

## ARTICLE

## Motivators for using on-demand vehicle sharing services in Brazil

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### ABSTRACT

This study focused on the analysis of motivators for the use of on-demand travel modes in Brazil. The methodological procedures included the use of combined methods of probabilistic sampling and pre-tests to design the research instrument and use of the IBM SPSS Statistics software, for data treatment which used, among others, exploratory and confirmatory factor analysis. The five major regions of Brazil were considered in this research, totaling 2150 interviews, indicating the existence of fourteen motivators for use involving the economic, social, environmental, and technological dimensions, however, only six variables comprise the structuring nucleus of demand and are based on an element of economic order (Reduced Tariff), one of a socioeconomic nature (Expectation of Benefits) and four technological drivers (Technological Availability, Convenience of Time and Boarding in addition to Data Security), which figure as utilitarian indicators, corroborating the results of international studies and contrasting those that signal hedonistic elements as relevant. In this sense, the study presents advances in establishing parameters of consumer choice based on the use of platforms aimed at displacement, figuring as an indicator of the reasons for use and their scaling of relevance in the users' decision-making process.

### KEYWORDS

Consumer Behavior, Sharing Economy, Technology

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## 1. INTRODUCTION

Changes in consumer behavior, combined with the set of technological developments and their impacts on the daily lives of individuals and organizations, as well as fluctuations and changes in the individual economic situation, fostered the emergence of the embryo that is now understood as vehicle sharing services on-demand, which presents itself as a distinctive model based on the logic of access to an asset rather than its property, consisting of five strictly connected pillars: People, technology, cost, idleness, and temporality of use, which leads individuals, for example, to lend or borrow - involving or not involving money - instead of aiming to own something.

Considering a set of factors triggered in the relations between companies and people – especially when associated with crises; changes in consumer behavior concerning their purchasing power toward understanding the ownership and enjoyment of goods or services, in addition to technological advances and the development of connective platforms.

The volume of applications offering travel on-demand has increased considerably in Brazil. The national market accommodates companies such as Uber and 99 Taxi, but it also serves niches such as Lady Driver (women), Eu Vô (elderly), Garupa (small and medium-sized cities), Jaubra (periphery) among other niches (Microsoft Store, 2020).

Given the context of expansion and evolution of the offer, it was necessary to research the motivators for the use of means of travel on-demand, characterized by the use of an application program to request a vehicle for urban displacement, in this case, as a way of understanding the consumer's decision-making.

The study focused on the discussion of motivators for the use of modes of travel on-demand in Brazil. To achieve this objective, the structuring of the target audience and the locations of incidence, we opted for combined methods of probabilistic sampling, in addition to carrying out pre-tests to assemble the research instrument.

The research regarding the motivators for the use of on-demand travel modes presents a relevant contribution to the field of studies when discussing the set of conditioning elements of consumer decision-making, particularly considering that a consistent part of national studies (Mann et al., 2018; Sampaio et al., 2018; Santos et al., 2019) and international (Nelson & Sadowsky, 2017; Henao, 2017) analyze partial aspects of the consumption relationship, such as research focused on the social aspect (Arruda et al., 2016), the environmental aspect, (Bezerro & Santiago, 2017) and even the economic aspect (Cassel, 2018) of the offer, without, however, questioning the set of factors inducing the demand as a whole.

Finally, it is indicated that the main contributions of this study to both the theoretical field and professional practice are centered on the categorization and hierarchy of motivators that predict the consumption of platform commuting services compared to international studies, in addition to questioning the cost and non-possession roles as central drivers of consumption. It is emphasized that the answer to both hypotheses represents an important theoretical leap in national terms, considering the impacts that this type of service has achieved in the country.

The results indicated the existence of social and economic motivators influenced by technology, whose utilitarian nature, as opposed to the hedonistic aspect of consumption, indicates cost as an element of the first magnitude, in addition to the technological facilitator and the final objectives with the movement at the expense of the displacement itself.

## 2. LITERATURE REVIEW

The Sharing Economy has usually been defined as any activity that involves obtaining, offering, or even sharing access to goods or services, coordinated from community services in a virtual environment, being labeled with different names, such as collaborative consumption, access, or platform economy, in addition to the gig economy (Belk, 2014).

The Sharing Economy has, as main characteristics, online collaboration, exchanges based on mutual benefits, the notion of online sharing, and the ideology of consumption (Hamari et al., 2015), whereas the on-demand applications offered by travel services are usually called ride-hailing or ride-sourcing, as they connect the demanders of a given product or service - in this case, mobility- with providers through technological resources such as platforms and applications. These companies are named as Transportation Network Companies (TNC's) (Henao, 2017; Cassel, 2018).

This type of offer has reshaped the way people move in cities (NTU, 2019) considering the way the offer is made available, based on technology, which allows for an easier service request, with reduced prices and security, with accelerated proliferation, especially in cities with deficient public transport and high level of demand (Rayle et al., 2016; Coelho et al., 2017).

It is necessary to distinguish between the different formats of access to goods and services, sometimes mistakenly associated with the sharing economy, they are:

- a) **Collaborative Economy:** the economic system of decentralized networks and markets that provides underutilized assets combining needs and availability, avoiding traditional intermediaries (Botsman, 2013).
- b) **Sharing Economy:** an economic system based on the exchange of underutilized goods/ services that include money or not and that occurs directly between people (Eckhardt & Bardhi, 2015; Frenken & Schor, 2017).
- c) **Collaborative consumption:** emerges as the reinvention of rent, loan, exchange, sharing, donation, based on technology, positioning itself as a phenomenon of technological impact (Dubois *et al.*, 2014).
- d) **On-demand services or Ridehailing:** platforms that connect customers to mobility providers immediately (Botsman, 2017).

Sharing economics is a term commonly, and incorrectly, associated with the idea that there is an efficient model of linking supply to demand without, however, actually sharing or collaborating in the process (Ertz & Leblanc-Proulx, 2018). In the context of commuting, it is necessary to defer the nature of the Uber or 99 Taxi offer that bring the logic of purchasing on-demand for a service, that is, they do not represent an underutilized asset, from the Wazecarpool offer, for example, which makes available a "Vacant seat" due to the cost of traveling (Schor, 2016; Standing et al., 2018).

Botsman (2013) points out that, by mistake, all these offers are commonly launched under the same umbrella, indicating part of the structural change in consumer behavior and indicates the existence of 3 possible types of systems. The first is the redistribution market in which the asset is reused by a new owner; the second refers to the collaborative lifestyle, in which people with similar interests help each other from the technological facilitator, and the third refers to the payment for the benefit of the product or service and not its possession.

It is observed that the ascendancy of this business model occurs first in countries with a high degree of industrialization, specifically in highly saturated markets for consumer goods. In this context, collaborative consumption started to offer consumers the exchange of the current logic, based on the ownership of something for access to a good or service. (Botsman & Rogers, 2010).

In developing countries, however, the situation is different. In those where there is a greater economic escalation or lack of environmental and social awareness, acquisitions can still occur from ownership (Belk, 2014), and according to Retamal (2019) “... in emerging economies, the situation of (...) rapid growth of the middle class leads to the search for access or possession of consumer goods for the first time”, which indicates a potential for the area because, in places where the economic crisis is installed, in some way - property or access - they can lead people consumption of goods at different levels and forms (Dubois et al., 2014; Hamari et al., 2015; Godelnik, 2017).

From the digital sharing of information, goods, and even services, the consumer's relationship with the possession or ownership of something becomes dematerialized, the goods gain a connotation of intangibility, changing the level of desire to own something, which has migrated to use and thus obsolescence becomes faster and the previous logic of possessing something loses strength (Botsman & Rogers, 2010; Belk, 2014).

Besides, aspects such as cost and non-possession are pointed out, especially in countries whose users would present beacons based on environmental and social aspects (Ward et al. 2019; Tirachini & Ríoc, 2019) among their decision-making elements, and thus, made it relevant to understand whether such a phenomenon occurs in Brazil (Freitas et al., 2016; Rayle et al., 2016; Coelho et al., 2017), which would indicate the utilitarian or hedonistic character of consumption.

International studies such as those by Dubois et al., 2014; Frenken & Schor, 2017; Böcker & Meelen, 2017; Casey & Galor, 2017; Yaraghi & Ravi, 2017; Godelnik, 2017 and nationals such as those of Coelho et al., 2017 and Sampaio et al., 2018 point directly or indirectly to both cost and non-possession as elements to be observed.

Stephany (2015) indicated that the values associated with underutilized goods when made available to the community through digital media would have the consequence of reducing the need for possession, and, in turn, Bucher et al. (2016) identified that materialism, sociability, and volunteering would be predictors of the motivation to share and that the social aspect has the greatest impact, followed by the moral and monetary elements. Maurer et al. (2016) in a national study, indicates that participation in the sharing economy underlies a rational behavior of maximizing utility, which Hamari et al. (2016) complement by indicating that the replacement of the exclusive ownership of goods by a service of Low-cost sharing is a latent phenomenon.

For Bellotti (2015) the efficient use of assets will help to prevent imminent shortages by promoting reuse and sustainability, indicated by the lack of ownership and having a reduced cost threshold due to the reuse and sustainability inserted in the model, a point corroborated by Botsman & Rogers (2010) that indicate the positive environmental and social effects of sharing, and this indication is complemented by another national study by Da Silveira et al. (2016) which indicates that the shared economy combines elements of an economic nature, in this case, reduced cost, with environmental and social aspects, which are indicated by the lack of ownership among others. Given these notes, the following hypothesis is generated:

- **H1:** cost and non-possession are the main elements of vehicle sharing services on demand in Brazil.

In answering this hypothesis, the study fills the gap that concerns Brazilian's perception of not owning a vehicle, considering the national culture of vehicle ownership (Mann, 2018; NTU, 2019) and the use of forms of shared mobility on demand that have the cost between its elements of consideration of exponential relevance (Arruda et al., 2016; Bezerro & Santiago, 2017; Santos et al., 2019).

The main companies that provide services on demand, reorganize local transport and influence the dynamics of cities, and thus influence congestion levels or even parking costs (Cassel, 2018), can also change the demand for public or private transportation (Nelson & Sadowsky, 2017) while it can offer transportation at a convenient time, for example (Tirachini & Ríoc, 2019; Ward et al., 2019).

To a large extent, the Sharing Economy has grown worldwide thanks to several information technology applications (Chahal & Kumar, 2014) in addition to ways to access and promote the acquisition of devices such as smartphones, which promote the use of online platforms (Eckhardt & Bardhi, 2015).

The large-scale adoption of smartphones and the reduction in the communication costs of mobile devices allowed for the emergence of Moby-on-demand (MoD.), which is capable of providing users with a reliable mode of mobility, improving virtual access, and physically reducing waiting times, and the stress associated with travel (Alonso-Mora et al., 2017).

The cultural and social expressions instrumented by the virtualization of reality and relationships make coexistence and consumption hybrid (Castells, 2013), allowing the transition of relations between the virtual and the real, which is something that, particularly for generations who have grown up with access to connectivity, has been provided by the availability of the Internet, has amplified the social interactions (Greenberg & Weber, 2008) and exchanges that generate sharing, as well as amplifying use at the expense of possession, and a sense of belonging to groups and causes, which is positively incorrect in forms of consumption based on access to goods and experiences (Eckhardt & Bardhi, 2015).

There are indicators from the consumer experience with the services on demand that point to the main consumption drivers being the monetary benefits (Bellotti et al., 2015) coming from the reduced cost (Mohlman, 2015), minimizing information asymmetry, considering the online reputation system, and expanding the choice of products and services with better prices and higher quality (Acquier et al., 2017).

It is possible to observe the insertion of social, economic, environmental, and technological dimensions in the embryonic process of the emergence of Sharing Economy as a field of study, based on a set of prerogatives, such as consumer concern with sustainability and yearning for new social connections, reduction production, and consumerism, in addition to the virtualization of relationships among other aspects, allowed the concept to rise and strengthen itself as an innovative business model (Botsman & Rogers, 2010; Dubois et al., 2014; Schor, 2016).

Finally, it is necessary to assess which are the main drivers of consumption of the service on demand, considering studies that point out the economic aspect as relevant (Frenken & Schor, 2017; Böcker & Meelen, 2017; Godelnik, 2017) while other studies (Schor, 2016; Yaraghi & Ravi, 2017) indicate that the social or even environmental element (Casey & Galor, 2017; Nijland & Meerkerk, 2017) as well as even the technological (Teubner & Flath, 2015) as motivators associated with the use of such modals. In this sense, the hypothesis arises that:

- **H2:** the set of motivators associated with Sharing Economy in the context of the on-demand modals of displacement in Brazil figure in the economic, environmental, social, and technological dimensions.

In responding to this hypothesis, the study fills the categorization and hierarchy of reasons for use gap based on the consumer decision-making process, while, at the same time, indicating paths to be followed by professionals related to the area regarding consumption conditions and the importance of each dimension from the perspective of those who use this type of service.

### 3. METHODOLOGY

The sample composition was determined by three probabilistic sampling methods. The sampling grid was used to satisfy the assumption of clear identification of the members of the population of interest and the exclusion of foreign elements (McBratney et al., 1981), and in this sense, the approach for the application of the questionnaires focused on individuals with behavioral posture that was indicative of the use of the service (cell phone in the hands, stopped at selected pick-up points and carefully observing the cars that approached, in addition to those that stopped at the same locations).

Additionally, the precepts of systematic sampling were used to obtain as many sample subjects as possible, with the possibility of harmonic participation (Nezer et al., 2016), determining that every two boardings or off-boarding of observed users, the third element would be approached.

Such methods were combined with cluster sampling, as a way to determine the main incidence sites of the sample set (Zhang et al., 2016) mapped in the following locations: São Paulo (SP), Presidente Prudente (SP), Campo Grande (MS), Dourados (MS), Curitiba (PR) and Maringá (PR), which were used for the application of pre-tests, respecting the scalar representativity. In this sense, they were determined from on-site observation and an indication of autochthonous, service use centers, which generated the following set of locations: airports, shows/fairs/events, shopping centers, universities and colleges, highways, public markets, and hotels.

The pre-test had a four-dimensional questionnaire, supported by surveys in several countries, as can be observed in Table 1.

**Table 1**  
*Factors and authors*

Authors	Factor
Böcker & Meelen, 2017; Yaraghi & Ravi, 2017; Godelnik, 2017.	ECONOMIC Reduced tariff value; productivity and efficiency, financial savings.
Teubner & Flath, 2015; Botsman, 2017.	TECHNOLOGICAL Digital and interpersonal reliability; access to electronic device and connection means.
Casey & Galor, 2017; Nijland & Meerkerk, 2017.	ENVIRONMENTAL Lower air pollution and carbon emission reduction, less environmental degradation and fuel consumption.
Schor, 2016; Yaraghi & Ravi, 2017, Botsman, 2017.	SOCIAL Social trust; generation of social relationships, perception of sharing, desire to share.

*Source:* authors cited in the table.

The structuring of the questions in each factor for establishing the effectiveness of the research instrument was based on the Likert five-point scale (Norman, 2010), in which 1 meant “irrelevant”, 2 “not very relevant”, 3 “important”, 4 “very important” and 5 “indispensable”.

The first pre-test questionnaires were applied between mid-December 2018 and mid-January 2019 for a period of one hour at each incidence point identified for validation of the research instrument, and for up to twelve hours in each previously named municipality, earning two hundred and forty-six valid samples. Two points emerged considering the set of actions and procedures.

The first is that the proportion of use was approximately 3 to 1 in the capitals, that is, in the same period, three users embarked in the capitals against one in the smaller cities, which led to the selection of 150 samples for the capitals and 50 for the municipalities with more than 100 thousand inhabitants.

The second point - from the pre-tests - deals with the dimensions considered relevant to the choice of the on-demand travel service. The set of items pointed out notably by international studies did not prove to be fully adherent to the Brazilian case, generating the need for modeling the research instrument, in this sense, it was applied according to a pre-test in the same locations between the end of January and the end of February 2019, from the following set of questions (Table 2):

**Table 2**  
*Questionnaire adapted to the Brazilian case from the pre-tests*

Dimension	Question
Cost	
Reduced Fee	Travel fares are cheaper. And I consider that:
Elimination of expenses	I can eliminate expenses with parking, fuel, insurance, maintenance when using a vehicle on demand. And for me this is:
Technological Convenience	
Technological Availability	I can make use of this type of service due to the offer of access platforms that have facilitated my way of traveling. And in my opinion, this is:
Data security	My data protection systems and the knowledge of the driver’s data generate in me trust of use. And I consider this to be the case:
Convenience of Use	
Schedule convenience	With a platform I have the convenience of using the services at any time without having to move or call a travel company. And for me this is:
Travel safety	I follow the journey through my smartphone, board at a convenient location and trust the company and the driver, which leaves me safe on the way. And in my opinion, this is:
Boarding/unboarding convenience	I can wait for the vehicle in a safe place and also unboarding in a specific place. And I consider this:
Use Experience	
Socialization	I have the possibility to talk to the driver, know about some place or information during the trip. And that is for me:
Expectation of use	I can use the service whenever I want, go out at night, move to some point without worrying about driving, with the break of the vehicle or with the time back, for example. And in my opinion, this is:
Absence of requirements	This type of service allows me to move even if I have motor, cognitive, knowledge of the route, of documents. And I consider this:

**Table 2**  
*Cont.*

Dimension	Question
Environmental Benefits	
Vehicle reduction	When using this service, I have the awareness and satisfaction of understanding that there is one less vehicle in circulation. And for me this is:
Pollutants reduction	I have the perception that by using this type of displacement I am contributing to the reduction of the emission of pollutants. And in my opinion that is:
Social Benefits	
Valuing the professional	By using this type of displacement, I am favoring the individual professional over a company. And I consider this:
Income generation	When I prefer this kind of displacement, I know that I am generating income for one person. And for me this is:

*Source:* Author.

The survey took place between May 2019 and January 2020, obtaining 2150 valid questionnaires – from people over 18 who had already used the service more than five times – in nine Brazilian states (Belo Horizonte, Campo Grande, Curitiba, Florianópolis, Manaus, Natal, Rio de Janeiro, Salvador, São Paulo) besides the Federal District and in fourteen cities with more than 100 thousand inhabitants (Balneário Camboriú (SC), Bauru (SP), Campinas (SP), Campo Largo (PR), Cascavel (PR), Dourados (MS), Feira de Santana (BA), Foz do Iguaçu (PR), Maringá (PR), Mossoró (RN), Niterói (RJ), Presidente Prudente (SP), São José (SC) and Uberlândia (MG)). The set of variables was subjected to the internal consistency test (IBM SPSS Statistics) to generate the reliability indicator (Table 3).

**Table 3**  
*Level of internal consistency*

Reliability statistics	
Cronbach's Alpha based on standardized items	Nº items
,858	16

*Source:* Author.

This value indicates a high level of internal consistency of the variables (Landis, & Koch, 1977) and indicates that the set of items shows coherence and cohesion with a factor load greater than 0.60, representing a satisfactory parameter of one-dimensionality and consistency internal. Sequentially, the following elements are presented (Table 4):

**Table 4**  
*KMO and Bartlett test*

Kaiser-Meyer-Olkin measure of sampling adequacy	,904
Chi-square approx.	18338,691
Bartlett's sphericity test	df
	91
	Sig.
	,000

*Source:* Author.



Both the Kaiser-Meyer-Olkin measure above 0.80 and the Bartlett sphericity test have adequate significance (Hair et al., 1987).

The data analysis relied on the use of the IBM SPSS Statistics software, using a set of indicators considering the nominal qualitative characteristics of the independent variables analyzed through the Exploratory Factor Analysis complemented by the Confirmatory Factor Analysis, to determine the inferences regarding the proposed hypotheses.

#### 4. DATA ANALYSIS AND DISCUSSION

To answer the two proposed hypotheses, it is first necessary to present the data set related to the validation of a set of described elements from the sample. Such a data set helps to allocate the variables in a ranking and ordering of their degree of importance, as can be seen in Table 5:

**Table 5**  
*Frequency of use and degree of importance*

Motivators	Average (Likert)		Standard Deviation	Variation	Asymmetry	General	
	General	Standard error	General	General	Statistics	Average % *	Mode
Technological Availability	4,58	0,018	0,556	0,532	-1,772	88,91%	5
Reduced fee	4,48	0,017	0,609	0,454	-1,657	91,57%	5
Expected Benefits	4,47	0,017	0,575	0,401	-1,346	86,86%	5
Convenience of schedule	3,92	0,016	0,537	0,344	-1,397	75,52%	4
Data security	3,83	0,016	0,539	0,346	-0,933	69,66%	4
Boarding convenience	3,65	0,02	0,531	0,566	-0,826	66,78%	4
Travel safety	2,98	0,016	0,428	0,331	-0,001	21,30%	3
Elimination of expenses	2,73	0,016	0,538	0,345	0,483	10,23%	3
Absence of requirements	2,26	0,018	0,521	0,475	-0,2	1,30%	2
Individual income generation	1,93	0,02	0,539	0,582	0,244	1,22%	2
Socialization	1,71	0,012	0,449	0,302	0,946	1,11%	2
Pollutant Reduction	1,47	0,013	0,485	0,342	1,301	1,05%	1
Valuing the professional	1,61	0,012	0,454	0,307	0,666	0,79%	1
Reduction of vehicles in circulation	1,47	0,012	0,477	0,333	1,122	0,76%	1

\*Sum of categories 4 (very important) and 5 (essential) the Likert scale

Source: Author.

Standard deviation, variation, and asymmetric proportionality present levels considered adequate and, therefore, reliable and consistent, allowing the sequence of contextualization of the first hypothesis response.

Considering that the “Reduced Fee” (Average: 4.48 / Combined Average: 91.57% and Mode: 5) and the “Elimination of Expenses” (Average: 2.73 / Conjugated Average: 10.23% and Mode: 3), while belonging to the same category, do not present similar indicators, points to the fact that the cost, although important, divides space in the decision to use with other motivators.

The survey also found that 77.66% of the sample does not consider the possibility of scrapping or failing to purchase a vehicle for family use or work, which invalidates the second hypothesis,

that is, non-possession and cost do not represent the major motivators for the use of the service within the Brazilian sample.

Studies that pointed out such elements as robust in the perception of consumers in the places where the surveys were carried out (Belk, 2014; Eckhardt & Bardhi, 2015; Henao, 2017; Mann, 2018) were not corroborated by this study. Besides, national surveys have shown growth in the acquisition of vehicles for private use (Rayle et al., 2016; Sampaio et al., 2018; Ward et al., 2019) without disregarding the appearance of vehicle signatures in the country, which presented a considerable number of offers (Coelho et al., 2017; Santos et al., 2019; Tirachini, & Ríoc, 2019). Such inference indicates a model of the national decision-making process distinct from the experiences of other countries.

Thus, attention shifts to the second hypothesis, which advocates the categorization of consumption drivers in Brazil, and as the first contextualization stage, Exploratory Factor Analysis was used to confirm the set of variables from the pre-tests, expressed in Table 6:

**Table 6**  
*Communalities, component matrix and factor allocation*

Indicators	Reduced Fee	Technological availability	Expected benefits	Time convenience	Data security	Convenience of boarding / unboarding	Travel safety	Elimination of expenses	Absence of requirements	Individual income generation	Socialization	Pollutant reduction	Valuing the professional	Reduction of circulating vehicles
Communes	0,823	0,794	0,758	0,602	0,669	0,738	0,685	0,635	0,618	0,632	0,555	0,725	0,623	0,608
Component matrix <sup>a</sup>	0,886	0,864	0,853	0,749	0,754	0,841	0,665	0,592	0,585	0,684	0,672	0,851	0,551	0,568
Factor <sup>b</sup>	1	1	1	2	2	2	3	3	3	3	4	4	4	4

<sup>a</sup> Rotation method: Oblimn with Kaiser normalization.

<sup>b</sup> Indicates the range of the component that the motivator is inserted, complemented by the scree plot.

Source: Author

All values expressed in the commonality field are above 0.500 indicating the adequacy of the variables, as well as in the factors field, the explanatory order of the factors can be observed, as can be seen in Table 7.

It is observed that the “Extraction sums of squared loads” and the “Rotating sums of squared loads” present adequate indices. Observe the Scree Plot (Figure 1).

The set of proposed variables explains 72.40% of the decision-making process from the flexion point allocated in the fourth component, which indicates that the proposed motivators can be considered valid and indicative of the path to inferences related to the second hypothesis.

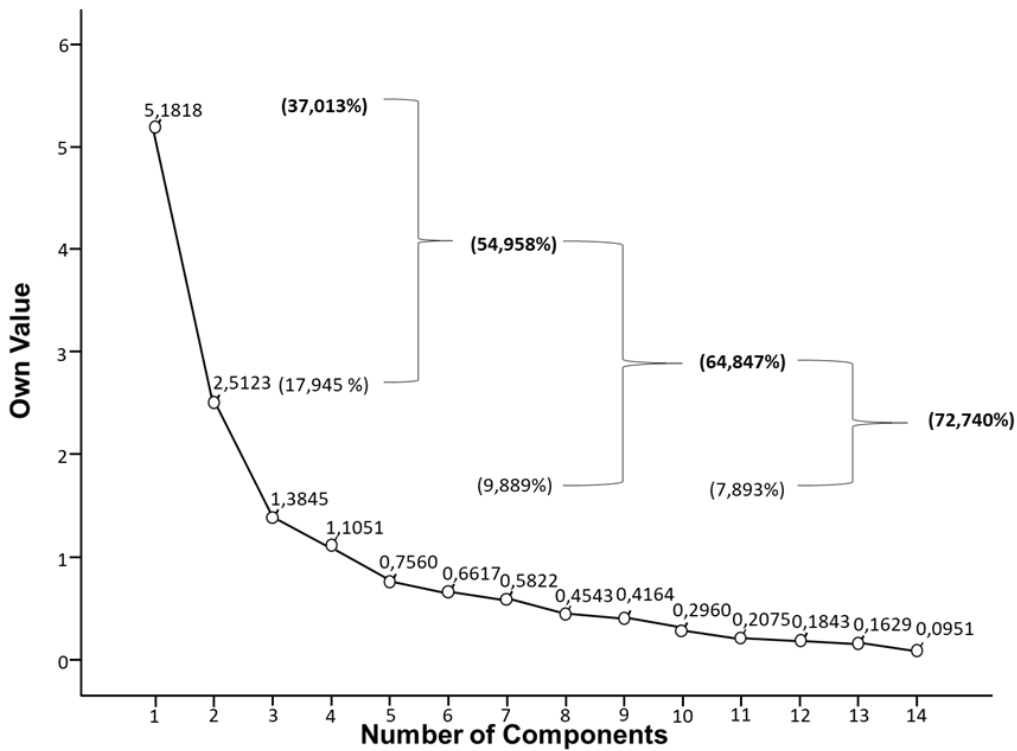
However, to give more robustness to the inferences expressed below, two models were run through Confirmatory Factor Analysis. Before this could be done, there was a need for adjustments considering the scalar nature of the data.

**Table 7**  
*Total Variation Explained*

Component	Initial eigenvalues			Extraction sums of squared loads			Rotating sums of squared loads
	Total	% variation	% cumulative	Total	% variation	% cumulative	Total
1	5,182	37,013	37,013	5,182	37,013	37,013	4,947
2	2,512	17,945	54,958	2,512	17,945	54,958	2,604
3	1,384	9,889	64,847	1,384	9,889	64,847	2,032
4	1,105	7,893	72,74	1,105	7,893	72,74	1,472
5	0,756	5,4	78,14				
6	0,662	4,727	82,867				
7	0,582	4,159	87,025				
8	0,454	3,245	90,27				
9	0,416	2,974	93,244				
10	0,296	2,114	95,358				
11	0,207	1,482	96,84				
12	0,184	1,316	98,156				
13	0,163	1,164	99,32				
14	0,095	0,68	100				

Extraction method: analysis of the main component.

Source: Author.



**Figure 1.** Scree Plot.

Source: Author.

The first model involved the fourteen variables raised in the pre-test and confirmed during data collection and analysis, the modified model accommodated the six variables with the best indexes from the figure and the previous tables, namely Reduced Fee, Technological Availability, Expected Benefits, Convenience of Boarding, and Schedule in addition to data security. The data can be seen in Table 8.

**Table 8**  
*Distinctive indicators between models*

Models	Absolute Adjustment Measures		Incremental Adjustment Measures			Parsimony-Adjusted Measures			
	Chi-square	RMSEA	CFI	TLI	NFI	PRATIO	PCFI	PNFI	AIC
Model 1	0,000	0,188	0,694	0,608	0,692	0,780	0,540	0,542	5541,561
Modified Model	0,0068	,0059	0,917	0,936	0,922	0,888	0,794	0,774	2312,562

**Source:** Author.

It is observed that Model 1 presents indicators (RMSEA: 0.188 / CFI: 0.694 / TLI: 0.608 / NFI: 0.692 / PRATIO: 0.780 / PCFI: 0.540 / PNFI: 0.542) that indicate the need to refute the model as proposed.

Whereas the modified model showed a verisimilitude rate expressed by the chi-square greater than 0.05 indicating that the distance between the observed data matrix and the estimated matrix is appropriate (Carmines & Mclver, 1981). The RMSEA (Root-Mean-Square Error of Approximation) - which expresses the amount of variation that cannot be explained by the model - generated an index lower than 0.050, being also considered adequate.

The incremental adjustment measures had three important indicators for contextualizing the proposed model. The CFI (Comparative Fit Index), TLI (Tucker-Lewis Index) above), and NFI (Normed Fit Index) above 0.90, which indicates structural adequacy.

The Parsimony adjustment measures, expressed by PRATIO, PCFI (Parsimony Comparative Fit Index), and PNFI (Parsimony NFI) in the modified model, presented indices considered adequate by the literature (Mulaik et al., 1989).

From the AIC (Akaike Information Criterion) it can be inferred that the difference between the initially proposed model (5541,561) and the adjusted model (2312,562) indicates robust consistency (Akaike, 1974) of the latter in terms of responding to the study's question regarding the motivators for using the mode of travel on-demand, giving consistency to the proposed set.

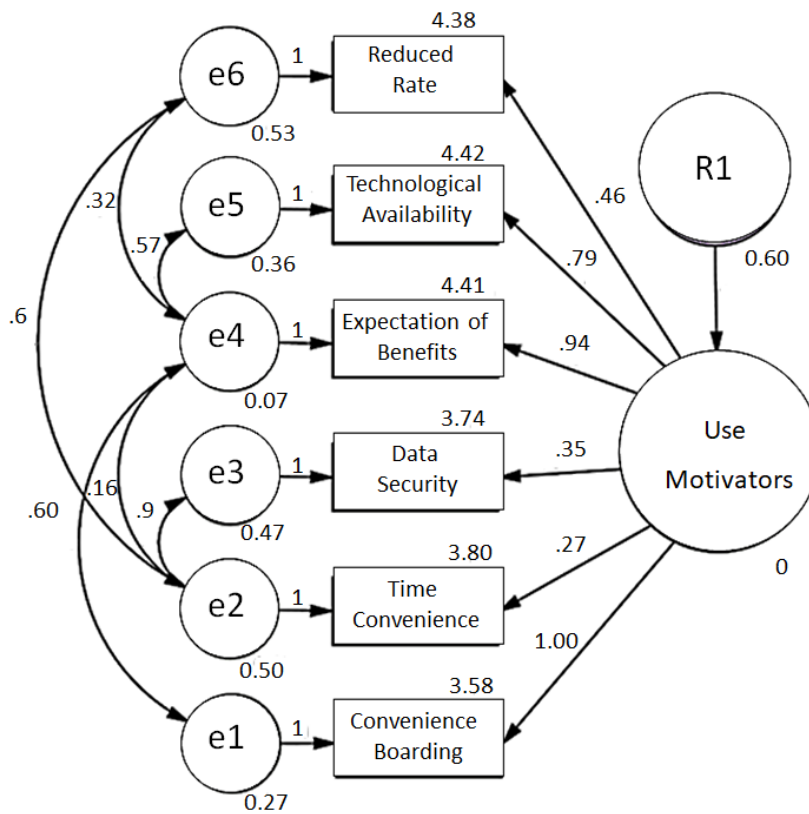
A second step in the analysis of the confirmatory analyses is related to the contextualization of a set of indicators presented sequentially (Table 9).

The *p* values expressed in the "Regression Weights" "Variances" and "Intercepts" fields demonstrate the adequacy of the proposed model (< 0,001), as well as the data presented in the "Standardized Regression Weights" and "Squared Multiple" fields, in addition to the elements that indicate the absence of multicollinearity point to the inference of the consistency of the adjusted model. Figure 2 shows the set of relationships established by the modified model.

**Table 9**  
*Indicators generated by the Confirmatory Factor Analysis*

Variables	Regression Weights				Variances				Intercepts				Standardized Regression Weights	Squared Multiple
	Estimate	S.E.	C.R.	P	Estimate	S.E.	C.R.	P	Estimate	S.E.	C.R.	P		
Reduced Fee	1,000				,556	,032	17,174	***	3,585	,020	178,560	***	0,801	,207
Technological Availability	,321	,025	12,933	***	,310	,023	13,481	***	3,801	,016	239,069	***	,325	,526
Expectation of Benefits	,368	,025	14,684	***	,486	,015	31,637	***	3,738	,016	234,551	***	,372	,010
Boarding Convenience	,106	,026	4,170	***	,470	,015	31,213	***	4,414	,017	264,000	***	,102	,138
Convenience of Time	,832	,036	22,963	***	,594	,018	32,679	***	4,420	,018	239,480	***	,726	,106
Data Security	,494	,028	17,635	***	,347	,018	19,100	***	4,378	,017	251,015	***	,455	,642

Source: Author.



**Figure 2.** Model modified by Confirmatory Factor Analysis.  
Source: Author.

The data presented from the visual version of the generated model shows the set of existing correlations between the variables with the Standardized RMR measured at 0.074, in addition to the consistency signaled indicated by the Regression Weights. Additionally, it is pointed out that the values obtained from the variances and intercepts point to the indication that the model is consistent and adequate. From this set of elements, arising from the data, come the subsequent inferences.

The first set of motivators is formed by the Reduced Rate, Technological Availability and Expectation of Benefits, which indicate the utilitarian sense of the elements essentially linked to cost, the convenience of use, and desired end, respectively, partially aligned with the studies by Bellotti et al., 2015; Godelnik, 2017; Nelson & Sadowsky, 2017; Netter, et al., 2019. The results of this research indicate that such elements are among the most relevant in the decision-making process for the use of Brazilians.

The second set is formed by the variables Boarding Convenience; Time Convenience and Data Security which emerged basically because the service is offered through applications and in a certain instance indicate substantial differences concerning traditional travel offers, such as public transport, taxis, and subways, which have different dynamics access and use. Such notes are corroborated by studies such as those by Schor 2016 and Netter et al., 2019 who highlight the importance and influence of technology and its impacts on consumers.

The other motivators - related to environmental and social aspects - did not adhere to the model proposed in the Confirmatory Factor Analysis in the Brazilian case, in contrast, at least partially to studies such as those by Hamari et al. 2015; Bucher et al. 2017; Ertz & Leblanc-Proulx (2018) and Standing et al. 2018, among others, who present the importance of such dimensions.

The model generated indicates that the Reduced Fee has an economic character, the Expectation of Benefits is of a social and economic nature considering that the act of moving is less relevant than the completion of such action and, finally, Technological Availability; Boarding convenience; Time Convenience and Data Security are technological variables that appear as a phenomenon resulting from the provision of travel services on platforms and applications (Acquier et al., 2017; Yaraghi & Ravi, 2017; Sadowski, 2019).

Thus, the second hypothesis is refuted, by indicating the absence of the environmental element in the set of use drivers, as well as the technological categorizers as elements related to access, without, however, necessarily appearing as a category of analysis in itself.

## 5. CONCLUSIONS

The Exploratory Factor Analysis indicated the existence of a set of motivators linked to the environmental, social, economic, and technological dimensions and was among the variables that underlie the consumers' decision-making process, however, the Confirmatory Factor Analysis indicated that only six of them are part of the list of first-rate items in the Brazilian context, which indicates that elements of a social and environmental nature did not appear to be strongly linked to the demand process.

Such inference leads to the observation that the utilitarian sense is strongly present in the consumption decision-making process, corroborating with a wide range of international and even national studies indicating the cost, personal interests, and the technological beacon as indicators of consumer conduct.

This statement starts from conjecture that points to “Technological Availability” as an element that promotes and facilitates the offer, the “Expectation of Benefits” as a generator of experience, and the “Reduced Rate” as the denominator of the cost associated with the choice. All of them appear as sufficiently cohesive items to act, in the consumer’s value perception center, as an interconnected group, which can eventually be interconnected with the other motivators of use constantly or according to the instance of interest of use.

This means that, although the user has these three items in the first instance of influence in his decision-making process, the other motivators present in the model can be inserted as auxiliaries in the belief system.

Therefore, although the dimensions are representative, their order of importance presents distinctions, which differ, even the most relevant, from previous international studies in their entirety, showing adherence in the economic aspect, but mainly concerning the moments of use and technological facilitators.

It is noteworthy that this study brought as distinctive and innovative elements, the indication that despite the presence of three guiding dimensions - economic, social, and technological - only three variables - “Technological Availability”; “Experience expectation” and “Reduced rate” - are considered central in the context of motivating use, which represents advances in the theoretical field based on evidence that corroborates with a consistent part of international and national studies, and demonstrate the traction of consumption behavior associated with motivators of use as instrumentalists of value and reference of the decision of use.

The managerial contribution is found in the indication that the displacement itself is not relevant concerning the user’s loyalty to an application or platform, as its use decision drivers are associated with individualistic evaluations and with reduced cost support, which could lead to the consumption of another modal that offered the same set of facilitators based on technological access and with reduced cost.

The study fills gaps by revealing the reasons and nature of use by consumers, in addition to systematically categorizing the elements offered by platforms or applications and accommodated as appropriate by users, such inference is supported by robust data and capable of generating structuring, contextualization, and expansion of the understanding on the topic in the country.

Future studies, including drivers, public managers, and the attitude of the organizations that manage the platforms, may present a wide dossier on the bottlenecks and potentialities of the offer of this type of service in Brazil since this study was limited to analyzing users of travel services under demand since this study was limited to analyzing users of travel services under demand.

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