5
<b><i>Speed of Internet</i></b>	
< 10 Mbps	6.9
10 Mbps	44.7
20 Mbps	30.2
30 Mbps	3.3
40 Mbps	2.4
50 Mbps	5.6
100 Mbps or more	6.9
<b><i>Number of internet users in a house</i></b>	
1	0.2
2	3.8
3	14.3
4	39.5
5 or more	42.2
<b><i>Location</i></b>	
Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	45.6

Others	54.4
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### 3.2. Measures

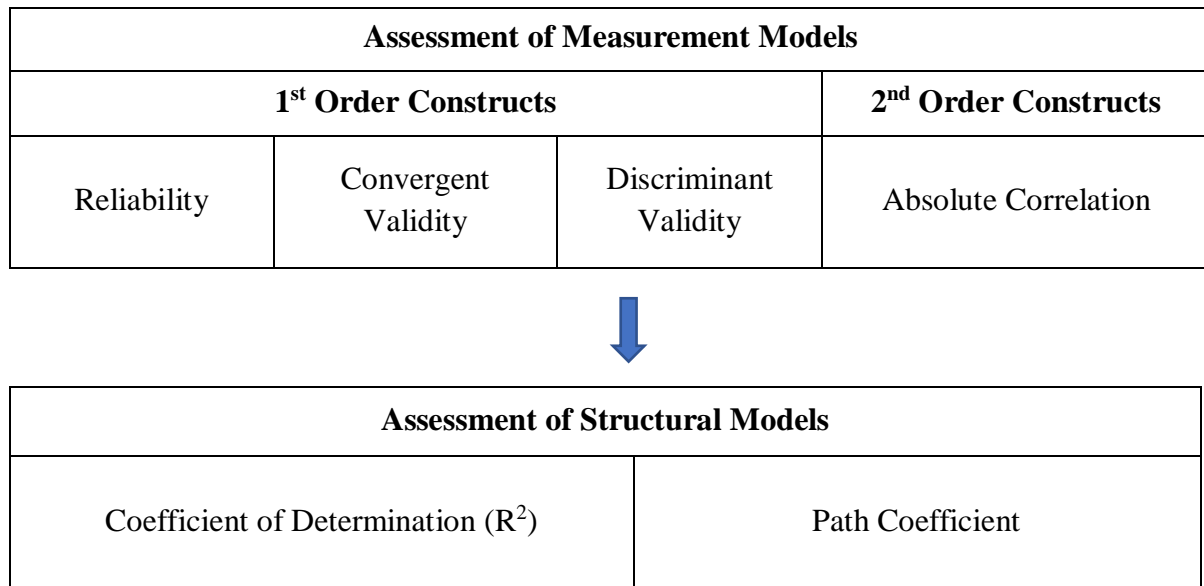
The perceptions on participants about service quality were measured using measurement scale proposed by [Thaichon et al., 2014](#) in terms of service quality for internet service providers, and every item were measured using a likert scale which was anchored at 1 for strongly disagree and 6 for strongly agree. That is, we initiated service quality as 4 constructs including: network quality, customer service & technical support, information & website support, and privacy & security. We used Trust and Commitment as a 2 dimensional construct of CRM Quality, the items for Trust and Commitment were adopted from [Morgan and Hunt \(1994\)](#). Customer Loyalty were measured using 3 items, adopted from [Chaudhuri and Holbrook, 2001](#).

## 4. Data analysis and results

In this study the method of Partial Least Squares Path Methodology (PLS-PM), a perform of Structural Equation Modeling (SEM) with Smart PLS 3.3.2 ([Ringle et al., 2015](#)), was used to examine our model of measurement and test the hypotheses proposed. The first step is designing model, followed by assessment of measurement models (Outer model) and assessment of Structural model (Inner model).

Step 1 : Design the model
<ul style="list-style-type: none"> <li>• Input Data</li> <li>• Assign Manifest Variable</li> <li>• Process the Model</li> </ul>
Step 2 : Assessment of Measurement Model (First Order Constructs)
<ul style="list-style-type: none"> <li>• Reliability Assessment</li> <li>• Convergent Validity</li> <li>• Discriminant Validity</li> </ul>
Step 3 : Assessment of Measurement Model (Second Order Constructs)
<ul style="list-style-type: none"> <li>• Absolute Correlations</li> </ul>
Step 4 : Assessment of Structural Model
<ul style="list-style-type: none"> <li>• Coefficient of Determination (<math>R^2</math>)</li> <li>• Path Coefficients</li> </ul>

**Fig. 2.** Structural Equation Modelling



**Fig. 3.** PLS model assessment

#### 4.1. Assessment of Measurement Models – First Order Constructs

All first-order factors in the study are set to be reflective, and the measurement models were tested including Reliability, Convergent Validity and Discriminant Validity. The Reliability of all constructs were assessed of Composite Reliability (CR) and Average Varianced Extracted (AVE). The recommendation are a minimum value of 0.7 for CR and a minimum value of 0.5 for AVE (Fornell, C., & Larcker, D.F. 1981). Also, a model is considered Reliable when the value of Cronbach's Alpha is equal to or greater than 0.7 (Wong, Ken. 2013).

**Table 2** (Items, reliability indices & convergent validity)

	Constructs	Items Code	FL	A	CR	AVE
1	Network Quality	NETQUAL1	.83	.87	.91	.72
		NETQUAL2	.88			
		NETQUAL3	.86			
		NETQUAL4	.81			
2	Customer Service & Technical Support	CSTTECH1	.89	.84	.91	.76
		CSTTECH2	.88			
		CSTTECH3	.84			
		INFOWEBS1	.86			
3	Information & Website Support	INFOWEBS2	.89	.95	.96	.80
		INFOWEBS3	.90			
		INFOWEBS4	.90			
		INFOWEBS5	.90			
		INFOWEBS6	.91			

		PRVSCURE1	.93				
4	Privacy & Security	PRVSCURE2	.94	.95	.96	.87	
		PRVSCURE3	.93				
		PRVSCURE4	.92				
5	CRM Quality – Trust	CRMTRUST1	.94				
		CRMTRUST2	.93	.88	.92	.80	
		CRMTRUST3	.82				
6	CRM Quality - Commitment	CRMCOMM1	.90				
		CRMCOMM2	.92	.89	.93	.82	
		CRMCOMM3	.90				
7	Customer Loyalty	CL1	.93				
		CL2	.95	.93	.95	.87	
		CL3	.92				

**Notes:** FL = Factor Loadings, A = Cronbach's Alpha, CR = Composite Reliability, AVE = Average Variance Extracted

As displayed on table 2, A and CR and AVE of all reflective measures conducted in the study are above 0.7, 0.7 and 0.5 respectively indicated that all items are considered good indicators of their respective components.

**Table 3** (Discriminant Validity (Fornell-Larcker Criterion))

Constructs		1	2	3	4	5	6	7
1	Network Quality	<b>.85</b>						
2	Customer Service & Technical Support	.54	<b>.87</b>					
3	Information & Website Support	.60	.67	<b>.89</b>				
4	Privacy & Security	.50	.58	.70	<b>.93</b>			
5	CRM Quality – Trust	.69	.62	.70	.68	<b>.90</b>		
6	CRM Quality – Commitment	.64	.60	.64	.58	.83	<b>.91</b>	
7	Customer Loyalty	.63	.59	.62	.57	.85	.86	<b>.93</b>

As shown in table 3, the table provides inter-construct correlation and square roots of AVE (diagonal entries) of first order constructs. It showed that the square roots of AVE in each construct are higher than its shared variance, which establish the discriminant validity of the constructs (Fornell, C., & Larcker, D.F. 1981).

#### 4.2. Assessment of Measurement Models – Second Order Constructs

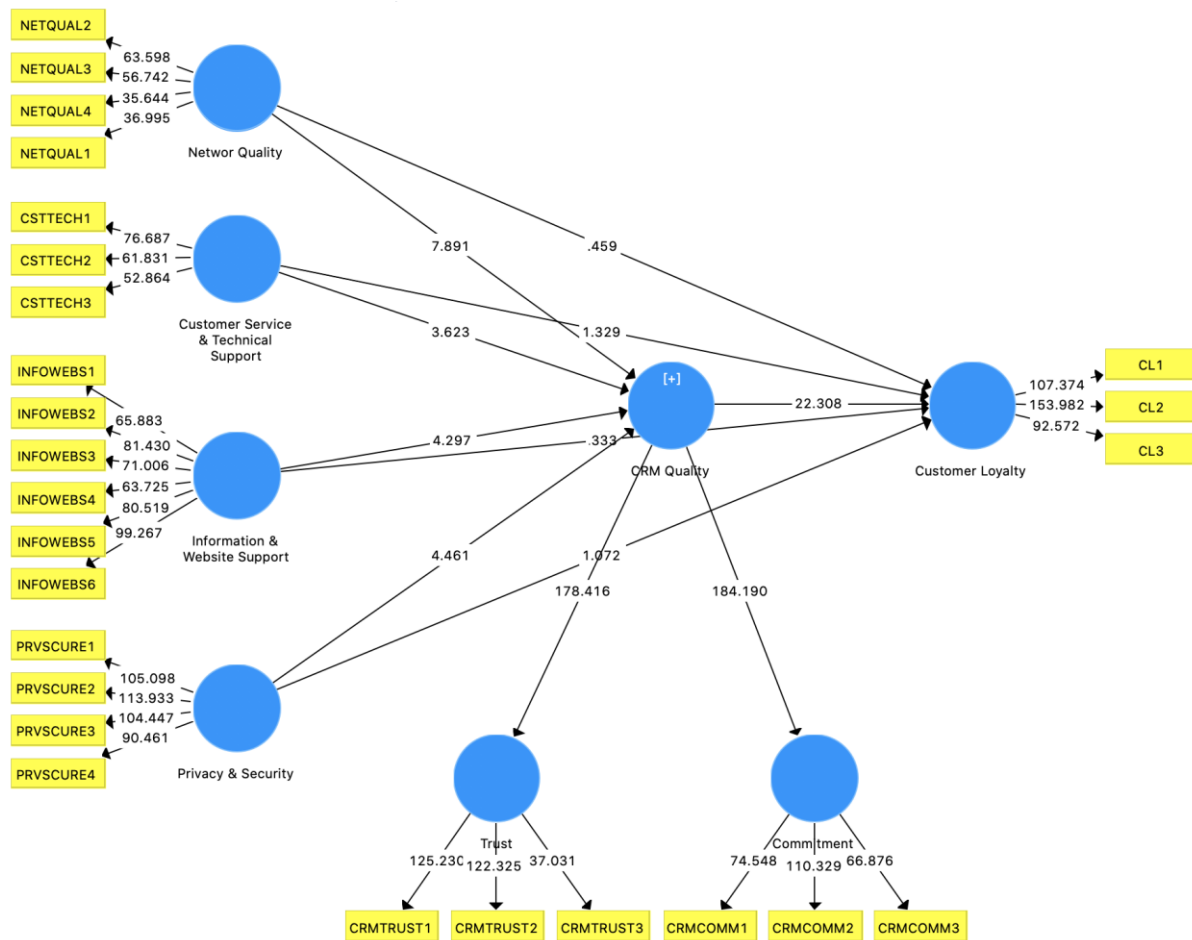
The measurement of second order factors of CRM Quality was examined using recommendation from Chin, W.W.,1998. The correlations among the two first-order



constructs of CRM Quality were tested. The total correlations among those constructs (Trust and Commitment) is 0.83. This indicated that CRM Quality is better depicted as a reflective second-order variable instead of a formative, because the correlation of reflective second-order constructs is tremendously high above 0.8 (Pavlou, P.A., & El Sawy, O.A. 2006)

### 4.3. Assessment of Structural Models

In this study, PLS was used to examine the hypothesized between constructs of proposed model. The relation among constructs are considered to be supported if corresponding path coefficient are significant.



**Fig. 4.** Structural models on SmartPLS 3.0

The path analysis revealed that all constructs of service quality have positive and significant effects on CRM Quality explaining 66% of variance. As shown in table 4a, all constructs of service quality on customer loyalty have no direct effects. Moreover, CRM Quality have direct effect on loyalty, supporting H1 on table 5. Having established these direct effects tested, the indirect effects were then examined and the outcomes are shown in table 3b. Finally, customer loyalty is explained by 80% of

variance. All the indirect effects of all service quality on loyalty via CRM Quality are significant statistically, supporting H2 – H5 on table 5.

**Table 4** (Results for direct and indirect effects)

<i>(a) Direct Effects</i>				
<b>Direct relationship tested</b>		<b>T Statistics</b>	<b>P Values</b>	<b>R<sup>2</sup></b>
1	Network quality → CRM Quality	7.96	.00	.66
2	Customer Service & Technical Support → CRM Quality	3.99	.00	
3	Information & Website Support → CRM Quality	4.37	.00	
4	Privacy & Security → CRM Quality	4.46	.00	
5	Network quality → Customer Loyalty	.48	.63	.80
6	Customer Service & Technical Support → Customer Loyalty	1.35	.18	
7	Information & Website Support → Customer Loyalty	.34	.73	
8	Privacy & Security → Customer Loyalty	1.13	.26	
9	CRM Quality → Customer Loyalty	23.21	.00	

<i>(b) Indirect Effects</i>			
<b>Indirect relationship tested</b>		<b>T Statistics</b>	<b>P Values</b>
1	Network quality → CRM Quality → Customer Loyalty	7.96	.00
2	Customer Service & Technical Support → CRM Quality → Customer Loyalty	3.99	.00
3	Information & Website Support → CRM Quality → Customer Loyalty	4.37	.00
4	Privacy & Security → CRM Quality → Customer Loyalty	4.46	.00

**Table 5** (Causal Path and Hypothesis testing)

<b>Causal Path</b>	<b>T Statistics</b>	<b>P Values</b>	<b>Hypothesis testing</b>
CRM Quality → Customer Loyalty	23.21	.00	H1 Supported
Network Quality → CRM Quality → Customer Loyalty	7.96	.00	H2 Supported
Customer Satisfaction & Technical Support → CRM Quality → Customer Loyalty	3.99	.00	H3 Supported

Information & Website Support → CRM Quality → Customer Loyalty	4.37	.00	<b>H4 Supported</b>
Privacy & Security → CRM Quality → Customer Loyalty	4.46	.00	<b>H5 Supported</b>

## 5. Discussion

The present study investigated the roles of customer relationship management (CRM) Quality on the link between service quality and customer loyalty on fixed-broadband internet service providers (ISP). The findings showed that (i) CRM Quality is positively associated with customer loyalty (ii) Service Quality does not seem to affect Customer Loyalty directly (iii) CRM Quality has strong and positive impact as a mediating role of Service Quality on Customer Loyalty.

### 5.1. Managerial Implications

The above findings have some practical implications. First, given the direct effects of service quality on customer loyalty that has no significant influence, therefore internet service providers must continually improve the quality of their service offering dimensions, which are identified as network quality, customer service & technical support, information & website support, and privacy & security. Second, our findings showed the importance of a good CRM program that caused trust and commitment, that are fundamental in generating customer loyalty. Thus, in practical implications, managers are required to highly foster trust and commitment if they want to arise benefits from loyal customers.

### 5.2. Limitations and areas for future research

This research has several limitations. First, the choice of destination where this research conducted (Indonesia) might limit the generalisability of research due to cultural will be different in any other countries. Further research could consider to implement in neighbouring countries, such as Malaysia and Singapore. Second, it tested only for 1 brand of ISP. Hence, to make it more generalisable, the future research could gather data from multiple brand of ISP. Third, this study examined the mediating effects of affective evaluations such as trust and commitment on cognitive evaluations such as ISP's service quality on loyalty. Further research could enrich the affective evaluations such as customer satisfaction. Lastly, the constructs of relational relationship such as customer loyalty, trust and commitment are changing over time. To see the mediating impact of CRM Quality on customer loyalty evolves, a longitudinal research design could be implemented instead of this research that used cross-sectional study.

**Table 6** (Measurement Items)

<b>Constructs</b>	
<b>NQ</b>	<p>I do not experience any Internet disconnection from this ISP</p> <p>The speed of Download speed meet my expectations</p> <p>The speed of Upload meet my expectations</p> <p>The Internet speed always stable even though on rush hours</p>
<b>CS</b>	<p>The Customer service on this ISP are well-informed</p> <p>The Customer service on this ISP always respond to my questions</p> <p>My technical problems will be solved punctually by the technician of this ISP</p>
<b>IW</b>	<p>The ISP has sufficient information on the brochure</p> <p>The ISP has sufficient information on the website</p> <p>The ISP has the latest information on the brochure</p> <p>The ISP has the latest information on the website</p> <p>The ISP has relevant information on the brochure</p> <p>The ISP has relevant information on the website</p>
<b>PS</b>	<p>My own personal information is safe at this ISP</p> <p>My own personal information is protected at this ISP</p> <p>I am safe when doing financial transaction on this ISP</p> <p>I am protected when doing financial transaction on this ISP</p>
<b>CRM – TR</b>	<p>I can trust this ISP</p> <p>I can depend on this ISP</p> <p>I am sure that this ISP will not deceive me</p>
<b>CRM – CM</b>	<p>I am involved with this ISP</p> <p>I am glad to use this ISP as my house internet</p> <p>I am attached to this ISP</p>
<b>CL</b>	<p>I will choose this ISP as my house internet providers</p> <p>I use this ISP because it is the best choice for me</p> <p>I am sure that I am a loyal customer of this ISP</p>

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