Understanding Single Homing and Multihoming User Switching Propensity in Cloud File Hosting Service Relationships

Sigi Goode
Research School of Management
Australian National University

Abstract

This paper compares the commitment and switching propensities of single-homing users, who only consume services from a single provider, and multi-homing users, who consume similar services from multiple providers at the same time. The study surveys 217 users of public file-hosting services, a popular but controversial cloud-based service. The study reveals significant differences between single-homing and multihoming users. For single-homing users, propensity to leave is motivated by trust. For multihoming users, propensity to leave is motivated by commitment. However, the results also indicate that both single-homing and multihoming users perceive similar relationship components (e.g. shared values, mutual understanding, relationship costs and benefits), despite their homing preferences. The findings provide theoretical insight into how different types of users approach online service relationships. The findings have implications for highly separated online service providers.

1 Introduction

User switching is an important problem facing online service providers. Service users across a range of service types may switch their service use between providers and channels as their perception of the service relationship changes (PriceWaterhouseCoopers, 2016). In a survey across a range of industries, Ofcom (2010) found that service bundles exhibit the highest rates of consumer switching. Misinterpreting the service user relationship can be costly: 76% of customers who have had a bad experience with an online firm report that they will switch away from the provider and will not return (Forrester Research, 2011). To this end, online service providers may attempt to prevent users from switching to other service providers, for example by requiring proprietary application software, long service contracts, or costly service severance fees.

However, there is evidence in a number of service industries that users may not be switching, but rather "*multihoming"* in which service market conditions allow a service user to consume the same service from multiple service providers simultaneously

(Armstrong, 2006; Belleflamme & Peitz, 2019; Doganoglu & Wright, 2006). Increasingly, practitioners are advising service providers that multihoming might be beneficial to service provider arrangements and customer sentiment (Ofcom, 2015; Oxera, 2015) on the grounds that modern customers demand substantial relationship flexibility.

However, empirical investigations to support these contentions are more sparse. There have been very few studies of multihoming in the online service literature. For example, Mital and Sarkar (2011) examined multihoming and social network services at a market level. Hyrynsalmi et al. (2016) examined the behavior of software developers and multihoming across app stores. Kwon et al. (2017) examined the homing preferences of social network service users with respect to similarity among users. Yet no studies have explored the service relationship perceptions of multihoming service users. Prior theory holds that single-homing users are likely to be more loyal to their single service provider, demonstrating a high level of commitment towards them. These single-homing users are unlikely to switch to other service provider and consciously invest in establishing a long-lasting relationship with their provider. On the other hand, multihoming users are likely to have lower commitment to their service provider. Prior theory holds that multihoming users are more likely to switch between service providers, place lower value on their incumbent service relationships, and have a higher propensity to leave or switch.

This paper addresses this gap by comparing the switching behaviors of two groups of service users. First, single-homing users who consume services from only one service provider even though many similar service providers exist in the market, and second, multihoming users who consume similar services from multiple service providers. Our study presents evidence that challenges both of these positions of conventional wisdom. In prior research, commitment spurs customer loyalty, improves word of mouth advertising and encourages repurchase intention (Brown et al., 2005; Chiou, 2004; S. S. Kim & Son, 2009; Piha & Avlonitis, 2015). However, under our lens, commitment can have an adverse effect because the user constrains their behavior to a single provider. This self-imposed constraint has numerous effects, including producing a supernormal reliance on trust in the relationship. Our findings indicate that propensity to switch is driven by trust alone for single-homing users, and commitment alone for multihoming users. We extend recent research into switching (Li, 2015; Matzler et al., 2015) in order to understand both the trust and commitment effects of users who already use more than one service provider.

In order to understand the relationship perceptions of single and multihoming service users, the study focuses on the public file-hosting service market. In this market, users may upload their files and documents to a hosting provider, and then allow other users (e.g. family members, other Internet users) to download those files. Public file-hosting is a contentious example of cloud storage services, partly because of unclear or opaque business models (Naldi & Mastroeni, 2016), concerns over user privacy (Joint et al., 2009) and the ease with which such services can be used to spread malware (Grobauer et al., 2011).

Our study makes two contributions to knowledge. First, there has been almost no prior work into the simultaneous consumption of multiple online services. One reason for the dearth of prior work is that conventional services are typically inseparable (Zeithaml et al., 1985). They are solicited and consumed in the same time or space. As a result, it is

difficult for an individual to consume the same service from multiple providers at once. Online services, however, are significantly more separable, and the consumer can patronize multiple providers simultaneously. Prior work has considered the bundling of complementary services (Batt, 2002) and the delivery of services from multiple providers (Berry, 1995). However there has been almost no prior work into the consumption of the same service from multiple providers simultaneously. Hence, we contribute to extant knowledge of service delivery by exploring an aspect of service theory that is unique to the online context. Second, practically, we contribute research into the behavior of users in the cloud storage context. Amid concerns over customer loyalty in cloud-based application services (Goode et al., 2014), expenditure on general public cloud services is predicted to reach some $277 billion in 2021 (IDC, 2018), highlighting the popularity of these types of service. However, there has been very little prior research into public file-hosting services. While popular and useful, we need to understand the opportunities offered by cloud services (Brynjolfsson et al., 2010). There has been almost no prior work into how users perceive their propensity to switch between these service offerings. Our study addresses this gap.

The rest of this paper is structured as follows. The next section introduces end user relationships, using the commitment-trust model. The following section discusses the study's theoretical model and hypothesis development. This is followed by a discussion of the research model and context. The paper then presents the data analysis and conclusions.

2 End-User Relationships

A relationship is a condition of connection between two parties, based on mutual contact, perceptions, feelings or another shared quality (Kern & Willcocks, 2002). Relationships have been an important service research topic because of the need to understand how various types of users influence and interact with each other and their online services (Al-Natour & Benbasat, 2009; D. J. Kim et al., 2009). Long-term durability of end-user relationships is highly desirable.

Relationships can involve multiple parties, but in many commercial encounters, relationships are dyadic and contain two parties (such as an employee and an employer, a retailer and a supplier, or an end user and a system provider). However, in market situations where customers are not locked into consumption from one provider only, they may elect to consume from multiple providers (Armstrong, 2006). This "multihoming" allows the consumer to pursue multiple relationships at the same time.

Among the most popular and well-known researched relationship models in prior literature is the commitment-trust model of exchange relationships (Morgan & Hunt, 1994), itself founded on social exchange theory (Cook & Emerson, 1978). This model has been applied in a number of service contexts, such as end-user loyalty to their ISPs (Sanchez-Franco et al., 2009) and online purchasing (Noteberg et al., 2003). According to this relationship framework, two components form the basis of exchange relationships, commitment and trust. While there have been numerous configurations of the commitment-trust model in prior literature, both trust and commitment are vital core variables in this model. Without commitment, we cannot explain the desire to make shared relationships. Trust alone only explains the perception of benevolence to

the other party and on its own merely signals a *propensity* to engage in a relationship. Similarly, commitment alone does not explain the personal perceptions or anticipations of positive outcomes that arise from reliance and dependence between the parties. These three concepts of trust, commitment and homing are explored here.

2.1 Trust in the End-User Relationship

Trust signifies the perceived reliability and sincerity of a relationship party (Bhattacherjee, 2002). Trust contributes to a preference to rely on the other party (McKnight & Chervany, 2002), and reflects a perception that their future actions will be positive and benevolent (Goo et al., 2009). It suggests a confidence and an expectation that the other party's actions and intentions are reliable and will not be used punitively (Pennington et al., 2003). Trust describes one party's belief that another party will behave in such a way that both parties will experience positive outcomes from the union. This belief in turn also means that there will be no unanticipated behaviors that could result in negative effects. Similarly, a relationship partner might be considered untrustworthy if they act in a way that might increase risk or harm between the parties.

Trust is seen as a vital attribute to good user relationships (McKnight & Chervany, 2002). Trust enhances the longevity of the relationship, reduces conflict between relationship partners, and protects them against the risks of ambiguity, where parties are unable to monitor each other's activity (Gallivan & Depledge, 2003). When a user trusts a service provider, they in effect believe that the provider will deliver on their promises: the service will be provided as specified as they have come to expect from prior experiences (Rufín & Molina, 2014). The user is also more likely to hold beliefs that the system is operating in the user's interests, and messages and signals about system operations are credible and can be relied upon.

2.2 Commitment in the End-User Relationship

Commitment represents "a desire to develop a stable relationship, a willingness to make short-term sacrifices to maintain the relationship, and a confidence in the stability of the relationship" (E. Anderson & Weitz, 1989, p. 19). Commitment constitutes an enduring desire to retain a significant and highly-regarded relationship (Gundlach et al., 1995). Psychological commitment manifests itself as a personal attachment and belief that staying in the relationship is a positive experience (K. C. Chang et al., 2010). As a result of these attachment perceptions and beliefs, committed relationships are characterized by longevity: commitment provides a foundation upon which these durable relationships can progress and develop (Berry, 1995; Berry & Parasuraman, 1991).

Commitment is an important component of the end-user relationship. Some prior research has positioned commitment in terms of support given by senior management to new initiatives. Commitment benefits online service implementation and ongoing usage, in terms of end-user enthusiasm and positive attitudes (Sanchez-Franco et al., 2009). More committed users are better able to work with service support staff, yielding a more positive and productive use climate (K. C. Chang et al., 2010). Committed users are more engaged, have greater satisfaction and have lower visible resistance to new IT innovations (H.-W. Kim & Kankanhalli, 2009). A committed user wants their relationships to last and will work to make and maintain relationship longevity (Goo et al., 2009).

2.3 Homing in the End-User Relationship

Homing describes the user's affiliation or patronage with a given market offering (Caillaud & Jullien, 2003). The term reflects the concept of a user making a 'home' on a particular marketing offering (Eisenmann et al., 2006). The concept applies especially in two-sided markets (Rochet & Tirole, 2003), which comprise two sets of actors with differing abilities and roles (such as service provider and service consumers) (Rochet & Tirole, 2003).

Single-homing occurs when a user patronizes a single provider only. This dedicated use occurs even though there are numerous other similar service providers or platforms are available within reach (Armstrong, 2006). An example might be a user who only keeps one credit card from one bank, or a network user with only one internet service provider. Alternatively, multihoming occurs when a market agent uses two or more market providers for the same purpose (Armstrong, 2006). In the service context, multihoming takes place when a service user patronizes two or more suppliers of the same service at one time. From a user's perspective, multihoming results when there is the potential for services to be compatible between providers (Doganoglu & Wright, 2006) and the costs of switching between suppliers is low. For example, a user may use many payment services at one time, for various different transactions (Rysman, 2007).

The type of homing exhibited by users has numerous effects on the market and the suppliers contained therein. Our focus in this paper is on the relationship commitment effects of these different types of users. Most prior studies of single and multihoming behaviors have taken place at the macro level but there is almost no prior work into the relationship perceptions of individual actors. Prior macro-level research implicitly holds that multihoming users ought to exhibit lower relationship commitment, in aggregate, by virtue of the fact that they use multiple providers for the same purpose (Hagiu, 2006). Multihoming users move between suppliers at will and hence must exhibit lower commitment. Despite this lower commitment, however, if the ability to multi-home is inexpensive, direct network effects are reduced and this allows multiple providers to continue to operate in the market (Crocioni, 2008). Coincidentally, trust itself has also not been explored in the homing context, though it might be reasonable to assume that trust behaviors can be lower for multihoming users because they are not forced to believe in the possibility of transactional downsides. Should they perceive that a trading partner is going to impose an intolerable cost or punishment, multihoming service users ought to able to switch to another provider. This argument would be consistent with prior research on trust in the face of multiple providers (Ferrin et al., 2008; Schaupp & Carter, 2010). Reduced trust may also act as a loss-avoidance protection for these multiple service users (Molm, 2003).

3 Cloud Storage Services

Growing data networking capacity, inexpensive network access and demands for larger data storage have led to a rise in popularity of online cloud storage services. These services allow users to remotely store and access files and data archives over a network connection, such as the Internet (Alsmadi & Prybutok, 2018; Goode, 2019). Using this service model, users may upload data either for their own private use, or in some cases for the consumption of other users located throughout the network.

Cloud storage services are attractive to users for a number of reasons. First, cloud services provide convenient access to files and data without being restricted to a single networked device: users may access files regardless of their network location (Burda & Teuteberg, 2015). Second, cloud storage services allow users to backup their important documents and files in order to guard against loss through hardware failure, ransomware or user error (Burda & Teuteberg, 2014; McLeod & Gormly, 2017). Third, many cloud storage services also allow users to access their files through dedicated mobile and portable device applications (Arpaci, 2016; Park & Kim, 2014). Fourth, the usefulness of cloud services allows them to be deployed as a complement to conventional service provision in a variety of contexts such as banking, health and education (Asadi et al., 2017; Ghaffari & Lagzian, 2018; Hew & Kadir, 2016).

The cloud storage service model is an appropriate and useful context through which to examine user homing and commitment, for a number of reasons. First, the easy availability of cloud storage software and application services means that users may consume services from one cloud storage provider, or multiple providers, without significant barriers to access and use (Burda & Teuteberg, 2015; Goode et al., 2014). Second, some cloud storage services allow data to be uploaded automatically as it is captured or generated, thereby reducing even further the cost of multihoming to other service providers (Alsmadi & Prybutok, 2018; Liu et al., 2018). This accessibility also allows users to experiment with new storage behaviors across multiple providers (Gracia-Tinedo et al., 2014).

This setting is also suitable for study because the user must rely on the storage provider to fulfill their service promises. The user must feel that their service requirements are being met in order to want to trust the service provider with their personally sensitive data (Burda & Teuteberg, 2014; Lansing & Sunyaev, 2016). Users may upload highly sensitive material to these services because they rely on the host to be able to deliver access to data as promised (Alsmadi & Prybutok, 2018; Liu et al., 2018). These privacy concerns are also shared by third party users (e.g. teachers, bank staff, health professionals) that offer cloud services to complement conventional services (Lustgarten, 2015; McLeod & Gormly, 2017).

Third, the cloud storage services setting is characterized by an inability for the service provider and service consumer to be in close contact with each other. This separation in service provision means that it is difficult for cloud service partners to see each other or to monitor each other's behavior and activity (Burda & Teuteberg, 2015; Goode, 2012; Tate & Evermann, 2010). This opacity makes it more important for users to be able to trust and understand the activities of the other party (Keh & Pang, 2010). In the cloud service context, this separation may also mean that users are more prone to switching between providers, or to consume storage services from multiple providers, in order to cope with concerns over provider risk and trust (Cheng et al., 2019; Goode, 2015; Lansing & Sunyaev, 2016; Moqbel & Bartelt, 2015).

Of the cloud services currently available, the public file hosting model has seen the least scholarly enquiry (Stantchev et al., 2014). Under the public file-hosting model, also known as direct download services, file lockers, and one-click file hosting (Mahanti et al., 2011; Rasenberger & Pepe, 2011), users upload files that are then publicly available to other users across the network (Lobato & Tang, 2014). Uploaders are typically provided with a URL that allows direct access to the file, and the user may publish this

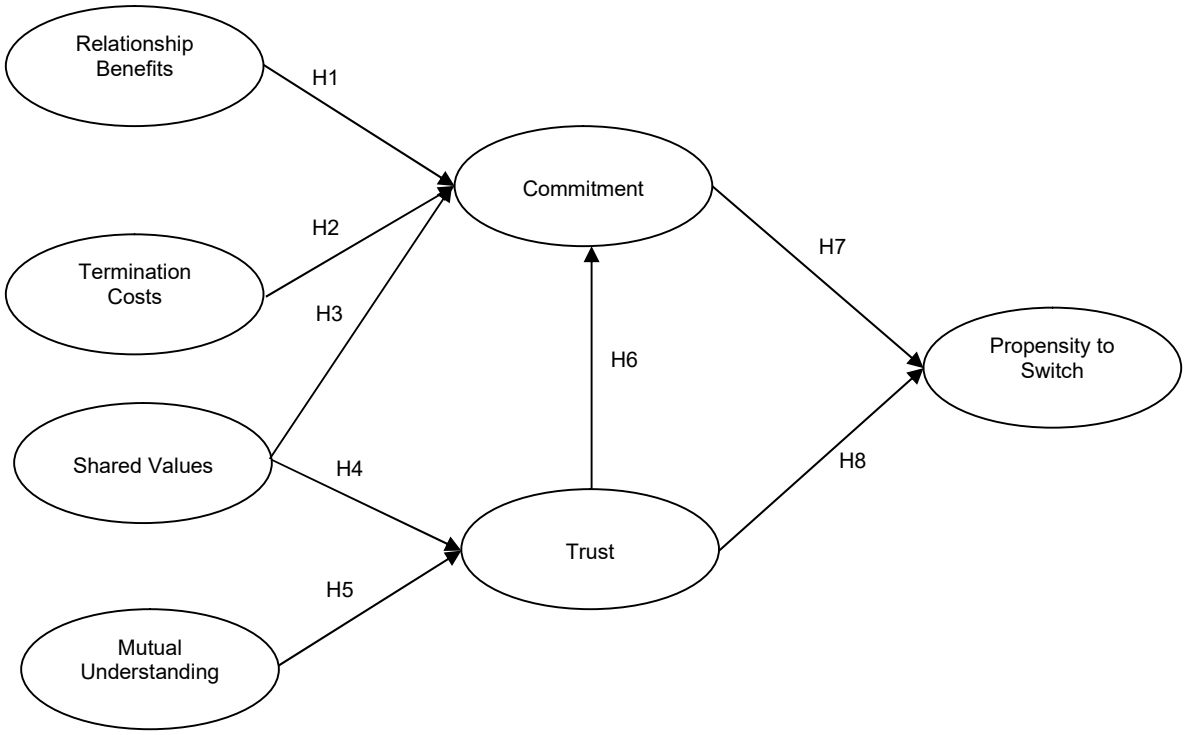
URL among friends, work colleagues or to online users generally. The public file hosting provider typically makes revenue through advertising and the sale of premium account subscriptions, both for uploaders and downloaders. The separation inherent in online services may be further intensified in the public file-hosting model, in which users may provide few personal details for membership and may pay for these services via cryptocurrency, such as Bitcoin. This separation has exacerbated the controversy over these types of online services, on the grounds that they can be used to distribute pirate software and malware to unsuspecting users (Nikiforakis et al., 2011; Rasenberger & Pepe, 2011). Further, unclear business models and scrutiny from law enforcement have also meant that a number of popular public file-hosting providers (e.g. Rapidshare, Hotfile, FileServe, Megaupload) have gone out of business. These factors mean that user decisions to use one or multiple public file-hosting services are not clear.

4 Theoretical Model and Hypothesis Development

Our model is underpinned by prior attitude-behavior theory. It is established in prior literature that an individual's perceptions influence their beliefs and, in turn, their intentions (Ajzen, 1991). This reasoned-action relationship allows us to understand that the link between how an individual (in this case, a user) perceives their environment, and then subsequently intends to act upon it.

Our research model is shown in Figure 1. In summary, following from social capital theory, we argue that trust in the relationship is driven by shared values and mutual understanding between the user and the provider. Following from prior social exchange theory, commitment to the provider is driven by the user's assessment of the relationship benefits, and also their perceived costs of terminating the relationship. Following from the commitment-trust model of exchange relationships, in turn, commitment and trust both affect the user's propensity to switch away from the provider. Each of these variables and their relationships are explained below.

Figure 1 Research Model of Relationship Commitment and Switching Propensity



4.1 Relationship Benefits and Commitment

Following from prior social exchange theory, we argue that perceptions of relationship benefits are positively related to commitment. When an individual feels that they are getting benefit from a relationship, they are more likely to persist in that relationship in order to continue benefiting from those positive outcomes (Palmatier et al., 2006; Skard et al., 2016; Vatanasombut et al., 2008). By contrast, when an individual feels that they are not reaping benefits from the exchange, they are likely to discontinue their patronage. The desire to maximize personal benefit is a rational choice, for utilitarian, hedonic and social benefits (Kakar & Kakar, 2018; Liljander & Roos, 2002). Prior theory in the marketing relationship literature has also supported this relationship (Garbarino & Johnson, 1999; Morgan & Hunt, 1994).

We propose two hypotheses for this relationship. First, we argue that both single-homing and multihoming users will exhibit a positive relationship between perceived benefits and commitment, on the grounds that both groups are able to separately evaluate the benefits in their relationships and choose among them accordingly. Single-homing users are able to choose between providers before selecting one that meets their needs. Multihoming users are not locked to a particular provider and, hence, may move to a provider that provides them with the greatest outcomes. This argument leads to our first main hypothesis:

H1a *There is a positive relationship between relationship benefits and commitment for both single-homing users and multihoming users.*

Our second argument is that the above relationship will be stronger for single-homing users than for multihoming users. The reason is that single-homing users have been

able to evaluate their provider over the duration of their relationship and have elected to stay with them. They have made an investment in the relationship with the provider, but remain devoted to that provider. On the other hand, if multihoming users were rational wealth-maximizers, they would seek out the provider that yielded them the greatest benefit outcomes. Multihoming is traditionally more expensive than single-homing because of the additional effort required to maintain more network connections (Eisenmann et al., 2006). Therefore, we argue that perceived benefits for single-homing users will be higher than multihoming users. This leads to our first sub-hypothesis:

H1b *The relationship between perceived benefits and commitment is stronger for single-homing users than multihoming users.*

4.2 Termination Costs and Commitment

Following from prior social exchange theory, perceived termination costs represents the expected level of disruption that the partner would have to expend if they were to leave the relationship (Ravald & Grönroos, 1996). For example, the partner may need to find another provider, reorganize their business processes or commence a lengthy search process (Dwyer et al., 1987). If these costs are substantial, then the relationship partner will prefer to remain with their current partner in order to minimize or avoid these costs (de Ruyter et al., 2001; Goo & Huang, 2008).

Our two hypotheses for this relationship are as follows. First, we argue that the relation between perceived termination costs and commitment will be positive for both user groups. It is rational to want to minimize the costs in a transaction and, if these users are rational, then they will maneuver and mold their service use in line with this minimization strategy. This leads to our second main hypothesis:

H2a *There is a positive relationship between perceived termination costs and commitment for both single-homing users and multihoming users.*

Second, we argue that perceived termination costs will be higher for single-homing users than multihoming users. Single-homing users, in voluntarily choosing just one provider, are more likely to see their investment in the provider as an anchoring effect. This investment in one service provider means that they may be unwilling to forego the investment made so far and hence do not wish to consider an alternative provider. This leads to higher commitment expectations for these users. Alternatively, the perceived termination costs of multihoming users will be lower because they can move between providers as they deem fit. This leads to our second sub-hypothesis:

H2b *The relationship between perceived termination costs and commitment is stronger for single-homing users than multihoming users.*

4.3 Shared Values and Commitment

Following from social capital theory, we argue that there will be a positive relationship between shared values and commitment. When the user perceives that they share the values and standards of the service provider, they are more likely to develop a commitment to that provider (J. Y. Kim & Wulf, 2010). This perception of shared values encourages the perception that both parties wish to remain in partnership, and that the

relationship can continue into the future on that basis (Kakar & Kakar, 2018; Maxham & Netemeyer, 2003). In turn, the perception of shared values also lowers the cost and effort required to maintain the relationship.

We propose two hypotheses regarding this relationship. First, we argue that both single-homing and multihoming users will exhibit a positive relationship between shared values and commitment, because both parties wish to avoid the costs of both identifying new relationship partners, and of managing the current relationship, to some extent. This leads to our third main hypothesis:

H3a *There is a positive relationship between shared values and commitment for both single-homing users and multihoming users.*

Users who develop a relationship with only one file hosting provider are likely to exhibit greater commitment than multihoming users. Single-homing users may feel a particular commitment to the single file hosting service provider that they are using. However, multihoming users may feel that their commitment is of a more general nature, and that they do not need to be as committed to each individual file hosting service provider. This leads to our next sub-hypothesis:

H3b *The relationship between shared values and commitment is stronger for single-homing users than multihoming users.*

4.4 Shared Values and Trust

Following again from social capital theory, we argue that shared values will be positively associated with trust. The social capital perspective on trust behavior is that transactions are made possible because of a sense of shared values and standards between the parties (Paldam & Svendsen, 2000). When parties to a social transaction perceive that they have compatible standards, traditions and modes of behavior, they then believe that the other party is more likely to treat them as they would like to be treated (Fukuyama, 1995; Putnam, 1993). This perception of benevolence builds a sense of trust between the two parties (Fukuyama, 1997).

We advance two hypotheses about this relationship. First, the relationship between shared values and trust will be positive for both single-homing and multihoming users. Shared values is an important precursor to trust (Fukuyama, 1997), and therefore both types of users are going to feel a measure of compatibility in their service provider choices to some positive extent. This leads to our fourth main hypothesis:

H4a *There is a positive relationship between shared values and trust for both single-homing users and multihoming users.*

Users who constrain themselves are likely to feel higher perceptions of shared values than users who do not. In volitional use, single-homing users are able to look at alternative providers and select a compatible option before electing to commit. However, multi-homed users do not need to assess the shared values of each provider and, hence the relation between shared values and trust propensity is reduced. As a result, we argue that users who can evaluate alternatives can choose one that matches their values, leading to trust, while users who may select a range of providers does not

need to tie themselves down and hence the association between perceived shared values and trust will be lower. This leads to our next sub-hypothesis:

H4b *The relationship between shared values and trust is stronger for single-homing users than multihoming users.*

4.5 Mutual Understanding and Trust

Social capital theory tells us that the social fabric underpinning exchange relationships are governed by a perception of mutual understanding (Nahapiet & Ghoshal, 1998). Mutual understanding represents a sense of agreement between two parties (H. H. Chang & Chuang, 2011). This mutual understanding allows parties to see that their relationship attitudes, principles and needs are recognized in the transaction (Paldam & Svendsen, 2000). This mutual understanding builds a sense of consistency, reliance acceptance between the parties, thereby strengthening trust in the relationship (Cohen & Prusak, 2001). Therefore, mutual understanding contributes to trust.

We use two hypotheses to capture this relationship. First, we argue that mutual understanding will be positively associated with trust for both single-homing and multihoming users. The social capital lens holds that social exchanges are underpinned by mutual understanding and trust. The user's relationship with the provider is an exchange and hence, mutual understanding will positively affect trust for both groups of users. This leads to our fifth main hypothesis:

H5a *There is a positive relationship between mutual understanding and trust for both single-homing users and multihoming users.*

Second, we argue that a single-homing user will have a higher perception of mutual understanding than a multihoming user. In the same spirit as shared values, a single-homing user should be able to evaluate competing service providers prior to making an investment in a given relationship. They can therefore select a provider that they feel is likely to understand their needs. This perception of mutual understanding builds trust. However, multihoming users are less likely to rely on mutual understanding in their relationship because they may not require the same level of mutually understood signals and actions. Therefore, a multihoming user is not likely to exhibit a strong relationship between mutual understanding and trust. This leads to the next sub-hypothesis:

H5b *The relationship between shared values and trust is stronger for single-homing users than multihoming users.*

4.6 Trust and Commitment

Building on the core of relationship marketing theory, trust leads to commitment in the relationship (Morgan & Hunt, 1994). Trust builds a sense of reliability and dependability in the partner where one partner feels that the other would not jeopardize the relationship and therefore parties are able to rely on each other into the future (Garbarino & Johnson, 1999; Sanchez-Franco et al., 2009). This reliance leads to commitment and a desire to preserve the relationship.

We again present two hypotheses for this relationship. First, we argue that trust will be positively associated with commitment in both groups of users. Both single-homing and multihoming users are likely to want to trust their providers in order to be able to rely on them, at least to some extent. We argue that both types of users are likely to want to continue to benefit from this trust, and hence both groups show a positive relationship between these two variables. This leads to our sixth main hypothesis:

H6a *There is a positive relationship between trust and commitment for both single-homing users and multihoming users.*

Our second hypothesis is that the relationship between trust and commitment will be higher for single-homing users than for multihoming users. Single-homing users have made a significant investment in their provider. They have used the single provider's services for their service requirements and hence they are likely to be unwilling to forego their investment by changing to another provider. On the other hand, multihoming users are less likely to value trust and commitment as highly as single homing users. Because they can switch providers in order to meet their service needs, they do not have to exhibit such strong commitment to the provider. Their trust in the provider will hence have less of an effect on commitment in comparison to single-homing users. This leads to our next sub-hypothesis:

H6b *The relationship between trust and commitment is stronger for single-homing users than multihoming users.*

4.7 Commitment and Propensity to Switch

Propensity to switch represents a user's desire or likelihood of patronizing another provider's services. When a user exhibits a high propensity to switch, they are demonstrating an increased likelihood that they will move their service consumption to another provider (Zeithaml et al., 1996). A committed user is likely to have a lower propensity to switch (Wong & Sohal, 2003). When a user is committed to the relationship, they are more likely to want to remain in that relationship and hence less compulsion to search for another provider in the first place (Zauberman, 2003). Their commitment reduces their switching propensity (Mittal & Lassar, 1998; Patterson & Smith, 2003).

We present two hypotheses for this relationship. First, we argue that there will be a negative relationship between commitment and propensity to switch for both groups of users. A user with greater feelings of commitment is less likely to want to switch. Single-homing users are committed to a single provider and hence they are less likely to be interested in switching away. A multihoming user who exhibits feelings of commitment is also less likely to switch. Therefore, we expect a negative relationship for both groups of users. This leads to our seventh main hypothesis:

H7a *There is a negative relationship between commitment and propensity to switch for both single-homing users and multihoming users.*

Our second hypothesis is that the relationship between commitment and propensity to switch will be stronger for single-homing users than multihoming users. In other words, a multihoming user that can move between service providers is likely to be on the

lookout for other providers even when using the current one. However, single-homing users, who are facing self-improvised constrains, is less likely to be looking for other service satisfiers. Hence, the relationship between commitment and propensity to switch is likely to be lower for multihoming users than for single-homing users. This leads to our next sub-hypothesis:

H7b *The relationship between commitment and propensity to switch is stronger for single-homing users than multihoming users.*

4.8 Trust and Propensity to Switch

Trust contributes inversely to a propensity to leave. When an individual trusts another party, they develop affective feelings of reliance and dependence (Gilles N'Goala, 2007). They bond with the other party in order to fulfill this ongoing reliability and benefit from a dependable relationship into the future (Palmatier et al., 2007; Patterson & Smith, 2003). When an individual experiences trust, they are less inclined to want to switch away from the relationship, for two reasons. First, they do not wish to jeopardize the trust feelings already given and received in the relationship and, second, because they believe that alternative unknown parties are not yet as trusted as the incumbent (Lazzarini et al., 2008).

We present two hypotheses for this relationship. First, we argue that trust will be negatively related to propensity to leave for both user groups. If both groups exhibit trust, they will both show less inclination to switch and to jeopardize or compromise their trust situation (Colwell & Hogarth-Scott, 2004). Therefore, our eighth main hypothesis states:

H8a *There is a negative relationship between trust and propensity to switch for both single-homing users and multihoming users.*

Second, we argue that single-homing users are likely to exhibit stronger trust to propensity to leave than multihoming users. Self-constrained single-homing users are more likely to feel invested in and dependent on the relationship than multihoming users. Single-homing users seek fulfillment from a single provider and therefore this provider holds a valued position as a trusted sole partner at the exclusion of others. By contrast, a multihoming user will show a weaker relationship between trust and propensity to leave because they are not as invested in the relationship. Their trust feelings will let them patronize services from a range of providers and hence their propensity to switch away from this current provider is higher. Therefore, our final sub-hypothesis is:

H8b *The relationship between trust and propensity to switch for single-homing users is stronger than multihoming users.*

5 Research Method

We selected an online questionnaire survey as the most appropriate and effective data collection method for this research. The survey method is a common data collection technique in prior cloud service research (Casas & Schatz, 2014), especially in studies of

large groups of factors across diverse respondents (Salkind, 2003). The approach allows for a range of perceptions to be collected within a short period of time (King & He, 2005).

5.1 Instrument Construction and Validation

There were two main components to the survey. First, to capture user perceptions regarding their online service relationships, existing survey items that had been validated in prior research literature were used in constructing the theory component of the instrument (Nunnally & Bernstein, 1994). To measure relationship commitment and trust, we adapted items from prior service relationship commitment-trust studies of Morgan and Hunt (1994) and Ulaga and Eggert (2004) . Items regarding mutual understanding were adapted from prior research on social interaction in service encounters and sharing friendships (Price & Arnould, 1999; Price et al., 1995).

Second, to capture respondents' use of public file hosting services, the survey presented respondents with a list of 17 popular cloud storage services, and gave respondents the opportunity to nominate service providers we had not included. The survey instrument was pre-tested on another senior faculty member and three cloud hosting service users. Following this pretest, the survey instrument was amended, and a final instrument was developed. Table 1 provides the research variables and corresponding items.

Table 1 Research Variables, Questionnaire Items and Literature Sources

Variable	Label	Questionnaire Item	Literature Source
Propensity to Switch	PROPS1	I may cease my relationship with this cloud service within the next six months.	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	PROPS2	I won't leave this cloud service within the next year. *	
	PROPS3	I may cease my relationship with this cloud service within the next two years.	
Commitment	RCOMMIT1	I am not very committed to the relationship with the cloud service. *	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	RCOMMIT2	The relationship with the cloud service is very important to my activities.	
	RCOMMIT4	My relationship with the cloud service is something I intend to maintain indefinitely.	
Supplier Trust	TRUS1	This cloud service is not trustworthy. *	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	TRUS2	This cloud service is sincere at all times.	
	TRUS3	In our relationship, this cloud service is a firm that I have great confidence in.	
Shared values	SHARV1	In general, the cloud service's opinions and values are a lot like mine.	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	SHARV4	I don't share the same values as this cloud storage service. *	
	SHARV5	I believe I share the same values as this cloud storage service.	
Relationship termination costs	TERMCOST1	Leaving this cloud service right now would be very difficult, even if I wanted to.	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	TERMCOST2	My activities would be greatly disrupted if I decided to leave this cloud service now.	
	TERMCOST4	The costs for me to switch to another cloud service would be very high at this time.	
Relationship benefits	RELBEN1	The quality of this cloud service's products is higher than those of others.	(Morgan & Hunt, 1994; Ulaga & Eggert, 2004)
	RELBEN2	This cloud service's customer service is better than others.	
	RELBEN4	On balance, I value my relationship with this cloud service.	

Mutual Understanding	MUTUAL1	I feel that this cloud service understands my needs.	(Price & Arnould, 1999; Price et al., 1995)
	MUTUAL2	In general, there is mutual understanding between me and this cloud service.	
	MUTUAL5	I think both this cloud service and I know what I want in this relationship.	
* Reverse coded item			

5.2 Instrument Administration

The survey was operationalized through Amazon Mechanical Turk. As part of the survey administration process, potential respondents were given several additional questions in order to filter unsuitable respondents. Potential respondents had to first answer a multiple-choice question about which online services, if any, they had regularly used in the past month. This list included video sites, such as youtube.com, social network sites, such as twitter.com, and cloud storage sites: those who signaled that they had used a cloud storage service were granted access to the full survey. The instrument also featured two sets of control questions in order to alleviate inattention bias and self-selection bias among respondents.

6 Analysis and Hypothesis Testing

We received 283 responses from cloud storage service users. After discarding incomplete responses, we were left with 237 useable responses to the full survey.

Respondents had been naturally encouraged to list the cloud storage services they had used in the past month. In order to identify the groups of cloud file hosting users, it was necessary to artificially construct two subsample groups from the overall respondent group. First, we excluded cloud storage services that provided predominantly private cloud backup services and were not generally used for public file access. This left only those cloud services that were predominantly used for public file hosting. From this group of service providers, we identified those respondents who used only one public file hosting provider, to comprise the single-homing group (n=125). We then identified all respondents who used between two and five public file hosting providers (n=92), to comprise the multihoming sample group. This yielded a final sample of 217 users.

6.1 Common Method Variance Testing

We examined the potential for common method bias using procedures advocated by Liang et al. (2007) and Podsakoff et al. (2003). We adopted a multi-stage approach to controlling for common method bias. During data collection, we randomly ordered items in the survey instrument to alleviate ordering biases. Survey items were also carefully checked for meaning and readability. We also assured respondents that there were no right or wrong answers.

Following data collection, Harman's (1976) single factor test was applied in a principal CFA of all survey items. Variance percentages ranged from 1.1% to 41% for four components with Eigenvalues larger than one, and no component accounted for more than half of the variance. These findings indicate a low possibility of common method bias.

6.2 Response Demographics

Table 2 illustrates the demographics of the respondent group. Gender was weighted more towards males, with 154 males and 62 female respondents. Approximately half of the respondent group had used cloud storage services for more than two years, which indicates that respondents were likely to have had a reasonable amount of time to become acquainted with the storage services available to them. More than half of the respondents were aged between 20 and 30 years, but the survey also garnered a reasonable number of responses from older age groups.

Table 2 Respondent Demographic Data

		Single		**Multi**		**Total**	
		n	**%**	**n**	**%**	**n**	**%**
Gender	Male	81	37.5	73	33.8	154	71.3
	Female	43	19.9	19	8.8	62	28.7
Age (years)	less than 20	13	6.0	12	5.6	25	11.6
	20-25	39	18.1	33	15.3	72	33.3
	26-30	37	17.1	19	8.8	56	25.9
	31-35	17	7.9	10	4.6	27	12.5
	36-40	13	6.0	9	4.2	22	10.2
	41-50	5	2.3	8	3.7	13	6.0
Income	Less than US$12,500	39	18.1	29	13.4	68	31.5
	US$12,500 - US$24,999	30	13.9	19	8.8	49	22.7
	US$25,000 - US$37,499	12	5.6	11	5.1	23	10.6
	US$37,500 - US$49,999	20	9.3	8	3.7	28	13.0
	US$50,000 - US$62,499	8	3.7	5	2.3	13	6.0
	US$62,500 - US$74,999	1	0.5	6	2.8	7	3.2
	US$75,000 - US$87,499	4	1.9	7	3.2	11	5.1
	US$87,500 - US$99,999	4	1.9	3	1.4	7	3.2
	US$100,000 or More	4	1.9	3	1.4	7	3.2
Duration of Use	Less than a year	40	18.5	16	7.4	56	25.9
	One to two years	27	12.5	34	15.7	61	28.2
	Two to three years	21	9.7	11	5.1	32	14.8
	Three to four years	22	10.2	12	5.6	34	15.7
	Four to five years	5	2.3	3	1.4	8	3.7
	Five years or more	9	4.2	14	6.5	23	10.6

6.3 Modeling

We analysed the model using Partial Least Squares (PLS) techniques. PLS is a popular analytical approach in prior service literature that is robust to sample size and distribution non-normality (Hair et al., 2011; Sarstedt et al., 2016). PLS analysis

techniques include both a structural and a measurement model, allowing the researcher to gauge both the quality of measurement for each predictor item, the quality of each variable, and the representational correspondence between variables.

6.3.1 Assessing the Measurement Model

Following Hair's (2006) analytical approach, we first evaluated the model's psychometric properties by evaluating convergent validity, discriminant validity and variable reliability. Convergent validity, which describes the degree of inter-item correlation (Campbell & Fiske, 1959), was evaluated by assessing each variable's item loadings. We used a bootstrapping technique with 2000 iterations to compute these loadings. Table 3 provides the results and t-statistics for each outer model path. All coefficients were significant at the .001 level and fall within the 5% confidence intervals, which suggests suitable convergent validity.

Table 3 Loadings for Reflective Variables

	Coefficient	t-statistics	CI 5.00%	CI 95.00%
MUTUAL1 ← Mutual Understanding	0.879	36.617***	0.835	0.913
MUTUAL2 ← Mutual Understanding	0.888	43.565***	0.852	0.918
MUTUAL5 ← Mutual Understanding	0.858	43.734***	0.824	0.890
PROPS1 ← Propensity to Switch	0.814	25.219***	0.757	0.861
PROPS2 ← Propensity to Switch	0.876	47.470***	0.845	0.904
PROPS3 ← Propensity to Switch	0.835	32.274***	0.789	0.873
RELBEN1 ← Relationship Benefits	0.779	18.132***	0.699	0.838
RELBEN2 ← Relationship Benefits	0.801	24.990***	0.742	0.844
RELBEN4 ← Relationship Benefits	0.802	24.941***	0.746	0.849
RCOMMIT1 ← Commitment	0.834	40.580***	0.798	0.865
RCOMMIT2 ← Commitment	0.845	35.754***	0.803	0.880
RCOMMIT4 ← Commitment	0.819	27.838***	0.766	0.862
SHARV1 ← Shared Values	0.917	52.836***	0.885	0.940
SHARV4 ← Shared Values	0.917	73.160***	0.895	0.936
SHARV5 ← Shared Values	0.883	60.458***	0.858	0.905
TRUS1 ← Trust	0.869	51.765***	0.840	0.895
TRUS2 ← Trust	0.779	22.166***	0.713	0.827
TRUS3 ← Trust	0.790	24.204***	0.731	0.839
TERMCOST1 ← Termination Costs	0.860	41.002***	0.821	0.889
TERMCOST2 ← Termination Costs	0.868	57.289***	0.843	0.894
TERMCOST4 ← Termination Costs	0.693	13.666***	0.598	0.765
***: p<0.001				

We inspected the item loadings to variable correlations and the square root calculations of the Average Variance Extracted (AVE) (Gefen & Straub, 2005) to assess discriminant validity, the discriminatory power of the items. Table 5 shows the square root of AVE values, which exceeded the correlation coefficients for other variables (Fornell & Larcker, 1981). Overall these results indicated satisfactory discriminant validity.

Table 4 Item and Variable Cross Loadings

	Mutual Understanding	Propensity to Switch	Relationship Benefits	Commitment	Shared Values	Trust	Termination Costs
MUTUAL1	**0.879**	-0.342	0.507	0.567	0.590	0.600	0.311
MUTUAL2	**0.888**	-0.297	0.382	0.506	0.567	0.551	0.295
MUTUAL5	**0.858**	-0.367	0.397	0.481	0.571	0.539	0.179
PROPS1	-0.272	**0.814**	-0.255	-0.373	-0.237	-0.364	-0.163
PROPS2	-0.416	**0.876**	-0.496	-0.523	-0.356	-0.449	-0.326
PROPS3	-0.258	**0.835**	-0.409	-0.417	-0.331	-0.377	-0.210
RELBEN1	0.379	-0.332	**0.779**	0.416	0.447	0.403	0.281
RELBEN2	0.357	-0.336	**0.801**	0.470	0.425	0.477	0.284
RELBEN4	0.430	-0.439	**0.802**	0.555	0.467	0.608	0.288
RCOMMIT1	0.487	-0.533	0.544	**0.834**	0.519	0.558	0.471
RCOMMIT2	0.463	-0.373	0.504	**0.845**	0.488	0.458	0.599
RCOMMIT4	0.533	-0.403	0.480	**0.819**	0.556	0.550	0.552
SHARV1	0.527	-0.291	0.467	0.511	**0.917**	0.509	0.280
SHARV4	0.539	-0.311	0.518	0.541	**0.917**	0.546	0.384
SHARV5	0.696	-0.390	0.533	0.631	**0.883**	0.670	0.401
TRUS1	0.602	-0.443	0.518	0.512	0.564	**0.869**	0.300
TRUS2	0.487	-0.318	0.458	0.499	0.541	**0.779**	0.364
TRUS3	0.479	-0.392	0.579	0.526	0.467	**0.79**	0.289
TERMCOST1	0.234	-0.218	0.294	0.530	0.311	0.307	**0.860**
TERMCOST2	0.304	-0.317	0.377	0.621	0.400	0.403	**0.868**
TERMCOST4	0.177	-0.127	0.162	0.393	0.231	0.201	**0.693**

We assessed reliability, the degree of internal consistency among the variables, using composite reliability and Cronbach Alpha values as shown in **Error! Reference source not found.**. Composite reliability values exceeded the criterion of 0.7 (Hair et al., 2006) and AVE values exceeded the criterion of 0.5 (J. Anderson & Gerbing, 1988). Overall, these results indicated satisfactory reliability among study variables.

Table 5 Latent Correlations, Square Root of Average Variance Extracted and Composite Reliability

	C	MU	PS	RP	SV	TC	T	Alpha	ρA	CR	AVE	R^2
Commitment	**0.833**							0.779	0.779	0.871	0.693	0.656
Mutual Understanding	0.594	**0.875**						0.847	0.849	0.907	0.766	
Propensity to Switch	-0.527	-0.384	**0.842**					0.797	0.816	0.88	0.71	0.312
Relationship Benefits	0.613	0.493	-0.471	**0.794**				0.711	0.718	0.837	0.631	
Shared Values	0.626	0.659	-0.371	0.563	**0.906**			0.891	0.902	0.932	0.82	
Termination Costs	0.648	0.302	-0.286	0.358	0.398	**0.811**		0.74	0.78	0.851	0.658	
Trust	0.629	0.645	-0.475	0.636	0.644	0.389	**0.814**	0.744	0.75	0.854	0.662	0.502

C: Commitment; MU: Mutual Understanding; PS: Propensity to Switch; RB: Relationship Benefits; SV: Shared Values; TC: Termination costs; T: Trust

6.3.2 Assessing the Structural Model

To compute the differences between each group, we applied a multiple group analysis technique. This technique yields a t-test of the difference in parameter estimates and path coefficients between two subgroups (Hair Jr et al., 2017; Sarstedt et al., 2011). We ran both parametric (which assumes equal variance across groups) and non-parametric tests to compare variances. A Welch-Satterthwaite test also confirmed the results of the parametric case (Henseler, 2012). Table 6 provides the results of the path and variance testing, the path coefficients and t-statistics. Table 7 shows the outcomes of hypothesis testing.

Table 6 Structural Model Path Coefficients and Hypothesis Results

Path	Single-homing				Multihoming				Variance	
	Coef.	t-stat	CI5.00%	CI95.00%	Coef.	t-stat	CI5.00%	CI95.00%	Coef. Δ	t-stat
Relationship Benefits → Commitment	0.180	2.611**	0.077	0.302	0.375	3.880***	0.207	0.521	0.195	1.657
Termination Costs → Commitment	0.418	6.489***	0.315	0.525	0.376	5.209***	0.258	0.490	0.042	0.434
Shared Values → Commitment	0.198	2.464*	0.050	0.318	0.232	2.488*	0.082	0.386	0.035	0.281
Shared Values → Trust	0.307	3.043**	0.138	0.462	0.441	4.349***	0.269	0.605	0.133	0.918
Mutual Understanding → Trust	0.498	5.647***	0.357	0.647	0.345	3.506***	0.184	0.509	0.152	1.142
Trust → Commitment	0.244	2.504*	0.081	0.403	0.045	0.468	-0.104	0.206	0.199	1.413
Commitment → Propensity to Switch	-0.225	2.043*	-0.404	-0.043	-0.593	4.891***	-0.777	-0.387	0.368	2.236*
Trust → Propensity to Switch	-0.448	4.386***	-0.627	-0.285	0.092	0.818	-0.107	0.262	0.539	3.596***
*** indicates p < .001, ** indicates p < .01, * indicates p < .05										

Table 7 Research Hypotheses and Testing Outcomes

Hypothesis	Statement	Outcome
H1a	There is a positive relationship between relationship benefits and commitment for both single-homing users and multihoming users.	Accepted
H1b	The relationship between perceived benefits and commitment is stronger for single-homing users than multihoming users.	Not accepted
H2a	There is a positive relationship between perceived termination costs and commitment for both single-homing users and multihoming users.	Accepted
H2b	The relationship between perceived termination costs and commitment is stronger for single-homing users than multihoming users.	Not accepted
H3a	There is a positive relationship between shared values and commitment for both single-homing users and multihoming users.	Accepted
H3b	The relationship between shared values and commitment is stronger for single-homing users than multihoming users.	Not accepted
H4a	There is a positive relationship between shared values and trust for both single-homing users and multihoming users.	Accepted
H4b	The relationship between shared values and trust is stronger for single-homing users than multihoming users	Not accepted
H5a	There is a positive relationship between mutual understanding and trust for both single-homing users and multihoming users.	Accepted
H5b	The relationship between mutual understanding and trust is stronger for single-homing users than multihoming users.	Not accepted
H6a	There is a positive relationship between trust and commitment for both single-homing users and multihoming users.	Not accepted

H6b	The relationship between trust and commitment is stronger for single-homing users than multihoming users.	Not accepted
H7a	There is a negative relationship between commitment and propensity to switch for both single-homing users and multihoming users.	Accepted
H7b	The relationship between commitment and propensity to switch is stronger for single-homing users than multihoming users.	Not accepted
H8a	There is a negative relationship between trust and propensity to switch for both single-homing users and multihoming users.	Not accepted
H8b	The relationship between trust and propensity to switch is stronger for single-homing users than multihoming users.	Accepted

7 Discussion

Our results fundamentally illustrate that while single-homing and multihoming users can exhibit similar relationship foundations, the trust and commitment levels differ significantly between groups. Our analysis also reveals that there is a significant difference between the constituencies and relationships between each of these variables. Our results in detail are as follows.

First, the results show a positive relationship between relationship benefits and commitment for both groups ($\beta_S = 0.180$, $p < .01$, $\beta_M = 0.375$, $p < .001$). This finding supported hypothesis H1a, which was accepted. The finding supported the theory that service users persist with a relationship where they obtain positive outcomes. The analysis did not reveal a significant difference between groups with respect to the perceived benefits and commitment ($t = 0.195$, NS) and hypothesis H1b was not accepted. Our theoretical expectation for this hypothesis was that multihoming users would be able to extract greater benefits from the relationship because they can look for superior providers and use them when appropriate. The analysis suggests that the level of homing alone does not affect perceived relationship benefits: it could be that service-level factors, such as pricing might affect commitment levels[1].

There was a positive relationship between perceptions of termination costs and relationship commitment, for both groups ($\beta_S = 0.418$, $p < .001$, $\beta_M = 0.376$, $p < .001$). Therefore, we accepted hypothesis H2a. For both single-homing users and multihoming users, our finding suggests that a perception of difficulty in leaving the relationship contributes to a higher devotion to the relationship. However, the analysis did not reveal a significantly greater effect for single-homing users than multihoming users ($t = 0.042$, NS), and hypothesis H2b was not accepted. This finding might arise because both types of users come to rely on the services in different ways – single-homing service users relying on one single service, and multihoming users relying on multiple services - and terminating that service might still disrupt this reliance. It could be that multihoming users have more complex use arrangements than single-homing users, such that service termination would nevertheless be disruptive.

The analysis revealed a positive relationship between shared values and commitment for both single-homing and multihoming service users ($\beta_S = 0.198$, $p < .05$, $\beta_M = 0.232$, $p < .05$) and hypothesis H3a was accepted. This result indicated that both types of users develop a commitment from a perception that they share the goals and ideas of the

[1] We thank an anonymous reviewer for this suggested explanation.

service provider. However, the analysis did not reveal significant differences between the groups (t = 0.281, NS), and hypothesis H3b was not accepted. It is possible that multihoming users have a more diluted sense of shared values, or that their value basis is less complex and hence easier to satisfy than those of single-homing users.

The analysis revealed a positive relationship between shared values and trust, for both user groups (β_S = 0.307, p < .01, β_M = 0.441, p < .001). These results supported hypothesis H4a, which was accepted. The result suggested that when users perceive a compatibility of standards and values, they are able to develop trust in each other. However, the effect between shared values and trust was not significantly different for multihoming and single-homing users (t = 0.918, NS), and hypothesis H4b was not accepted. In other words, users who consume the same service from multiple providers place greater emphasis on shared values than users who restrict their service consumption to one service provider. We theorized that single-homing users place a great emphasis on shared values because they had the ability to select a provider that met their requirements (regardless of what those requirements are). Counter to this expectation, we observed that single-homing users placed the same emphasis on shared values with respect to trust.

The results revealed a positive relationship between mutual understanding and trust for both single-homing and multihoming user groups (β_S = 0.498, p < .001, β_M = 0.345, p < .001) and hypothesis H5a was accepted. However, hypothesis H5b, which held that this relationship would be stronger for single-homing users than multihoming users, was not accepted (t = 1.142, NS). Based on social capital theory, we expected to see an important relationship between mutual understanding and trust for both groups because mutually held appreciation and consideration underpins the development of trusting relationships. Single-homing users appear to follow a conventional model of social capital, in that mutual understanding underpins the relationship fabric. However, multihoming users still require mutual understanding in order to undertake and maintain the relationship, even though they can choose who addresses their service needs. Multihoming users may have lower mutual understanding requirements than single-homing users, but contrary to prior research (Khodyakov, 2007) may still trust the service provider on this basis.

The results showed a positive relationship between trust and commitment for single-homing users, but not multihoming users (β_S = 0.244, p < .05, β_M = 0.045, NS). Therefore, we did not accept hypothesis H6a. For single-homing users, this finding was consistent with much prior relationship marketing theory, in that perception of benevolent reliability and dependability leads to a more durable and long-term relationship perception. Interestingly, despite this finding, there were no significant differences between trust and commitment between the two user groups (t = 0.199, NS) and we did not accept hypothesis H6b. This finding suggests that users who voluntarily use only one service and users who use multiple services, exhibit similar trust-commitment behaviors. This finding appears to challenge our understanding of the relationship because both kinds of users care about the quality of their relationship even though one kind of user appears more easily able to leave the relationship. The finding also suggests that multiple types of trust (Korsgaard et al., 2015), even within the dyadic service user/provider arrangement, may be present in the relationship.

The analysis revealed a negative relationship between commitment and propensity to leave for both the single-homing and multihoming groups (β_S = -0.225, p < .05, β_M = -0.593, p < .001). Therefore, we accepted hypothesis H7A. However, while we observed a significant difference between the two groups (t = 2.236, p < .05), the analysis revealed that the negative relation between commitment and propensity to switch was significantly larger for multihoming users than single-homing users. This finding was a significant departure from our expectation that users who choose to devote their use to a single provider are likely to see a lower propensity to switch because their commitment is higher, and hypothesis H7b was not accepted. In other words, in this volitional service consumption context, committed users of a single service provider are not unlikely to switch, whereas multihoming users demonstrate perceptions that are more consistent with our expectations of commitment and low propensity to switch. One explanation for this finding is that multihoming users have greater knowledge of the service market, because they use multiple providers; they are hence more knowledgeable about the risk of failure among market providers and believe that switching will not necessarily improve service response.

Finally, the results showed a significant negative relationship between trust and propensity to leave for single-homing users, but not multihoming users (β_S = -0.448, p < .001, β_M = 0.092, NS). Hypothesis H8a was not accepted. For single-homing users, this finding was consistent with our prediction from theory, that the more a relationship partner trusts the other partner, the less likely they will be to switch away from that partner. However, for multihoming users, the expectation that trust preserves feelings of reliability in the relationship and a switch away from the partner would violate or disrupt those feelings, did not hold. Further, the results also showed a significantly stronger relationship between these variables for single-homing users (t = 3.596, p < .001) and hypothesis H8b was accepted. In other words, propensity to switch is driven much more strongly by trust for single-homing users and multihoming users. It is possible that multihoming users do not need to trust their service provider – perhaps they take other measures to ensure that their relationship is not compromised or undermined by the provider (e.g. encrypted files, personal backups, restricted account details).

8 Conclusions

We began this study with a desire to understand the relationship behaviors of single-homing users and multiple-homing users. From prior theory, we expected that single-homing users would exhibit a lower propensity to leave than multiple-homing users, because their levels of commitment would be higher. We also expected to see lower trust levels for multiple homing users because they don't need to rely on any one provider for their service needs. We built a model of service switching based on prior relationship commitment theory. We tested this model on two groups of users of public file-hosting services, the first being single-homing users who are devoted to a single file-hosting provider and the second being multihoming users who consume the same service from between two and five different service providers.

Contrary to expectations, we found different propensities to switch for both user groups. Taking the findings for hypotheses H7b and H8b, it appears that propensity to switch is driven predominantly by trust for single-homing users, and predominantly by

commitment for multihoming users. This finding illustrates that not only do two-sided markets affect sellers and buyers (i.e. service providers and service users), but they also affect the individual ways in which market parties elect to transact with each other in that single and multihoming users possess different perspectives on relationship drivers and departure factors.

Interestingly, we did not find significant relationship differences in the other predictors between single-homing and multihoming users. The results imply that users who constrain their use to a single service provider (in the presence of multiple available providers) depend entirely on trust beliefs for their willingness to remain with their chosen provider. However, users who can transact with multiple service providers are able to grow commitment perceptions. Users who pursue multiple service relationships seem to exhibit devotional aspects of commitment, while users who only use one provider display constrained commitment behaviors.

Our results suggest that allowing and encouraging loyal users to patronize another provider's services might actually improve the end-user relationship by reducing their reliance on trust in the online service context. Also, if firms reap higher profits when customers multi-home (Doganoglu & Wright, 2006), then allowing users to pursue interactions with other firms may also have financial benefits. This trust-based relationship could easily be damaged by an unforeseen shock because users have very little commitment strength and they may elect to switch away from the provider altogether. However, by allowing or encouraging the user to look elsewhere for some of their service requirements, the provider may be able to grow more of this commitment intention in the minds of their users.

Our study may be open to several limitations. First, we restricted our sample artificially in order to evidence the different behaviors of two particular groups of users. A larger sample would be needed to assess, for example, users who switch between only two providers, and other groups. Second, our study focused on the cloud-based public file-hosting services model. Applications to other service areas may produce different results because of varying implications of trust and verifiability between service users and providers.

A number of areas for future research extend from this study. First, we need to better understand the shocks that lead to service switching for highly dedicated users. We observe that single-homing users depend almost entirely on their trust to prevent them from switching: the numerous predictable and unpredictable challenges to service fulfillment that characterize the online arena can threaten this trust. Hence, it would be useful to understand what shocks a firm can experience before these dedicated users begin to switch.

Our findings showed that single and multihoming users did not exhibit significantly different effects of traditional relationship factors such as shared values, mutual understanding, and relationship costs and benefits. The important role played by shared values in prior trust-building studies means that we need to better understand the relative importance of shared values for trust online relationships in these multiple service engagements. Perhaps single-homing users are content with an acceptable level of shared values. Multihoming users, on the other hand, may appreciate shared values because they have little else to rely on in the impersonal, separated service context.

Alternatively, multihoming users may require better ongoing indicators of shared values in order to preserve the relationship because they can attitudinally shift to other providers as they see fit.

We also need to better understand the use-intention implications of these multiple service engagements. Traditional face-to-face services are limited artificially by resources (for example, a banking customer can have only so many accounts before they run out of money to deposit into them); however, online services, such as the public file-hosting storage model seen in this paper, may be less subject to these restrictions due to the ease of duplicating digital material. Users who take up service offerings "just in case", and the use implications of such precautionary service engagement, would make for interesting study.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Al-Natour, S., & Benbasat, I. (2009). The Adoption and Use of IT Artifacts: A New Interaction-Centric Model for the Study of User-Artifact Relationships. *Journal of the Association for Information Systems*, *10*(9), 661–685.

Alsmadi, D., & Prybutok, V. (2018). Sharing and storage behavior via cloud computing: Security and privacy in research and practice. *Computers in Human Behavior*, *85*, 218–226.

Anderson, E., & Weitz, B. (1989). Determinants of Continuity in Conventional Industrial Channel Dyads. *Marketing Science*, *8*(4), 310–323.

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423.

Armstrong, M. (2006). Competition in two-sided markets. *The RAND Journal of Economics*, *37*(3), 668–691.

Arpaci, I. (2016). Understanding and predicting students' intention to use mobile cloud storage services. *Computers in Human Behavior*, *58*, 150–157.

Asadi, S., Nilashi, M., Husin, A. R. C., & Yadegaridehkordi, E. (2017). Customers perspectives on adoption of cloud computing in banking sector. *Information Technology and Management*, *18*(4), 305–330.

Batt, R. (2002). Managing Customer Services: Human Resource Practices, Quit Rates, and Sales Growth. *The Academy of Management Journal*, *45*(3), 587–597.

Belleflamme, P., & Peitz, M. (2019). Platform competition: Who benefits from multihoming? *International Journal of Industrial Organization*, *64*, 1–26.

Berry, L. L. (1995). Relationship Marketing of Services—Growing Interest, Emerging Perspectives. *Journal of the Academy of Marketing Science*, *23*(4), 236–245.

Berry, L. L., & Parasuraman, A. (1991). *Marketing Services: Competing Through Quality*. Free Press.

Bhattacherjee, A. (2002). Individual Trust in Online Firms: Scale Development and Initial Test. *Journal of Management Information Systems*, *19*, 211–241.

Brown, T. J., Barry, T. E., Dacin, P. A., & Gunst, R. F. (2005). Spreading the Word: Investigating Antecedents of Consumers' Positive Word-of-Mouth Intentions and

Behaviors in a Retailing Context. *Journal of the Academy of Marketing Science*, *33*(2), 123–138.

Brynjolfsson, E., Hofmann, P., & Jordan, J. (2010). Cloud computing and electricity: Beyond the utility model. *Communications of the ACM*, *53*(5), 32–34.

Burda, D., & Teuteberg, F. (2014). The role of trust and risk perceptions in cloud archiving—Results from an empirical study. *The Journal of High Technology Management Research*, *25*(2), 172–187.

Burda, D., & Teuteberg, F. (2015). Understanding service quality and system quality success factors in cloud archiving from an end-user perspective. *Information Systems Management*, *32*(4), 266–284.

Caillaud, B., & Jullien, B. (2003). Chicken & Egg: Competition among Intermediation Service Providers. *RAND Journal of Economics*, *34*(2), 309–328.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, *56*, 81–105.

Casas, P., & Schatz, R. (2014). Quality of experience in cloud services: Survey and measurements. *Computer Networks*, *68*, 149–165.

Chang, H. H., & Chuang, S.-S. (2011). Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. *Information & Management*, *48*(1), 9–18.

Chang, K. C., Sheu, T. S., Klein, G., & Jiang, J. J. (2010). User Commitment and Collaboration: Motivational Antecedents and Project Performance. *Information and Software Technology*, *52*, 672–679.

Cheng, S., Lee, S.-J., & Choi, B. (2019). An empirical investigation of users' voluntary switching intention for mobile personal cloud storage services based on the push-pull-mooring framework. *Computers in Human Behavior*, *92*, 198–215.

Chiou, J. (2004). The antecedents of consumers' loyalty toward Internet Service Providers. *Information & Management*, *41*(6), 685–695.

Cohen, D., & Prusak, L. (2001). *In Good Company: How Social Capital Makes Organizations Work*. Harvard Business Press.

Colwell, S. R., & Hogarth-Scott, S. (2004). The effect of cognitive trust on hostage relationships. *Journal of Services Marketing*, *18*(5), 384–394.

Cook, K. S., & Emerson, R. M. (1978). Power, Equity and Commitment in Exchange Networks. *American Sociological Review*, *43*(5), 721–739.

Crocioni, P. (2008). Leveraging of Market Power in Emerging Markets: A Review of Cases, Literature, and a Suggested Framework. *Journal of Competition Law and Economics*, *4*(2), 449–534.

de Ruyter, K., Moorman, L., & Lemmink, J. (2001). Antecedents of Commitment and Trust in Customer–Supplier Relationships in High Technology Markets. *Industrial Marketing Management*, *30*(3), 271–286.

Doganoglu, T., & Wright, J. (2006). Multihoming and compatibility. *International Journal of Industrial Organization*, *24*(1), 45–67.

Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing Buyer-Seller Relationships. *Journal of Marketing*, *51*(2), 11.

Eisenmann, Parker, G., & Van Alstyne, M. W. (2006). Strategies for Two-Sided Markets. *Harvard Business Review*, *84*(10), 92–101.

Ferrin, D. L., Bligh, M. C., & Kohles, J. C. (2008). It takes two to tango: An interdependence analysis of the spiraling of perceived trustworthiness and cooperation in interpersonal and intergroup relationships. *Organizational Behavior and Human Decision Processes*, *107*(2), 161–178.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*, 39–50.

Forrester Research. (2011). *Welcome To The Era Of Agile Commerce*. Forrester Research Inc.

Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. Hamish Hamilton.

Fukuyama, F. (1997). Social Capital and the Modern Capitalist Economy: Creating a High Trust Workplace. *Stern Business Magazine*, *4*(1), 4–17.

Gallivan, M. J., & Depledge, G. (2003). Trust, control and the role of interorganizational systems in electronic partnerships. *Information Systems Journal*, *13*, 159–190.

Garbarino, E., & Johnson, M. S. (1999). The Different Roles of Satisfaction, Trust, and Commitment in Customer Relationships. *Journal of Marketing*, *63*(2), 70–87.

Gefen, D., & Straub, D. W. (2005). A practical guide to factorial validity using PLS-graph: Tutorial and annotated example. *Communications of the Association for Information Systems*, *16*(1), 5.

Ghaffari, K., & Lagzian, M. (2018). Exploring users' experiences of using personal cloud storage services: A phenomenological study. *Behaviour & Information Technology*, *37*(3), 295–309.

Gilles N'Goala. (2007). Customer switching resistance (CSR): The effects of perceived equity, trust and relationship commitment. *International Journal of Service Industry Management*, *18*(5), 510–533.

Goo, J., & Huang, C. D. (2008). Facilitating relational governance through service level agreements in IT outsourcing: An application of the commitment-trust theory. *Decision Support Systems*, *46*(1), 216–232.

Goo, J., Kishore, R., Rao, H. R., & Nam, K. (2009). The role of service level agreements in relational management of information technology outsourcing: An empirical study. *MIS Quarterly*, 119–145.

Goode, S. (2012). Engagement and Disengagement in Online Service Failure: Contrasting Problem and Emotional Coping Effects. *Journal of Internet Commerce*, *11*(3), 226–253.

Goode, S. (2015). A note on service switching: Evidence from cloud storage services. *Services Marketing Quarterly*, *36*(2), 153–172.

Goode, S. (2019). Keeping the user in the cloud: A cognitive social capital antecedent to use continuance and trust-commitment in personal cloud storage services. *Behaviour & Information Technology*, *38*(7), 701–725.

Goode, S., Lin, C., Fernandez, W., & Jiang, J. J. (2014). Exploring two explanations of loyalty in application service provision. *European Journal of Operational Research*, *237*(2), 649–657.

Gracia-Tinedo, R., Sánchez-Artigas, M., Ramírez, A., Moreno-Martínez, A., León, X., & García-López, P. (2014). Giving form to social cloud storage through

experimentation: Issues and insights. *Future Generation Computer Systems*, *40*, 1–16.

Grobauer, B., Walloschek, T., & Stocker, E. (2011). Understanding Cloud Computing Vulnerabilities. *IEEE Security & Privacy*, *9*(2), 50–57.

Gundlach, G. T., Achrol, R. S., & Mentzer, J. T. (1995). The Structure of Commitment in Exchange. *Journal of Marketing*, *59*(1), 78.

Hagiu, A. (2006). Pricing and commitment by two-sided platforms. *The RAND Journal of Economics*, *37*(3), 720–737.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis*. Pearson Publishers.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152.

Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. Sage Publications.

Harman, H. H. (1976). *Modern Factor Analysis*. University of Chicago Press.

Henseler, J. (2012). PLS-MGA: A non-parametric approach to partial least squares-based multi-group analysis. In *Challenges at the interface of data analysis, computer science, and optimization* (pp. 495–501). Springer.

Hew, T.-S., & Kadir, S. L. S. A. (2016). Predicting instructional effectiveness of cloud-based virtual learning environment. *Industrial Management & Data Systems*, *116*(8), 1557–1584.

Hyrynsalmi, S., Suominen, A., & Mäntymäki, M. (2016). The influence of developer multi-homing on competition between software ecosystems. *Journal of Systems and Software*, *111*, 119–127.

IDC. (2018). *Worldwide Semiannual Public Cloud Services Spending Guide*. IDC Corporate USA.

Joint, A., Baker, E., & Eccles, E. (2009). Hey, you, get off of that cloud? *Computer Law & Security Review*, *25*(3), 270–274.

Kakar, A., & Kakar, A. K. (2018). Assessing Shopper's Penalty Reward Calculus in Online versus Instore Shopping. *E-Service Journal*, *10*(3), 24–45.

Keh, H. T., & Pang, J. (2010). Customer Reactions to Service Separation. *Journal of Marketing*, *74*(2), 55–70.

Kern, T., & Willcocks, L. (2002). Exploring Relationships in Information Technology Outsourcing: The Interaction Approach. *European Journal of Information Systems*, *11*(1), 3–19.

Khodyakov, D. (2007). Trust as a process: A three-dimensional approach. *Sociology*, *41*(1), 115–132.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Information Systems Research*, *20*(2), 237–257.

Kim, H.-W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, *33*(3), 567–582.

Kim, J. Y., & Wulf, E. (2010). Move to Depth: Buyer-Provider Interactions in Online Service Marketplaces. *E-Service Journal*, *7*(1), 2–14.

Kim, S. S., & Son, J.-Y. (2009). Out of Dedication or Constraint? A Dual Model of Post-Adoption Phenomena and its Empirical Test in the Context of Online Services. *MIS Quarterly*, *33*(1), 49–70.

King, W. R., & He, J. (2005). External validity in IS survey research. *Communications of the Association for Information Systems*, *16*, 880–894.

Korsgaard, M. A., Brower, H. H., & Lester, S. W. (2015). It isn't always mutual: A critical review of dyadic trust. *Journal of Management*, *41*(1), 47–70.

Kwon, H. E., Oh, W., & Kim, T. (2017). Platform structures, homing preferences, and homophilous propensities in online social networks. *Journal of Management Information Systems*, *34*(3), 768–802.

Lansing, J., & Sunyaev, A. (2016). Trust in cloud computing: Conceptual typology and trust-building antecedents. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*, *47*(2), 58–96.

Lazzarini, S. G., Miller, G. J., & Zenger, T. R. (2008). Dealing with the Paradox of Embeddedness: The Role of Contracts and Trust in Facilitating Movement Out of Committed Relationships. *Organization Science*, *19*(5), 709–728.

Li, C.-Y. (2015). Switching barriers and customer retention: Why customers dissatisfied with online service recovery remain loyal. *Journal of Service Theory and Practice*, *25*(4), 370–393.

Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, *31*(1), 59–87.

Liljander, V., & Roos, I. (2002). Customer-relationship levels – from spurious to true relationships. *Journal of Services Marketing*, *16*(7), 593–614.

Liu, X., Rubino, E., & Prybutok, V. R. (2018). A Cloud Storage Service Quality Trust Model. *Software Quality Professional*, *20*(3).

Lobato, R., & Tang, L. (2014). The cyberlocker gold rush: Tracking the rise of file-hosting sites as media distribution platforms. *International Journal of Cultural Studies*, *17*(5), 423–435.

Lustgarten, S. D. (2015). Emerging ethical threats to client privacy in cloud communication and data storage. *Professional Psychology: Research and Practice*, *46*(3), 154.

Mahanti, A., Williamson, C., Carlsson, N., Arlitt, M., & Mahanti, A. (2011). Characterizing the file hosting ecosystem: A view from the edge. *Performance Evaluation*, *68*(11), 1085–1102.

Matzler, K., Strobl, A., Thurner, N., & Füller, J. (2015). Switching experience, customer satisfaction, and switching costs in the ICT industry. *Journal of Service Management*, *26*(1), 117–136.

Maxham, J. G., & Netemeyer, R. G. (2003). Firms reap what they sow: The effects of shared values and perceived organizational justice on customers' evaluations of complaint handling. *Journal of Marketing*, *67*, 46–62.

McKnight, H. D., & Chervany, N. L. (2002). What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology. *International Journal of Electronic Commerce*, *6*(2), 35–59.

McLeod, J., & Gormly, B. (2017). Using the cloud for records storage: Issues of trust. *Archival Science*, *17*(4), 349–370.

Mital, M., & Sarkar, S. (2011). Multihoming behavior of users in social networking web sites: A theoretical model. *Information Technology & People*, *24*(4), 378–392.

Mittal, B., & Lassar, W. M. (1998). Why Do Customers Switch? The Dynamics of Satisfaction Versus Loyalty. *The Journal of Services Marketing*, *12*(3), 177.

Molm, L. D. (2003). Theoretical Comparisons of Forms of Exchange. *Sociological Theory*, *21*(1), 1–17.

Moqbel, M., & Bartelt, V. (2015). Consumer Acceptance of Personal Cloud: Integrating Trust and Risk with the Technology Acceptance Model. *AIS Transactions on Replication Research*, *1*(1).

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, *58*(3), 20–38.

Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *Academy of Management Review*, *23*(2), 242–266.

Naldi, M., & Mastroeni, L. (2016). Economic decision criteria for the migration to cloud storage. *European Journal of Information Systems*, *25*(1), 16–28.

Nikiforakis, N., Balduzzi, M., Van Acker, S., Joosen, W., & Balzarotti, D. (2011). Exposing the lack of privacy in file hosting services. *Usenix Workshop on Large-Scale Exploits and Emergent Threats*.

Noteberg, A., Christiaanse, E., & Wallage, P. (2003). Consumer trust in electronic channels: The impact of electronic commerce assurance on consumers' purchasing likelihood and risk perceptions. *E-Service Journal*, *2*(2), 46–67.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). McGraw-Hill Publishers.

Ofcom. (2010). *Strategic Review of Consumer Switching*. Ofcom.

Ofcom. (2015). *Adults' Media Use and Attitudes Report 2015*. Office of Communications.

Oxera. (2015). *Benefits of online platforms: Technical appendix*. Oxera.

Paldam, M., & Svendsen, G. T. (2000). An essay on social capital: Looking for the fire behind the smoke. *European Journal of Political Economy*, *16*(2), 339–366.

Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2006). Factors Influencing the Effectiveness of Relationship Marketing: A Meta-Analysis. *Journal of Marketing*, *70*(4), 136–153.

Palmatier, R. W., Scheer, L. K., Evans, K. R., & Arnold, T. J. (2007). Achieving relationship marketing effectiveness in business-to-business exchanges. *Journal of the Academy of Marketing Science*, *36*(2), 174–190.

Park, E., & Kim, K. J. (2014). An Integrated Adoption Model of Mobile Cloud Services: Exploration of Key Determinants and Extension of Technology Acceptance Model. *Telematics and Informatics*, *31*(3), 376–385.

Patterson, P. G., & Smith, T. (2003). A cross-cultural study of switching barriers and propensity to stay with service providers. *Journal of Retailing*, *79*(2), 107–120.

Pennington, R., Wilcocks, H. D., & Grover, V. (2003). The role of system trust in business to consumer transactions. *Journal of Management Information Systems*, *20*, 197–226.

Piha, L. P., & Avlonitis, G. J. (2015). Customer defection in retail banking: Attitudinal and behavioural consequences of failed service quality. *Journal of Service Theory and Practice*, *25*(3), 304–326.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

Price, L. L., & Arnould, E. (1999). Commercial Friendships: Service Provider-Client Relationships in Context. *Journal of Marketing*, *63*(4), 38–56.

Price, L. L., Arnould, E., & Deibler, S. L. (1995). Consumers' emotional responses to service encounters: The influence of the service provider. *International Journal of Service Industry Management*, *6*(3), 34–63.

PriceWaterhouseCoopers. (2016). *Financial Services Technology 2020 and Beyond: Embracing disruption*. PriceWaterhouseCoopers.

Putnam, R. (1993). The prosperous community: Social capital and public life. *American Prospect*, *13*, 35–42.

Rasenberger, M., & Pepe, C. (2011). Copyright enforcement and online file hosting services: Have courts struck the proper balance. *Journal of the Copyright Society of the USA*, *59*, 627.

Ravald, A., & Grönroos, C. (1996). The value concept and relationship marketing. *European Journal of Marketing*, *30*(2), 19–30.

Rochet, J.-C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, *1*(4), 990–1029.

Rufín, R., & Molina, C. M. (2014). Moderating effects of familiarity and experience in the relationships of trust with its antecedents and consequences. *E-Service Journal: A Journal of Electronic Services in the Public and Private Sectors*, *9*(3), 19–42.

Rysman, M. (2007). An Empirical Analysis of Payment Card Usage. *The Journal of Industrial Economics*, *55*(1), 1–36.

Salkind, N. J. (2003). *Exploring Research*. Prentice Hall Publishers.

Sanchez-Franco, M. J., Ramos, A. F., & Velicia, F. A. (2009). The moderating effect of gender on relationship quality and loyalty toward Internet service providers. *Information & Management*, *46*, 196–202.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies! *Journal of Business Research*, *69*(10), 3998–4010.

Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modeling: Alternative methods and empirical results. In *Measurement and research methods in international marketing* (pp. 195–218). Emerald Group Publishing Limited.

Schaupp, L. C., & Carter, L. (2010). The impact of trust, risk and optimism bias on E-file adoption. *Information Systems Frontiers*, *12*(3), 299–309.

Skard, S. E., Nysveen, H., & Thorbjørnsen, H. (2016). Influences of Perceived E-Service Risks: The Moderating Role of Perceived Benefits. *E-Service Journal*, *10*(1), 1–23.

Stantchev, V., Colomo-Palacios, R., Soto-Acosta, P., & Misra, S. (2014). Learning management systems and cloud file hosting services: A study on students' acceptance. *Computers in Human Behavior*, *31*, 612–619.

Tate, M., & Evermann, J. (2010). The end of ServQual in online services research: Where to from here? *E-Service Journal*, *7*(1), 60–85.

Ulaga, W., & Eggert, A. (2004). Relationship Value and Relationship Quality: Broadening the Nomological Network of Business-to-Business Relationships. *European Journal of Marketing*, *40*, 311–327.

Vatanasombut, B., Igbaria, M., Stylianou, A., & Waymond, R. (2008). Information systems continuance intention of web-based applications customers: The case of online banking. *Information & Management*, *45*, 419–428.

Wong, A., & Sohal, A. (2003). Service quality and customer loyalty perspectives on two levels of retail relationships. *Journal of Services Marketing*, *17*(5), 495–513.

Zauberman, G. (2003). The Intertemporal Dynamics of Consumer Lock-In. *Journal of Consumer Research*, *30*(3), 405–419.

Zeithaml, V., Berry, L. L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *The Journal of Marketing*, *60*(2), 31–46.

Zeithaml, V., Parasuraman, A., & Berry, L. L. (1985). Problems and Strategies in Services Marketing. *The Journal of Marketing*, *49*(2), 33–46.