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SUBSCRIPTION TO DIGITAL SERVICES: A SYSTEMATIC LITERATURE REVIEW

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Diego Manuel Ferreira Lusquiños Fontanez

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Master of Science in Business Administration dissertation presented to the COPPEAD GRADUATE SCHOOL OF BUSINESS OF THE FEDERAL UNIVERSITY OF RIO DE JANEIRO – BRAZIL

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DEDICATION

I dedicate this dissertation to my mother, Maria Palmira Ferreira Lusquiños, and to my brother, Rodrigo José Ferreira Lusquiños Fontanez. The three musketeers, forever.

I dedicate this dissertation to my grandfather, Manuel Ferreira Lusquiños. Even though we haven't had much time together, I know that your courage, your strength and your love have always been with me.

I also dedicate this dissertation to my advisor, Professor Roberto Nogueira, for our instigating conversations and discussions. Thank you for all the learning and support.

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ABSTRACT

With the advancements of the internet and IT-based e-commerce systems, services through information technology were accelerated. Through digital innovation new combinations of digital and physical components are possible, creating novel products and services, where firms are able to change the way they compete and provide services.

This paper aims at understanding the factors that influence the paid subscription of digital services – a dominant revenue model in this area. A systematic literature review identified 21 publications that were carefully analyzed, covering theories, models and constructs related to digital services subscription. All the data analyzed in this literature review were finally used to create an integrative model for digital service subscription.

This work could be useful for researchers of the area with the study of the constructs, theories and the proposition of an integrative model that can be operationalized, validated and used in future research. Developers could benefit from the results for creating better digital services, aimed at better user experience and increased revenues from subscription, while digital services vendors could provide more customer-centered offers.

Key words: *Digital Services; Subscription; Integrative Model; Revenue Model; Willingness to Pay; Subscription Intention*

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1. INTRODUCTION

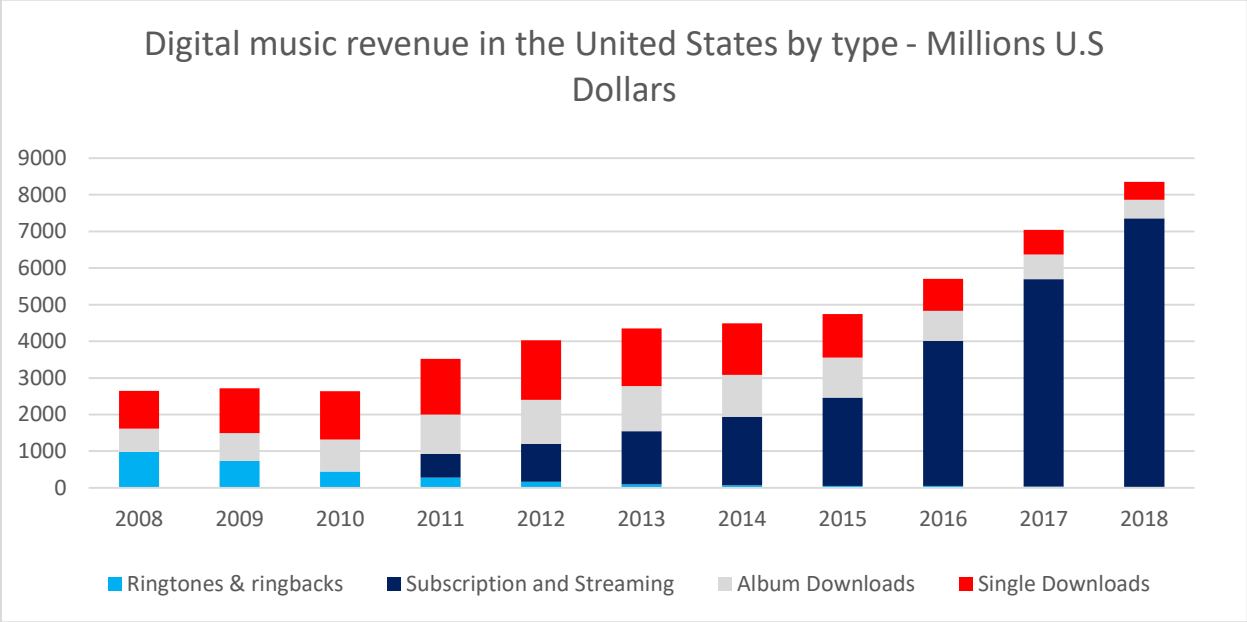
With the advancements of the internet and IT-based e-commerce systems, services through information technology were accelerated (Hamari, Sjoklint, & Ukkonen, 2016). Digital innovation made possible new combinations of digital and physical components, creating novel products and services (Yoo, Henfridsson, & Lyytinen, 2010), where firms are able to change the way they compete and provide services (Vendrell-Herrero, Bustinza, GlennParry, & Georgantzis, 2017). The facilitation of services exchange through digital technology brings the perspective of a service ecosystem, where a structure of largely loosely coupled, value-proposing social and economic actors interact through institutions and technology to (1) co-produce service offerings, (2) engage in mutual service provision, and (3) co-create value (Barrett, Davidson, Prabhu, & Vargo, 2015).

Therefore, many industries have been and continue to be disrupted by the revolution brought by the rise of digital services. For instance, the online content service industries have grown rapidly, with the possibility of accessing online content on-demand (Fernandes & Guerra, 2019), such as video streaming, electronic journals, e-books, digital music, among others.

The music industry is one of many examples of this disruption. Before digitization, record labels controlled their own value chain, from signing new artists to distributing their music to record stores (Nylén & Holmström, 2015). Now the artists themselves can make their own decisions concerning marketing and promotion of their records (Fernandes & Guerra, 2019), and new business models emerged.

Yet, as can be seen from the following figure, nowadays the most important business model for digital music in terms of revenue is the subscription for music streaming. In 2011 the revenue of music streaming in the United States accounted for US$ 651 million, while album downloads and single downloads represented US$ 1 billion and 1,5 billion respectively (Statista, 2020). In 2018, however, music streaming revenue jumped to more than US$ 7,3 billion, while the sum of album downloads, single downloads accounted for less than US $ 1 billion.

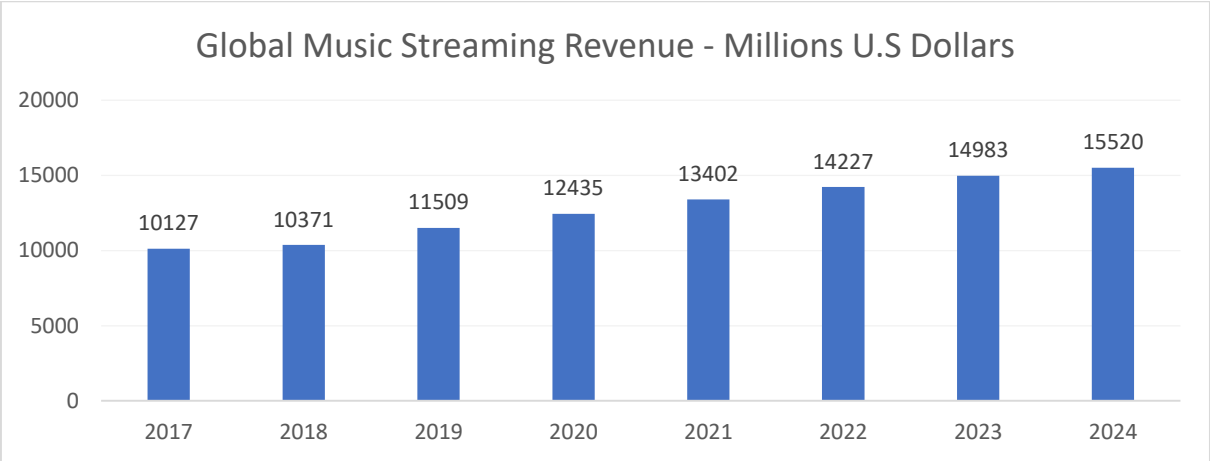
Figure 1: Digital music revenues in the United States



Source: (Statista, 2020)

Music streaming providers deliver services that allows consumers to enjoy an unlimited amount of music for a monthly subscription fee (Chen, Leon, Nakayama, & Hooked, 2018), instead of purchasing individual music products such as CDs and downloads (Wlömert & Papies, 2016). In 2018 digital music distribution already accounted for more than half (59%) of total industry revenues, while only 25% came from physical sales; and even more important for the relevance of this research, music streaming alone accounted for 47% of the total revenue of the music industry in 2018 (IFPI, 2020). In 2020, the global revenue from music streaming is expected to reach US$ 12,4 billion and will continue growing (Statista, 2020).

Figure 2: Global music streaming revenue



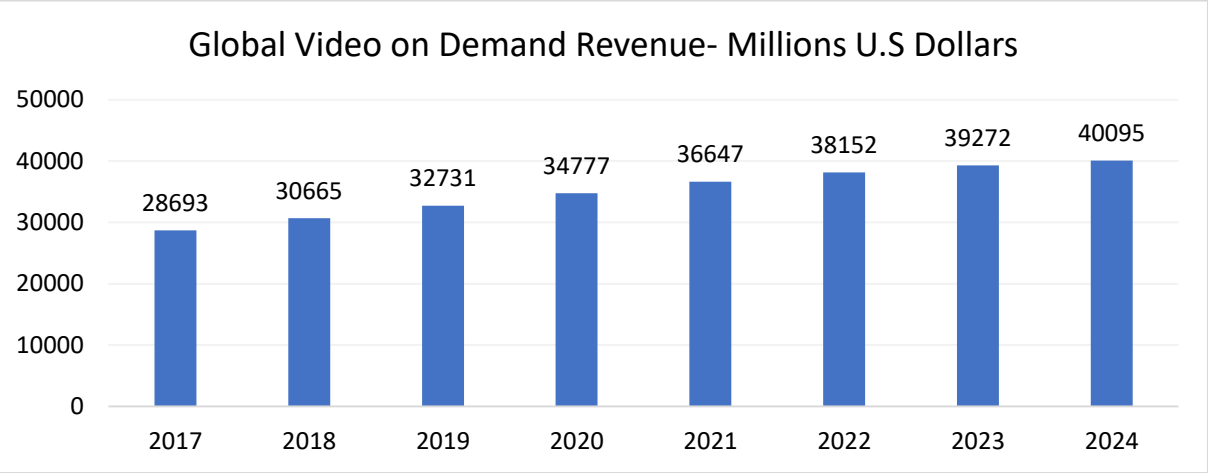
Source: (Statista, 2020)

In order to attract consumers to subscribe to their services, it is important for music streaming providers to understand the attitude of consumers towards subscribing these services (Kwong & Park, 2008). The majority of music streaming companies use the 'freemium' model, composed of free basic version, while revenues are generated through the paid premium versions, becoming an important business model for today's services (Fernandes & Guerra, 2019). Streaming services may be an attractive legal alternative to illegal file sharing, besides reducing users purchase uncertainty associated with unobservable product quality (Wlömert & Papies, 2016). Users can listen to almost every song available by using the free version of the service, yet paying subscribers have advantages such as no advertising, unrestricted access to the catalogue, offline listening and the possibility of downloading music. Besides financing non-paying users, paying subscribers also help music streaming companies to pay royalties for the music (Fernandes & Guerra, 2019). If firms are successful in attracting many consumers into the paid streaming model, they can expect the music market to grow due to the substantial revenue contribution of these services (Wlömert & Papies, 2016). Therefore, it is critical for the long-term viability of music streaming providers to improve their conversion rates (Wagner, Benlian, & Hess, 2014).

As already stated, the revolution of digital services subscription has global consequences, impacting many other industries besides the music one. Video-on-demand represents an even greater market, where the video streaming has achieved great popularity (Sardanelli, Vollero, Siano, & Bottoni, 2019) and is the most important source of revenue with companies charging subscription fees such as Netflix. In 2020 the total global revenue of the Video-on-demand segment is expected to reach US$ 34,7 billion, from which video streaming represent US$ 25,9

billion. Video-on-demand are expected to continue growing, reaching in 2024 a global revenue of over US$ 40 billion:

Figure 3: Global video on demand revenue:



Source: (Statista, 2020)

Therefore, after all this discussion, it becomes clear that the understanding of the factors that influence paid subscription of digital services has a critical impact on this ever-growing multibillionaire global-scale industry phenomenon.

Some papers studied and empirically tested the factors and causal relations for the subscription of music streaming (Fernandes & Guerra, 2019; Chen, Leon, & Nakayama, 2018; Mäntymäki, Islam, & Benbasat, 2019), social networking sites (Lu & Hsiao, 2010; Hsiao, 2011; Vock, van Dolen, & de Ruyter, 2013), cloud storage services (Trenz, Huntgeburth, & Veit, 2019; Wang, Lai, & Lin, 2016), video streaming (Sardanelli, Vollero, Siano, & Bottoni, 2019), e-book subscription (Hsiao & Chen, 2017), among others digital services. However, to the knowledge of the authors, no systematic literature review was developed with goals of analyzing and comparing the constructs, causal relations and proposing an integrative model for the digital services subscription. A systematic literature review with those objectives would be very useful for the understanding of the digital service subscription phenomenon, so relevant to the global business environment as already mentioned.

This study wishes to fulfill this gap. This systematic literature review focuses on a broad field of digital services to ensure the most complete analysis. It provides an aggregation of the most used constructs, with their definitions and the extent of their usage. Furthermore, it tries to establish a basis for future works by identifying and aggregating the relations between constructs and subscription. Finally, based on the data retrieved from the literature, an integrative model for digital services subscription is proposed.

Therefore, our research question is: what are the factors that lead to subscription of digital services.

This work could be useful for researchers of the area with the study of the constructs, theories and the proposition of an integrative model that can be operationalized, validated and used in future research. Developers and vendors could also benefit from the results for creating better digital services, aimed at better user experience and increased revenues from subscription.

2. METHODOLOGY

For the systematic literature review I chose Scopus (Elsevier) as the main database. The reasons for that are: (1) "Scopus is the only one that explicitly has "cited by" (number of citations of the article) as part of its metadata. This attribute, which is an indicative of relevance, allows sorting articles by a practical criterion (Wadovski, Nogueira, & Chimenti, 2018); and (2) Scopus is the world's largest abstract and citation database of peer-reviewed research literature. With over 24,600 titles from more than 5,000 international publishers" (Scopus, 2019). I selected only peer-reviewed articles at Scopus Platform. It is important to highlight that those peer-reviewed articles contain references that may not follow this rule but are relevant to the study. Therefore, these authors are also mentioned in our research.

Second, I made a preliminary literature review using the Scopus Platform and also searching for articles in relevant information systems, marketing, internet services, computer and related business journals to identify the adequate terms for the systematic literature review.

Third, at Scopus Platform[1], I applied the relevant terms found in the second step: all documents that had in their textual content (abstract or title or keywords) terms related to digital subscription such as (online or digital or mobile) service (subscription or pay). As already mentioned, the freemium strategy is also an interesting way of acquiring and converting free users into paid users in the subscription business model, paramount for the sustainability of the business; therefore the following keywords were also added to the search: Freemium; free trial; Converting free paid user. These keywords generated a total of 4,519 results.[2] The query can be found in the footnote of this page.

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[1] https://www.scopus.com/. Accessed on November 27th of 2019.

[2] Scopus Database Query: (TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (online AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND pay) OR TITLE-ABS-KEY (freemium) OR TITLE-ABS-KEY ("free trial") OR TITLE-ABS-KEY (converting AND free AND paid AND user))

Then, I applied both language ("English"), document type ("articles") and source type ("journals") filters, generating 1,900 results[3]. After that I excluded the areas and subareas that were not relevant for the study (Engineering; Biochemistry; Genetics and Molecular Biology; Medicine; Physics and Astronomy; Materials Science; Mathematics; Environmental Science; Chemistry; Agricultural and Biological Sciences Neuroscience; Earth and Planetary Sciences; Chemical Engineering; Energy; Pharmacology, Toxicology and Pharmaceutics; Immunology and Microbiology; Multidisciplinary; Health Professions; Nursing; Dentistry; Veterinary; Undefined), leaving only the social sciences: arts and humanities; business, management and accounting; decision science; economics, econometrics and finance; phycology; social sciences. This filter brought 789 results.[4]

After that I filtered the results by title and abstract looking for relevant publications for the systematic literature review. Those filters led to 147 results.

Finally, I applied the following final criteria to select the articles:

1) Survey researches provide a relationship between constructs, making it an excellent way to compare articles in a quantitative way and study causal relations between constructs (Ovcjak, Hericko, & Polancic, 2015). Other systematic literature reviews that studied causal relations between constructs also considered this type of research as their main source of data. For instance, the percentage of survey articles studied in Sanakulov & Karjaluoto (2015), Shaikh & Karjaluoto (2015) and Ovcjak, Hericko, & Polancic (2015) were 100%, 96% and 100%, respectively. Therefore, the filter for the data collection methodology of the selected articles for this systematic literature review will be surveys.

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[3] Scopus Database Query: (TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (online AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND pay) OR TITLE-ABS-KEY (freemium) OR TITLE-ABS-KEY ("free trial") OR TITLE-ABS-KEY (converting AND free AND paid AND user)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j"))

[4] Scopus Database Query: (TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (online AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND pay) OR TITLE-ABS-KEY (digital AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND subscription) OR TITLE-ABS-KEY (mobile AND service AND pay) OR TITLE-ABS-KEY (freemium) OR TITLE-ABS-KEY ("free trial") OR TITLE-ABS-KEY (converting AND free AND paid AND user)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j")) AND (EXCLUDE (SUBJAREA , "ENGI") OR EXCLUDE (SUBJAREA , "MEDI") OR EXCLUDE (SUBJAREA , "MATH") OR EXCLUDE (SUBJAREA , "ENVI") OR EXCLUDE (SUBJAREA , "AGRI") OR EXCLUDE (SUBJAREA , "MATE") OR EXCLUDE (SUBJAREA , "BIOC") OR EXCLUDE (SUBJAREA , "ENER") OR EXCLUDE (SUBJAREA , "PHYS") OR EXCLUDE (SUBJAREA , "NEUR") OR EXCLUDE (SUBJAREA , "EART") OR EXCLUDE (SUBJAREA , "CHEM") OR EXCLUDE (SUBJAREA , "NURS") OR EXCLUDE (SUBJAREA , "CENG") OR EXCLUDE (SUBJAREA , "HEAL") OR EXCLUDE (SUBJAREA , "MULT") OR EXCLUDE (SUBJAREA , "PHAR") OR EXCLUDE (SUBJAREA , "DENT") OR EXCLUDE (SUBJAREA , "IMMU") OR EXCLUDE (SUBJAREA , "VETE"))

2) Only digital services (music streaming, social networking sites, apps, among others). Other types of services were not taken into consideration even if they require subscription.

3) The dependent variable should be related to subscription in digital services. A careful analysis of the items of the dependent variable, and the broader context in which the research is taking place were used as criterion. Therefore, articles that only studied "Intention to Use" of digital services without any implication of payment or subscription were not selected. Also, studies of one-time purchases of digital services or goods were not selected (such as the purchase of an E-book), as we are studying paid subscriptions. On the other hand, willingness to pay for music streaming is a valid article for selection as music streaming services are in most of the cases paid via subscription. Articles that have dependent variables with items such as "I want to regularly pay for this service" or "I am willing to pay an annual fee for this service" or "I want to have a premium subscription for this service" were taken into consideration.

4) Only B2C Offerings. We want to study regular customers, not company's willingness to pay for enterprise software, even if they are digital services and require paid subscription plans.

As expected, when this combination of criteria is carefully followed, it leads to a very specific context of the literature: the constructs and relations that lead to the paid subscription of digital services. For instance, we are not looking for any general type of payment or revenue for digital services - we are studying specifically one model of revenue: subscription. Those criteria are important so that the research questions can be answered with consistency. In addition to the articles yielded by the search, we analyzed the articles that were recommended as further reading or cited in the research papers discovered. Hence, after all those considerations and requirements were consistently taken into consideration, this final filter on Scopus database brought 20 selected articles.

In order to guarantee that the most relevant articles are selected in this systematic literature review, we have run a similar search and filtering process for Web of Science articles database. The criteria were the same applied at Scopus, as well as the same keywords: a few differences in terms of the query string and filters are expected as they are different tools.

Following the same steps applied at Scopus, at Web of Science Platform[5], I searched for the relevant terms: all documents that had in their textual content (abstract or title or key words) words related to digital subscription such as (online or digital or mobile) service (subscription or pay), Freemium; free trial; Converting free paid user. These keywords generated a total of 4,189 results.[6]The query can be found in the footnote of this page.

Then, I applied both language ("English") and document type ("Articles") filters, generating 2,645 results[7]. This phase brought more results than Scopus probably because a filter for source type "journals" was not available for this tool. After that I excluded the areas and subareas that were not relevant for the study. This filter brought 1150 results. The detailed query for this filter can be found at the footnote of this page.[8]

After that I filtered the results by title and abstract looking for relevant researches to the systematic literature review. I also made exclusions based on the availability of the study (articles with limited or no access were removed). This led to 157 results. Then, I selected the final articles for Web of Science database using the same final criteria used at Scopus, obtaining as a result 11 selected articles. As expected, the articles found at Web of Science were fewer

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[5] apps-webofknowledge.ez29.periodicos.capes.gov.br/. Accessed on November 27th of 2020.

[6]WEB SCIENCE Query: Você pesquisou por: Todos os campos: (Digital Service Subscription) OR Todos os campos: (Online Service Pay) OR Todos os campos: (Digital Service Pay) OR Todos os campos: (Online Service Subscription) OR Todos os campos: (Mobile Service Subscription) OR Todos os campos: (Mobile Service Pay) OR Todos os campos: (Freemium) OR Todos os campos: ("Free Trial") OR Todos os campos: (Converting Free Paid User)

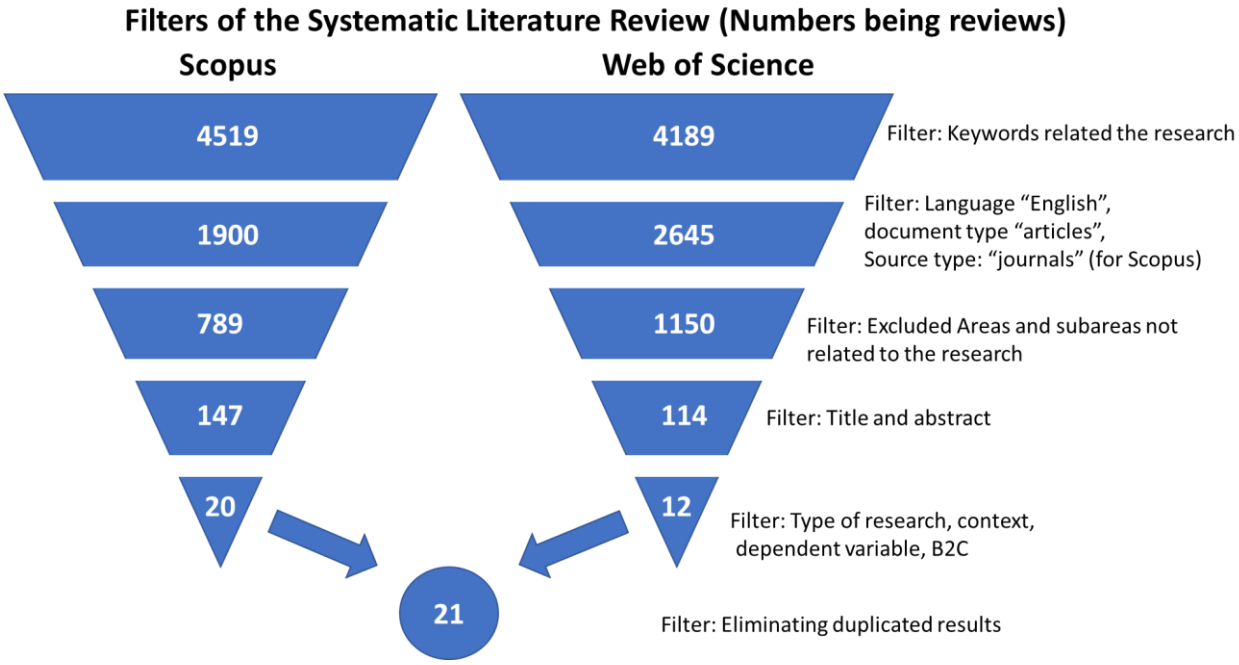
[7] WEB SCIENCE Query: Você pesquisou por: Todos os campos: (Digital Service Subscription) OR Todos os campos: (Online Service Pay) OR Todos os campos: (Digital Service Pay) OR Todos os campos: (Online Service Subscription) OR Todos os campos: (Mobile Service Subscription) OR Todos os campos: (Mobile Service Pay) OR Todos os campos: (Freemium) OR Todos os campos: ("Free Trial") OR Todos os campos: (Converting Free Paid User) Refinado por: IDIOMAS: (ENGLISH) AND TIPOS DE DOCUMENTO: (ARTICLE)

[8] WEB SCIENCE Query: Você pesquisou por: Todos os campos: (Digital Service Subscription) OR Todos os campos: (Online Service Pay) OR Todos os campos: (Digital Service Pay) OR Todos os campos: (Online Service Subscription) OR Todos os campos: (Mobile Service Subscription) OR Todos os campos: (Mobile Service Pay) OR Todos os campos: (Freemium) OR Todos os campos: ("Free Trial") OR Todos os campos: (Converting Free Paid User) Refinado por: IDIOMAS: (ENGLISH) AND TIPOS DE DOCUMENTO: (ARTICLE) AND [excluindo] CATEGORIAS DO WEB OF SCIENCE: (REHABILITATION OR ENGINEERING ENVIRONMENTAL OR BIOCHEMISTRY MOLECULAR BIOLOGY OR ENGINEERING MULTIDISCIPLINARY OR BIOTECHNOLOGY APPLIED MICROBIOLOGY OR ENGINEERING ELECTRICAL ELECTRONIC OR GENETICS HEREDITY OR SOCIAL SCIENCES BIOMEDICAL OR GERONTOLOGY OR PUBLIC ADMINISTRATION OR ECOLOGY OR UROLOGY NEPHROLOGY OR HEALTH CARE SCIENCES SERVICES OR ENGINEERING MANUFACTURING OR BIOCHEMICAL RESEARCH METHODS OR ERGONOMICS OR DENTISTRY ORAL SURGERY MEDICINE OR ONCOLOGY OR DERMATOLOGY OR PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH OR SURGERY OR COMPUTER SCIENCE SOFTWARE ENGINEERING OR FILM RADIO TELEVISION OR COMPUTER SCIENCE HARDWARE ARCHITECTURE OR CLINICAL NEUROLOGY OR IMAGING SCIENCE PHOTOGRAPHIC TECHNOLOGY OR GEOGRAPHY OR INDUSTRIAL RELATIONS LABOR OR SUBSTANCE ABUSE OR MATHEMATICS INTERDISCIPLINARY APPLICATIONS OR HEALTH POLICY SERVICES OR CARDIAC CARDIOVASCULAR SYSTEMS OR NEUROSCIENCES OR ENVIRONMENTAL SCIENCES OR PSYCHOLOGY CLINICAL OR NUTRITION DIETETICS OR NURSING OR OTORHINOLARYNGOLOGY OR ENVIRONMENTAL STUDIES OR OBSTETRICS GYNECOLOGY OR POLITICAL SCIENCE OR MEDICAL INFORMATICS OR CHEMISTRY ANALYTICAL OR PRIMARY HEALTH CARE OR TRANSPORTATION SCIENCE TECHNOLOGY OR GEOSCIENCES MULTIDISCIPLINARY OR WATER RESOURCES OR EDUCATION EDUCATIONAL RESEARCH OR INSTRUMENTS INSTRUMENTATION OR MEDICINE GENERAL INTERNAL OR REGIONAL URBAN PLANNING OR AUDIOLOGY SPEECH LANGUAGE PATHOLOGY OR GREEN SUSTAINABLE SCIENCE TECHNOLOGY OR ENDOCRINOLOGY METABOLISM OR CHEMISTRY MULTIDISCIPLINARY OR HOSPITALITY LEISURE SPORT TOURISM OR FOOD SCIENCE TECHNOLOGY OR MULTIDISCIPLINARY SCIENCES OR PEDIATRICS OR FAMILY STUDIES OR PSYCHIATRY OR AGRICULTURAL ECONOMICS POLICY OR IMMUNOLOGY OR AUTOMATION CONTROL SYSTEMS OR INFECTIOUS DISEASES OR TRANSPORTATION OR MATERIALS SCIENCE MULTIDISCIPLINARY OR PHARMACOLOGY PHARMACY OR ENERGY FUELS OR MATHEMATICS APPLIED OR ENGINEERING INDUSTRIAL OR MEDICINE RESEARCH EXPERIMENTAL OR LAW OR OPTICS OR REMOTE SENSING OR ENGINEERING CIVIL)

than at Scopus database. Both databases brought a total number of 32 articles: 20 at Scopus and 12 at Web of Science.

Finally, I compared the selected articles at both databases and eliminated the duplicates. Out of the 32 selected articles, 11 were found in both databases (duplicates). Therefore, the final number of articles considered in this systematic literature review is 21. The search process was conducted in the second semester of 2019. The following figure resumes the filtering process at both databases:

Figure 4: Filter and selection process at Scopus and Web of Science sites



3. RESULTS AND DISCUSSION

3.1. Identified Articles and Theories

I have highlighted all selected articles on the following table, where I have identified the number of citations, year and journal of publication, studied services and theories used by the researchers to create their models.

Table 1: Selected articles

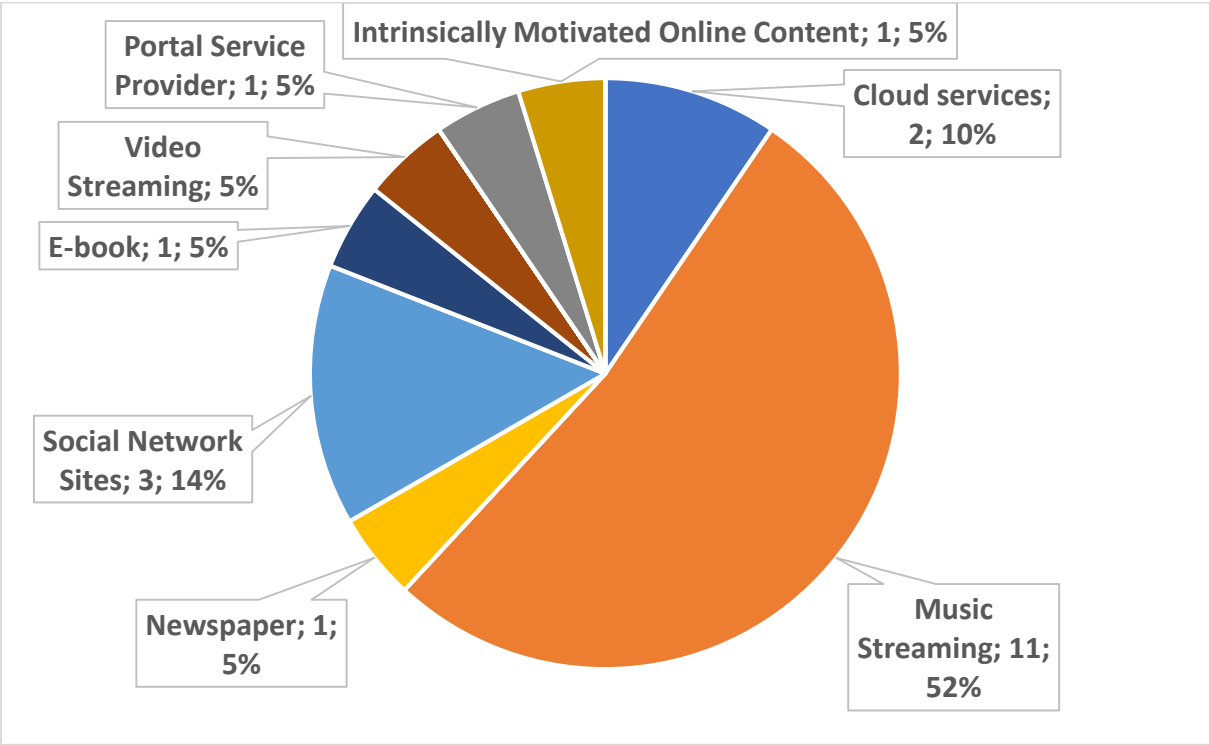
Title	Authors	Year	Cited by	Journal	Service	Main theories
How to Succeed with Cloud Services? A Dedication-Constraint Model of Cloud Success	(Trenz, Huntgeburth, & Veit)	2019	5	Business and Information Systems Engineering	Cloud services	Dedication-Based and Constraint-Based Relationship Mechanisms
What drives subscribing to premium in freemium services? A consumer value-based view of differences between upgrading to and staying with premium	(Mäntymäki, Islam, & Benbasat)	2019	1	Information Systems Journal	Music Streaming	Theory of Consumption Values (TCP)
"It's MY Service, it's MY Music": The role of psychological ownership in music streaming consumption	(Danckwerts & Kenning)	2019	0	Psychology and Marketing	Music Streaming	Theory of Psychological Ownership
Drivers and deterrents of music streaming services purchase intention	(Fernandes & Guerra)	2019	0	International Journal of Electronic Business	Music Streaming	Technology Acceptance Model (TAM) / Value Based Adoption Model (VAM)
Lowering the pirate flag: a TPB study of the factors influencing the intention to pay for movie streaming services	(Sardanelli, Vollero, Siano, & Bottoni)	2019	0	Electronic Commerce Research	Video Streaming	Theory of Planned Behavior (TPB)
Converting music streaming free users to paid subscribers: social influence or hedonic performance	(Chen, Leon, & Nakayama)	2018	1	International Journal of Electronic Business	Music Streaming	Technology Acceptance Model (TAM)
Are you hooked on paid music streaming? An investigation into the millennial generation	(Chen, Leon, Nakayama, & Hooked)	2018	2	International Journal of e-Business Research	Music Streaming	Theory of Planned Behavior (TPB) / Commitment-trust theory
Value-based adoption of e-book subscription services: The roles of environmental concerns and reading habits	(Hsiao & Chen)	2017	9	Telematics and Informatics	E-book	Theory of Reasoned Action (TRA) / Value Based Adoption Model (VAM)

Title	Authors	Year	Cited by	Journal	Service	Main theories
The impact of creativity and community facilitation on music streaming adoption and digital piracy	(Hampton-Sosa)	2017	7	Computers in Human Behavior	Music Streaming	Technology Acceptance Model (TAM)
What make people getting charged apps instead of free one?	(Wang, Lai, & Lin)	2016	2	Journal of Global Information Management	Cloud Services	Value Based Adoption Model (VAM)
Converting freemium customers from free to premium—the role of the perceived premium fit in the case of music as a service	(Wagner, Benlian, & Hess)	2014	39	Electronic Markets	Music Streaming	Dual Mediation Hypothesis / the Elaboration Likelihood Model
Consumers' attitude and behavior towards online music piracy and subscription-based services	(Cesareo & Pastore)	2014	24	Journal of Consumer Marketing	Music Streaming	Theory of Reasoned Action (TRA)
Understanding Willingness to Pay for Social Network Sites	(Vock, van Dolen, & de Ruyter, 2013)	2013	39	Journal of Service Research	Social Network Sites	Social Capital Theory
User adoption and purchasing intention after free trial: An empirical study of mobile newspapers	(Wang, Oh, Wang, & Yuan)	2013	30	Information Systems and e-Business Management	Newspaper	Technology Acceptance Model (TAM) / Expectation Confirmation Theory (ECT)
Music as a service as an alternative to music piracy?: An empirical investigation of the intention to use music streaming services	(Dörr, Wagner, Hess, & Benlian)	2013	21	Business and Information Systems Engineering	Music Streaming	Theory of Planned Behavior (TPB)
Customer Willingness to pay for online music: The role of free mentality	(Lin, Hsu, & Chen)	2013	28	Journal of Electronic Commerce Research	Music Streaming	Theory of Planned Behavior (TPB)
Why internet users are willing to pay for social networking services	(Hsiao K.-L.)	2011	27	Online Information Review	Social Network Sites	Value Based Adoption Model (VAM)
The influence of extro/introversion on the intention to pay for social networking sites	(Lu & Hsiao)	2010	131	Information and Management	Social Network Sites	Perceived Value (PERVAL)
Out of dedication or constraint? A dual model of post-adoption phenomena and its empirical test in the context of online services	(Kim & Son)	2009	259	MIS Quarterly: Management Information Systems	Portal Service Provider	Dedication-Based and Constraint-Based Relationship Mechanisms
Digital music services: consumer intention and adoption	(Kwong & Park)	2008	36	Service Industries Journal	Music Streaming	Theory of Planned Behavior (TPB)

Title	Authors	Year	Cited by	Journal	Service	Main theories
Consumer perceptions and willingness to pay for intrinsically motivated online content	(Lopes & Galleta)	2006	52	Journal of Management Information Systems	Intrinsically Motivated Online Content	Perceived Value and Technical Quality

The following figures detail the selected articles.

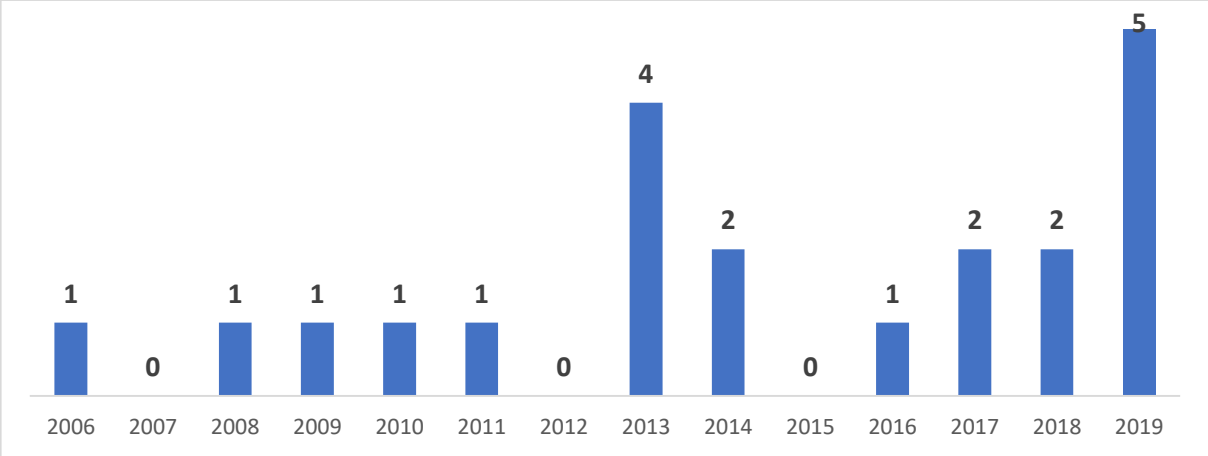
Figure 5: Services studied by selected articles



As can be seen, most of the papers studied music streaming. This is probably a consequence of the many companies that offer this type of service that appeared in recent years, such as Spotify, Pandora, Tidal and others. Those services are widely used, and many customers pay monthly subscriptions. The second most studied service in this literature review is Social Network Sites. For example, in Taiwan there is a popular Social Network Site called i-Partment that besides personal homepages with photos and diaries, the services also provides the members with their own avatar and the "iPartments", which are virtual apartments included on their personal homepage (Lu & Hsiao, 2010). Additional advantages for VIP members of i-Parment are more decorations for their virtual apartments or avatars, more food for their virtual pets, larger space for online diaries, larger space for guest books, and additional features for making friends (Hsiao, 2011).

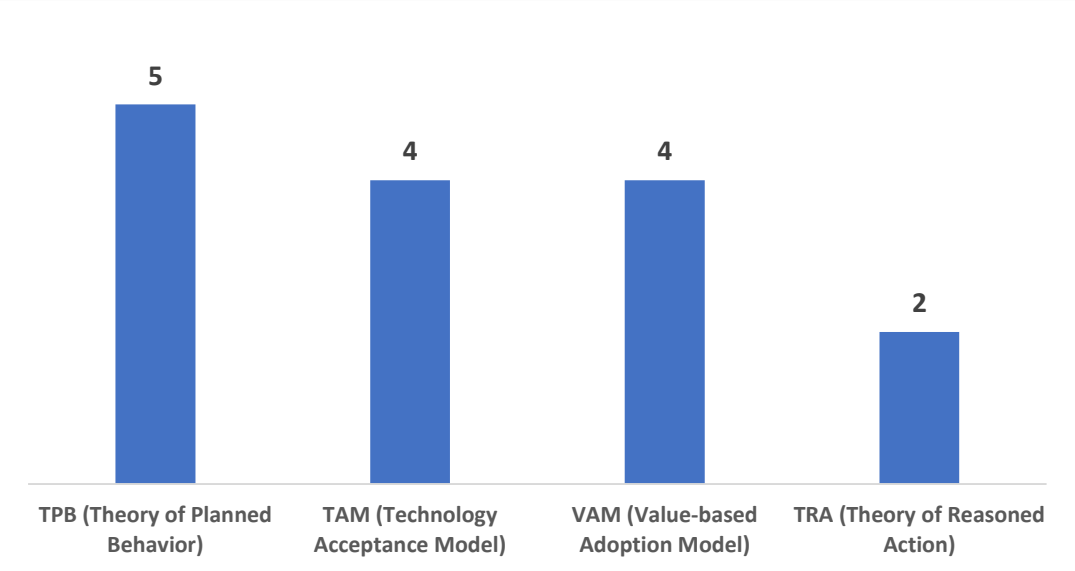
As can be seen, most of those services are continuous by definition: music streaming, cloud services, social network sites, among others. They are not separated in episodes such as purchases and repurchases. Hence, the subscription business model makes sense and the selected articles are consistent with the goals of this literature review.

Figure 6: Publications per year according to the selection criteria



As can be seen, the number of publications has been growing reaching a peak of 5 by 2019. The growing relevance in terms of published articles reinforces the need for this systematic literature review.

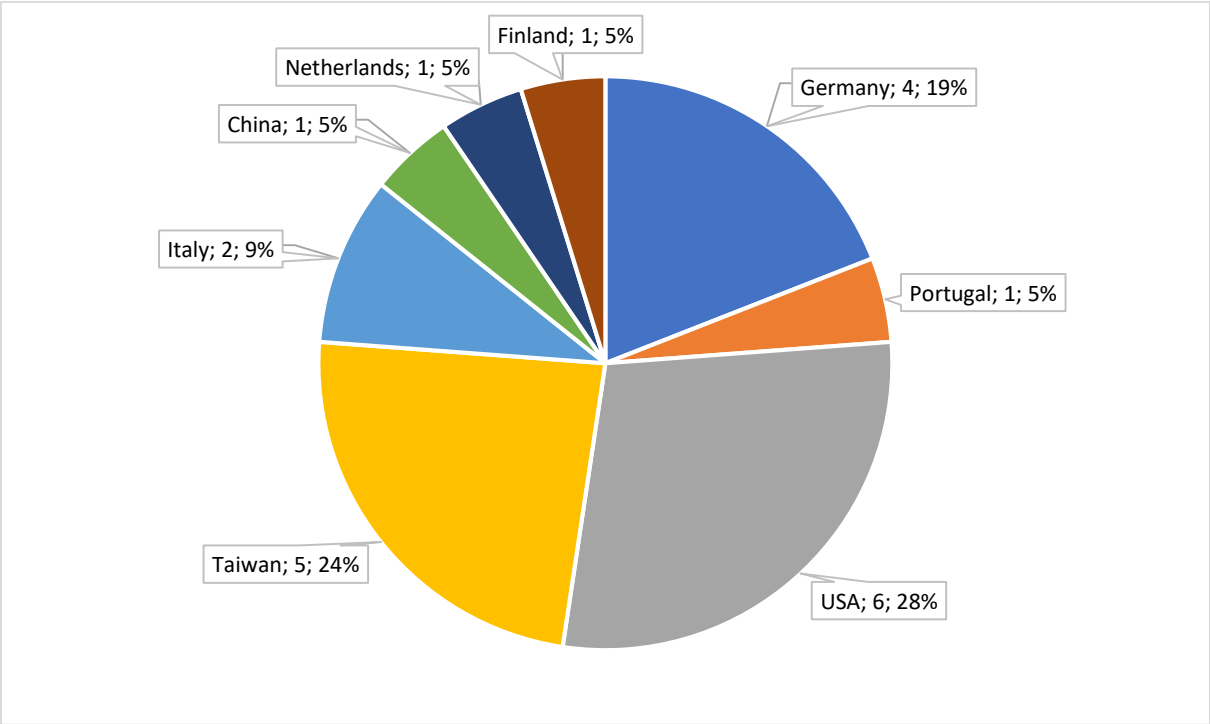
Figure 7: Most utilized theories for the selected articles



Many different theories and models were utilized. Here we resume the most utilized ones. The most commons where classical adoption theories such as TPB (Theory of Planned

Behavior), TAM (Technology Acceptance Model) and TRA (Theory of Reasoned Action), together with VAM (Value-based Adoption Model). More details about the utilized theories are going to be provided in the discussion session.

Figure 8: Studies allocated according to geographic origin of the data



As can be seen from the figure above, the studies for the selected articles are concentrated at Europe (43%), Asia (29%) and North America (28%). Therefore, there is an opportunity for studies that better understand the constructs and relations that lead digital services subscription in Latina America, Africa and Oceania.

3.2 Constructs

Data extraction from the articles provided us with constructs. In some models exists similar constructs. For instance, Fernandes & Guerra (2019), Wang, Oh, Wang, & Yuan (2013) and Hampton-Sosa (2017) utilized the "Perceived Enjoyment" construct, for instance. On the other hand, Hsiao (2011) and Mäntymäki, Islam, & Benbasat (2019) utilized the construct "Enjoyment". Besides having similar names, after reading those articles, it can be seen that they also are defined in a similar way: as the degree to which the activity of using a certain system is perceived to be enjoyable in its own right. Going even further, to the items that compose the construct, it can also be seen that they are related to the same ideas. Therefore, the "Perceived

Enjoyment" and "Enjoyment" constructs for those cases were analyzed – or aggregated – as being similar for the constructs and relations studies (number of occurrences of constructs, the value of the correlation between constructs, and so on…). The "Satisfaction" and "Customer Satisfaction" constructs are also examples of this type of similarity.

Other example, less obvious, is the similarity between the "Subjective Norm" and "Social Influence" constructs. Even though they have different names, when analyzing their definitions, contexts of use and items in the selected articles, it can be seen that for those cases both constructs are similar: the perceived social pressure regarding executing or not of a behavior. Once again, those constructs were analyzed – or aggregated – with regards to number of occurrences, relations and so on.

It is important to notice that those similarities and aggregations for those constructs were also found out by Ovcjak, Hericko, & Polancic (2015).

In those cases, the constructs were found similar after careful analysis of the items, the context and theories related. The final list of constructs from the selected studies and the number of their occurrences is shown in the following table. The first column of the table "Construct" is the aggregated that corresponds to the "Similar Constructs" column. As explained already, the "Perceived Enjoyment" construct(in the first column) is related to the "Perceived Enjoyment" and "Enjoyment" constructs (third column), with a total number of occurrences of 5: in that case, it occurred 3 times as "Perceived Enjoyment" and twice as "Enjoyment.

As can be seen, very few aggregations were made so that the consistency of each construct and relation remained. Again, those aggregations were carefully studied from the greater context of their application in each study, the theories that supported them, until the item level. This brought a total of 87 constructs studied in the selected articles. A more detailed approach to those constructs is developed in the "Constructs and Hypotheses" section for the development of the integrative model.

Table 2: List of analyzed constructs in selected studies

Construct	No. Of Occurrences	Similar Constructs
Willingness to Pay	21	Willingness to Pay, Intention to Upgrade to Premium Subscription, Intention to Pay, Purchase Intention, Subscription Intention, Willingness to Try Subscription, Behavioral Intention to Pay
Subjective Norm	5	Subjective Norm, Social Influence

Construct	No. Of Occurrences	Similar Constructs
Perceived Enjoyment	5	Enjoyment, Perceived Enjoyment
Perceived Usefulness	5	
Perceived Value	5	
Satisfaction	4	Satisfaction, Customer Satisfaction
Perceived Value For Money	4	Perceived Price/Value for Money, Perceived Price Value, Price Value
Perceived Cost	4	Perceived Cost, Perceived Price, Perceived Fee
Attitude Toward Paying	4	
Perceived Service Quality	3	Perceived Service Quality, Perceived Performance/Quality Value
Age	3	
Gender	3	
Attitude Toward The Service	3	
Perceived Behavioral Control	3	
Perceived Ease of Use	3	
Continuance Intention	3	
Switching Costs	2	
Loyalty	2	
Trust	2	
Word-of-Mouth	2	
Perceived Sacrifice	2	
IT Experience	1	
Perceived Premium Fit	1	
Attitude Free Version	1	
Cognition Premium	1	
Attitude Premium	1	
Perceived Critical Mass	1	
Hedonic Performance Expectancy	1	
Confirmation	1	
Perceived Community Facilitation	1	
Overall Technical Quality	1	
Technicality	1	
Masculinity/Femininity	1	
Facilitating Conditions	1	
Communication Control Capacity	1	
Submission of Recommendations	1	
Search for Recommendations	1	
Desire to Own	1	
Flat Rate Preference	1	
Economic Benefits	1	
Moral Judgment	1	
Importance and Exposure to Music	1	
Involvement and Interest	1	

Construct	No. Of Occurrences	Similar Constructs
Attitude Towards Online Piracy	1	
Perceived Content	1	
Perceived Context	1	
Perceived Infrastructure	1	
Habit	1	
Environmental Concerns	1	
Perceived Emotional Value	1	
Income	1	
Sunk Cost	1	
Lost Performance Costs	1	
Perceived Social Value	1	
Degradation Barriers	1	
Personalization	1	
Learning	1	
Conformity	1	
Free Mentality	1	
Perceived Benefit	1	
Reputation	1	
Perceived Creativity Facilitation	1	
Social Capital	1	
Attitude Toward Unauthorized Downloading	1	
Unauthorized Downloading Intention	1	
Relative Advantage	1	
Voluntarism	1	
Frequency of Music Listening	1	
Entitativity	1	
Perceived Functional Value	1	
Investment on Self	1	
Intimate Knowledge	1	
Control of the Object	1	
Service-based Psychological Ownership	1	
Music-based Psychological Ownership	1	
Ubiquity	1	
Social Connectivity	1	
Discovery of New Content	1	
Intrusiveness of Advertising	1	
Willingness to Pay for Upgrade	1	
Intention to Use	1	
Inattentiveness to Alternatives	1	
Perceived Risk	1	
Frequency of Past Behavior	1	
Moral Judgement About the Illegal Acquisition of Movies	1	
Perceived Subjective Norms About Digital Piracy	1	
Involvement with the movie category	1	

3.3 Causal Relations from the Review

Based on the studies we have created a list of the relations between constructs with the number of occurrences of each relation, median correlation between those constructs, how many times it has occurred, and the percentage of significance– percentage the relationship between independent and dependent constructs were considered significant in the studies. Those studies have brought a total of 140 different relations. This method of constructs and relations analysis was also applied by Ovcjak, Hericko, & Polancic (2015) and Sanakulov & Karjaluoto (2015).

The first column of the following table name the causal relations among constructs. The second indicates the number of articles in which the relationship appeared. The third is the median association value and the last informs in how many of those (in percentage) were considered statistically significant

It can be considered that the higher the value of the median correlation, and the higher the percentage of significance, the higher the importance of the relation for our integrative model.

It is also important to know all the occurrences of all the relations were consistent regarding the type of influence that one construct had on the other – whether positive or negative. For instance, for all the 5 occurrences of the Perceived Value→ Willingness to pay relation, the influence of Perceived Value on Willingness to Pay was positive, bringing a median correlation of 0.469. In that case, all the occurrences were statistically significant: the hypothesis "Perceived Value is positively related to Willingness to Pay" was supported in those 5 studies (100% value on the % significant column). Therefore, as this relation has been studied and supported in 5 different studies and deals directly with the dependent variable with a relatively high median correlation, it was included in our proposed integrative model, presented in the following section.

Table 3: List of used relations between constructs

Relation	No of studies	Median Correlation	% Significant
Perceived Value-->Willingness to Pay	5	0.469	100%
Subjective Norm-->Willingness to Pay	5	0.180	100%
Gender-->Willingness to Pay	4	0.110	50%

Relation	No of studies	Median Correlation	% Significant
Attitude Toward Paying-->Willingness to Pay	3	0.4605	100%
Attitude Toward The Service-->Willingness to Pay	3	0.289	100%
Perceived Enjoyment-->Willingness to Pay	3	0.356	100%
Perceived Ease of Use-->Perceived Usefulness	3	0.200	100%
Perceived Behavioral Control-->Willingness to Pay	3	0.140	67%
Age-->Willingness to Pay	3	-0.150	33%
Satisfaction-->Loyalty	2	0.420	100%
Satisfaction-->Word-of-Mouth	2	0.310	100%
Switching Costs-->Willingness to Pay	2	0.135	100%
Perceived Ease of Use-->Perceived Enjoyment	2	0.274	100%
Perceived Usefulness-->Willingness to Pay	2	0.235	100%
Perceived Value For Money-->Willingness to Pay	2	0.222	100%
Perceived Enjoyment-->Perceived Value	2	0.267	100%
Perceived Cost-->Perceived Value	2	-0.307	100%
Satisfaction-->Willingness to Pay	2	0.184	50%
Switching Costs-->Loyalty	1	0.200	100%
Age-->Loyalty	1	0.090	100%
Satisfaction-->Continuance Intention	1	0.260	100%
Switching Costs-->Willingness to Pay For Upgrade	1	0.100	100%
Loyalty-->Willingness to Pay	1	0.170	100%
Loyalty-->Willingness to Pay For Upgrade	1	0.160	100%
Loyalty-->Continuance Intention	1	0.590	100%
Loyalty-->Word-of-Mouth	1	0.360	100%
IT Experience-->Willingness to Pay For Upgrade	1	0.150	100%
Gender-->Willingness to Pay For Upgrade	1	0.110	100%
Perceived Value For Money-->Cognition Premium	1	0.445	100%
Perceived Premium Fit-->Attitude Free Version	1	0.417	100%
Attitude Free Version-->Cognition Premium	1	0.337	100%
Cognition Premium-->Attitude Premium	1	0.785	100%
Attitude Premium-->Willingness to Pay	1	0.553	100%
Perceived Critical Mass-->Subjective Norm	1	0.127	100%
Perceived Critical Mass-->Hedonic Performance Expectancy	1	0.251	100%
Subjective Norm-->Attitude Toward Paying	1	0.490	100%
Attitude Toward Paying-->Continuance Intention	1	0.051	100%
Confirmation-->Perceived Usefulness	1	0.410	100%
Confirmation-->Perceived Ease of Use	1	0.510	100%
Confirmation-->Perceived Enjoyment	1	0.490	100%
Confirmation-->Satisfaction	1	0.240	100%
Perceived Enjoyment-->Perceived Usefulness	1	0.210	100%
Perceived Usefulness-->Satisfaction	1	0.230	100%
Perceived Ease of Use-->Willingness to Pay	1	0.160	100%
Perceived Ease of Use-->Satisfaction	1	0.250	100%
Perceived Enjoyment-->Satisfaction	1	0.280	100%

Relation	No of studies	Median Correlation	% Significant
Perceived Service Quality-->Perceived Value	1	0.260	100%
Overall Technical Quality-->Perceived Value	1	0.450	100%
Technicality-->Perceived Usefulness	1	-0.607	100%
Technicality-->Perceived Enjoyment	1	-0.572	100%
Perceived Usefulness-->Perceived Value	1	0.475	100%
Perceived Cost-->Willingness to Pay	1	-0.509	100%
Masculinity/Femininity-->Willingness to Pay	1	0.162	100%
Trust-->Willingness to Pay	1	0.177	100%
Frequency of Music Listening-->Willingness to Pay	1	0.150	100%
Facilitating Conditions-->Continuance Intention	1	0.322	100%
Communication Control Capacity-->Continuance Intention	1	0.264	100%
Trust-->Continuance Intention	1	0.237	100%
Frequency of Music Listening-->Continuance Intention	1	0.241	100%
Search for Recommendations-->Attitude Toward The Service	1	0.160	100%
Flat Rate Preference-->Attitude Toward The Service	1	0.220	100%
Relative Advantage-->Attitude Toward The Service	1	0.220	100%
Economic Benefits-->Attitude Towards Online Piracy	1	0.356	100%
Moral Judgment-->Attitude Towards Online Piracy	1	0.304	100%
Importance and Exposure to Music-->Attitude Towards Online Piracy	1	-0.328	100%
Involvement and Interest-->Willingness to Pay	1	0.742	100%
Attitude Towards Online Piracy-->Willingness to Pay	1	-0.152	100%
Perceived Service Quality-->Perceived Ease of Use	1	0.540	100%
Perceived Service Quality-->Perceived Behavioral Control	1	0.522	100%
Perceived Ease of Use-->Perceived Behavioral Control	1	0.726	100%
Perceived Usefulness-->Attitude Toward The Service	1	0.542	100%
Subjective Norm-->Attitude Toward The Service	1	0.613	100%
Perceived Content-->Perceived Value	1	0.410	100%
Perceived Context-->Perceived Value	1	0.118	100%
Perceived Infrastructure-->Perceived Value	1	0.088	100%
Habit-->Attitude Toward The Service	1	0.119	100%
Environmental Concerns-->Attitude Toward The Service	1	0.163	100%
Perceived Value-->Attitude Toward The Service	1	0.474	100%
Perceived Emotional Value-->Perceived Value	1	0.375	100%
Perceived Community Value-->Perceived Value	1	0.281	100%
Perceived Value For Money-->Perceived Value	1	0.307	100%
Perceived Value-->Satisfaction	1	0.838	100%
Sunk Cost-->Degradation Barriers	1	0.483	100%
Lost Performance Costs-->Degradation Barriers	1	0.223	100%
Perceived Social Value-->Perceived Value	1	0.284	100%
Degradation Barriers-->Willingness to Pay	1	0.258	100%
Perceived Usefulness-->Loyalty	1	0.370	100%
Perceived Usefulness-->Intention to Use	1	0.140	100%
Personalization-->Loyalty	1	0.180	100%

Relation	No of studies	Median Correlation	% Significant
Personalization-->Switching Costs	1	0.200	100%
Personalization-->Inattentiveness to Alternatives	1	0.130	100%
Learning-->Switching Costs	1	0.270	100%
Learning-->Willingness to Pay	1	0.200	100%
Switching Costs-->Inattentiveness to Alternatives	1	0.130	100%
Perceived Benefit-->Attitude Toward Paying	1	0.300	100%
Perceived Sacrifice-->Attitude Toward Paying	1	-0.110	100%
Free Mentality-->Attitude Toward Paying	1	-0.290	100%
Reputation-->Overall Technical Quality	1	0.570	100%
Reputation-->Perceived Value	1	0.240	100%
Perceived Creativity Facilitation-->Perceived Usefulness	1	0.416	100%
Perceived Creativity Facilitation-->Perceived Enjoyment	1	0.310	100%
Entitativity-->Perceived Community Value	1	0.405	100%
Entitativity-->Willingness to Pay	1	0.215	100%
Perceived Community Value-->Willingness to Pay	1	0.220	100%
Social Capital-->Perceived Functional Value	1	0.590	100%
Perceived Community Value-->Perceived Usefulness	1	0.240	100%
Perceived Community Value-->Perceived Enjoyment	1	0.164	100%
Perceived Usefulness-->Unauthorized Downloading Intention	1	-0.208	100%
Attitude Toward Unauthorized Downloading-->Unauthorized Downloading Intention	1	0.643	100%
Perceived Cost-->Unauthorized Downloading Intention	1	0.197	100%
Investment on Self-->Service-based Psychological Ownership	1	0.766	100%
Intimate Knowledge-->Service-based Psychological Ownership	1	-0.224	100%
Control of the Object-->Music-based Psychological Ownership	1	0.229	100%
Service-based Psychological Ownership-->Music-based Psychological Ownership	1	0.599	100%
Music-based Psychological Ownership-->Willingness to Pay	1	0.434	100%
Ubiquity-->Perceived Enjoyment	1	0.189	100%
Ubiquity-->Perceived Value For Money	1	0.189	100%
Social Connectivity-->Perceived Value For Money	1	0.184	100%
Discovery of New Content-->Perceived Enjoyment	1	0.292	100%
Intrusiveness of Advertising-->Perceived Value For Money	1	-0.255	100%
Hedonic Performance Expectancy-->Attitude Toward Paying	1	0.092	0%
Submission of Recommendations-->Attitude Toward The Service	1	0.070	0%
Desire to Own-->Attitude Toward The Service	1	-0.040	0%
Importance and Exposure to Music-->Willingness to Pay	1	0.031	0%
Income-->Willingness to Pay	1	-0.006	0%
Reputation-->Willingness to Pay	1	0.020	0%
Overall Technical Quality-->Willingness to Pay	1	0.060	0%
Social Capital-->Perceived Community Value	1	0.273	0%
Social Capital-->Willingness to Pay	1	0.110	0%
Entitativity-->Perceived Functional Value	1	0.050	0%
Perceived Functional Value-->Willingness to Pay	1	0.010	0%

Relation	No of studies	Median Correlation	% Significant
Perceived Enjoyment-->Unauthorized Downloading Intention	1	0.112	0%
Attitude Free Version-->Attitude Premium	1	-0.030	0%
Ubiquity-->Willingness to Pay	1	-*	0%
Social Connectivity-->Willingness to Pay	1	-*	0%
Social Connectivity-->Perceived Enjoyment	1	-*	0%
Discovery of New Content-->Perceived Value For Money	1	-*	0%
Discovery of New Content-->Willingness to Pay	1	-*	0%
Intrusiveness of Advertising-->Perceived Enjoyment	1	-*	0%
Intrusiveness of Advertising-->Willingness to Pay	1	-*	0%

*The magnitude of the relation was not considered significant, and was not shown by the authors

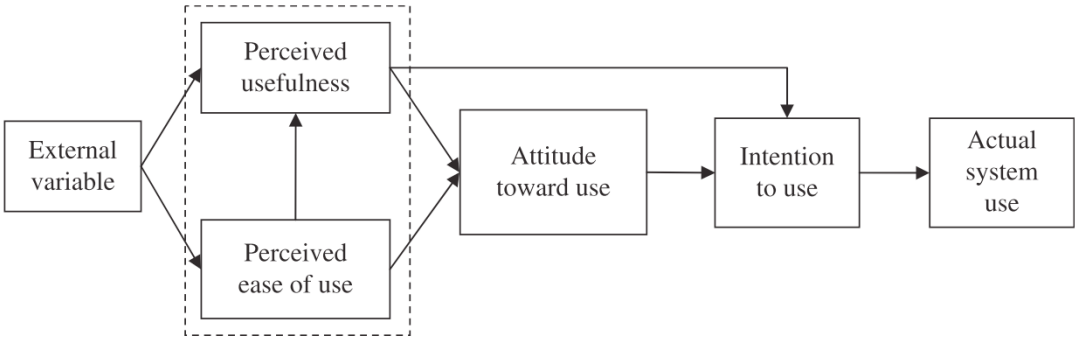
3.4 A Proposal of an Integrative Model

Based on the studied relations, theories and all the analysis developed up to this point, in the next sessions we propose integrated models for the digital service subscription. Therefore, here we are going to provide the definition of the constructs, preliminary scales proposals and the hypothesis for the proposed model based on this analysis. The theories are also going to be utilized to support the proposition. The preliminary scale for the constructs were also based on the selected articles. Some of the preliminary scale proposals for the constructs were adapted, so that the constructs can be applied to a wide variety of services. They were carefully analyzed so that their essence and meaning were maintained. Most of the constructs have their items measured on a seven-point Likert-scale, with 1 representing the lowest score on the scale (strongly disagree) and 7 representing the highest score (strongly agree) – unless stated otherwise.

Perceived Ease of Use: defined as the degree in which the user believes that adopting a technology would be free of effort (Davis, 1989). The technology Acceptance Model focuses on two constructs in order to predict user intentions toward the acceptance of information technology systems: perceived ease of use and perceived usefulness (Davis, 1989). Even though those two constructs are not the only ones to explain adoption, the theory suggests that they play a central role. Perceived usefulness is the degree to which people perceive a system to be useful to them in terms of performance improvement. However, even though a person may perceive a system as useful, it is possible that the obstacles and effort necessary to use that system could override the benefits of the use. Hence, perceive ease of use is defined as the degree to which people think that certain system can be used effortlessly: without hurdles and difficulties (Davis, 1989). It was found that Perceived Enjoyment and Perceived Usefulness

mediated the influence of perceived ease of use on intention to use a computer in the workplace. A figure of the TAM model is shown below:

Figure 9: TAM Research Model Framework



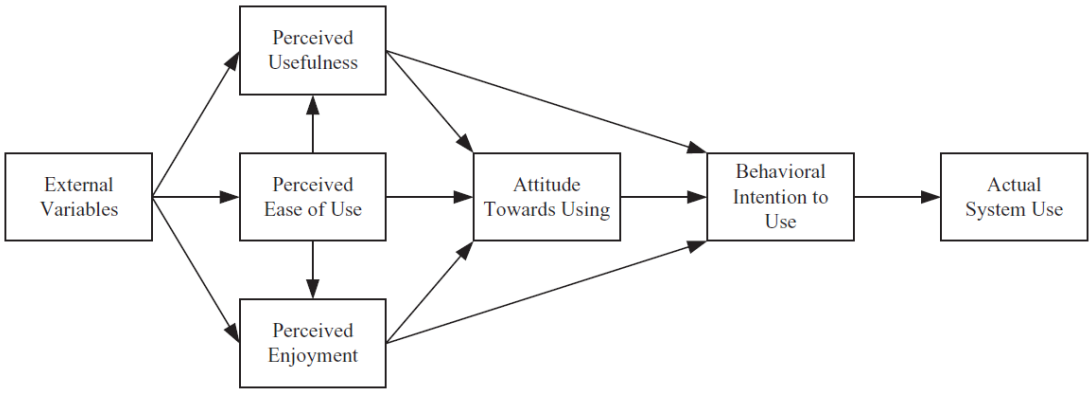
Source: (Davis, 1989)

Even though TAM was originally applied to professional tools (utilitarian systems) used in offices such as business information systems and word processing software, is has also been successfully used in hedonic cases such as the music streaming studies.

In 1992 it was proposed a new construct to be added to the model: Perceived Enjoyment (Davis, Bagozzi, & Warshaw, 1992). Perceived enjoyment is defined as the degree to which the activity of using a certain system is perceived to be enjoyable in its own right, apart from the instrumental value of the particular type of system (Davis, Bagozzi, & Warshaw, 1992) (Lee, 2005).

Hedonic systems provide self-fulfilling value to the user (Heijden, 2004). Users look for hedonic technologies such as music streaming in great part because of the enjoyment that they provide. When the extended TAM is applied to hedonic services, the Perceived Enjoyment construct usually emerges as a strong predictor of technology acceptance (Heijden, 2004). The following figure depicts the extended TAM research model framework.

Figure 10: Expanded TAM research model framework



Source: (Davis, Bagozzi, & Warshaw, 1992) adapted by (Cheng, 2011)

In this systematic literature review the relationship between Perceived Ease of Use and Perceived Usefulness has been studied by Kwong & Park (2008), Wang, Oh, Wang, & Yuan, (2013) and Hampton-Sosa (2017). The relation between Perceived Ease of Use and Perceived Enjoyment has been studied in this systematic literature review Wang, Oh, Wang, & Yuan, (2013) and Hampton-Sosa (2017). Thus:

H_1 Perceived Ease of Use is positively related to Perceived Usefulness

H_2 Perceived Ease of Use is positively related to Perceived Enjoyment

Furthermore, Kwong & Park (2008) noticed the Perceived Ease of Use has a positive effect on Perceived Behavioral Control. Perceived Behavioral Control represents individual perception of the availability or lack of the necessary resources (including skills) and opportunities to develop a specific behavior. Therefore, when the service is easy to be used, the customer feels more confident to use it. Hence:

H_3 Perceived Ease of Use is positively related to Perceived Behavioral Control

Table 4: Perceived Ease of Use preliminary scale proposal

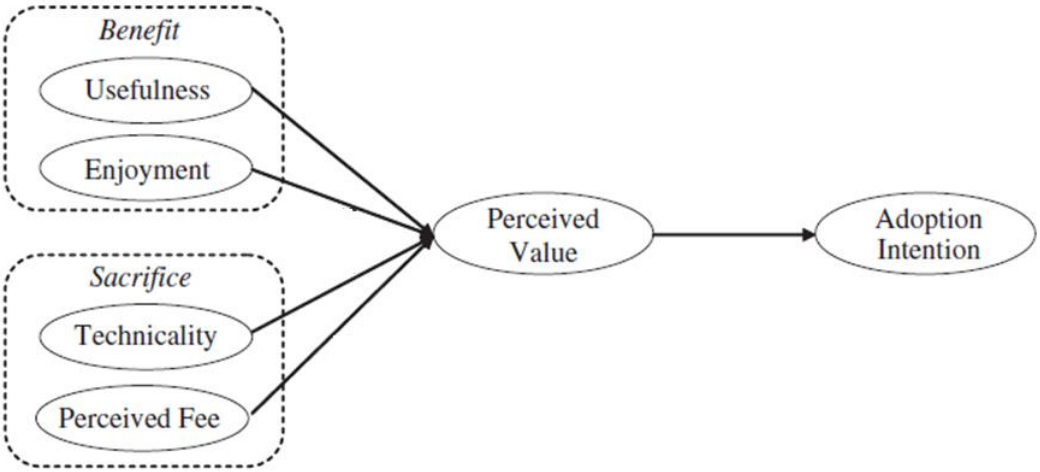
#	Statement	Source
1	[Digital Service] is easy to use.	(Davis, 1989)
2	It is easy to become skillful at using [Digital Service].	(Davis, 1989)
3	[Digital Service] is flexible to interact with.	(Davis, 1989)
4	My interaction with [Digital Service] is clear and understandable.	(Davis, 1989)
5	Learning to use [Digital Service] is easy.	(Davis, 1989)

Perceived Usefulness: as said earlier, it is the degree to which people perceive a system to be useful to them in terms of performance improvement, and is one of the central constructs for TAM (Davis, 1989). It mediates the influence of perceived ease of use on intention. In this systematic literature review the relationship between Perceived Usefulness and Willingness to Pay has been studied by Wang, Oh, Wang, & Yuan, (2013) and Hampton-Sosa (2017). Therefore:

H_4 Perceived Usefulness is positively related to Willingness to Pay

Furthermore, Perceived Usefulness has also been used in the Valued Based-Adoption Model (VAM), as can be seen by the following figure:

Figure 11: Value-based Adoption model



Source: adapted from Kim, Chan, & Gupta (2007).

In this model, the perceived value is the evaluation of both the sacrifices (monetary and non-monetary costs such as time and effort) and benefits (such as usefulness and enjoyment) regarding the acquisition of a product or a service (Kim, Chan, & Gupta, 2007). In this systematic literature review the relation between Perceived Usefulness and Perceived Value has been studied by Fernandes & Guerra (2019). Therefore:

H_5 Perceived Usefulness is positively related to Perceived Value

Table 5: Perceived Usefulness preliminary scale proposal

#	Statement	Source
1	[Digital Service] is useful.	(Davis, 1989)

2	[Digital Service] saves me time.	(Davis, 1989)
3	[Digital Service] helps me be productive.	(Davis, 1989)
4	[Digital Service] makes the task I want to accomplish easier to get done.	(Davis, 1989)
5	[Digital Service] helps me be more effective.	(Davis, 1989)
6	[Digital Service] requires the fewest steps to accomplish what I want to do with it.	(Davis, 1989)
7	[Digital Service] improves my performance.	(Davis, 1989)
8	[Digital Service] enhances my productivity.	(Davis, 1989)

Perceived Enjoyment: Perceived enjoyment refers to hedonic value, playing a relevant role in determining usage behaviors (Fernandes & Guerra, 2019). TAM has been applied to a wide range of information technologies, providing a basis for exploring technology acceptance originally through perceived usefulness and perceived ease of use (Davis, 1989).

Wang, Yeh, & Liao (2013) suggested that the so-called hedonic (enjoyment) benefit has a great influence on Perceived Value. This is also supported by the Value-based Adoption Model mentioned earlier (Kim, Chan, & Gupta, 2007). In our literature review, the relation between Perceived Enjoyment and Perceived Value has been studied by Fernandes & Guerra (2019) and Hsiao (2011). Therefore:

H_6 Perceived Enjoyment is positively related to Perceived Value.

Furthermore, is expected that services that are perceived as enjoyable and useful should attract paying customers. In this systematic literature review the relationship between Perceived Enjoyment and Willingness to Pay has been supported by Wang, Oh, Wang, & Yuan (2013), Mäntymäki, Islam, & Benbasat (2019) and Hampton-Sosa (2017). Hence, we hypothesize:

H_7 Perceived Enjoyment is positively related to Willingness to Pay.

Finally, the relationship between Perceived Enjoyment and Perceived Usefulness has been studied in this systematic literature review by (Wang, Oh, Wang, & Yuan, 2013), where they hypothesized that the perception of enjoyment about the service increases the perception of usefulness. Consequently:

H_8 Perceived Enjoyment is positively related to Perceived Usefulness.

Table 6: Perceived Enjoyment preliminary scale proposal

#	Statement	Source
1	Using [Digital Service] is pleasurable.	(Hong, Thong, Moon, & Tam, 2008)
2	I have fun using [Digital Service].	(Hong, Thong, Moon, & Tam, 2008)
3	I find using [Digital Service] to be interesting.	(Hong, Thong, Moon, & Tam, 2008)
4	To me, the [Digital Service] is exciting.	(Heijden, 2004)
5	Using [Digital Service] provides me with a lot of enjoyment.	(Heijden, 2004)

Perceived Value: The most widely accepted definition of this construct is the consumer's cognitive evaluation of the tradeoff between all cost and benefit components regarding the acquisition of a product (Hsiao & Chen, 2017) (Zeithaml, 1988). Perceived value was also defined by Day (2000) as the gap between consumer-perceived benefits and costs. Perceived Value is the central construct for the Value-Based Adoption Model mentioned earlier

In this systematic literature review the relation between Perceived Value and Willingness to pay was one of the must studied, being supported by five studies: Fernandes & Guerra (2019), Hsiao (2011), Hsiao & Chen (2017), Lopes & Galleta (2006) and Wang, Lai, & Lin (2016). Therefore:

H_9 Perceived Value is positively related to Willingness to Pay.

Table 7: Perceived value preliminary scale proposal

#	Statement	Source
1	Compared to the fee I need to pay, the use of [Digital Service] offers value for money.	(Kim, Chan, & Gupta, 2007)
2	Compared to the effort I need to put in, the use of [Digital Service] is beneficial to me.	(Kim, Chan, & Gupta, 2007)
3	Compared to the time I need to spend, the use of [Digital Service] is worthwhile to me.	(Kim, Chan, & Gupta, 2007)
4	Overall, the use of [Digital Service] delivers good value to me.	(Kim, Chan, & Gupta, 2007)

Perceived Cost: The degree to which a consumer believes that the service is worth the monetary cost (Hsiao & Chen, 2017). Previous studies have pointed out that as the price increases, perceptions of value decline. In this systematic literature review this construct was utilized with different names, such as Perceived Price (Hsiao & Chen, 2017), Perceived Fee (Fernandes & Guerra, 2019), Perceived Cost (Lin, Hsu, & Chen, 2013). Yet, after careful analysis of the items utilized and overall context, those constructs were found to be similar: the degree to which a consumer believes that the service is worth the monetary cost. A similar combination was also done in the systematic literature review developed by Ovcjak, Hericko, & Polancic (2015).

The negative influence that Perceived Cost has on Perceived Value is supported by the Value-Based Adoption Model, as already explained. In this systematic literature review this relation has been studied by Hsiao & Chen (2017) and Hsiao (2011). Furthermore, the relation between Perceived Cost and Willingness to Pay has been studied by Fernandes & Guerra (2019). Thus, the following hypotheses are proposed.

H_{10} Perceived Cost is negatively related to Perceived Value

H_{11} Perceived Cost is negatively related to Willingness to Pay

Table 8: Perceived Cost preliminary scale proposal

#	Statement	Source
1	The price that I have to pay for the use of [Digital Service] is too high.	(Chu & Lu, 2007)
2	The price to pay to access the [Digital Service] is not reasonable.	(Chu & Lu, 2007)
3	I am not pleased with the price that I have to pay for the use of [Digital Service].	(Chu & Lu, 2007)
4	The price for [Digital Service] is a lot of money to spend.	(Chu & Lu, 2007)
5	In terms of the cost of accessing [Digital Service], I feel that the payment is high.	(Chu & Lu, 2007)
6	In terms of the cost of accessing [Digital Service], I feel that the monthly subscription fee is expensive.	(Chu & Lu, 2007)

Confirmation: is the degree that users first experience meets the initial expectation of the user (Wang, Oh, Wang, & Yuan, 2013). Here the Expectation Confirmation Theory (Oliver R. L., 1980) comes into play. Usually, before trying the service, user cognitions (e.g., beliefs, attitude) are based on second-hand sources such as industry reports, interpersonal exchange of information and media in general. These sources of information (indirect ones) can be unrealistic, resulting in less cognitions. When users experience the service – for instance, through a free trial, a freemium experimentation, trying the service through a friend already have already subscribed – they evaluate the extent to which their initial cognition is consonant with their experience, revising their cognition and behavior in order to achieve greater consonance. It will, therefore, influence user's beliefs about the service and. Hence:

H_{12} Confirmation is positively related to Perceived Usefulness

H_{13} Confirmation is positively related to Perceived Ease of Use

H_{14} Confirmation is positively related to Perceived Enjoyment

Table 9: Confirmation preliminary scale proposal

#	Statement	Source
1	My experience with using [Digital Service] was better than what I expected.	(Bhattacherjee, 2001)
2	The service performance provided by [Digital Service] was better than I expected.	(Bhattacherjee, 2001)
3	The service level provided by [Digital Service] was better than what I expected.	(Bhattacherjee, 2001)
4	Overall, most of my expectations from using [Digital Service] were confirmed.	(Bhattacherjee, 2001)

Perceived Service Quality: Service quality is founded on a comparison between what the customer feels should be offered and what is provided (Parasuraman, Zeithaml, & Berry, 1988). It can be assessed by measuring customers' expectations and perceptions of performance level for a range of service attributes. In this systematic literature review, the relation between Perceived Service Quality and Perceived Value has been studied by (Lu & Hsiao, 2010) and (Lopes & Galleta, 2006). Hence:

H_{15} Perceived Service Quality is positively related to Perceived Value

Furthermore, Kwong & Park (2008) hypothesized that better service quality would lead to higher quality and quantity of information available to consumers, which gives them a better ability to make decisions that are more informed and gives them more control regarding their action. This suggests that service quality, behavioral control, and ease of use may interrelated. The positive influence that Perceived Service Quality has on Perceived Ease of Use and Perceived Behavioral control was supported in that study. Therefore:

H_{16} Perceived Service Quality is positively related to Perceived Ease of Use
H_{17} Perceived Service Quality is positively related to Perceived Behavioral Control

Table 10: Perceived Service Quality preliminary scale proposal

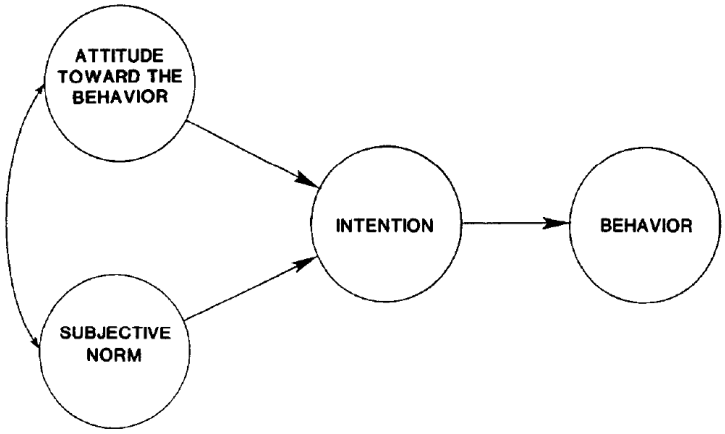
#	Statement	Source
1	[Digital Service] have consistent quality.	(Parasuraman, Zeithaml, & Berry, 1988)
2	[Digital Service] is well designed.	(Parasuraman, Zeithaml, & Berry, 1988)
3	[Digital Service] has an acceptable standard of quality.	(Parasuraman, Zeithaml, & Berry, 1988)
4	When [Digital Service] promise to do something by a certain time, it does so.	(Parasuraman, Zeithaml, & Berry, 1988)
5	This [Digital Service] would score high on, flexibility, organization, and design.	(Parasuraman, Zeithaml, & Berry, 1988)

Perceived Behavioral Control: represents individual perception of the availability or lack of the necessary resources and opportunities to develop a specific behavior (Ajzen & Madden,

1986). Following the Theory of Planned Behavior, together with attitude and subjective norm, Perceived Behavioral Control is one of the antecedents of a behavior – in this case, subscribing to a digital service.

The Theory of Planned Behavior, hence, has the objective to predict human behavior in specific contexts. It is an evolution of the Theory of Reasoned Action (TRA), as the latter was not adequate in situations where the person didn't have complete volitional control (Ajzen, 1991). A diagram of the TRA model is shown in the figure below:

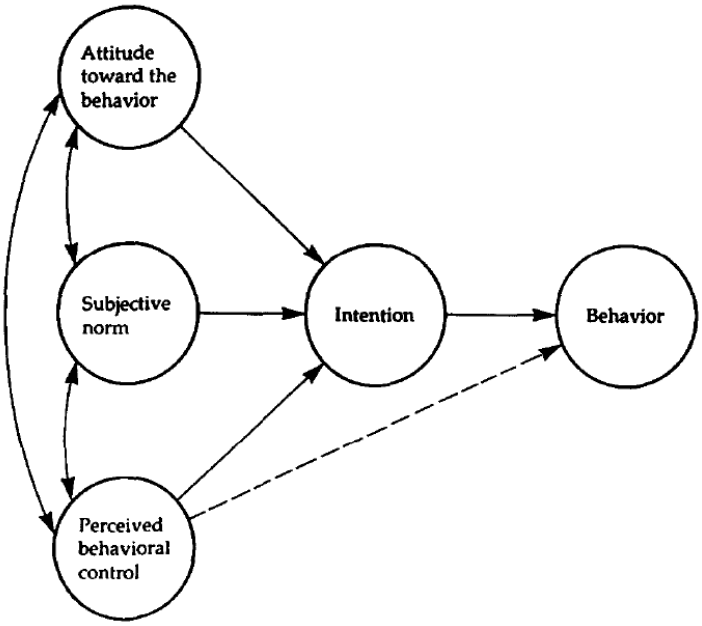
Figure 12: TRA Model Framework



Source: Ajzen & Madden (1986)

The Theory of Planned Behavior (TPB) also states that the higher the intention of a person towards a behavior, higher are the chances of executing it. Intention can be interpreted as the amount of effort that a person is willing to do in order to implement a behavior. However, the person might not have the necessary resources to perform it, such as money, skills, cooperation of others. Collectively all those factors give the person true control over the behavior. Then, if the person has the intentions, resources and control, he or she should succeed to execute the behavior. The following figure shows the Theory of Planned Behavior framework:

Figure 13: TPB Research Model Framework



Source: Ajzen (1991)

Therefore, actual behavioral control – the amount of resources and opportunities – is paramount for a person to perform a behavior. However, it is the perception of behavioral control that has a greater impact on the behaviors guided by intentions. The main difference between the Theory of Reasoned Action and the Theory of Planned Behavior is the addition of Perceived Behavioral Control.

This construct in different than locus of control, as the latter takes a more generic form in the behavior of a person – the degree to which a person believes that they have control over the outcomes of his or her life. Perceived behavioral control, however, can vary according to context.

There are three requirements for the prediction validity of the Theory of Planned Behavior. (1) The more information a person has about a behavior, the more accurate their perception of behavioral control is, and the successful behavioral attempt is better predicted. The other two requirements are: (2) both the intentions and behavioral control must remain stable from the time of measurement to the time of the action, and (3) the behavioral control and intentions must be correctly linked to the behavior of interest. The performance of a behavior is the joint function of intentions and perceived behavioral control. The perceived behavioral control gets more important with the decline of volitional control. When a person has full control over the behavior, intentions should be enough to predict behavior, as stated by the Theory of Reasoned Action.

The relationship between Perceived Behavioral Control and Willingness to Pay was not empirically supported by Kwong & Park (2008), but it was found to be significant by Dörr (2013) and Lin, Hsu, & Chen (2013). Nevertheless, we hypothesize:

H_{18} Perceived Behavioral Control is positively related to Willingness to Pay

Table 11: Perceived Behavioral Control preliminary scale proposal

#	Statement	Source
1	I have the necessary resources to use [Digital Service].	(Venkatesh, 2000)
2	I am confident that I know how to use [Digital Service].	(Venkatesh, 2000)
3	I have the adequate equipment (e.g., computer, internet connection) to use [Digital Service].	(Venkatesh, 2000)
4	With the necessary devices, the possibility of access, and the necessary knowledge provided, it would be easy to use [Digital Service].	(Venkatesh, 2000)

Perceived Critical Mass: is the degree to which a person believes that most of his or her peers are using a system (Lou, Luo, & Strong, 2000). The critical mass concept has been explained from the lenses of innovation and social systems. (Rogers, 1995) defined it as the point at which a certain minimum number of users have adopted an innovation so that the rate of adoption increases rapidly, reaching a diffusion that is self-sustaining. This suggests an innovation must have enough adopters for it to be perceived as valuable, inducing new users to adopt it. Oliver, Marwell, & Teixeira (1985) defined critical mass as the idea that some threshold of participants or action has to be crossed before a social movement 'explodes' into being.

However, even though the functioning of the critical mass concept can be seen in many innovations and new services, it is hard to specifically determine when this threshold is attained. Therefore, the Perceived Critical Mass is used, generating impression among potential new users that critical mass has been reached (Chen, Leon, & Nakayama, 2018). This perception acts as a signaling mechanism that there is value to be gained, and this might entice new adopters to join – similar to a social pressure. Therefore:

H_{19} Perceived Critical Mass is positively related to Subjective Norm

Table 12: Perceived Critical Mass preliminary scale proposal

#	Statement	
1	Many people I communicate with use the same [Digital Service] that I use	(Markus, 1987)
2	The people I communicate with will continue to use the same [Digital Service] that I use in the future	(Yoon, Jeong, & Rolland, 2015)

3	Of the people I communicate with regularly, many use the same [Digital Service] that I use	(Yoon, Jeong, & Rolland, 2015)
4	[Digital Service] is popular among my family and friends	(Yoon, Jeong, & Rolland, 2015)
5	Most people in my peer group frequently use [Digital Service]	(Yoon, Jeong, & Rolland, 2015)

Subjective Norm: The Theory of Planned Behavior states that there are three independent determinants of intention: the perceived behavioral control already discussed, attitude toward the behavior and subjective norm. Attitude is the evaluation, favorable or unfavorable, that the person develops to the behavior in question, and subjective norm is the perceived social pressure regarding executing or not a behavior. It is defined as the person's perception that most people who are important to him think he should or should not perform the behavior in question (Fishbein & Ajzen, 1975). As stated earlier, this is a fundamental construct for the TRA and TPB theories.

The relationship between Subjective Norm and Willingness to Pay has been studied by five different publications: Dörr, Wagner, Hess, & Benlian (2013), Kwong & Park (2008), Lin, Hsu, & Chen (2013), Chen, Leon, & Nakayama (2018) and Chen, Leon, Nakayama, & Hooked, (2018). The relationship between Subjective Norm and Attitude Toward Paying has been studied by Chen, Leon, & Nakayama (2018). Therefore, the following hypotheses are proposed.

H_{20} Subjective Norm is positively related to Attitude Toward Paying

H_{21} Subjective Norm is positively related to Willingness to Pay

Table 13: Subjective Norm preliminary scale proposal

#	Statement	Source
1	I believe I should pay for [Digital Service] because many of my friends pay for this service.	(Venkatesh, Morris, Davis, & Davis, 2003)
2	People who influence my behavior think I should pay for [Digital Service].	(Venkatesh, Morris, Davis, & Davis, 2003)
3	People whose opinions I value recommend that I pay for [Digital Service].	(Mathieson, 1991)
4	My friends/classmates think subscribing to [Digital Service] is a good idea.	(Mathieson, 1991)
5	My family members think subscribing to [Digital Service] is a good idea.	(Mathieson, 1991)

Free Mentality: Is defined as the belief that everything online should be free (Lin, Hsu, & Chen, 2013). As explained earlier, the "free content" business model has been broadly adopted. Many companies provide free online content and services in order to attract more customers and expand market share. It is believed that service providers can charge more advertising fees

if more people access their websites. As an outcome, many Internet consumers have developed a belief that online businesses should not charge customers since they have generated significant income from advertising (Dou, 2004). Besides that, peer-to-peer software programs allow consumers to exchange digital music without charging any money. Piracy is a common way of obtaining free content. These drivers lead customers to believe many digital services on the Internet should be free, perceiving certain amount of unfairness when required to pay for digital content (Lin, Hsu, & Chen, 2013). Therefore, the stronger the free mentality a user has, the lower is his/her attitude toward paying for digital services. In this systematic literature review this relation has been supported by Lin, Hsu, & Chen (2013). Consequently:

H_{22}: Free Mentality is negatively related to Attitude Toward Paying.

Table 14: Free Mentality preliminary scale proposal

#	Statement	Source
1	Providing free service fits into the original purpose of the Internet.	(Dou, 2004)
2	In general, software vendors should provide free service.	(Dou, 2004)
3	For fee-based [Digital Service], I think it should be free.	(Dou, 2004)
4	I think providing free [Digital Service] fits into the original purpose of the Internet.	(Dou, 2004)

Perceived Premium Fit: is defined as the degree of similarity between the free and premium versions of a service (Wagner, Benlian, & Hess, 2014). A high premium fit means that the free version includes most of the premium version features. On the other hand, a lower premium fit indicates that the free version is significantly limited when compared to the premium version. The limitations can be many: advertising interrupting the execution of the service or decreasing the user experience quality, lack of customization, less features, less convenience (no offline availability of the service, for instance). Other types of limitation are service specific: music streaming that do not allow music download for the free version (Wagner, Benlian, & Hess, 2014), cloud services that imposes more strict limitation for storage for the free version (Trenz, Huntgeburth, & Veit, 2019), and others.

If the free version is considered to have a good resemblance with the premium version, the user will approve the free version and develop a positive attitude toward it. The relationship between Perceived Premium Fit and Attitude Toward Free Version has been studied by Wagner, Benlian, & Hess (2014). Therefore:

H_{23} Perceived Premium Fit is positively related to Attitude Toward Free Version

Table 15: Perceived Premium Fit preliminary scale proposal

#	Statement	Source
1	There is a big similarity between the functionalities of the free version and those of the premium version of [Digital Service].	(d'Astous & Landreville, 2003)
2	The free version of [Digital Service] is similar to the premium version.	(d'Astous & Landreville, 2003)
3	There is a good association between the free version of [Digital Service] and the premium version of [Digital Service].	(d'Astous & Landreville, 2003)
4	The free version differentiates strongly from the premium version of [Digital Service] (Reversed).	(d'Astous & Landreville, 2003)

Attitude Toward Free Version: as the name says, it is the attitude that the user has toward the free version of the service. The Dual Mediation Hypothesis (DMH) may explain the possible cognitive and affective relationships between the free and premium versions of a service. The DMH has its origins in advertising, describing the impact of advertisements on consumers' product evaluation and their final intention to purchase the service (Homer, 1990) (MacKenzie, Lutz, & Belch, 1986).

Regarding advertisement and branding, cognitions (positive or negative thoughts) determine attitudes (positive or negative feelings). The DMH involves direct and indirect ways of changing attitudes (Petty & Cacioppo, 1981). Besides extending the DMH through new constructs previous researches also applied it to a new environment (Coulter & Punj, 1999). Helm & Bley (2009), for instance, used free promotional offers instead of advertisements, extending the model by including consumer characteristics and the characteristics of the free premium (value and product premium fit). The results indicate that consumers consider the value of the freebie more important than its functional relationship to the product.

Therefore, DMH may show how the different versions of freemium services are evaluated and how this evaluation can be influenced. The free version of the service can be regarded as an advertisement for the premium version with users being persuaded by testing the service and the provider (Wagner, Benlian, & Hess, 2014). User can test all the service's basic functions and evaluate whether they want access to its premium features.

In situations where users are forced to spend money on a service, cognitions about the product may specifically play a role. In contrast to attitudes, cognitions describe thoughts rather than feelings. Hence, Attitude Toward Free Version should influence cognitions about the premium version (Wagner, Benlian, & Hess, 2014). Therefore:

H_{24} Attitude Toward Free Version is positively related to Cognition Premium

Table 16: Attitude Toward Free Version preliminary scale proposal

This is a differential semantic scale:

The basic version of [Digital Service] is…

#	Statement	Source
1	very bad—very good	(Teng & Laroche, 2007)
2	very unfavorable—very favorable	(Teng & Laroche, 2007)
3	highly uncreative—highly creative	(Teng & Laroche, 2007)
4	least attractive—very attractive	(Teng & Laroche, 2007)

Perceived Value for Money: is defined as a share of a product's quality compared to its price. In this systematic literature review three constructs were combined into Perceived Value for Money due to its similarities. There constructs were perceived price value (Wagner, Benlian, & Hess, 2014), perceived fee (Wang, Oh, Wang, & Yuan, 2013) and perceived price/value for money (Lu & Hsiao, 2010). A similar combination of constructs was also made by Ovcjak, Hericko, & Polancic (2015).

Users assess the product positively if they provide a high evaluation of the price in relation to the value it provides. Quality and price are typical utilitarian attributes that influence cognitions, influencing attitudes indirectly (Wagner, Benlian, & Hess, 2014). Hence:

H_{25} Perceived Value for Money is positively related to Cognition Premium

Table 17: Perceived Value for Money preliminary scale proposal

#	Statement	Source
1	[Digital Service] is reasonably priced.	(Venkatesh, Thong, & Xu, 2012)
2	[Digital Service] is a good value for money.	(Venkatesh, Thong, & Xu, 2012)
3	At the current price, [Digital Service] provides good value.	(Venkatesh, Thong, & Xu, 2012)
4	[Digital Service] appears to be a good bargain.	(Sweeney & Soutar, 2001)
5	The quality of [Digital Service] is good relative to its price.	(Sweeney & Soutar, 2001)

Cognition Premium: as stated previously, this construct describes the thoughts that the user entertains regarding the premium version of the service (Wagner, Benlian, & Hess, 2014). It is influenced by Attitude Toward Free Version and Perceived Value For Money.

As already said, firstly, Attitude Toward Free Version influences Cognitions Premium. Then, these cognitions should influence user's Attitude Toward the Premium Version. In this regard, cognitions mediate the relationship between attitudes toward the free version and attitudes toward the premium version (Wagner, Benlian, & Hess, 2014).

H_{26} Cognition Premium is positively related to Attitude Premium

Table 18: Cognition Premium preliminary scale proposal

This is a differential semantic scale:

The premium version of [Digital Service] has…

#	Statement	Source
1	less salient attributes—more salient attributes	(Teng & Laroche, 2007)
2	low quality—high quality	(Teng & Laroche, 2007)
3	less advantages—many advantages	(Teng & Laroche, 2007)
4	less features – more features	(Teng & Laroche, 2007)

Attitude Premium: As said earlier, attitude toward a behavior is defined as the psychological tendency to respond or act in ways determined by favorable or unfavorable evaluations and beliefs (Fishbein, 1975). Davis (1989) defined attitude as the individual's positive or negative feeling about performing the target behavior - whereas cognitions are more related to thoughts rather than feelings. Therefore, it is expected that a more favorable attitude toward a behavior increased a person's intention to perform that it. Here the attitude is related to the premium version of the service. According to the DMH, Attitudes Premium have a direct influence on the intention to pay for such services (Wagner, Benlian, & Hess, 2014). Therefore:

H_{27} Attitude Premium is positively related to Willingness to Pay

Table 19: Attitude Premium preliminary scale proposal

This is also a differential semantic scale:

About the premium version of [Digital Service], I…

#	Statement	Source
1	dislike quite a lot—like quite a lot	(Teng & Laroche, 2007)
2	find it unsatisfactory– satisfactory	(Teng & Laroche, 2007)
3	find it very unappealing—very appealing	(Teng & Laroche, 2007)
4	find it very attractive — very unattractive	(Teng & Laroche, 2007)

Attitude Toward Paying: Attitude toward a behavior is defined as the psychological tendency to respond or act in ways determined by favorable or unfavorable evaluations and beliefs (Fishbein & Ajzen, 1975). Davis (1989) went on to define attitude as the individual's positive or negative feeling about performing the target behavior. Therefore, it is anticipated

that a more favorable attitude toward a behavior, the greater a person's intention is to perform that behavior. In this systematic literature review the relationship between Attitude Toward Paying and Willingness to Pay has been studied by 4 articles: Chen, Leon, & Nakayama (2018), Lin, Hsu, & Chen (2013), Chen, Leon, Nakayama, & Hooked (2018) and Sardanelli, Vollero, Siano, & Bottoni (2019). Therefore:

H_{28}: Attitude toward paying positively influences Willingness to Pay.

Table 20: Attitude toward paying preliminary scale proposal

#	Statement	Source
1	Paying for [Digital Service] is a good idea.	(Kim S. S., 2009)
2	I am favorable toward paying for [Digital Service].	(Kim S. S., 2009)
3	Paying for [Digital Service] is a wise idea.	(Kim S. S., 2009)
4	I feel positive about paying for [Digital Service].	(Kim S. S., 2009)

Switching Costs: refers to the economic, psychological, or social costs that would occur when the user ends the relationship with the service provider (Trenz, Huntgeburth, & Veit, 2019). As the sunk costs are usually low for B2C digital services such as music streaming, cloud storage and social networking sites, the procedural switching costs are the most relevant. They are related to the hurdles of finding and adapting to a new provider, losing the connection with other users and friends, losing preferences and customizations, risks, uncertainties, and others. In this systematic literature review the relationship between Switching Costs and Willingness to Pay has been studied by Trenz, Huntgeburth, & Veit (2019) and Kim & Son (2009). Therefore:

H_{29}: Switching Costs is positively related to Willingness to Pay

Table 21: Switching Costs preliminary scale proposal

#	Statement	Source
1	Switching to a different [Digital Service] provider is connected with some hassles.	(Kim & Son, 2009)
2	It would cost a lot of time and effort to switch the [Digital Service] provider.	(Kim & Son, 2009)
3	Problems could arise when switching to a different [Digital Service] provider.	(Kim & Son, 2009)
4	Switching to a different [Digital Service] provider is a complex process for me.	(Kim & Son, 2009)

Involvement and Interest: Is the level of personal importance, interest and knowledge that a consumer has about a product or a service. The more involved and knowledgeable a consumer is with and about a product or service, the higher the level of cognitive effort devoted to evaluate the service itself (Cesareo & Pastore, 2014). Involvement has been considered a relevant factor in influencing the consumer's decision-making (Bloch, 1981). The relationship between Involvement and Interest and Willingness to Pay has been studied by Cesareo & Pastore (2014). Therefore, we hypothesize:

H_{30}: Involvement and Interest positively influences Willingness to Pay.

Table 22: Involvement and Interest preliminary scale proposal

#	Statement	Source
1	I rate this [Digital Service] as being of the highest importance to me personally.	(Lastovicka & Gardner, 1978)
2	[Digital Service] is a topic that I could talk about for a long time.	(Lastovicka & Gardner, 1978)
3	I definitively have a "wanting" for this [Digital Service].	(Lastovicka & Gardner, 1978)
4	[Digital Service] is a subject that interests me.	(Lastovicka & Gardner, 1978)
5	Because of my personal values, I feel that this is a service that ought to be important to me.	(Lastovicka & Gardner, 1978)
6	I can make many connections or associations between experience in my life and this service.	(Lastovicka & Gardner, 1978)

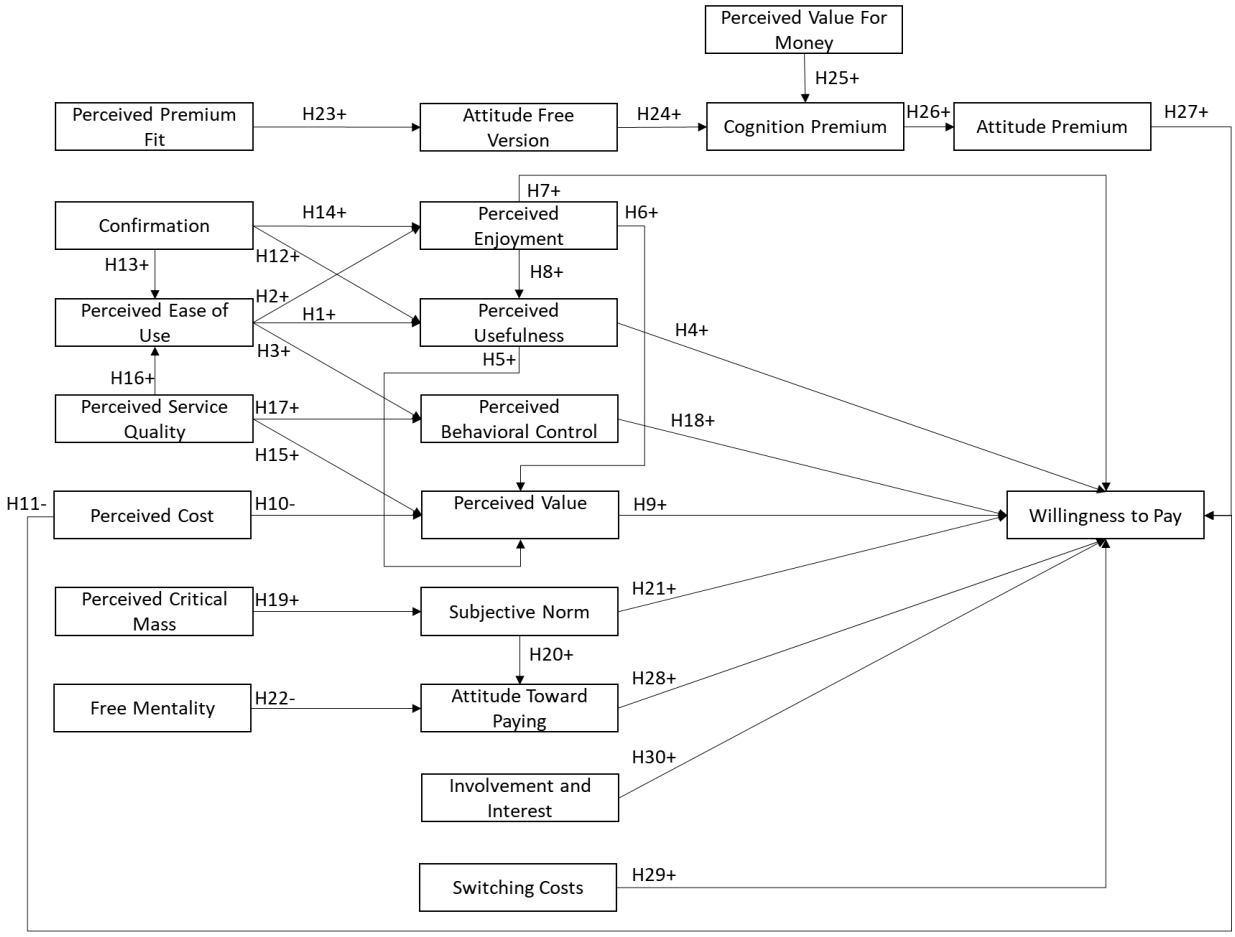
Willingness to pay: constructs such as behavioral intention to pay (Hsiao, 2011), willingness to pay (Kim & Son, 2009), subscription intention (Sardanelli, Vollero, Siano, & Bottoni, 2019), payment intention (Hsiao & Chen, 2017), willingness to try subscription (Cesareo & Pastore, 2014), among others, were combined in the willingness to pay construct. In all those cases both the items and the broader context of the corresponding papers measured the willingness to pay of the respondent for that digital service subscription. This is the dependent variable of the model.

Table 23: Willingness to pay preliminary scale proposal

#	Statement	Source
1	I am willing to pay a monthly subscription for the [Digital Service].	(Lin, Hsu, & Chen, 2013)
2	I am willing to pay a fee-based [Digital Service] in the future.	(Lin, Hsu, & Chen, 2013)
3	I will use the fee-based [Digital Service] in the near future.	(Lin, Hsu, & Chen, 2013)
4	I expect to subscribe to [Digital Service] in the near future.	(Kwong & Lee, 2002)
5	I anticipate myself to subscribe to [Digital Service] in the near future.	(Kwong & Lee, 2002)

Finally, after the definition of the relevant constructs and relations, together with the theoretical background that supports them, we propose the following integrative model for the subscription of digital services:

Figure 14: Integrative model for digital services subscription



3.5 The Proposal of a Parsimonious Integrative Model

The previous integrative model is useful to better understand and visualize the most relevant and studied constructs, theories and relations for digital services subscription. It gives tangibility to all the aspects presented in this systematic literature review. Yet, as it has a great number of constructs, the model becomes difficult to operationalize. Therefore, in the following figure, we present a parsimonious model, containing the most relevant constructs and the relations with the highest correlations, considering Willingness to Pay as the dependent construct. All the hypothesis, constructs and theories have already been discussed in the previous session. We also show in the model the median correlation for each of the relations.

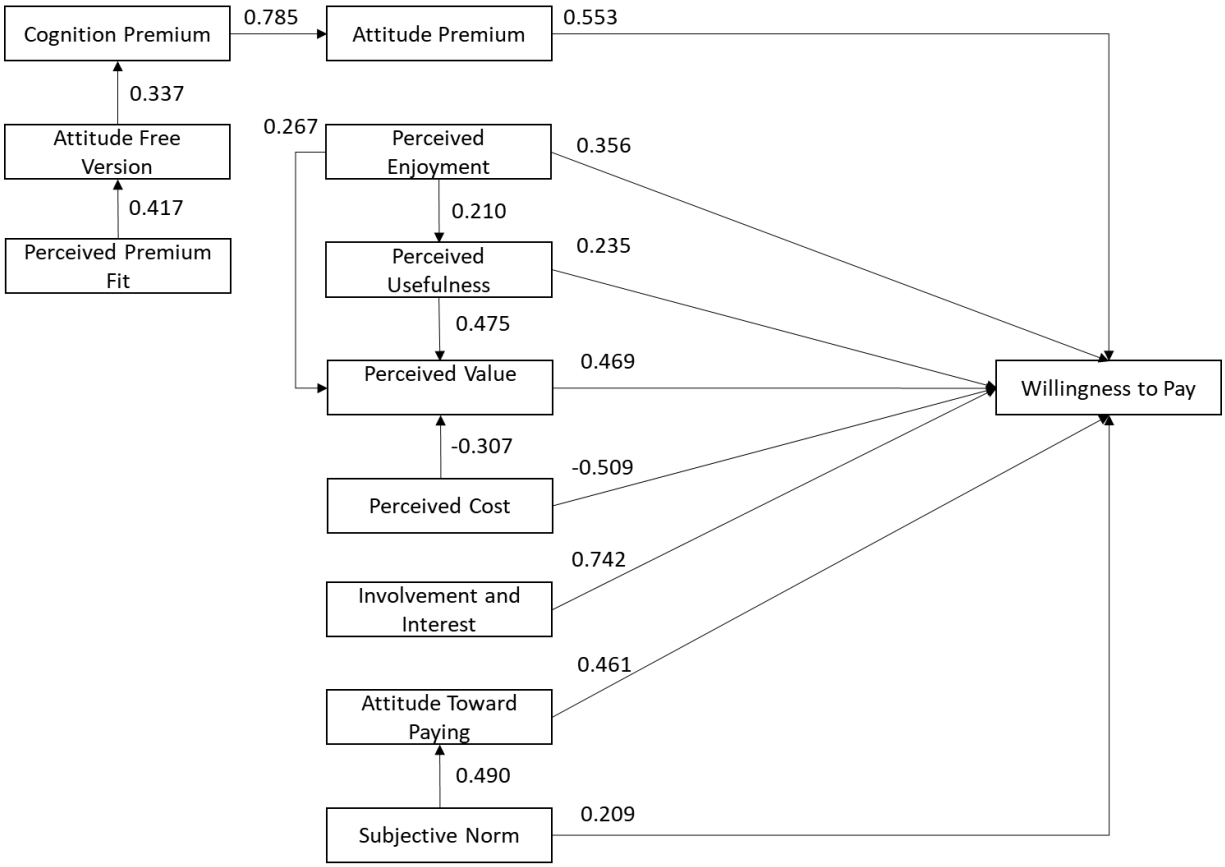
First, we have defined a minimum median correlation value as a filter to select the relations with the highest correlations. If this correlation value requirement was too low, the parsimonious model would have too many constructs, and operationalization would not be viable. If the value was too high, the model would have too few constructs, becoming incomplete and impairing its potential of explaining the dependent variable – Willingness to Pay. After some tests, experimenting with different minimum median correlation values and exploring how many constructs those correlations allowed the integrative model to have, we defined that the minimum median correlation is 0.400.

Second, started from the dependent variable backwards, we selected the relations and constructs that had a direct influence on Willingness to Pay. This "first layer" of constructs were Attitude Toward Paying, Perceived Value, Perceived Cost, Interest and Involvement and Attitude Premium. All those constructs had a correlation higher than 0.400 in module towards Willingness to Pay. Another important criterion of the selection of those constructs was their degree of "generality". This means that constructs that were too specific to one type of service were not selected, as our objective is to create a generic model, appliable to any kind of digital service. For instance, even though the construct "Music-based Psychological Ownership" had a correlation of 0.434 towards Willingness to Pay, it was not selected as it is specific to the music streaming service.

Third, we developed a similar process with the constructs of this "first layer". We selected constructs that presented a median relation higher than 0.400 towards each of the constructs of this "first layer", creating a "second layer" of constructs and relations.

Finally, we analyzed the model that emerged too see if it was coherent, presented constructs that explained the dependent variable from different points of view, and if the theories utilized in the systematic literature review supported the model. Because of that, two constructs were added to the final parsimonious model: Perceived Enjoyment and Attitude Toward Free Version. Those two exceptions are going to be explained further, after the presentation of the model in the following figure:

Figure 15: Parsimonious integrative model for digital services subscription



The most studied theories and models are embedded in the parsimonious integrative model. The Value-Based Adoption Model (VAM) is present, where Perceived Value represents the evaluation of the tradeoff between the sacrifices and benefits of the service, influencing directly Willingness to Pay. The most relevant benefits are the Perceived Usefulness and Perceived Enjoyment constructs, from the Technology Acceptance Model (TAM), both also influencing Willingness to Pay. The monetary cost represented by the Perceived Cost construct is the most relevant sacrifice, which also has a strong and direct effect on Willingness to Pay.

Even though none Perceived Enjoyment's correlations with other constructs is higher than 0.400, it was added to the model because of the following reasons: (1) to preserve the integrity of VAM, (2) it is linked to three other relevant constructs, (3) it has a direct influence on Willingness to Pay.

Furthermore, Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) are represented by the Subjective Norm and Attitude Toward Paying constructs. Even though Subjective Norm influence on Willingness to Pay is not as strong as other constructs, it has an important influence on Attitude Toward Paying, which has a relatively high influence on Willingness to Pay.

Additionally, constructs more recently developed such as Perceived Premium Fit, Attitude Toward Free Version, Cognition Premium and Attitude Premium represent user's perceptions of the free and the premium versions of services. Those perceptions lead to the high influence that Attitude Premium has on Willingness to Pay. Therefore, even though Attitude Toward Free Version has a correlation lower than 0.400 towards Cognition Premium, it was added to the model to maintain the coherence of this free and premium version comparison of the digital services.

Finally, Involvement and Interest was the construct with higher influence on Willingness to Pay, consequently being represented in the final model.

As can be seen from the theories, definitions of the constructs and their preliminary scale proposals, the parsimonious integrative model is not restricted to any specific type of service. Besides that, this systematic literature review selected articles from diverse categories of digital services where those theories and constructs were tested: music and video streaming, cloud services, social networking sites, newspapers, e-books, among others. Therefore, we expect that the parsimonious integrative model would be applied to different types of digital services.

4 CONCLUSION

This paper aims at understanding the factors that influence the paid subscription of digital services. A systematic literature review identified 21 publications that were carefully analyzed, covering theories, models and constructs related to digital services subscription. The review focused on the constructs that are involved in digital service paid subscription research, besides exploring the causal relations between those (i.e. median significance coefficients, percentage of significant instances). All the data analyzed in this literature review were finally used to create an integrative model for digital service subscription, with 20 constructs and 30 relations.

In addition to that, a parsimonious version was also produced, reducing the number of constructs and relations, based upon the intensity of the coefficients found in the literature. This model has 12 constructs and 16 relations.

This work could be useful for researchers of the area with the study of the constructs, theories and the proposition of an integrative model that can be operationalized, validated and used in future research. Developers could also benefit from the results for creating better digital services, aimed at better user experience and increased revenues from subscription, while digital services vendors could provide more customer-centered offers.

We expect following studies to operationalize, validate and test this proposed model. Ideally, this model should be tested in a cross-country study, in order to understand and validate hypotheses and the integrative model. As already mentioned, there is an opportunity for testing models in Latin America, Africa and Oceania – as no papers were found in this systematic literature review for those localizations.

This systematic literature review should be interpreted considering the following limitations. First, this study was designed to research the field of digital services as broadly as possible. This fact constitutes a limitation as it is not focused and does not present an in-depth review of specific digital service type.

Second, the literature search process was conducted in the second semester of 2019, being limited to journal articles and English language.

One of the limitations of systematic literature reviews is the search string itself, which impacts the resulting set of the investigated literature. Since one of the objectives of our research was to investigate the general field of digital services paid subscription, we adapted

the search string accordingly. Therefore, some of the digital services types may not be represented in our research comprehensively.

Besides the operationalization of the model, we recommend that future exploratory researches in order to identify emergent variables that could be used for the development of new models for the digital subscription phenomenon. For instance, given the growing number of competitors in this business model, constructs such as the ones that deal with the multihoming behavior could also be considered.

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