THE SUBSCRIPTION MODEL IN AUTOMOTIVE INDUSTRY: A TOOL FOR CO-CREATORS IDENTIFICATION

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ABSTRACT

The purpose of this research is to establish a connection between co-creation and the adoption of vehicle subscription-based services and to test the application of a model for car choice. The objective is to test the hypothesis that experience-driven vehicle subscription services (EDVSS) attract co-creators and the effects of pre-identified constructs on the adoption of vehicle subscription services. The hypotheses are formulated after having extensively review industrial reports about the emerging trends in automotive and the academic literature on co-creation, motivation of drivers' behavioural changes and attitudinal models for car choice. A quota sample of 380 US citizens participated in the primary data collection through a survey. Overall, results demonstrate that people that are more involved in co-creative initiatives tends to increase the willingness to adopt an experience-driven vehicle subscription service. Furthermore, the tested attitudinal model for car choice results in moderately explicate the adoption of EDVSS. Results are discussed to draw main implication for managers. The research contributes to the extant literature in co-creation, by opening relevant new paths of research benefitting different industries. Thus, the validated model both extend the literature relatively the application of attitudinal models to explicate a certain behaviour as well as provide managers with a useful tool to develop specific marketing strategies.

SUMÁRIO

O objetivo desta pesquisa é estabelecer uma conexão entre a co-criação e a adoção de serviços baseados em assinatura de veículos e testar a aplicação de um modelo para a escolha de carros. O objetivo é testar a hipótese de que os serviços de assinatura de veículos orientados por experiência (EDVSS) atraem cocriadores e os efeitos de construções pré-identificadas na adoção de serviços de assinatura de veículos. As hipóteses são formuladas após uma extensa revisão de relatórios industriais sobre as tendências emergentes no setor automotivo e a literatura académica sobre co-criação, motivação das mudanças comportamentais dos condutores e modelos atitudinais para a escolha de carros. Uma amostra de quota de 380 cidadãos dos EUA participou na recolha de dados primários por meio de um inquérito. No geral, os resultados demonstram que as pessoas que estão mais envolvidas em iniciativas co-criativas tendem a aumentar a disposição de adotar um serviço de assinatura de veículos baseado em experiência. Além disso, o modelo atitudinal testado para a escolha do carro resulta em uma explicação moderada da adoção do EDVSS. Os resultados são discutidos para extrair as principais implicações para os gerentes. A pesquisa contribui para a literatura existente em co-criação, abrindo novos caminhos relevantes de pesquisa, beneficiando diferentes indústrias. Assim, tanto o modelo validado estende a literatura quanto à aplicação de modelos atitudinais para explicar determinado comportamento, como também fornece aos gestores uma ferramenta útil para o desenvolvimento de estratégias específicas de marketing.

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1. INTRODUCTION

1.1. Introducing the research project

Automotive industry is currently facing a structural transformation that is expected to shake the individual mobility paradigm of the past century (Urry, 2004). In fact, the benefits that people have experienced since the democratization of car usage have become so embedded in our daily life (Gärling & Axhausen, 2003) that hypothesise its dismission seems to be almost impossible.

Nevertheless, mainly thanks to digitalization, individual mobility is migrating from an all-purpose to a fit-for-purpose mobility, supporting the servitization of the industry (McKinsey & Company, 2016). At the same time, regulators are forcing manufacturers to accelerate the mass introduction of alternatives to internal combustion engines (ICE), with the aim of reducing the carbon emissions. Electric vehicles (EV) seem to be the solution, although this technology still requires further development before ensuring the required performances (The Boston Consulting Group, 2017).

Recently, car manufacturers have started to offer vehicle subscription-based offers as a new form of car ownership (Edmunds, 2018). Combining hassle-free access to car with the flexibility of choosing the perfect type of vehicle for every occasion, they rapidly caught the attention of industry experts that believe it could become an interesting solution for the future while reducing the financial risk for the present (Lachnit, 2018).

However, no clear evidence has been found on how companies should leverage the introduction of subscription-based services on a strategical level. Some argue that manufacturers could benefit mainly by intensifying the relationship with the final customers (Hill, 2015) to involve drivers in co-creative processes that are key in establishing a sustainable long term competitive advantage (PWC, 2013).

The following research project is aimed at investigating the relationship between vehicle subscription-based services and the co-creative behaviour of potential customers, in order to eventually obtain empirical evidence that could support the development of further literature in the field.

In particular, the focus will be on whether developing a subscription platform based on the characteristics of a participative environment could attract particularly people that are used to participate in co-creative processes (Bruns, 2006). Such a conclusion would have particularly

relevant implication for the industry, suggesting that by developing co-creative initiatives through subscription platforms, it would allow the companies to obtain a spontaneous engagement.

Secondly, the research aims at identifying a model that would help to identify which are the variables that explains the adoption of such a service. In particular, it will be tested the possibility of applying the existing attitudinal-based car choice model (Choo & Mokhtarian, 2004) to the adoption rate.

1.2. The structure of the research project

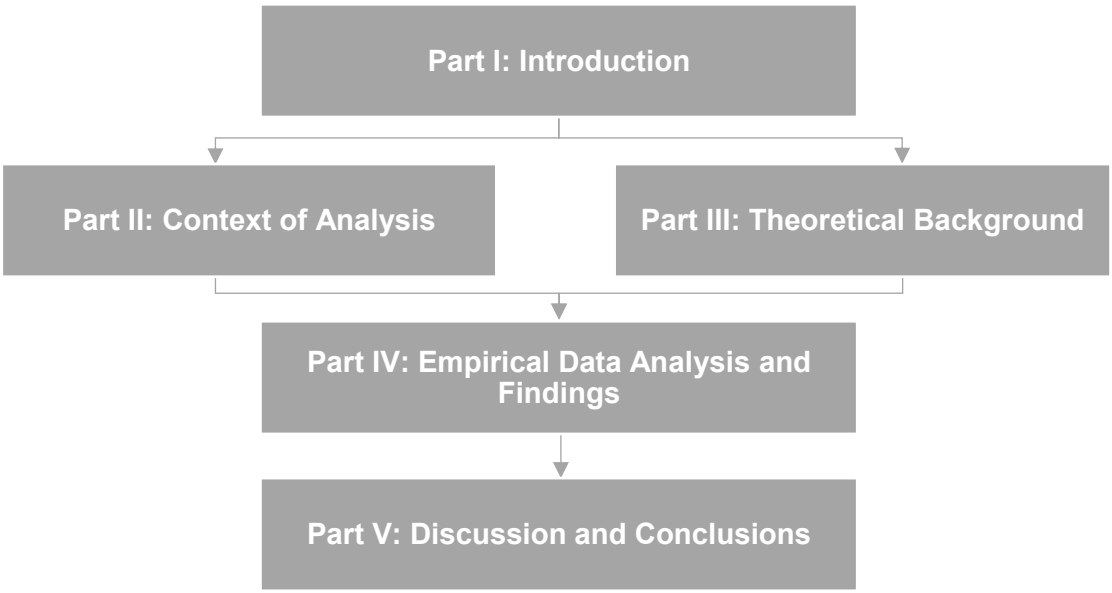

Figure 1 - Research structure

The research project is composed of five parts (see figure 1). The introduction is aimed at delineating the aspects of the investigation, its main theoretical bases, its objectives and its questions. Thus, the methodology is elucidated before the project conduction.

The second part of the elaborate is devoted to the market analysis of the context in which EDVSS are ascribed. This section sustains the importance of understanding this new phenomenon in order to clarify the shifts in market trends that mainly underlay the introduction of EDVSS.

The third part addresses the topics that concur in creating the bases for the theoretical background of the analysis. In detail, the literature review is aimed at establishing the connection between the co-creative practices and participative environments as EDVSS platforms are.

The fourth part explores analytically the hypotheses, testing empirically the validity of the theoretical concepts with respect to the US population, the only one that currently has been given the access to the studied type of service. The analyses are separated into two parts: the first one aims at testing the existence of a causal relationship between the customers' inclination to co-creative behaviours and the tendency to adopt an EDVSS; the second then attempt to adopt an existing framework of car types choice to explain the main variables accounting for the variability of the adoption rate of EDVSS.

In part five, finally, are discussed the main findings, the managerial implications of the research, conclusions are drawn, and further researches are suggested.

1.3. Research purpose

Given the substantial lack of academic contributions to understanding the potential of subscription-based services in the automotive industry, the main objective of this research project is to fill this gap by developing a consumers' behavioural analysis. Moreover, the elaborate addresses the relationship between the field of co-creation and the automotive industry, attempting to establish a connection between the introduction of vehicle subscription services and the co-creative practices.

The main question that the research is aimed at answering is whether the previous assumption could be supported by facts and not only by a theoretical reasoning. In particular, the first question will be the following:

Q1: *Are experience-driven vehicle subscription services attracting co-creators?*

The topic is tackled through the analysis of the causal relationship between the adoption rate and the tendency towards the participation in co-creative practices in the first part. The analysis will assess the relationship and then identify the existence of possible confounding effects.

In the following step, the contributions of each factor towards the adoption rate will pinpoint the ones supporting the choice to subscribe to the service. As already outlined, the adoption thus will be described as a function of attitudes, personalities, lifestyles and car perceptions, each one with several factors, with the purpose of answering whether:

Q2: *Is it possible to explain the adoption of EDVSS using existing car choice models?*

After having identified an adequate model for the type of car choice, the model is tested with respect to the data collected using the covariance-based confirmatory technique of structural equation modelling.

1.4. Research methodology

The relationship between co-creative behaviour and the adoption of EDVSS as well as the validity test for the explicative model for adoption itself is addressed through the collection of both quantitative and qualitative secondary data and quantitative primary data.

The structural approach initiates with the definition of the main trends in the automotive sector, in order to clarify the external environment in which the EDVSS are collocated. Information is retrieved from several trusted databases mainly for quantitative contributions, while academic papers, specialized industry reports and newspapers were deployed to collect mainly qualitative pieces of information.

To enhance the likelihood of obtaining sounding results, the sample has been selected among the US population. This choice has allowed both the use of original constructs, that are mainly written and tested in the English language, as well as limit the risk that the constructs wouldn't be valid given the fact that the majority of the research conducted in transportation are US-based.

The first part of the analysis is conducted testing the relationship through the application of a multiple linear regression model with the purpose of a exploratory research. In the second part, to test the validity of the application of an existing model to explicate adoption rate, covariance-based structural equation modelling is used, since it allow to observe the fit goodness of the model with respect to the analysed sample.

The research project was conducted between January 2018 and August 2018.

2. CONTEXT OF ANALYSIS

2.1. Strategic Choices for the future of automotive

The future of the automotive industry is mainly driven by external factors. Indeed, regulations and changes in consumers' habits will significantly pull the transition to a new private transportation paradigm.

Specifically, regulations are mainly targeting the limitation of the automotive industry incidence to the global carbon emissions. The governments' aim is to drastically reduce the footprint of this industry, forcing the adoption of alternative powertrain technologies and the radical dismission of internal combustion engines (ICE). The severe restrictions applied to the traditional ICE powertrains will shrink their overall market share from 93% of 2017 to the forecasted 68% of 2025, initiating an irreversible transformation of the industry (The Boston Consulting Group, 2018).

Consumers, on the other hand, are expected to constantly increase car usage. In the solely Europe, it is forecasted an increase of 40% in mileages driven while one-third of total mileage will be swept by a shared offer by as late as 2030 (PWC, 2017). Generally, mainly due to the increase in population, the demand for fast, cheap, secure and above all individual transportation will strongly be developed worldwide. China is expected to become the predominant market for the transformation of the industry, leading to the adoption of electric and autonomous vehicles (PWC, 2017).

Concisely, the paradigm of the next decade individual mobility is built around four main pillars, namely autonomous driving, connected information, electrification of powertrains and shared use (McKinsey & Company, 2016).

2.1.1. The issue of re-discussing car usage

By having drawn the conclusion that economic factors stand predominantly at the basis of the shift in car behaviours of Millennials, it is needed to shed some light on the reasons motivating the importance of car usage over the alternative means of transport.

Although there is no clear clue on how the future of mobility will look like (Dutzik & Baxandall, 2013) and even given the fact that the paradigm of future public mobility is going to be drastically different from the one of the 19th century (McKinsey & Company, 2016), (Urry, 2004), the automobile is going to still play a key role in the mobility solution.

The reasons are quite articulated since car consumption is a complex and heterogeneous phenomenon (Schwanen & Lucas, 2011). The main motivation resides in the fact that the automobile has given the possibility to redesign people lifestyle in the name of flexibility, eventually contributing to substantially increase the fragmentation and the individualization of the personal needs (Schwanen & Lucas, 2011). Overall, the benefits of flexibility substantially improved everyone's life to the point that a strong lock-in effect opposes cars dismissing initiatives (Urry, 2004). The lack of viable alternatives that could provide a comparable range of coverage is considered as a key factor preventing from the reduction of individual cars (Lenntorp, 1977), since it represents the fear of losing car benefits rather than the actual automobile itself.

However, people more than often could be affected by the circumstances where socio-cultural norms, accompanied with schedule tightness and structural lack of competitive alternatives, head to a strong preference for car usage (Schwanen & Lucas, 2011). And even when it is not the best choice, it is likely that people will not question themselves whether an alternative would be better due to the irrational appraisal of car benefits. Pre-discursive and pre-cognitive impulses and motivations stand at the core of this biased evaluation, making it to become a deep-rooted automatism (Sheller, 2004)

Ideally, car usage should result from complex and dynamic reciprocal interaction between personal factors and external circumstances (Schwanen & Lucas, 2011). The final assessment depends on the attributes of the available alternatives, the characteristics of the decision-maker, the set of elements that identify the situation – namely the type of trip and the specifications of the origin and the destination (Ben-Akiva, 1985) and the perception of time value (Brownstone & Small, 2005).

In some cases people can be driven by rationality, mainly when encountering a strong difference in norms, symbolic factors and emotions (Meyer, Levin, & Louviere, 1978), (Louviere, 1981), as well as for effect of attitudinal variables (Recker & Golob, 1976), (Koppelman & Lyon, 1981).

However, people tend to perform biased cost-benefit appraisals due to the predominance of irrational and distorted perceptions of the decision maker (Banister, 1978). The heterogeneity of the different cost components accounts for the main contribution towards the irrationality of the evaluation (Lanken, Aarts, Knippenberg, & Knippenberg, 1994). Thus, the use of car become a script-based behaviour (Gärling & Axhausen, 2003) that acts as a routine drastically reducing decision's efficiency (Schwanen & Lucas, 2011).

2.1.2. From an all-purpose to a fit-for-purpose mobility

Whether it is true that cars will maintain a relevant role in the next decades, the mode of car usage is going to be profoundly re-discussed in favour of new on-demand-based paradigms of mobility.

The global car market is going to constantly grow both in quantities and value over the next decade driven mainly by developing countries (McKinsey & Company, 2016). Nevertheless, the predominant model of private transportation of the 20th century, based on an all-purpose solution, will be increasingly dismissed in favour of flexible and tailored solutions. An example is the forecasted 10% of car sold in 2030 that will belong to sharing services (McKinsey & Company, 2016).

The adoption of new mobility services, as vehicle subscriptions, will be mediated by the tensions between demands from a younger generation – more incline to a convenient service – and older generations – sceptical about revolutionizing their established habits, namely traditional car ownership (PWC, 2017). Therefore, it becomes essential to revise the segmentation criteria to support the advent of alternatives to traditional car ownership. It is advised to cluster on the basis of drivers' behaviours, population density, macroeconomic indicators and prosperity (McKinsey & Company, 2016). While low-income cities are expected to face a rapid growth in volume of car sold, high-income regions, due to the higher disposable, will lead the market penetration for innovative technology solution and marketing strategies (McKinsey & Company, 2016). Thus, to predict the outcome of the transformational process, researchers should focus specifically on the richer regions that will drive the entire industry.

2.1.3. A crucial technological transition

The development of alternatives to traditional internal combustion engines (ICE) stands at the core of the forthcoming automotive industry redefinition (McKinsey & Company, 2016). Governments and regulators have imposed strict ties to carbon emissions such that manufacturers have been forced to develop feasible alternatives to traditional ICE powertrains. Even though some manufacturers initiated their R&D processes during the 1990s, more than two decades after, the alternatives still lack the required strengths that would allow a massive adoption. Electric vehicles represent the main solution to drastically reduce carbon emissions at the exhausts pipes, although the elevate payback period of the investment represents the main reason preventing users from a fast adoption of this new technology. With adequate infrastructures and a payback period limited within three years, the introduction of electrified vehicles in urban areas would be boosted significantly up to +40% (The Boston Consulting Group, 2018). In a future of shared autonomous

EV, the car use cost will drop by as far as 54% compare to current private-owned ICE vehicles (The Boston Consulting Group, 2017), a result that can be achieved only in when investments will be amortised.

However, the approach to the massive electrification will be gradual in absence of durable and concrete incentives. The final adoption scenario will be strongly influenced by the opposed forces of regulators and customers, the former aimed at pushing the offer and the latter at pulling the demand (McKinsey & Company, 2016). Governments should then support the migration between 2020 and 2025, restricting the usage of full ICE vehicles while subsidizing the adoption of electric ones.

This phase is considered essential to the development of a strong economic proposition to the customers both allowing companies to further invest to develop more efficient solutions and supporting regulators in designing specific norms. The tipping point to the adoption of EV would likely happen towards 2025, having the customers starting to pull the demand, but only whether the cost-benefits outcome of EV will become competitive compared to the traditional ICE offer (The Boston Consulting Group, 2018).

2.1.4. The need for new revenue streams

Normally, innovations should be marketed at a premium-price to sustain the recoup of the upfront investments (Johne, 1999). However, several early attempts highlighted that this is not the case, having the adoption substantially remained stagnating through time mismatching the recovery expectations. Full-electric vehicle will account only for the 14% of the 109 million units of forecasted sales by 2030, sustaining that, in concrete, the transition towards completely green solutions will be extremely slow (The Boston Consulting Group, 2018).

Therefore, manufacturers have increasingly recurred to alternative source of revenues to revitalize their profitability. Currently, car makers are exploring the potential of data management revenues opportunities to differentiate their income sources. Indeed, vehicles are considered as large platforms that leverage on-demand data both from and to external servers, allowing carmakers to provide either a new form of mobility and data-driven services.

No coincidence is the use of subscriptions fees for accessing online services on board, for navigation support or scheduled maintenance as well as the resell of big data collected by the customers. These additional flows will account for ~30% of total revenues by 2030 for a total of US$ 1.5 trillion (McKinsey & Company, 2016). By the same year, indeed, it is expected that the industry value for private vehicles will almost double, from US$ 3.5 trillion of 2016 to US$ 6.7

trillion, mainly driven by the expansion of emerging market that will rapidly adopt ICE vehicles (McKinsey & Company, 2016).

2.1.5. New forms of competition and cooperation

The new introduction of alternative revenue streams implies an enlargement in the competitive environment and therefore a need for adapting both competition and cooperation strategies. Several signals suggest that the industry might be subjected to a radical redefinition. Car makers are starting to compete in the arena of service-based offers, enlarging significantly the boundaries of the industry and increasing the complexity by enlarging the front to be covered from the risks of competition – e.g. the entrance of mobility providers, tech giants and other new OEMs (McKinsey & Company, 2016). For this reason, in the next decades, the automotive industry is going to become an essential slice of the individual mobility services arena.

Partnerships will represent the main source of competitive advantage in the future (McKinsey & Company, 2016). In fact, the redefinition of the industry implies large investments that should be coupled with a constant reduction in costs to maintain an acceptable level of capital efficiency. Incumbents are expected to intensify the partnerships with other OEMs with the purpose of containing the efforts to allow a smooth technology transition. Then, cooperative initiatives with software companies should be aimed at establishing and capturing a durable competitive advantage over direct competitors. Indeed, the market leadership will be assigned to the OEM that better implement future mobility services – e.g. including mobility services, advanced safety, location-based services, in-vehicle contents, and remote analytics.

2.1.6. The role of co-creation in establishing a competitive advantage

During the transition, establish a durable and valuable competitive advantage should remain the manufacturers' priority. Differently from previous times though, the strategic process has changed significantly. The market evolution is reaching such a complexity that it would be uneconomical and unreasonable to constantly face all the different competition fronts (McKinsey & Company, 2016).

As a result, manufacturers started to acknowledge the importance of relying on an external source of knowledge to improve both their efficiency and their effectiveness. In a sense, it has to become a structural core approach to innovation (Chesbrough, 2006), leveraging the different skills and professions of networks that are external to the organization to improve the offer and the value proposition for their clients (Füller, Hutter, & Faullant, 2011).

At the same, the socio-cultural meaning of the vehicle is undergoing a profound change and it mainly depends on how customers could capture the meaning of the car itself (Füller, Hutter, & Faullant, 2011). In this panorama, co-creation – the jointed contribution between the company and the customer in creating the final outcome - becomes a key tool to understand customers by involving them into the process of value creation and could be considered as a systematic requirement for the future manufacturers' strategies (PWC, 2013).

2.1.7. Co-creative practices in the automotive industry

The automotive industry embraces largely the opportunities offered by co-creative practices. It is no coincidence that the 83% of the automotive firms have in the past decades undertaken collaborative projects with their stakeholders in the purpose of innovation, compared to the average 57% of all the other industries (Hitachi, 2017). The diffusion of the internet has positively affected both the empowerment of the customers and provided a convenient place where the car-maker and the other players can discuss car-related topics (PWC, 2013).

On top of that, automotive companies have hosted virtual customers environments (VCE) for long years; these digital environments incentive activities of co-creative product development and support (Nambisan & Baron, 2009). An example is the *Co-Creation Lab* by BMW, an online portal aimed at hosting the virtual community to support the structured collection of ideas on product design, conceptualisation and development (Bartl, Jawecki, & Wiegandt, 2010).

Undoubtedly, firms draw a concrete advantage by participating in the interaction with its stakeholders in VCE; at the same time, customers receive multiple advantages that reinforce their participation too. Their cognitive benefits in deepening the knowledge about the product and its features; social integrative benefits derived by their participation in the community and the bonds that they identify; personal integrative benefits in showing their knowledge and problem solving skills; hedonic benefits drawing pleasure from the stimulus offer by the community (Nambisan & Baron, 2009).

As aforementioned, co-creative interactions could occur at the design stage with the purpose of ensuring that the outcome is able to match or even exceed the customers' expectations (Hitachi, 2017). At this stage, customers share ideas, actively take part in design contests, as well as share

knowledge to innovate design approaches and solutions (PWC, 2013). Examples of successful collaborative relations are the concept car *Fiat Mio*[1] and the *People's car project*[2] by Volkswagen.

In some other cases, the manufacturer integrates the co-creative relationship into multiple stages of the value chain. Although academics underlined the risks of such a practice, for instance, the drastic reduction of the time to market (Chang & Taylor, 2016), Local Motors[3] and General Motors[4] have revealed themselves to be exemplary cases of collaborative design and co-production (PWC, 2013). However, more than customers, suppliers are the one that can contribute in the most valuable way at this stage, by increasing transparency, supply chain efficiency and enhance their partnerships (Hitachi, 2017).

Marketing and brand management activities are the ones that eventually benefit the most from customers' active participation (PWC, 2013). Indeed, co-creative participation underlay customer motivations including brand-product attachment (Nambisan & Baron, 2009), that means the customers can become directly promoters of the product and engage indirectly their networks. For instance, Volkswagen gave customers the opportunity to participate in designing the contents of its communication campaign *Drive until*[5].

2.1.8. Exploit big data for co-creation

Among the latest trends in individual mobility services, subscription-based offers have captured the attention for their innovative approach to car consumption. By charging a fixed monthly fee, the customer can access the flexibility of choosing the preferred car for the specific purpose he has to reach. The massive big-data analysis represents one of the enablers of such an innovative service.

Automotive subscription-based services are indeed provided through the support of specific digital platforms[6], IT systems that allow customers preferences and habits to be more conveniently tracked (Elliot, 2011), communication more effectively supported (Roberts & Grover, 2012), and service modifications integrated with low-cost high-efficient processes (Wang, Hu, & Hu, 2013).

[1] Fiat Mio is a concept car presented in 2010 in Brazil, inspired by more than 17'000 people with 11'000 ideas (PWC, 2013).
[2] People's car project has been launched to collect ideas to innovate the Chinese automobile market. It recorded more than 13 million visitors, 200'000 design submissions and eventually Volkswagen presented three of the main ideas into concepts introduced at Beijing Auto Show in 2012 (PWC, 2013).
[3] Local Motors has developed an integrative approach of manufacturing based on the open-source network (PWC, 2013).
[4] General Motors has offered Chevrolet Corvette the opportunity to build the engine of the car on their own with the support of company technicians (PWC, 2013).
[5] Customers had the chance to submit their own ideas for the third part of the commercial promoting the Golf in Canada (PWC, 2013).
[6] An example is Carma, a company specialised in automotive subscription management (Veichle Subscription Software, 2018).

Therefore, subscription platforms represent tools that enable the company to adopt an SDL strategy through big-data collection; in other words, they allow the connection between the company and the final user, by perceiving, capturing and responding to any given market stimulus (Xie, Wu, Xiao, & Hu, 2016).

The basic version of subscription platforms has the purpose of allowing customers to tailor the car choice to fit the specific need. This is an example of the transactional platform: the firm in that sense can collect customer's choices, process the direct and indirect big-data and rapidly respond back to customers providing the car required (Xie, Wu, Xiao, & Hu, 2016). At this first level, firms become able to identify a pattern of consumption and track preferences that can benefit both the service provision and products offer.

Interestingly, a subscription platform could integrate also the other typologies of collaborative resources: for instance, communicative big-data from the interactions to eventually collect unstructured and structured information on customers' opinions to support ideas generation and product-service development, similar to what happens in virtual customers environments; or participative big-data, resulted from the involvement of knowledge, resources and skills shared to actively take part in the improvement and re-configuration of the service; then, transboundary big-data or information collected by the company from the customers that are not related directly to the offer but instead to parallel ecosystems – typical of multi-brand and multi-service platforms (Xie, Wu, Xiao, & Hu, 2016).

Firms reveal a strong concern in exploiting big-data; the potential benefits they could derive are several and at all level of company management, from strategic establishment and exploitation of competitive advantage (Fulgoni, 2013), new product development (Lazer, Kennedy, King, & Vespignani, 2014) and operative marketing decisions (Tihanyi, Graffin, & George, 2015).

However, the main challenge is how to become able to acquire the competencies to valuably excavate into data (Mithas, Lee, Earley, Murugesan, & Djavanshir, 2013). Indeed, co-creative processes are established in correspondence of the company capitalization of the heterogeneous digital resources in the context of cooperative environments. In other words, this implies the ability by the company to involve the customer in the process, while the counterpart should be able to search, learn and show interest in participating in co-creative processes (Xie, Wu, Xiao, & Hu, 2016).

2.1.9. Factors influencing young adults changing car behaviour

Co-creative processes allow the intensification of the relationship with the customers (Hill, 2015). Understanding customers implies observing the motivations that lead to a substantial shift in car preferences. In fact, Millennials are the first generation that has encountered a decline in car ownership (Jones, 2008).

This change has captured the attention of many researchers that wanted to understand the main drivers of such a change. Preliminary analysis observed that, the restriction of car use (Ralph, 2015), the overall lower percentage of people owning a driving licence compared to the previous generations (McDonald, 2015) and the increased choice of alternative options to traditional purchase (Polzin, Chu, & Godfrey, 2014) lay at the base of such a shift and may suggest the beginning of a new era for the human-vehicle relationship. To give even more momentum to the situation, these peculiarities have been demonstrated not being an exclusive situation of the US, retracing other similar negative trends in other developed countries (Millard-Ball & Schipper, 2011), (Goodwin, 2012), (Kuhnimhof, et al., 2012) (Kuhnimhof, Zumkeller, & Chlond, 2013), (Delbosc & Currie, 2013), (Delbosc, 2017). Further researches have tracked both altered lifestyle behaviours and economic factors as the two main areas of contribution to such a fall.

As far as new behaviours are concerned, the social and cultural preference theory attempt to explain the current trend among Millennials. From one side, they have boosted the desire of living in highly dense urban areas, reducing the possibility and the need for personal car usage (Dutzik, Inglis, & Baxandall, 2014). From the other, travel preferences have faced a substantial change motivated by the availability of a complete public transportation offer and the incremental use of innovative information technologies (Van Wee, 2015).

In particular, the advent of mobile devices and the broadband connection have a controversial role though, by contemporaneously incentivizing the reduction of traditional car usage while supporting an emerging demand. Indeed, from one side the overall people travelling is reduced both directly, by limiting the occasions for travel – e.g. the usage of videoconferences for business meetings –, and indirectly, by allowing the planning of the route in a more effective way, with the usage of recent communication technologies. Nevertheless, the same technologies represent the promoters of alternative and substitutive demand for new travelling occasions (Mokhtarian P. , 2002), (Mokhtarian P. , 2009), (Dal Fiore, Mokhtarian, Salomon, & Singer, 2014). Anyway, Blumenberg et al. (2012) demonstrated that the increased usage of internet overall leads to an increase in travelling.

Nevertheless, economic factors are accounted for the major contribution in the fall of car usage in the US (Kurz, Li, & Vine, 2016), a result that is supported also by the findings of a comparative study lead by the US Federal Reserve comparing the incidence of economics and consumer behaviours. Anyway, this phenomenon seems to be more transitional than structural. McDonald (2015), by comparing the preferences of the different age groups, concludes that temporary economic trends mainly motivate the overall reduction, while Ralph (2015) points out that Millennials suffered the most past negative economic conjectures, facing a jeopardization of their already precarious economic status and resulting in a forced overall reduction in car purchases.

2.1.10. Trends in car ownership

As economic factors contributed the most in the shrink of car usage, similarly they significantly contributed in the reduction of the average ownership rate among Millennials, fallen under the unit per person (0,9) while all previous generations exceed the unit (Klein & Smart, 2017). The economics are so relevant that remarkable differences can be noticed when comparing economically independent and dependent Millennials.

In fact, car ownership is explained by dissimilar variables for the different categories. While the age is the main factor influencing the ownership in economically dependent Millennials – with a proportionally direct relationship, or while ageing the average ownership rate increase – the counterpart is significantly affected by the jointed effect of wealth and income. Even the migration from the dependency to the independency head to opposed results depending on the initial financial status of the candidate. Therefore, the economic situation of the household represents the best predictor of average ownership rate with a positive direct relationship (Klein & Smart, 2017).

In particular, economically-independent Millennials contribute the most to the fall in ownership. They express a huge concern in investing a relevant amount of money in purchasing a vehicle at the beginning of their path for self-sustainability. Moreover, urban areas are the preferred place to stay for them, contributing in the overall postpone purchased by offering alternative public transportation and generally disincentive the private-car usage (Myers, 2016). However, whether the total cost of ownership would be lower or the disposable income higher, car purchase would be the prevalent option according to their preferences (Klein & Smart, 2017). Indeed, it is possible to observe that while ageing the average household disposable and car ownership rise accordingly.

The consideration that economic factors are predominant is supported also by the fact that economically-dependent Millennials witness average ownership values that are perfectly comparable to the previous generations (Klein & Smart, 2017). Anyway, according to Myers

(2016), the result could be influenced also by the fact that this category is still resident at their parents' place that is usually far away from the downtown area.

2.1.11. Zero-Cars Behaviours

As demonstrated previously, the outcome of car usage for Millennials is predominantly influenced by economic factors over a substantial shift in preferences and ownership rates highly depends on income and wealth. An analysis of zero-cars behaviours underlines that economic motivations are again at the core of the decision.

In fact, academic researchers have demonstrated that there are clear established relationships between the car ownership and employment; owning a car increases the opportunities to receive a job offer (Sandoval, Cervero, & Landis, 2011), so it is unsurprising that employed people have overall a higher car ownership rate (Gurley & Bruce, 2005), (Ong, 2002); car owners are also the ones that on average work more hours per week (Gurley & Bruce, 2005) and at the end of the day earn a higher salary (Raphael & Rice, 2002).

Nevertheless, zero-cars behaviours are increasingly gaining momentum worldwide and recently the public opinion has undertaken a strong position in favour of the "choice" for alternative means of transport (Brown, 2017). However, it should be remarked the distinction between the ones that consciously decide to free their life from the automobile – as known as car-free – and the ones that are constrained in that specific situation – or car-less – assuming that for everyone it represents the outcome of a decision-making process (Brown, 2017).

By doing so, it appears as clear how economic factors resulted again as being predominant in the determining the decision. Observing the Californian population, the more proactive in adopting an innovative solution to mobility is possible to observe that the large majority (79%) of households that have been accounted for zero-car behaviour are actually in a car-less situation. The remaining 21% represents the ones that have deliberately decided in favour of car-free options, with only the 2% of them motivating their choice for explicit environmental concerns (Brown, 2017).

Therefore, income plays an essential role in the definition of the behaviours. The relation between the household income and car usage is parabolic. Indeed, low-income people are bounded into the car-less condition and the relation is positively correlated. Middle-income people usually represent the ones that actually own at least a car. High-income household witness an inversion in the trend: while increasing the disposable income people start again to abandon car usage for car-free options (Brown, 2017).

Given this background, car sharing has been demonstrated to be successful in addressing primary the car-less situation although their subscriptions comprise only the 4% of the total number of zero-car households (Brown, 2017). The same number increases up to 39% when inside the car-free group.

2.2. Defining the subscription model

Given the context depicted previously, car manufacturers have undertaken several actions to support their sales. In fact, as customers face mainly economic limitations that prevent them from accessing the usage and then the ownership of the car, the solutions proposed mainly focused on limiting these financial barriers by reducing the economic impact of the investment in a car purchase. For instance, leasing options have the main objective of allowing customers to defer the payment of the car with monthly capital instalments while at the same time ensure that at the end of the contract it could have the incentive of purchase a new model. Renting, on the other hand, offered a solution to free from the hassle of ownership while driving a recent model.

In this panorama of offers, subscription-based services arise with the main aim of offering the benefits of a renting option with the flexibility in choosing and changing product derived from other industry – the smartphone in particular.

2.2.1. What subscription models entail

A subscription is a formal agreement that encompasses the customer access to a specific offer or set of offers, whether products or services, in a range of specific quantities and for a determined period of time, in exchange of customer information and price discounts (Cook & Garver, 2002). Subscription-based offers, by leveraging the willingness of the customer to access repeated purchases for the specific product or service, cannot be guaranteed to the business that can be accessed once only (e.g. perishable products) (Gabszewicz & Sonnac, 1999). Under this logic, access a determined quantity of a specific product or service should be more expensive when purchasing each unit independently rather via subscription. Nevertheless, the main argument in favour the subscription-based offer is that the loss in lower price is lower than the benefits provided by the reduction of revenues volatility and the collection of customers demand and preferences, essential information to effectively market the offer (Cook & Garver, 2002).

Subscription-based business models are not really a novelty for business to consumer industries. Their early applications are encountered mainly in the publishing industry during the 17th century (Pressman, 2017), followed by gyms, utilities and telecommunications providers (McCarthy &

Fader, 2017). Only the advent of the digital era has incentivised online companies to experiment with the potentialities of subscription-based offers (Greenemeier, 2001); (Overby, 2001); (Quint, 2002). Currently, US is facing the proliferation of such a business model in many different industries, a phenomenon that leads to getting more than 11 million new subscribers during 2017, with a 200% growth rate between 2011 and 2017 (McCarthy & Fader, 2017).

These results are in part motivated by the companies' shift from transaction-oriented marketing strategies to the development of relationship-oriented strategies, supported by the development of internal customer relationship management (CRM) capabilities in retaining and enhancing the business-to-consumer relationship. (McCarthy & Fader, 2017). In that sense, subscription-based offers become a natural way to develop a long-term bond between the company and the customers through repeated purchases. Indeed, the company aim becomes to capitalize the benefits of the relationship by capturing its customers' lifetime value, that is the present value of the future cash flows attributed to the customer relationship (Pfeifer, 2005).

The automotive industry is no exception to this approach. Anecdotal evidence shows that in the US car purchases are being driven by leasing payment options. Choosing for a leasing eventually leads to the establishment of a long-term relationship between the company and the customer.

Between 2012 and 2017, leasing purchases have grown by 91% (Edmunds, 2017), contributing significantly to the recovery in auto sales across all the age groups. Millennials are the group that overall were more attracted by leasing options, witnessing one out of three (~33%) individuals deciding to lease, while the other age groups tend to stick to an average of ~28% (Edmunds, 2017).

With an increasing progression of leasing over other form of ownership has been substantial in the Millennials segment – from ~21% of 2011 to ~33% of 2016 – Millennials prefer this financial solution to purchase entry mid-range luxury cars (Edmunds, 2017). Economic factors seem to stand at the core of the decision, as data confirmed being this segment the one with the huger number of people (~21%) with an average income lower than the US $50K, compared to an average of ~15% of the other generations in the US (Edmunds, 2017).

In this panorama, subscription-based offers represent an innovative approach to access vehicles, although companies are still trying to develop an effective receipt to support their own value proposition.

2.2.2. The typologies of vehicle subscription services

Vehicle subscription offers are currently at their early stage. Companies are still setting up pilot projects both to refine the service formula and to observe the market reactions. Although the concept at the base is the same, that is offering the access of a car with a monthly fixed payment, the differences between the several options are huge. However, the supply could be clustered mainly either as convenience-driven or experience-driven subscription offers.

In a convenience-driven vehicle subscription, the value proposition is based on providing the easier, more convenient and more affordable access to a car. The main player in this segment is Canvas by Ford, Clutch Atlanta and Fair. They provide usually all-inclusive offers that allow the subscriber to drive a car for a predetermined period of time – in some cases giving the possibility to reduce the monthly fee when committing for longer periods. Insurance, maintenance, and taxes are included in the payment that could vary between $250 to $900 (Edmunds, 2018). The providers in this segment are usually start-ups or dealers offering either low/mid-range and in some cases premium cars.

However, the providers can adjust their offers around the trade-off between the novelty of the car and possibility to change it. With some exceptions, this segment is featured with cars between 1 to 6 years of life and the possibility to change the vehicle between one to 5 times per month. Indeed, this specific cluster offers cars that have already passed the initial phase of depreciation, when the value drops significantly, allowing the customer to access it with no commitment and a lower fee (Gao, 2018). Behind this apparently simple system, providers are undertaking a capital investment operation such that the fee paid by the customer exceeds the sum of the monthly depreciation, the expectation in extraordinary costs and the monthly rate of ordinary costs of the vehicle. That means generating a certain percentage of profits each month for each client, that becomes higher as the business scale up – being the rate of overheads per client lower.

Experience-driven subscriptions play a completely different game. They aim at providing a unique luxury service, top-tier vehicles, usually mono-brand as the service is offered mainly by OEMs, such as in the case of Passport by Porsche, Book by Cadillac and Access by BMW. The monthly fee range between $1500 up to $3700 in all-inclusive formula (Lachnit, 2018). They entail unlimited car changes per month, a personal concierge service that delivers the booked car within few hours and an unlimited mileage. Cars are offered in their medium to high tiers, with the as tailored as possible equipment for the client and period of life of the vehicle that is included between 1 to 6 months (Lachnit, 2018).

In this specific segment, OEMs are mainly interested in enhancing the relationship with their clients by offering the pure essence of the brand. In a sense, as customers appear to be more interested in experiences with the product rather than the product itself (Cooper, 2016), it becomes emergingly important to focus on developing meaningful occasions that may allow the brand to reinforce its lead over competitors. The subscription platforms support both the provision of the experience as well as its design, by collecting and analysing the transactional information as companies clearly state in their policies. It represents, then, a top-tier service, extracting a premium from the client with respect to a leasing (Fingas, 2017) for being attached to the brand and having the possibility to access the entire offer.

A self-standing category is represented by the one-car offer, currently provided only by Care by Volvo (Lachnit, 2018). This option entails the possibility of accessing a brand-new car, as in the case of a leasing, while still including in the monthly fee all the additional expenses - namely maintenance, insurance, and concierge service. The contract includes a mileage limitation, though, and bind the customer for a minimum of 24 months. Every year, it is given the possibility to change the vehicle, both upgrading or downgrading the offer, an option that could attract more clients as the fleet expands. To some extents, this option, more than being a subscription-based service, could be considered as an extension of a traditional leasing.

2.2.3. Benefits of subscription business models for companies

Subscription services represent an opportunity for manufacturers and dealers in expanding their customers base in specific market niches, although it is possible that in the future it will expand considerably in the overall market (Leggett, 2018). By introducing a subscription business model, companies could become able to achieve a stronger relationship with clients and eventually their loyalty, although many risks are associated to the shift from a lump-sum based business to a monthly payment based one (Hill, 2015).

For this reason, before proceeding with any decision, companies should identify the main target they are willing to reach to value their customer lifetime value (Hill, 2015). If subscription can become a tool to easily capitalize their value, then the focus of the provider should be on enhancing the relationship with the customer itself. Indeed, effective subscription offers are properly designed, more than to attire, to retain (Tondon, 2015) and to engage (Neely, 2016) large pools of customers. Subscription business models allow the supplier to acquire a deeper understanding of the consumption patterns of its clients, eventually increasing the effectiveness to match and even

anticipate their needs (Neely, 2016). By doing so the company can conquer the trust of its customers in the long run, avoiding the risk of dissatisfaction that eventually leads them to abandon.

The result of this structured approach is the ability of the company to prevent dramatic demand volatility, increasing among the others its supply chain and operations efficiency (Cook & Garver, 2002) and the financial evaluations (Hill, 2015). In particular, the lock-in effect witnessed by the preferences, given a certain set of alternatives, results in an effective plan of operations that allow the company to increase efficiency and eventually reinvest the saving to increase the offer customization (Cook & Garver, 2002)

Companies could move even a step forward though. Whether they design tailored packages to customers, that perfectly fit their needs, tracked as aforementioned through the direct interaction, companies can support upselling strategies that ultimately result in increasing the captured customer lifetime value of specific customer segments (Tondon, 2015).

2.2.4. Benefits of subscription business models for customers

Naturally, customers to could particularly benefit from the value proposition of a subscription business model. The main advantages are related to the characteristics of convenience and flexibility offered by the innovative business model (Edmunds, 2018). Indeed, the vehicle management may be substantially simplified when comparing to traditional forms of ownership, and the possibility of change car easily could not only indulge customers' preferences but also reduce the investment risk in purchasing a new car in a transitional moment for the industry (Lachnit, 2018). In many cases, subscription could also dramatically improve the financial return from the investment in mobility, by generating substantial cost savings mainly in urban areas and by beforehand determining the number of fix costs (Edmunds, 2018).

However, there are some situations in which traditional forms of ownership are strictly preferred. In some cases, indeed, when ownership is essential – e.g. car lovers that purchase for their private collections –, when restrictions imposed on the customers are binding – from the prohibition to smoke or the limited number of people allowed to drive the car – or when there is no advantage from having access to an easy to switch offer of cars, the customers could simply not be appealed

3. THEORETICAL FRAMEWORK

3.1.1. The context of service-dominant logic

Through the lenses of service-dominant logic (SDL), it is possible to capture the perspective of value creation in marketing, introducing the analysis of creative forms of exchange (Vargo & Lusch, 2008). It is the context in which firms and customers contribute to co-create value (Kennedy & Guzmán, 2016), specifically supporting the importance of such a collaboration, structured into a constant information sharing and a mutual learning process, to eventually achieve a superior value proposition (Grönroos & Voima, 2013), (Randall, Pohlen, & Hanna, 2010), (Vargo & Lusch, 2008). Intangible skills, knowledge and relationships are the main elements the active consumers could share with the company to contribute in the co-creation of value (Jaworski & Kohli, 2006), (Vargo & Lusch, 2008). Co-creation in the context of SDL have been quite extensively observed in different situations, including the co-creation of a customer's voice (Jaworski & Kohli, 2006); the satisfaction of expectations (Oliver, 2006); the co-production (Etgar, 2006); the management of supply chain and value chain (Flint & Mentzer, 2006); in cross-functional processes (Lambert & García-Dastugue, 2006); on marketing strategy effectiveness and the operational efficiency (Kalaignanam & Varadarajan, 2006).

3.1.2. What co-creation is

As anticipated, co-creation is structured within the boundaries of SDL. The concept of co-creation derives strictly from several other academic contributions in strategy. It is deeply rooted in the concept of core competencies (Prahalad & Hamel, 1990) and it is the result of the combination of the resource-based model of the firm (Barney, 1991) with the customer-orientation for value innovation (Kim & Mauborgne, 1999). Co-creation bases on the fact that customers experience the actual value of a product or a service only when in use (Payne, Storbacka, & Frow, 2008).

Co-creation is the result of the customer understanding of what their potential in extracting value at the point of the exchange is. The phenomenon of co-creation occurs in correspondence of the convergence between the role of the company and its consumer with the aim of value creation (Ind & Bjerke, 2007), (Prahalad & Ramaswamy, 2004). More specifically, it is a process that involves multiple parties in a structured and systematic approach with the objective of interacting, learning and sharing key information to jointly create value (Vargo & Lusch, 2016), (Prahalad & Ramaswamy, 2004).

Value co-creation aims at providing the company with a tool for succeed in competitive environments, where traditionally companies are mainly forced to reduce costs through the value chain to keep up with the rivalry.

Instead, the co-creation approach is much more aimed at developing a structure of personalized interactions with the consumer in the scope of offer differentiation (Prahalad & Ramaswamy, 2004). Indeed, a supplier offering a superior value proposition that results from a co-creative process, become better at reaching its main target group and then capture back some value in the form of higher profits (Payne, Storbacka, & Frow, 2008).

It is possible to identify several actions involving co-creation that are meant to benefit the company during all the stages of product and service development (Payne, Storbacka, & Frow, 2008). However, only the integration in the ideation and launch phase have been demonstrated to substantially produce positive financial outcomes (Chang & Taylor, 2016).

The relationship between the company and the consumer is mainly articulated in three-steps, namely the acquisition, stabilization and eventually the enhancement stage (Payne, Storbacka, Frow, & Knox, 2009), when value creation is finally obtained. During the three phases engaged consumers are aggregated to form a unique unit that interacts directly with the company to support the development of the offer (Hatch & Schultz, 2010), (Ind & Bjerke, 2007).

Companies are incentivized to collect feedbacks from the customers to both create and improve their products and brand identities (Kennedy & Guzmán, 2016). Indeed, the aim is to give consumers the possibility to take part of the brand identity definition, by leveraging their daily use of the product or service and their social connections (Iglesias & Bonet, 2012).

Manage different stakeholders during the process of co-creation appears not to be an easy task for companies. In fact, the result of the process mainly depends on its dynamics, which differ according to the type of opportunities the specific virtual space provides (Vallaster & von Wallpach, 2013), the main tools through which the structured and unstructured knowledge is collected. However, should be said that Millennials are the ones that naturally represent the majority of the population in almost every virtual space, given their higher confidence with online social spaces (Kennedy & Guzmán, 2016). For this reason, Duggan et al. (2014) attribute Millennials the label of “creators”.

Nonetheless, the main challenge for companies and specifically for brand managers is still represented by their resistance in letting the consumers influence directly the strategy of the brand development. In fact, an essential point for co-creation to be effective is the spontaneous recognition of the customer value and that pass through the natural renounce of the company to

control every aspect of the brand internally, a challenge that is far from being easy (Hatch & Schultz, 2010), (Iglesias, Ind, & Alfaro, 2013). One of the biggest challenges for the future is to understand how to spontaneously value the outcome of the co-creative process in order to capitalize the worth generated (Brakus, Schmitt, & Zarantonello, 2009), (Hatch & Schultz, 2010), (Iglesias & Bonet, 2012) (Payne, Storbacka, Frow, & Knox, 2009).

3.1.3. Co-creative behaviour dimensions

For the scope of the research, co-creative practices won't be either limited to a specific phase or to the brand or product level, but it will be considered as a structured behaviour articulated into several different dimensions. In particular, the literature has identified two different types of value co-creative behaviour that have been respectively defined as customer participation behaviour and customer citizenship behaviour (Yi & Gong, 2013). The former identifies the cluster of activities that are required to successfully generate value while the latter embodies the factors that are typical of voluntary behaviours that provide extraordinary value to companies although they could not occur in every co-creative practice (Yi, Nataraajan, & Gong, 2011), (Bove, Pervan, Beatty, & Shiu, 2009).

Breaking down the second order factors, it is possible to identify four dimensions each that allow the comprehension of its systematic structure. Customer participation behaviour is indeed composed of four components, that are the information seeking, information sharing, responsible behaviour and personal interaction. They embody four crucial moments of the co-creative practice, namely the research of pieces of information to understand the customer's role in the entire process (Kelley, Donnelly Jr, & Skinner, 1990), the sharing of the information for use to the counterpart (Lengnick-Hall, Claycomb, & Inks, 2000), the customers' acknowledgment of their responsibilities and duties (Ennew & Binks, 1999) and ability of successfully interact with the counterpart (Ennew & Binks, 1999).

Customer citizenship behaviour, on the other hand, incorporates customers0 feedbacks, advocacy, helping and tolerance. These moments involve in detail solicited and unsolicited comments that support outcome creation (Groth, Mertens, & Murphy, 2004), the customer's sincere recommendations of the business to others (Groth, Mertens, & Murphy, 2004), the support provided to other customers to help them in behave consistently with their role (Groth, Mertens, & Murphy, 2004) and the openness demonstrated by the customers in case the outcome does not match the expectations (Lengnick-Hall, Claycomb, & Inks, 2000).

3.2. Understanding the reasons for behavioural changes

3.2.1. The concept of "produsage"

Participative environments are the outcome of constant changes in either socio-cultural participation and in economic production (Bruns, 2006), mainly driven by the need for rapid access, develop and share of knowledge and information. These transformations were driven mainly by the rapid change in the role of consumers. Indeed, the literature has required the redefinition of consumers, describing the concept of *prosumer* (Toffler, 1971) before and *pro-am* (Leadbeater & Miller, 2004) in more recent years. While the former remarks specifically the need for consumers' informed decisions in a context of individualisation and customisable product offer, the latter draws an explicit connection between the producers and customers' efforts in the development of commercial offers.

Nevertheless, the evolutionary change that has been mainly encountering at the beginning of the 21st century is the essential substitution of the traditional production-consumption dichotomy with a more complex, fluid concept that has been named *produsage* (Bruns, 2007). The baseline of this new pattern is built on one fundamental rule: members of a community are not either producers nor consumers but have the potential to be both by playing a fluid role in the system.

Produsage can be summarized as a community-based collaborative environment, where a large number of members can always contribute more than a closed group of producers; it is similar to a play with fluid roles, where everyone participates accordingly to their passions, preferences and possibilities. Thus, products are unfinished artefacts, underlying their dynamic nature where users continuously improve the outcome; a place of common property but with individual merit is always rewarded (Bruns, 2007).

3.2.2. The "produsers"

The shift in paradigm from traditional forms of production-consumption to the *produsage* environment represents the systematic adaptation to the structural transformation of the role of consumers, in this case namely the *produsers.*

According to Bruns (2007), the unique characteristics of the new collaborative environment reflect the features of its population. And since not every environment is configured to support *produsage*-led behaviours, not every generation – as a group of people – can be considered as *produsers*. To clarify their profile, Bruns (2007) developed further the concept of Generation C.

The watchdog website *Trendwatching.com* (2004), (2006) introduced for the very first time the terms Generation C publishing an article that illustrated the need for a radical re-discussion of the archetype of consumption at the beginning of the new millennium. Purchases decisions, in that sense, became a more complex process that embodies the patient analysis of the other users' reviews to improve the experience through recommendations (Hardey, 2011)

Generation C is then not defined on the basis of a specific time-frame but as being the population of *produsers* at the core of the user-led, *produsage* system. They are the ones that participate in the broad sense of the content creation (Hardey, 2011). The "C" stands, in fact, for their contents-related characteristics, as *Trendwatching.com* (2004) outlines.

They are primarily identified as for *contents creator* and *creative*, attribute considered as key in the context of online community platforms (Bruns, 2007). They can also be *celebrities* in the sense of being able to influence their peers in a process of acquiring resonance by significantly contributing to the development of the outcome.

As far as *control* and *casual collapse* are concerned, their understanding is slightly more complex. The former refers to the altered concept of ownership implied in the *produsage* model: the contributor accepts the control of its content only on a collective level, renouncing to a significant part of its privileges otherwise guaranteed by the normative copyright law. In that sense, other members are allowed to deliberately modify and improve one's outcome, while still remain the prohibition of exploiting it for unauthorized commercial use (Bruns, 2007). The latter, on the other hand, refers to the casual collapse of certain traditional dichotomic production-consumption and product-based business models[7].

Therefore, it is observed that *produsers* behave sharing a profession towards an active participation in the creation of the outcome, similar to what happens with any other co-creative practice and, in a sense, a *produser* is thus a subgroup of the huge co-creation umbrella.

3.2.3. Digitalization as a driver of change

As aforementioned, the predominant role of digital practices in the process of acquiring knowledge and sharing information stands at the core of the Generation C. However, that does not represent an exclusive prerogative to them, as several other categories have been designed to contribute in the description of a behavioural transition that is far from being finished. In fact, some other definitions such as Digital Native (Prensky, 2001) and NetGen (Tapscott, 2009) share with

[7] It mainly refers to specific informational products, for instance the software industry and the encyclopaedias market, according to *Trendwatching.com* (2004)

Generation C (Bruns, 2007) and more generally with Millennials the key feature of experiencing profound behavioural changes enabled by the massive introduction of the digitalization in their daily activities.

Whether from one side the digital environment has allowed immediate exchanges between different parties, on the other side it has permitted undertaking multi-task activities that resulted in incentivizing the dispersion of the focus in favour of a more ephemeral approach to the tasks themselves. As a result, Millennials became the progenitors of a set of people that faced a complete change in preferences that then eventually influenced behaviours (Howe & Strauss, 2000).

Nevertheless, automotive is particularly affected by the change in the way pieces of information are leveraged in the digital environment. The possibility of accessing them whenever and wherever people need them has revolutionized the established paradigm of the past century in which either an adequate beforehand preparation and a strong reliance on expert advice were particularly valued. Currently, people look for a continuous information flow to independently perform an informed decision (DeMaria, 2013). The achievers' profile characterising Millennials represents the main driver in undertaking a critical assessment whenever decisions should be taken (Howe & Strauss, 2000).

As a result, the strongest implication of continuous information flow for businesses is the tendency not to be loyal in their purchases (Parment, 2012); they indeed prefer the selection of the best possible offer at any time – that does not imply the most affordable.

Subscription services serve the purpose of fighting against the lack of loyalty by building up a strong bond between the brand and the client.

Having identified the background of the reasoning, it is possible to identify the main hypothesis that stands at the basis of the following research project. Indeed, considering experience-driven subscription platforms, the digital tools that are used to support the service provision, as the participative environment, then it is possible to hypothesize that the same platforms should attract more *produsers*, namely co-creators, than the several alternatives. Therefore, the core of the research will concentrate on testing the following assumption:

H1: **Experience-driven subscription services (EDVSS) attract consumers more involved in co-creative practices than the conventional/traditional car access options.**

3.3. Understand adoption motivations

Academic transportation literature recognises the central role of travelling for its own sake as opposed to the vestigial idea that it could only be considered as an instrument to reach a destination. The main implication is that this approach considers that travel has an intrinsic positive utility (Redmond & Mokhtarian, 2001), and therefore it cannot be observed as a simple function of demographic variables.

Thus, empirical studies demonstrated the presence of both significant affective and symbolic factors that flank the instrumental perception (Marsh & Collett, 1986), (Sachs, 1983), enlarging the sphere of perceptions that drive the travel choice. These factors not only have a relevant role in predicting the car demand (Steg, 2005) but also are considered when pondering regulations application (Stradling, Meadows, & Beatty, 2000), since for instance the predominance of an affective perception of cars could drastically limit the driver availability to reduce its vehicle usage and then suggest the ineffectiveness of specific strategies.

Therefore, manufacturers should be aware of the main factors influencing car choices to successfully forecast the demand (Steg, 2005) and set up the strategies accordingly. The same conclusion could apply when design co-creative initiatives that need to suit the target to ensure both an active spontaneous participation as well as a successful outcome (PWC, 2013). According to Steg (2005), to ensure such a comprehensive view it is recommended how the customer relates with the triple role that cars could fulfil in drivers' minds, namely *instrumental, affective* and *symbolic* perceptions.

3.3.1. The model for car choice

The belief that transportation has a positive utility substantially questioned the precedent academic status quo about the model of car choice. Despite a considerable discrepancy could be identified in transposing attitudes into behaviours (Ajzen & Fishbein, 1980), empirical evidence demonstrates that an attitudinal and personality-based mode choice model actually outperforms traditional alternatives (Johansson, Heldt, & Johansson, 2006). These traditional models explain car choice mainly in terms of vehicle attributes, household and primary driver characteristics (Choo & Mokhtarian, 2004), substantially renounce to investigate inner motives. On the other hand, attitudinal models have demonstrated that behaviour could be predicted by intentions and that attitudes and social norms stand as precursors of such a relationship (Fishbein & Ajzen, 1975). Attitudes in particular are particularly relevant, being the spontaneous expression on the inner self

while social norms appear to be coerced and pressured by external factors (Sheeran, Norman, & Orbell, 1999).

Surely, previous car choice models still hold an important stake in the field among the experts, mainly because of their easier mode of assessment. However, Redmond & Mokhtarian (2001) introduced a car choice model that has been articulated mainly around the explicatory power of drivers' attitudes, personalities and lifestyles for car choice. Even if the main limitation of such an attitudinal based model is represented by the difficulty of drawing generally valid items to assess correctly the constructs, good performances in predicting car model choice have been reached in different applications (Choo & Mokhtarian, 2004).

Furthermore, the same model has been related to many others studies, operating the required adjustments, for instance in relation to driver's behaviour in climate-constrained world (Schäfer, Heywood, Jacoby, & Waitz, 2009), in relation to the mode choice (Johansson, Heldt, & Johansson, 2006) and in the adoption of alternative powertrains (Lane & Potter, 2007). The following project attempts to further extend its comprehensive application in predicting EDVSS adoption, thus eventually providing manufacturers with a useful tool to address their marketing strategies.

Attitudes involve the set of factors that contribute to the understanding of drivers' behaviour when opting for a specific type of car during the process of purchase (Choo & Mokhtarian, 2004). Indeed, it embraces both positive and negative attitudes towards cars prediction of choices. Four main factors apply: *travel dislike, pro-environmental policies, commute benefit* and *travel freedom* (Redmond, 2000). In detail, travel dislike represents the utility that the driver could derive from the use of car and, when positive, implies a driver disutility; pro-environmental policies assess the relationship between an attitude in favour of respectful choices over the decision of which type of car to drive, thus a positive score in this dimension implies a tendency towards protective legislation and eventually have a lower utility in car usage; commute benefit assesses the utility associated with repeated travels from home to workplace, with a positive score associated with a higher utility from commuting and a tougher possibility to change their behaviour; finally travel freedom is aimed at assessing the incidence of constraints in the decisions, such that scoring positively depict a situation with minor restrictions.

The study of attitudes could lead to alternatives hypothesis (Redmond & Mokhtarian, 2001). Indeed, in presence of a form of attitudinal attachment to the use of car, people could be willing to purchase specific models for their own satisfaction, while in the case of negative relationship,

people could either look for alternatives means of transport or opt for specific vehicle that could reduce their negative influence (e.g. buying a luxury car to enhance the experience of travelling).

An EDVSS is characterised by elevating the driving experience to the further level, providing high-end vehicles tailored for every specific situation, suggesting that a travel dislike should decrease the intention to adopt the service. On the contrary, people having a pro-environmental attitude could more affordability access greener cars and the ones experiencing travel freedom could find in EDVSS the perfect tailored solution for their journeys. Finally, in relation to the ones considering that commutes overall benefit their life, it is believed that EDVSS could offer them a possibility to further enhance their commutes by offering an higher car level.

H2a: **People featuring an attitudinal dislike in traveling are less likely to adopt an EDVSS.**

H2b**: People featuring an attitudinal propension towards pro-environmental policies, feeling freedom while driving and benefitting from commutes are more likely to adopt an EDVSS.**

3.3.2. The hypothesis for driver's personality

Driver's personalities are the second main variable that explicates car choice thus determining the adoption intentions of the studied service. Specifically, understanding driver's personality traits it is possible to identify the consumers that are mainly attracted by the subscription service and thus provide a more accurate target.

The adopted model identifies four driver's personalities traits: *the adventure seeker, the organizer, the loner* and *the calm*. Among them, *adventure seekers* are the ones that actively search for new experiences, directly benefitting from accessing different models for different purposes. EDVSSs allow them to access an option that support their explorative approach to life, something that the traditional ownership could not provide. On the other hand, the other factors result in more limited and uncertain outcomes, allowing in not predicting with reasonable certainty their outcome (Mokhtarian, Salomon, & Redmond, 2001)

H3: **People characterised by being adventure seekers are more likely to adopt an experience-driven vehicle subscription service.**

3.3.3. The hypothesis for driver's lifestyle

The third construct employed in the model refers to drivers' lifestyle, in four descriptions of candidates' preferences in modes of living. The lifestyle chosen definition is based on factors such as the work, family, money and status related thoughts (Redmond & Mokhtarian, 2001).

US drivers have been mainly clustered into four different types (Redmond, 2000); the status seekers showing-off the achievements; the workaholic those strictly living for their professional life; the family/community oriented mainly oriented to social interactions; finally, the frustrated facing constantly hard times with any aspect of their life.

Hypothetically, the adoption choice requires a benefit for the customers, either in the form of the unique feeling of driving the dreamed car or maybe for feeling accepted in their social environment. Status seekers will adopt a subscription service only if as far as the service offers cars that are socially appreciated. Conversely, frustrated people could struggle to understand the key benefits they could derive from the service, lacking substantially in confidence and control (Redmond & Mokhtarian, 2001), eventually deriving a negative impact from adoption. Then, family-oriented people could not be interested in having a wide choice since probably their main solution is represented by a unique type of vehicle, either SUV or Van, with a particular attention on saving money. Finally, workaholic people represent an unclear category, being potentially attracted by the opportunity of switching car when needed to maximize the experience in the few moments of driving, although there is a possibility that they could not be attracted at all given the priority represented by their profession.

H4a: **Status seeking lifestyle results in influencing positively the adoption of EDVSS.**

H4b: **Frustrated, family-oriented and workaholic lifestyles influence negatively the adoption of EDVSS.**

3.3.4. The hypothesis for driver's car perceptions

Car perceptions identify the alternative motives drivers shows when relating to the car usage. The contribution of Steg (2005) has demonstrated that people mainly describe their relationships with cars as a function of an instrumental, symbolic or affective use. The instrumental factors refer to the set of characteristics that specify the nature of the mean of transport, such as speed, convenience and flexibility. However, the instrumental role of the car is just a small side of the customer's perceptions. Besides it, indeed, people refer to cars with feelings that suggest alternative functions. Symbolic aspects are thus related to the social meaning that driving a specific car has, while affective aspects refer to the emotions that arise when establishing a direct relationship with the driving experience.

The hypothesis can be drawn easily in this particular section. People that denote a strong symbolic car perception are going to witness a stronger propensity to the adoption of an experience-driven vehicle subscription service than the ones with affective ones, because the latter may derive a

benefit predominantly from owning and driving their own car. On the contrary, instrumental perceptions affect negatively the service adoption, subordinating the driving experience in the fulfilment of the transport need.

H5a: **People showing predominantly symbolic car ownership perceptions have a stronger willingness to adopt an experience-driven vehicle subscription service than people with affective perceptions.**

H5b: **People showing predominantly instrumental car ownership perceptions have a negative willingness to adopt an experience-driven vehicle subscription service.**

4. RESEARCH DESIGN

4.1. Research philosophy

Before proceeding with the core of the research, it is briefly explained the approach undertaken by the author in designing the investigation.

Considering the relative novelty of the subject of analysis and the substantial lack of academic contributions, the study is conducted following a positivistic method. Indeed, by embracing this point of view, it is possible to obtain law-like generalisations from the mere observation of the reality (Saunders, Lewis, & Thornhill, 2009).

Positivism underpins the formulation of hypothesis based on the existing knowledge, in our case outlined in the theoretical section. The confirmation or rejection is determined eventually following a scientifically relevant test. Meaningful Knowledge is then generated by observing and measuring concrete phenomena in the target population (Crotty, 1998) and causal relationships are used to justify the formulation of conclusions.

4.2. Quantitative research design

4.2.1. Measurement model

The experiment features only previously tested scales to increase its internal validity and reliability. The scales are characterised by being both convergent and discriminant for relatively large samples, converging in similar constructs and diverging in dissimilar ones. All constructs are assessed using 7-points responses scales.

The questionnaire structure is composed of seven steps, each one aimed at measuring a specific variable.

In step 1 respondents are introduced through a brief explanation to experience-driven subscription services and then they are asked to assess their propensity to adopt the innovative service. The choice of opting for a stripped written description has been considered sufficient as no relevant differences could be found in the assessment of concepts presented either in embellished or stripped description, if not visually displayed (Lees & Wright, 2004). Moreover, considering the service nature of the object of evaluation, no picture would have improved the evaluation of the functionalities of the service.

The propensity towards the willingness to adopt the new service has been measured by making reference to the adoption model theorized by Rogers (1976) based on the five characteristics of an innovation. Relative advantage measures the extent to which the innovative service is perceived as more effective than the existing alternatives; compatibility defines the perceived level of adaptability of the innovation to the current life and lifestyle of people; complexity measures the hardness for users to fully learn the potential of the service and its processes; trialability evaluate the perception of potential users towards the possibility of testing the innovation; eventually observability is aimed at defining whether the benefits derived from the use of the innovation are visible to the final users. The constructs applied to measure these theoretical dimensions are retrieved mainly from the scales developed by Moore & Benbasat (1991) and the following applications by Karahanna et al. (1999), Tan & Teo (2000) and Chervany (1999). Furthermore, to ensure a comprehensive assessment of the respondent willingness to adopt, candidates' attitudes towards adoption are measured. In this case, the items are directly retrieved from the contribution of Fishbein & Ajzen (1975, 1980).

Construct	Factor	Item	Reference
ADOPTION RATE	Adoption Attitude	1. Car subscription services are a good idea 2. Car subscriptions are a wise idea 3. I like the idea of using car subscription services 4. Using car subscriptions would be a pleasant experience	Retrieved from (Fishbein & Ajzen, 1975) & (Fishbein & Ajzen, 1980)
	Relative Advantage	1. Car subscription services would enable me to accomplish my tasks more quickly 2. Car subscription services would improve the quality of my car travels 3. Car subscription services would enhance the effectiveness of my commutes 4. Car subscriptions would make my commutes easy 5. Car subscriptions would give me greater control over my travels	Retrieved from (Moore & Benbasat, 1991) & (Karahanna, Straub, & Chervany, 1999)
	Complexity	1. Learning to operate car subscription services would be easy for me 2. Overall, if I were to use the described service, it would be easy to use 3. It would be easy for me to become skilful at using a car subscription service	Retrieved from (Moore & Benbasat, 1991), (Karahanna, Straub, & Chervany, 1999) & (Tan & Teo, 2000)
	Compatibility	1. Car subscriptions would be compatible with most aspects of my travels 2. Car subscriptions would fit my travelling preferences	

		3. Car subscription would fit well with the way I like to drive	
	Trialability	1. I want to be able to use a car subscription service on a trial basis 2. I want to be able to properly try out a car subscription service 3. I want to be permitted to use a car subscription service on a trial basis long enough to see what it can do	
	Observability	1. I will use a car subscription service when many uses it 2. I will use a car subscription service when I have seen others using this service 3. I will use a car subscription service as soon as I get to know about it 4. I will use a car subscription service if it becomes popular 5. I will wait until other customers start to use a car subscription service 6. I will use a car subscription service when other people have successful experience of using it	

Table 1 – Measurement model for Adoption Rate

In the second step, the respondent is introduced to a set of questions directly dedicated at assessing their attitudes towards driving and cars in general, a key point when studying the motivations underlying the choice for vehicle subscriptions. Constructs are determined directly from the contributions of Redmond & Mokhtarian (2001) and Choo & Mokhtarian (2004), and they are divided into the already explained four categories, namely *travel dislike, pro-environmental policy, commute benefits and travel freedom* and 21 items. Note that the *travel dislike* factor is evaluated using some items that are reversely coded.

Construct	Factor	Item	Reference
DRIVER'S ATTITUDES	Travel dislike	1. Travelling is boring 2. I like exploring new places 3. The only good thing about travelling is arriving at your destination 4. Getting there is half the fun	Retrieved from (Redmond & Mokhtarian, 2001) & (Choo & Mokhtarian, 2004)
	Pro-environmental policy	1. To improve air quality, I am willing to pay a little more to use an electric or other clean-fuel vehicle 2. We should raise the price of gasoline to reduce congestion and air pollution 3. We need more public transportation, even if taxes have to pay for a lot of the costs	

		4. I limit my auto travel to help improve congestion and air quality	
		5. We can find cost-effective technological solutions to the problem of air pollution	
		6. We need more highways, even if taxes have to pay for a lot of the costs	
	Commute benefit	1. My commute is a real hassle	
		2. My commute trip is a useful transition between home and work	
		3. The travelling that I need to do interferes with doing other things I like	
		4. I use my commute time productively	
		5. Travel time is generally wasted time	
		6. Getting stuck in traffic doesn't bother me too much	
	Travel freedom	1. In terms of local travell, I have the freedom to go anywhere I want to	
		2. In terms of long-distance travel, I have the freedom to go anywhere I want to	
		3. The vehicles I travel in are comfortable	
		4. It is nice to be able to do errands on the way to or from work	
		5. I am willing to pay a toll to travel on an uncongested road	

Table 2 – Measurement model for Driver's Attitudes

In the third step, the respondents' personality is studied with respect to the four main categories of driving identified and measured by Redomond & Mokhtarian (2001) and Choo & Mokhtarian (2004), that are *adventure seeking, organizer, loner and calm* using 17 items.

Construct	Factor	Item	Reference
DRIVER'S PERSONALITY	Adventure seeking	1. I am adventurous	Retrieved from (Redmond & Mokhtarian, 2001) & (Choo & Mokhtarian, 2004)
		2. I am seeking variety	
		3. I am spontaneous	
		4. I like taking risks	
		5. I like to stay close to home	
		6. I am ambitious	
		7. I like moving at high speeds	
		8. I like being outdoors	
	Organizer	1. I am efficient	
		2. I am on time	
		3. I like following routines	
	Loner	1. I like being alone	
		2. I like being independent	
	Calm	1. I am aggressive	
		2. I am patient	
		3. I am restless	
		4. I like being in charge	

Table 3 - Measurement model for Driver's Personality

In the fourth step, it is investigated the lifestyle of respondents, an essential variable to depict what could be the persona that is appealed by a vehicle subscription service. Choo & Mokhtarian (2004) successfully established a scale with 17 items that consider four driver's lifestyles typologies, that are *frustrated, family and community oriented, status seeking and workaholic* as a determinant when defining car choice and car ownership.

Construct	Factor	Item	Reference
DRIVER'S LIFESTYLE	Frustrated	1. I often feel like I don't have much control over my life 2. I am generally satisfied with my life 3. Work and family do not leave me enough time for myself 4. I wouldn't necessarily have to like my work that much, as long as I made enough money 5. I feel that I am wasting time when I have to wait	Retrieved from (Redmond & Mokhtarian, 2001) & (Choo & Mokhtarian, 2004)
	Family and Community oriented	1. I'd like to spend more time with my family and friends 2. My family and friends are more important to me than my work 3. I'd like to spend more time on social, environmental, or religious causes 4. Occasionally, I'd be willing to give up a day's pay to get a day of work	
	Status seeking	1. To me, the car is a status symbol 2. A lot of the fun of having something nice is showing it off 3. To me, the car is nothing more than a convenient way to get around 4. The one who dies with the most toys wins	
	Workaholic	1. I'm pretty much a workaholic 2. I'd like to spend more time on work 3. I generally try to spend some time each week just on myself 4. I don't like to stay in one place for long	

Table 4 - Measurement model for Driver's Lifestyle

In the fifth step has the purpose of determine the scope of car usage; it is simply asked respondents to mark the categories of car usage that apply, making reference to Baltas & Saridakis (2013), that already preciously contributed in categorise the alternatives for regression models in three options, namely *work-related issues, entertainment and family-related purposes.*

In the sixth step, the candidate perception towards cars is measured, in detail whether he perceives the car as a simple tool or an object with some sort of meaning is attributed to it. A 17-constructs

scale is retrieved from Steg (2005) that contributed in reliably measures the three main type of perceptions, *instrumental, symbolic and affective*.

Construct	Factor	Item	Reference
CAR PERCEPTIONS	Instrumental	1. For me, the car has instrumental functions only 2. It does not matter to me which type of car I drive 3. I only have a car to travel from A to B 4. The functional quality of a car is more important to me than its make 5. If I did not need a car, I would dispose of it immediately	Retrieved from (Steg, 2005)
	Symbolic	1. A car provides status and prestige 2. My car shows who and what I am 3. I may be jealous of someone with a nice car 4. You can know a person by looking at his or her car 5. The brand of a car is more important to me than its functional qualities	
	Affective	1. I love driving 2. I know of a dream car that I would love to posses 3. I would love to drive in the newest Ferrari, Porsche or Jaguar 4. I like to drive just for the fun 5. I feel free and independent if I drive	

Table 5 - Measurement model for Car Perceptions

The seventh step then is aimed at assessing the extent of co-creative behaviours of respondents in their daily life. For the purpose, the scale developed and validated by Yi & Gong (2013) has been used as a reference for its comprehensive application. Its 29 constructs measure the incidence of candidate participative behaviours, directly influenced by the *degree of information seeking, information sharing, responsive behaviour and personal interaction*, as well as the incidence of its citizenship behaviour, assessed through *the incidence of feedback in their decision making, advocacy, the importance of helping and tolerance.*

Construct	Factor	Item	Reference
Customer Participation Behaviour	INFORMATION SEEKING	1. I have asked others for information on what this service offers. 2. I have searched for information on where this service is located. 3. I have paid attention to how others behave to use this service well.	(Yi & Gong, Customer value co-creation behavior: Scale development and validation, 2013)

	INFORMATION SHARING	1. I clearly explained what I wanted the employee to do. 2. I gave the employee proper information. 3. I provided the necessary information so that the employee could perform his or her duties. 4. I answered all the employee's service-related questions.
	RESPONSIBLE BEHAVIOUR	1. I performed all of the tasks that are required. 2. I adequately completed all the expected behaviours. 3. I fulfilled responsibilities to the business. 4. I followed the employee's directives or orders.
	PERSONAL INTERACTION	1. I was friendly to the employee. 2. I was kind to the employee. 3. I was polite to the employee. 4. I was courteous to the employee. 5. I didn't act rudely to the employee
	FEEDBACK	1. If I have a useful idea on how to improve service, I let the employee know. 2. When I receive good service from the employee, I comment on it. 3. When I experience a problem, I let the employee know about it.
	ADVOCACY	1. I said positive things about XYZ and the employee to others. 2. I recommended XYZ and the employee to others. 3. I encouraged friends and relatives to use XYZ.
Customer Citizenship Behaviour	HELPING	1. I assist other customers if they need my help. 2. I help other customers if they seem to have problems. 3. I teach other customers to use the service correctly. 4. I give advice to other customers.
	TOLERANCE	1. If service is not delivered as expected, I would be willing to put up with it. 2. If the employee makes a mistake during service delivery, I would be willing to be patient. 3. If I have to wait longer than I normally expected to receive the service, I would be willing to adapt.

Table 6 - Measurement model for Co-Creative Behaviour

4.2.2. Pilot testing

Previously to the questionnaires distribution to the final sample, a pilot testing has been applied to perform an evaluation of the required procedures in data collection and analysis, and to ensure that all the steps involved could lead to the expected outcome.

The service concept has been written by making direct reference to the wording used in the website by the principal providers in the US, in particular, Passport by Porsche, Book by Cadillac, Acces by BMW and Drive Clutch. Then, the concept has been presented to ten students from universities based in the US who did not know about the service before. The phrasing and wording have been demonstrated to be comprehensible and adequately exhaustive to perform an assessment of the same even without previous knowledge about it.

Ten international students have tested the entire questionnaire, that although not being US citizens were classified by certifying entities as proficient English speakers (C2 level of Cambridge Assessment English) together with the author in a pre-piloting session, aimed at assessing whether the questions were easily comprehensible.

The final stage of the pilot testing has been then performed, testing the procedures of survey delivery online and responses collection. For the purpose, 50 respondents were contacted through Amazon Mechanical Turk and asked to conduct the questionnaire and eventually provide suggestions for improvements at the end. The comments registered indicated some alternative wording that would have made the question clearer according to the respondent. Finally, the average completion time accounted for 9 minutes and 45 seconds.

4.2.3. Sample

The innovative nature of the service represents a variable that could significantly affect the results of the research. In fact, introducing the concept to a population that has never hear about the service could enhance the risk of distorting the outcome of the analysis. Oppositely, the concept explanation to an already informed population, even at a superficial level, is eventually able to even reduce the author bias in outlining the characteristics of the innovative service.

In addition to that, the aforementioned theoretical reasoning is mainly based on previous studies performed in the US, underlining the possibility that the conclusions obtained could not apply in a different geographical context.

Consequently, to ensure that customers have a complete understanding of the phenomenon and to support the theoretical conclusions, the US population is selected, having already had the chance to experience the introduction of such kind of services.

Therefore, for the specific purpose of the study, the US population has been selected as a target. Considered the necessity of comparing different groups of people based on their behaviours, a quota sampling method has been preferred and criteria have been identified in the geographical residence, gender and age.

Briefly, respondents are then people currently living in the US, aged between 20 and 75 both male and female. Note that people between 16 and 19 are excluded from the sample because they are excluded from the possibility of accessing a vehicle subscription service given the limitations that companies impose in driving under the age of 20, while people over 75 are excluded due to the substantial obstacle in successfully reaching them online.

The US population included between 20 and 75 years counts in 2018 roughly 330 million people (US Census Bureau, 2018). The ensure that the outcome could be consistent with the population, the research was conducted considering a confidence level of 95% and a confidence interval of 5%, resulting in a theoretical sample size of 384 people.

Respondents have been recruited via Amazon Mechanical Turk. Several studies demonstrated a comparable quality in research results to the ones using traditional methods. In particular, the attention level, biases and heuristics are similar to alternative widely used recruiting strategy (Paolacci, Chandler, & Ipeirotis, 2010), while it is demonstrated the effective diversification of samples compared to traditional college samples and that researchers could use the compensation system to incentive a wide participation among the population (Buhrmester, Kwang, & Gosling, 2011). Using an online respondents' recruiting strategy enables the author to reach enough large set of the population, given the fact that the offline population share in the US in 2018 is ~11% (Pew Research Center, 2018).

Responses collection has been organized over several stages. In the beginning, surveys were distributed widely in 2 batches of 100 questionnaires each. This allowed an intermediate assessment of the data collection that has been constantly compared to the population table. Then, in a second phase, respondents were targeted specifically to fulfil the requirements in age and gender, launching specific batches that were restricted to the specific missing categories. Finally, in the third stage, all the responses were analysed to eventually approve the results obtained. At the

end of the process, the questionnaire has been administered to 514 people, of whom 408 successfully fulfilled every step of the survey.

Therefore, the sample obtained was slightly oversampling the younger age classes. To increase sample representativeness and experimental internal validity, it was necessary to proceed with a fine-tuning procedure consisting in randomly selecting the exceeding observations per age class. A total of 23 responses among males were then deleted, specifically 3 from the 20-24, 16 from the 25-29, 2 from the 30-34 and 2 from the 55-59.

To finally test the significance of the final sample, a one-sample T-test was performed, to determine whether the age in recruited subjects was different to normal, considering the population age mean of 45.56 (US Census Bureau, 2018). The sample obtained a total mean of 45.22 years, -.33 lower than the population, with a sig. (2-tailed) of .673, indicating that the difference in means is not statistically significant ($p > .05$) and therefore the null hypothesis should be accepted, namely the sample is representative in terms of age. A similar result is achieved also when observing people separately by gender, with a -.40-mean difference with .719 sig. (2-tailed) for males and a -.26-mean difference with .810 sig. (2-tailed) for females.

Table 1 and 2 outline the sample distribution compared to the target population.

MALE				
	US Population		Sample	
	Frequency	Percent (%)	Frequency	Percent (%)
20-24	19	10,3	19	10,2
25-29	20	10,9	20	10,7
30-34	19	10,1	19	10,2
35-39	18	9,7	18	9,6
40-44	17	8,9	17	9,1
45-49	18	9,5	18	9,6
50-54	18	9,5	18	9,6
55-59	18	9,8	18	9,6
60-64	16	8,7	16	8,6
65-69	14	7,2	14	7,5
70-74	10	5,4	10	5,3
	187	100	187	100

Table 7 - Sample distribution compared to US population (Male)

FEMALE				
	US Population		Sample	
	Frequency	Percent (%)	Frequency	Percent (%)
20-24	18	9,5	18	9,3
25-29	20	10,2	21	10,9
30-34	19	9,7	19	9,8

35-39	18	9,4	16	8,3
40-44	17	8,8	18	9,3
45-49	18	9,4	18	9,3
50-54	19	9,6	19	9,8
55-59	19	10,0	19	9,8
60-64	18	9,3	18	9,3
65-69	15	7,9	15	7,8
70-74	12	6,1	12	6,2
	193	100	193	100

Table 8 - Sample distribution compared to the US population (Female)

4.2.4. Reliability of the measurement model

Cronbach's alpha has been used as an indicator of the reliability of used scales. It represents a measure of internal consistency of a scale, evaluating the power of each identified item of expressing the desired concept or construct. In the context of the research, for coefficients higher than .90, the scale features excellent reliability, between .90 and .70 it will be considered as high while between .70 and .50 it will be moderate (Hinton, McMurray, & Brownlow, 2004).

Moreover, the reliability test for internal consistency allows the computation of the measurement errors of the construct, observing the fraction of the score that could be determined by the error term. The computation of the measurement error is determined by the difference between the unit and the square of the Cronbach's alpha score obtained for the factor studied.

In specific cases, when the presence of one item affected negatively the value of the factor explained variance, it was necessary to opt for its elimination, in order to maintain an acceptable result.

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
ADOPTION	Adoption Attitude	.885	.217	4
	Relative advantage	.925	.144	5
	Complexity	.878	.229	3
	Compatibility	.885	.217	3
	Trialability	.907	.177	3
	Observability	.942	.113	6

Table 9 - Cronbach's Alpha scores for Adoption Scale

With respect to the measurement model used to assess *EDVSSs Adoption Rate*, the reliability results are satisfactory, in many cases displaying an excellent reliability. All the items featured in the scale are indeed representative of the factors identified, requiring no intervention to enhance the effectiveness of the measure.

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
DRIVER'S ATTITUDES	Travel dislike*	.598	.642	4
	Pro-environmental policies	.806	.350	6
	Commute benefit	.737	.457	6
	Travel freedom	.757	.427	5

**Reversed scale*

Table 10 - Cronbach's Alpha scores for Driver Attitudes

A similar outcome is obtained when testing the *Driver's Attitude* scale, observing only one factor, *Travel Dislike*, with moderate internal consistency. That implies a meaningful effect of the error term in explaining the relationship, therefore reducing the explicatory power of its items. Nevertheless, an item reduction procedure will not ensure the enhancement of the reliability, eventually leading to the acceptance of the potential limitation.

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
DRIVER'S PERSONALITY	Adventure seeking	.780	.392	8
	Organizer	.717	.486	3
	Loner	.515	.735	2
	Calm	.603	.636	3*

Table 11 - Cronbach's Alpha scores for Personality

In relation to *Driver's Personality,* the reliability test highlights some internal consistency issues. In detail, while *Adventure Seeking* and *Organizer* factors feature a high reliability, the others could be only considered moderately reliable. While it is possible to enhance the internal consistency for the *Calm* factor by excluding the item *I am patient,* no intervention is possible to the *Loner* factor that only embraces two items, preventing from any possible improvement.

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
DRIVER'S LIFESTYLE	Frustrated	.698	.513	4*
	Family and Community oriented	.715	.489	3*
	Status seeking	.823	.323	3*
	Workaholic	.708	.499	3*

Table 12 - Cronbach's Alpha scores for Lifestyle

As far as *Driver's Personality* is concerned, items deletion has been applied to each factor for several reasons. The frustrating factor, initially characterised by a Cronbach's alpha of .618, has witnessed the elimination of the item *I am generally satisfied with my life* to pass from a moderate to a high-reliability level. Similarly, the *Family and Community Oriented* factor has been adapted by deleting the item *Occasionally, I'd be willing to give up a day's pay to get a day of work* eventually reaching an internal consistency level from .693 to .715. However, the main improvement has been achieved for the *Status Seeking* factor by removing the item *To me, the car is nothing more than a convenient way to get around* and reaching a reliability level of .823 from the .693 starting point. Finally, through the elimination of the *I generally try to spend some time each week just on myself* item, the factor *Workaholic* achieved an internal consistency level of .708. Note that, although by eliminating some items, the scale could be considered as incomplete in tracking the studied phenomenon, in this specific case it has been given the priority to the obtainment of a satisfying reliability level accepting the compromise of losing some factor comprehensiveness but reducing the risk that the factor is mainly explained by the error term.

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
CAR PERCEPTIONS	Instrumental	.802	.357	5
	Symbolic	.892	.204	5
	Affective	.837	.299	5

Table 13 - Cronbach's Alpha Scores for Car Perceptions

Car Perceptions constructs all resulted in a high level of internal consistency, implying no additional intervention to improve their outcome. A similar decision has been taken for the *Co-Creative Behaviour* constructs, being all higher than the minimum threshold for high reliability (.70).

Scale	Factor	Cronbach's Alpha	Measurement Errors	Items
CO-CREATIVE BEHAVIOUR	Information seeking	.740	.452	3
	Information sharing	.867	.248	4
	Responsible behaviour	.862	.257	4
	Personal interaction	.916	.161	5
	Feedback	.735	.460	3
	Advocacy	.860	.260	3
	Helping	.895	.199	4
	Tolerance	.728	.470	3

Having the different scales demonstrated a substantial reliability, even if in some case items elimination was required, the overall score is computed as the summation of the single responses' score belonging to the group, according to the methodology suggested by Babbie (2013, p. 192) for questionnaires adopting Likert scales articulated in predetermined responses categories contributing in the creation of indexes.

4.2.5. The validity of the measurement model

A confirmatory factor analysis has been used to assess the dimensionality of the used constructs. The CFA study has been conducted using AMOS 25 statistical tool.

The *Adoption Scale* witnesses a substantially good fit of the model to the observations ($\chi 2/DF$ = 2.171, $p < .001$, CFI = 967, GFI = .903, AGFI = .877, RMSEA = .056, PCLOSE = .080) according to the validity threshold suggested by Hu & Bentler (1999). In the scope of the study, given the large sample analysed (n=380), it is possible to disregard the criteria of both $p > .050$ and of PCLOSE < .050. Note that the fitting result is obtained by covarying the measurement errors term of both items *Q2.2* (*Premium car subscription services are a good idea*) with *Q2.3* (*Premium car subscriptions are a wise idea*) and *Q2.24* (*I will wait until other customers start to use a premium car subscription service*) and *Q2.25* (*I will use a premium car subscription service when other people have successful experience of using it*), suggesting that could exist a form of relationship between the identified pair of variables in the analysed sample. Although it is not theoretically always acceptable to allow measurement errors covariances because it is preferable to develop an alternative model able to capture the latent variable influencing both error terms (Hermida, 2015), it is invoked the exception that occurs when the decision follows a rationale that is applied to every recurring case, in this case, the fact that the sample does not observe a significant difference between the pairs of presented items. All the factors are significant, and their loadings exceed the .70 ideal threshold (Hair, Black, Babin, & Anderson, 2010). Moreover, the scale satisfies the requirements for reliability (CR > .70) and convergent reliability (AVE > .50) (Hair, Black, Babin, & Anderson, 2010), while some discriminant validity issues could be found in relation to four out of six factors (MSV < AVE threshold unsatisfied), implying reproducibility problems. Even if the limitation is acknowledged and accepted in the following study, it is advised to follow one of the suggested improvement actions when replicating the study. The main alternatives that could allow the obtainment of a substantial discriminant validity by improving the Average Variance Extracted

score involve dropping cases or items according to either the decrescent measurement error variance (Fornell & Larcker , 1981) or via iteration (Efron, 1981).

A massive intervention has been required to allow the *Driver's Attitude Scale* reaching an acceptable fit to data. Eight items were loading too poorly (< 0.50), while item *Q3.17* (*Getting stuck in traffic doesn't bother me too much)* had a standardize residual covariance exceeding the accepted threshold in absolute value of 2.58 (Hair, Black, Babin, & Anderson, 2010), therefore a total number of nine items were eliminated. By having performed the required adjustments, the model for *Driver's Attitudes* reached a good fit ($\chi 2/DF = 2.015$, $p < .001$, CFI = 969, GFI = .960, AGFI = .935, RMSEA = .052, PCLOSE = .403), with all the items significant. While both reliability and convergent validity satisfy the respective requirements, the discriminant validity still encounters some issues (MSV > AVE) for two out of four factors (*Travel Dislike* and *Travel Freedom*). Nevertheless, the analysis proceeds by acknowledging that some reproducibility problems could feature future experiments involving the same construct.

A similar invasive treatment was required to achieve the model fit for the *Driver's Personality Construct* ($\chi 2/DF = 2.944$, $p < .001$, CFI = 963, GFI = .968, AGFI = .932, RMSEA = .072, PCLOSE = .056), all items significant. A total of eight items have been removed to depurate the construct and allow to test it for its validity. In particular, given the poor loading for variable *Q4.13* (*I like being alone*), the entire factor has been excluded being composed by only two items. Additionally, a poor loading was found for items *Q4.5* (*I like taking risks*) and *Q4.6* (*I like to stay close to home*), while items *Q4.7* (*I am ambitious*)*, Q4.8* (*I like moving at high speeds), Q4.9 (I like being outdoors)* and *Q4.12* (*I like following routines*) were featuring a standardised covariance higher than the 2.58 threshold. However, eventually, a good fit was obtained, even though the RMSEA value is typical of moderate fitting models (Hair, Black, Babin, & Anderson, 2010).

The outcome of the confirmatory factor analysis for the *Driver's Lifestyle* construct has faced several unsolvable issues. In a context of problematic model fitting and potential theoretical lack of meaning due to the limited number of item considerable, the researcher opted for abandoning the construct. The model was eventually hardly fitted to the data following an iterate approach and several alternative attempts. The constant lack of significance for the *Family and Community Oriented* factor lead to its elimination. Furthermore, the measurement error terms of items *Q5.11 (To me, the car is a status symbol)* and *Q5.12* (*A lot of the fun of having something nice is showing it off*) have been correlated to ensure that the model obtains the potential fitting model. However, no other motivation could be found to justify such a decision other than hypothesising the existence of latent variable (Hermida, 2015) that has not been observed in the model and cannot be clarified

within the scope of the research, therefore it should be further investigated in potential future follow-up. Moreover, the *Frustrated* factor features some poor loads with items *Q5.5* (*I wouldn't necessarily have to like my work that much, as long as I made enough money)* and *Q5.6* (*I feel that I am wasting time when I have to wait),* respectively .46 and .48, but deleting them would only decrease the model fit. Although parameters of model fit appear to satisfy the acceptance requirements ($\chi 2/DF = 2.181$, $p < .001$, CFI = 972, GFI = .966, AGFI = .939, RMSEA = .056, PCLOSE = .279), the researcher acknowledge the predominant incidence of the theoretical compromises to the positive outcome. The decision is supported by several issues in both reliability of the CFA model (*Frustrated* factor CR < .70), as well as in the convergent (for both the *Frustrated* and *Workaholic* and divergent validity (for all factors).

Differently, obtain a fitting model for the *Car Perceptions* construct was rather simple. Indeed, none of the items featured a poor factor loading and the major interventions were motivated by the presence of exceeding values (< 2.58, Hair, Black, Babin & Anderson,2010) for standardised residual covariances. A total of three items were eliminated, namely Q6.5 (*The functional quality of a car is more important to me than its make)*, Q6.13 (*I know of a dream car that I would love to possess)* and Q6.14 (*I would love to drive in the newest Ferrari, Porsche or Jaguar)*. The adjusted model featured an excellent fit of data ($\chi 2/DF = 1.876$, $p < .001$, CFI = 978, GFI = .959, AGFI = .938, RMSEA = .048, PCLOSE = .565) with significant items. The model is reliable with composite reliability for each factor exceeding .79, average variance extracted of .50 and maximum shared variance always higher than AVE value, respectively measures of convergent and divergent validity.

Lastly, the confirmatory factor analysis conducted on the *Customer Co-Creative Behaviour* construct was found significant, obtain a moderate fit of the model to data ($\chi 2/DF = 2.452$, $p < .001$, CFI = 945, GFI = .882, AGFI = .845, RMSEA = .068, PCLOSE = .001). Note that this result is fully admissible given the fact that the scale has been tested and validate previously only with respect to the Asian countries, while this analysis was conducted with the US population. Therefore, the analysis demonstrated that the scale could be applied even with alternative sample compositions, replicating substantially the previously obtained results. It was accepted a moderate degree of fit in lieu of more qualitatively preferable model to preserve the heterogeneous nature of the dimensions observed. In addition, the precedent attempts were not able to guarantee a significantly higher level of fit even when reducing the number of latent factors to be explained. The final model has witnessed only the elimination of four items, namely *Q7.4 (I usually pay attention to how others behave to use a service well), Q7.18 (I don't act rudely to the employee),*

Q7.27 (I give advice to other customers) and *Q7.28 (If service is not delivered as expected, I would be willing to put up with it)*. Nevertheless, even in this case, while the model is substantially reliable and convergently valid, its reproducibility is mined by the general lack of discriminant validity.

5. FINDINGS

5.1. Data analysis methods

The analysis is conducted in several steps using specifically *SPSS Statistics Software*. Univariate techniques are deployed to determine the sample fitting to the target population, check for data correctness and acquire basic insight about the object of analysis.

The relationships between scales scores are preliminary analysed through bivariate methods, mainly analysis of correlation and ANOVA.

Then a Multiple Linear Regression analysis is performed in the scope of understanding the relationship between the intention to adopt a vehicle subscription service, the dependent variable, and the set of independent variables that could be related.

5.2. Empirical research findings

5.2.1. Sample description and preliminary findings

As aforementioned the sample gather 380 people living in the US in an age range included between 20 and 75.

In terms of educational attainment, the sample obtained is mainly composed by people that successfully completed the 4 years degree program (~41%), that becomes half of the sample when including also the 2 years degrees (~9%). Professional degrees account for ~17% while doctorates for ~3%. Slightly more than the ~30% of respondents did not own a university title. Overall, when comparing the cumulative stake of college graduates against high-school graduates, the sample obtained substantially oversample the formers – ~67% vs. ~34% of the population (US Census Bureau , 2018) – implying a substantial under-representativeness of latter category.

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A natural consequence of the misaligned educational attainment of the sample is reflected in the differences also in the employment status. Nevertheless, the difference here is limited when comparing the employment rate. Note that the US unemployment rate is 4,9% (World Bank , 2018), while the corresponding number in the sample, namely the unemployed looking for a job, is 2,4%.

Then the large majority of the respondents are full-time employed (~66%), while part-time occupation accounts for 15,5% and retired for 9,7%. Students and disables are marginal categories, both 1,8% of the sample, while interestingly the 2,6% of respondents declare their intention not to being part of the national labour force.

Naturally, the situation slightly differs when comparing the results base on gender. Overall, males tend to participate more in full-time professions (~73% vs. ~59%) and few of them are unemployed (2,6% considering both active and inactive workers), while females have the higher stake in part-time jobs (18,1 vs. 12,8%) and the 4,7% declare the willingness to not participate in the labour force (compared to .5% of males).

Interestingly, although the figures in the previous explanations showed that male principally are employed in full-time professions when comparing the average household income of the sample women appears to have a slightly better economic condition. The average household income for women is indeed $47,120 that is $2,080 than the male average.

Overall, the income distribution in the sample is slightly different from the one of the population, having a over-representativeness of the lower income classes. In fact, the population median is $57,617 (Data USA , 2018) while the sample witnesses a value that falls between $40,000 and $49,000. The result is acceptable considered research constraints and the possibility of using only online means of questionnaire distribution given the geographical distance. Nevertheless, the result should acknowledge the presence of this distortion, being, as shown in the literature review, the income an essential variable when choosing a car.

In terms of geographical distribution, people residing in urban areas are slightly more represented than the ones living in rural zones, with 45,5% for the former and 55,5% for the latter. This substantial balance is particularly interesting to study the extent to which the place of residence affects the choice of purchasing a car via subscription.

To finalize the sample description, drivers' specific data are provided. In detail, almost the totality of the respondents reported owning a driving licence (99,2%) while a slightly lower figure represents the actual personal car owners with 95,5%.

5.3. Testing the relationship between co-creation and adoption

5.3.1. Introducing to the study

The first part represents the core of the research, aimed at assessing the existence of a relationship between the adoption rate of experience-driven vehicle subscription service (EDVSS) and the co-creative behaviour of the candidate.

In particular, by following a deductive approach from the literature, we established the relationship between the two topics. We propose that an EDVSS, due to its participative environment attracts people with a propensity to participation in co-creative practices, identified as *produsers*

Therefore, the study's goal is testing hypothesis one, that argues that experience-driven vehicle subscription platforms attract people that are characterised by being more involved in co-creative practices.

The analysis will be performed at different stages. Firstly, possible confounders (control variables) are detected from the literature and then tested for their potential influence on the main studied variables. Then, an extensive analysis is conducted to observe their role. Lastly, the main relationship is tested.

5.3.2. Introductory annotations

Before proceeding with the analysis, possible confounding variables are identified with the support of the presented literature. The objective is to predeterminate the existence of variables that could interfere in the final relationship, causing the misinterpretation of the outcome.

Summing up the main contributions outlined in the literature review section, economic and demographical variables are identified as potential confounders.

In detail, the economic status has been ascribed as the main factor acting in favour of the mobility preferences shifts (see Klein & Smart, 2017 and Brown, 2017); a significant impact of income could both influence the adoption rate of an experience-driven vehicle subscription service as well the participation in co-creative practices. However, for the study, it will be possible only to test the relationship controlling for the significance of the *Household Income* effect and the *Economic Independence* effect while since the sample resulted being almost exclusively composed by car owners it will not be possible to observe how the ownership impacts.

In terms of demographics, *Age* is the main variable to control. In fact, younger generations have faced a drastic incentive to change behaviour due to digitalization (Howe & Strauss, 2000) while at the same time they also become the ones that initiated a consumption patterns' shift towards new consumption paradigms, of which subscription services in automotive industry belong to.

It is acknowledged that potential other non-observed variables could interfere in the relationship, however, basing the reasoning on the theoretical framework and the data collected, it is rational to believe that all the previously explained variables represent the main possible confounders to be tested in the research.

Finally, it is possible to believe that the eventual relationship that could be drawn once depurated from the confounders, could be characterised by a causal nature, being *produsers*, people attracted by participative environments like an experience-driven vehicle subscription platform (Bruns, 2007).

5.3.3. Preliminary relationships identification: economic factors

At the initial stage of the analysis, the relationships between the identified possible confounders and the two main variables of the analysis are studied. The aim is to test whether observed factors could interact one to another influencing the quality of the final result.

Data on household income was collected as a categorical variable to limit the risk of resulting in invalid responses. The decision is motivated by the fact that income is considered the most sensitive and personal question in a survey (Laumann, Gagnon, Michael, & Michaels, 1994). ANOVAs were performed to observe whether for different household income classes significant differences in *Adoption Rate* and the *Co-Creation Behaviour Score* could be found.

The ANOVA test presents three main requirements that should validate to perform the analysis in a correct manner. While the independence of the comparison groups is guaranteed by the structure of the questionnaire, that allows the respondents only to opt for one of the alternatives, homoskedasticity and normality of the errors distribution should be tested before proceeding with the analysis.

The relationship between *Household Income* and the *Adoption Rate* is studied firstly, suspecting that the latter could increase for higher levels of income. Levene's test for equality of variances was performed to verify the homoskedasticity hypothesis. The Levene's test indicates equal measurement error variances (based on mean, $F(11) = 1.122$, $p = .343$). However, the hypothesis of normally distributed measurement errors is not validated (*Kolmogorov-Smirnov* $F(380) = .082$,

p = .000; Shapiro-Wilk F (380) = .977, p = .000). Performing the test in presence of this unsatisfied requirement could determine an increase in the likelihood of a false positive result. Nevertheless, as Glass et al. (1972) and Harwell et al. (1992) demonstrated, the real chance of significantly affect the false positive rate is not empirically verified when studying relatively large random samples as in our case (n = 380), allowing, after having acknowledged the analysis limitation, the use of ANOVA.

The analysis of variances between *Household Income* and *Adoption Rate of EDVSS* were then performed, showing that no significant relationship could be drawn (*F (11) = .963, p = .480*). This conclusion could be considered enough to abandon the hypothesis that *Household Income* could interfere in the relationship object of the study, having no effect on the *Adoption Rate*.

However, a further study on *Household Income* is conducted with respect to the *Co-Creative Behaviour Score* to draw more comprehensive conclusions. Being violated two main hypotheses to perform the ANOVA test, namely the homoskedasticity of error variances (*Levene's Test based on mean, F (11) = 3.279, p = .000*) and their normal distribution (*Kolmogorov-Smirnov F (380) = .108, p = .000; Shapiro-Wilk F (380) = .953, p = .000*), it was necessary to resort to the Kruskal Wallis test to ensure an acceptable result while limiting the risk for type one errors (Lantz, 2013). The test outlined a non-significant result (*Kruskal Wallis H (11) = 6.336, p = .850*). The null hypothesis of medians' equality is accepted, therefore the distributions resulted in not significantly differ among the different categories. It is possible, then, to conclude that *Household Income* has no significant effect either on the *Adoption Rate* of EDVSS nor on the *Co-Creative Behaviour Score.*

A similar conclusion could be obtained also relatively to the relationship between the *Economic Independency* status and the analysed variables. On a theoretical level, as economic independence is a dichotomic variable, a T-Test represents the most adequate method to assess the presence of a relationship with the other variables (Saunders, Lewis, & Thornhill, 2009). With respect to the relationship with the *Adoption Rate*, the Levene's test highlights equality of error variances (*based on mean, F (1) = 1.917, p = .167*), while the normality in errors distribution hypothesis is again violated (*Kolmogorov-Smirnov F (380) = .089, p = .000; Shapiro-Wilk F (380) = .974, p = .000*). Thus, it is necessary to test the relationship using the non-parametric Mann-Whitney U test to guarantee a reliable result (Zimmerman, 1987). The test indicates that no significant difference in medians could be found between the two categories (*U = 6110.50, p = .094*). It is concluded that neither the *Economic Independency Status* significantly affects the *Adoption Rate of EDVSS.*

This conclusion is also supported by the fact that no significant relation could be found even with respect to the *Co-Creative Behaviour Score*. In presence of errors heteroskedasticity (*Levene's Test based on mean, F (1) = 7.464, p = .007*) and errors unstandardized distribution (*Kolmogorov-Smirnov F (380) = .118, p = .000; Shapiro-Wilk F (380) = .937, p = .000*), the Kruskal-Wallis test was performed. The test implied the acceptance of the null hypothesis of equality in medians (*Kruskal-Wallis H (1) = .042, p = .042*) concluding that no significant relationship could be drawn.

5.3.4. Preliminary relationships identification: demographic factors

As far as the demographic factors are concerned, the Pearson's correlation study for continuous variables underlines the presence of significant relationships between the age of respondents and their levels of both *Adoption Rate* and *Co-Creative Behaviour Score*. Note that the two variables object of study can be considered as continuous since they are computed as a weighted linear transformation in the statistical software (Babbie, 2013), therefore Pearson's Correlation hypothesis of using continuous variables is validated.

Age of respondents could be suspected of being a confounder factor that interferes in the relationship between the studied variables. In detail, the *Adoption Rate* is inversely correlated to age (*Pearson's r (380) = -.187*, $p < .001$), implying that as one moves to older consumers the adoption rate decreases. Interestingly, the opposite is found for *Co-Creative Behaviour Score* (*Pearson's r (380) = .109*, $p = .034$), meaning that respondents feature a higher involvement in co-creative practices as they age.

Note that Saunders et al. (2009, p. 545) consider as not relevant correlations included between the boundaries of -.20 and .20. The outcomes than features no appurtenant relationship. However, a further study is conducted to observe the nature of the impact on the final relationship.

For this purpose, Keppel & Zedeck (1989) recommend the use of partial correlation to assess the extent of the potentially confounding influence in occasions in which is not possible to have a random assignation to two groups of analysis.

The preliminary scatterplots analysis represents graphically the previously observed relationships between *Age* and the variables object of the study. The indicative regression line is drawn to display the nature, either positive or negative, of the relationship. Data are highly dispersed around the graphical area with a coefficient of multiple determination R^2, the indicator of strength of the relationship measuring the explained variance of the model, of 3.5% in the case of the *Adoption Rate* and 1.2% in the case of the *Co-Creative Behaviour Score,* meaning that the variability of the dependent variable explained by *Age* is neglectable. Therefore, the previous conclusion that the

variable *Age* does not significantly affect the relationship between *Adoption Rate* and *Co-creative Behaviour Score* is additionally supported.

Furthermore, the preliminary analysis is integrated with the observation of the effect of *Age* on the *Co-Creative Behaviours Score* second-order factors (Yi & Gong, 2013), namely the *Customer Citizenship Behaviours Score* and the *Customer Participation Behaviours Score.* The outcome of the Pearson's correlation test outlines that the age significantly affects only the former variable ($r = .171, p = .001$) while no relation could be identified with respect the latter ($r = .016, p = .758$). Even if the prior case does not imply a relevant correlation, the result is interesting since it gives a possible explanation to the role of *Age* in incentivizing the participation in co-creative behaviour, suggesting that older people could have more experience and know-how to be shared.

Finally, to conclude the comprehensive observation of the *Age* effect on the variables, the comparison between the Pearson's correlation and the partial correlation controlling for age is conducted. In the latter case, when performing the control for *Age*, the correlation outcome of the two studied variables slightly increases from a Pearson's $r = .420$ ($p < .001$) to a partial correlation $r = .451$ ($p < .001$). The outcome highlights that *Age* to some extent interferes in the relationship by reducing the degree of the interaction; however, the difference is neglectable, and therefore it is possible to conclude that at the preliminary stage no observed factor confounds the relationship. The outcome, therefore, witnesses the existence of a moderate degree of the hypothesized relationship.

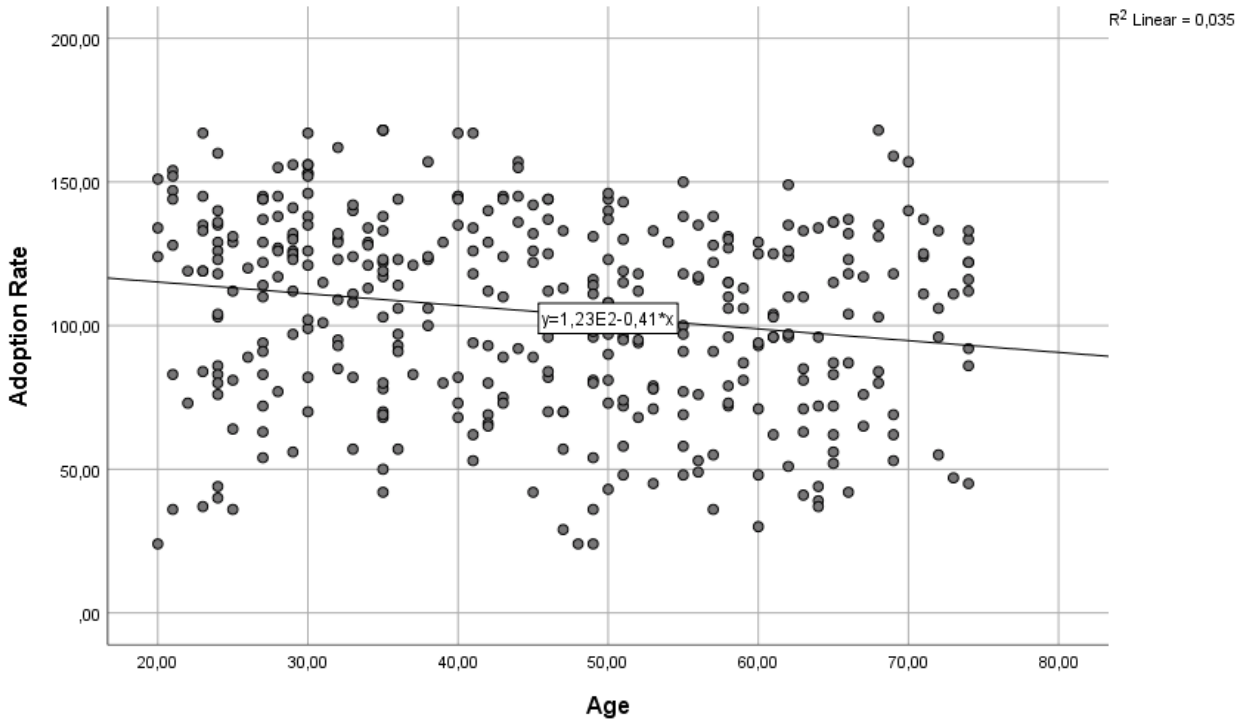

Figure 2 - Scatterplot between Age and Adoption Rate

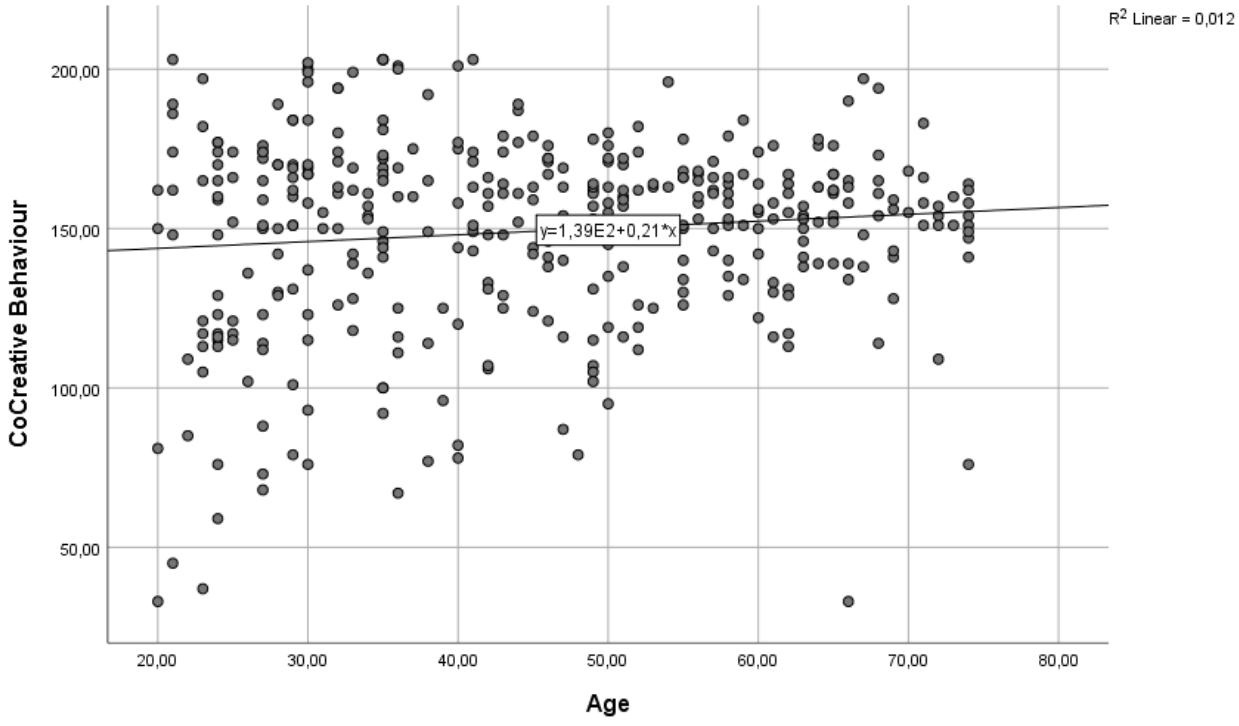

Figure 3 - Scatterplot between Age and Co-creative Behaviour Score

5.3.5. Causal relationship analysis between the EDVSS *Adoption Rate* and *Customer Co-Creative Behaviour Score*

The preliminary analysis has investigated the presence of confounding variables. *Age* has been demonstrated to act in an extremely limited proportion, concluding that should be disregarded from an interfering role. Obviously, this result should acknowledge as a limitation the possibility that unknown non-observable variables could silently impact the studied relationship.

Therefore, it is possible to state that the trackable relationship should be considered as direct between the *EDVSS Adoption Rate* and the *Customer Co-Creative Behaviour Score* (*Pearson's Correlation* $r = .420, p < .001$) with a moderate positive strength (Saunders, Lewis, & Thornhill, 2009).

Since the literature suggests that participative environments, as EDVSS, should attract *produsers* or co-creative users, it is possible to suspect the existence of a causal relationship between the variable that allows the use of a linear regression model. However, note that the claim would require further investigations to be validated, therefore in the analysis, it represents only an assumption.

The causal relationship is studied via multiple linear regression analysis. In particular, to increase the explicability level of the model, the *EDVSS Adoption Rate* is described by both the *Customer Participation Behaviours Score* and the *Customer Citizenship Behaviours Score*, the main factors influencing the *Co-Creative Behaviour Score*.

The linear regression confirms the previous result of a relationship between adoption rates of the service and the presence of a co-creative behaviour the variables significantly exists in a moderate level ($R^2 = .262$, $F (2) = 67.072, p < .001$).

Therefore, the results demonstrate that more than one-fourth of *EDVSS Adoption Rate* variability is explained by the components of the *Co-Creative Behaviour Score*. Note that, given the scope of the study, the low explanatory power should disregard from its role of the parameter for the validation of the model. In fact, the main meaning that it displays is that a relationship exists and that it has a quite significant incidence on the dependent variable.

In detail, the study of the of the variables contribution highlights that only the *Customer Participation Behaviour Score* is accounting for a positive incidence ($\beta = 1.489, p < .001$) on the dependent variable, while a negative and drastically limited effect is produced by the *Customer Citizenship Behaviour Score* ($\beta = -.317, p = .014$). Therefore, the result indicated not only that the participation in co-creative behaviours indeed increase the adoption of an EDVSS, but more in

detail that only one specific part of the co-creative behaviour accounts for this positive result. In fact, *Customer Citizenship Behaviour*, the additional set of voluntary activities that significantly benefit companies by extending the reach of the co-creative process (Yi & Gong, 2013), resulted in negatively affect the adoption, supposedly because the EDVSS platform could not allow them to operate the additional actions they want (i.e. providing structured feedbacks, advocating, helping and express tolerance).

However, the result changes when introducing the suspected confounders in the model. In detail, modelling the adoption using also the suspected confounders resulted in having none of the economic variables significant (*Household income p = .511, Economic Independency p = .412*), while the *Age* variable considerably impact the outcome (R^2 = .294, *F (5) = 31.207, p < .001*). *Customer Citizenship Behaviour* is no longer significant in the relationship (*β = -.168, p < .203)* while *Age* significantly predicts the *Adoption Rate of EDVSS* (*β = -.383, p < .001*) together with *Customer Participation Behaviour* (*β = 1.347, p < .001*). This shows that citizenship behaviour is not related with adopting a subscription model and most likely younger generations are more likely to adopt citizenship behaviours.

5.3.6. Discussion

The study highlighted numerous results that are worth mentioning. Firstly, our results suggest economic factors do not affect *Adoption Rate of EDVSS* or *Co-Creative Behaviour Score* of respondents. The conclusion is robust, supported by a preliminary analysis and the linear regression. A surprising finding, since economic factors revealed being the predominant factors that limited car ownership in favour of alternative modes (Klein & Smart, 2017). Secondly, *Age* has an ambiguous role in the model. The weak correlations that have been observed and neglected with respect to *Customer Citizenship Behaviour Score* in the preliminary analyses have revealed to substantially change the result of the regression model, making *Customer Citizenship Behaviour* not be a significant predictor anymore.

Overall the result revealed that a relationship between co-creative behaviour and adoption exists. More precisely, adoption is explained by the mandatory side of the co-creative process, namely the *Customer Participation Behaviour* (Yi & Gong, 2013). Thus, the result shows that drivers that are used to actively search for information about their role and the services/products they use, that share their knowledge, that are responsible and that spontaneously interact one to another are attracted by an EDVSS.

In fact, the variability of the *Adoption Rate* initially explained by the *Customer Citizenship Behaviour Score* (β = *-.317, p = .014*) become not significant after having introduced in the model the demographic variable (β = *-.168, p = .203*). *Customer Participation Behaviour* independently affect (β = *1.347, p < .001*), meaning that the construct that embodies the mandatory factors for co-creative behaviours (Yi & Gong, 2013) explicates the adoption rate of EDVSSs.

Remind that *Customer Citizenship Behaviour* includes voluntary factors that although could provide the company with extraordinary value, they are not required in every co-creative behaviour (Yi & Gong, 2013). These factors are indeed related to the spontaneous feedback formulation, in being an advocate for friends and family, to help other customers to perform co-creative actions and being tolerant towards misfunction of the product/service.

Thus, the obtained model confirms H1, demonstrating that customers that show a higher involvement in participating in co-creative practices are indeed more likely to adopt an EDVSS.

This mean that consumers that are attracted t o a subscription model are more. Involved in accessing information about the service, thus more likely to be informed about the option and alternatives. This empowers consumers in sharing their knowledge in co-creative processes. Further our finding indicates that subscription consumers respect their roles and responsibility and appreciate the direct interaction with others. This is particularly important as these consumers can be partners of firms to ideate new services, refine product during the development stage and/or assist in the launch and commercial stage of the service. At the different level, as discussed, subscription can be seen as the outcome of co-creation as consumers provide data about their usage pattern indirectly stating their service preferences.

5.4. Testing model validity for EDVSS adoption

5.4.1. Introducing to the study

The following part of the research is aimed at testing the applicability of the attitudinal model for car choice developed by Choo & Mokhtarian (2004) to explain the adoption of EDVSS. In particular, the model is articulated into three main components, namely the driver's attitudes, the driver's personality and the driver's lifestyle constructs. However, considering the sample analysed, driver's lifestyle resulted not being validated and therefore it is disregarded not being able to provide robust results. In this specific case the contribution by Steg (2005) about the importance of testing also the driver's car perceptions are integrated. The model allow to test the remaining hypotheses.

5.4.2. Developing the model

5.4.2.1. About the use of Structural Equation Modelling

In an effort to test the validity of the attitudinal model (Choo & Mokhtarian, 2004) application to the adoption rate and to either support or reject the identified hypotheses, the covariance-based Structural Equation Modelling (SEM) technique allows the observation of the structural relationship among the different latent variables.

SEM is a second-generation data analysis method that has gain significant relevance in the social sciences (Chin & Todd, On the use, usefulness, and ease of use of structural equation modeling in MIS research: a note of caution, 1995), being used primary as a tool for assessing and modifying theoretical frameworks (Anderson & Gerbing, 1988). Covariance-based and component-based procedures are largely used to assess the validity of measures and their underlying constructs (Chin, 1998).

However, the use of SEM is still debated. On one hand, it ensures significant advantages over first-generation techniques, mainly in terms of flexibility in analysing complex model having a multiple-predictors relationship (Chin, 1998). On the contrary, its higher level of complexity enhances the risk of resulting in invalid misunderstood outcomes (Chin, 1998). The main criticism is devoted to the practice of statistically-driving decisions compromising the theoretical meaning of the measurement model (Chin & Todd, 1995).

Nonetheless, for this second part, the covariance-based SEM methodology is preferred over a traditional linear regression model since it allows to evaluate the use of a pre-existing models with respect different sample, eventually validating the application of the model through time or for different purposes. On top of that, covariance-based SEM allows to observe potential causal relationship between several different latent variables (Ullman & Bentler, 2012), in our case the attitudinal constructs attempting to explain the adoption, similarly to what happen with a multiple linear regression model.

5.4.2.2. Defining the key variables

The analysis substantiates an attempt to describe the adoption rate of EDVSS adopting the existing framework that explains the car type choice.

The starting point is represented by the attitudinal model for car choice (Choo & Mokhtarian, 2004), articulated upon driver's attitudes, personalities and lifestyles. In addition, our tested model integrates the further contribution by Steg (2005) stating the importance of observing also the

driver's car perceptions. However, while the original model was designed to explicate the car type choice, the following analysis tries to transpose the model to explain EDVSS adoption rate.

To ensure the robustness of results, only the constructs that satisfied both the requirements of reliability and validity were considered in the model testing procedure. Therefore, *Driver's Lifestyles* are disregarded from the analysis having not matched the validity requisites with respect to the analysed sample. Thus, the initial constructs to be tested in the model are *Driver's Attitudes, Personalities* and *Car Perceptions*.

5.4.3. Modelling vehicle subscription choice

5.4.3.1. Testing model assumptions

To proceed with SEM application, the three main hypothesis of the absence of outliers, the absence of influencing cases and the absence of multicollinearity issues should be satisfied (Kline, 2012).

The Likert-based structure of the measurement model ensures that no outliers could be traced with respect to the different measures. Consequently, the influential multivariate analysis is performed according to the methodology suggested by Cook (1979), analysing the Cook's distance of each factor. The scatterplots between Cook's distance and respondent ID (see Appendix) highlight the absence of influential relatively every analysed factor, as most values lie within .08 Cook's distance.

Lastly, multicollinearity is tested to exclude potential covarying factors that could increase the chance of concluding with spurious outcomes (Kock & Lynn, 2012). The output of the multicollinearity test underlines the massive presence of a joint contribution between the factors *Travel Freedom* and *Travel Dislike* in the explained portion of the variance of the dependent variable *Adoption Rate of EDVSS*. While their tolerance value, greater than the .10, is satisfactory for each factor, the VIF value is indeed exceeding the upper threshold of 3 points (William, 2000). Therefore, it is suspected the presence of some sort of covarying effect of the *Travel Dislike* factor, the one with the higher VIF value, with at least another variable. The exclusion of the alleged factor was considered in order to ensure a reliable result. By performing the multicollinearity test again, it is possible to observe that in absence of *Travel Dislike* the result substantially improves, matching all the binding requirements.

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	TravelFreedom	,397	2,521
	CommuteBenefit	,351	2,852
	ProEnvironmentalPolicy	,368	2,717

	Calm	,495	2,020
	Organizer	,449	2,225
	Affective	,581	1,721
	Symbolic	,474	2,112
	Instrumental	,736	1,359
	AdventureSeeking	,334	2,990

a. Dependent Variable: AdoptionRate

Table 15 – Multicollinearity analysis of SEM factors

5.4.3.2. Model fit

After having satisfied the assumption in order to prevent the risk of reaching a misleading conclusion in the structural equation model, the model fit results are presented.

The final model is obtained after having adequately adjusted some of the items contributing to the analysed factors. Indeed, the items Q3.19 (*In terms of long-distance travel, I have the freedom to go anywhere I want to*) and Q4.18 (*I like being in charge*) where found covarying significantly with other items belonging to alternative constructs, therefore negatively influencing the overall model fit. Although such a decision could be criticized for having notably lost some theoretical meaning, the advantage acquired in terms of enhanced model fit outweighed the drawback.

Furthermore, note that the model explains partially the adoption rate of EDVSS services. In fact, both *Relative Advantage* and *Complexity,* two components of the Adoption construct, were excluded because of their negative incidence on both the absolute and incremental fit parameters. In other words, the developed model is not able to exhaustively explain the totality of the dependent variable.

Nonetheless, a good model fit is obtained after the required adjustments. The model reached a good fit respecting the requirement of absolute fit for the Root Mean Square of Error Approximation (*RMSEA = .052 < .08*), while the p-value is not observed given the large sample size (Browne & Cudeck, 1993) and the Goodness of Fit Index (*GFI = .876 < .900*) although under the threshold is acceptable (Jöreskog & Sörbom, 1989). The incremental fit index is respected, with the Comparative Fit Index (*CFI = .937 > .900*) that appears satisfactory (Bentler, 1990). Finally, the parsimonious fit is also reached, with a Chi-squared/df (*df = 419*) index of 2.025 < 3.0 (Marsh & Hocevar, 1985).

CATEGORY	INDEX	BENCHMARK	RESULT
Absolute Fit	RMSEA	< .08	.052
	GFI	> .90	.876
Incremental Fit	CFI	> .90	.937
Parsimonious Fit	Chisq/DF	< 3.0	2.025

Table 16 - Summary of model fit indexes

5.4.3.3. Structural model specifications

The adjusted attitudinal model resulted in a moderate explanatory power of the adoption rate for EDVSS. Indeed, following Chin's (1998) benchmarks the result of R^2 of .54 indicates the presence of a sensible strength of predictability of the independent constructs. Therefore, a substantial causal effect could be drawn between driver's attitudes, personalities and car's perceptions with respect to the *Adoption of EDVSS*.

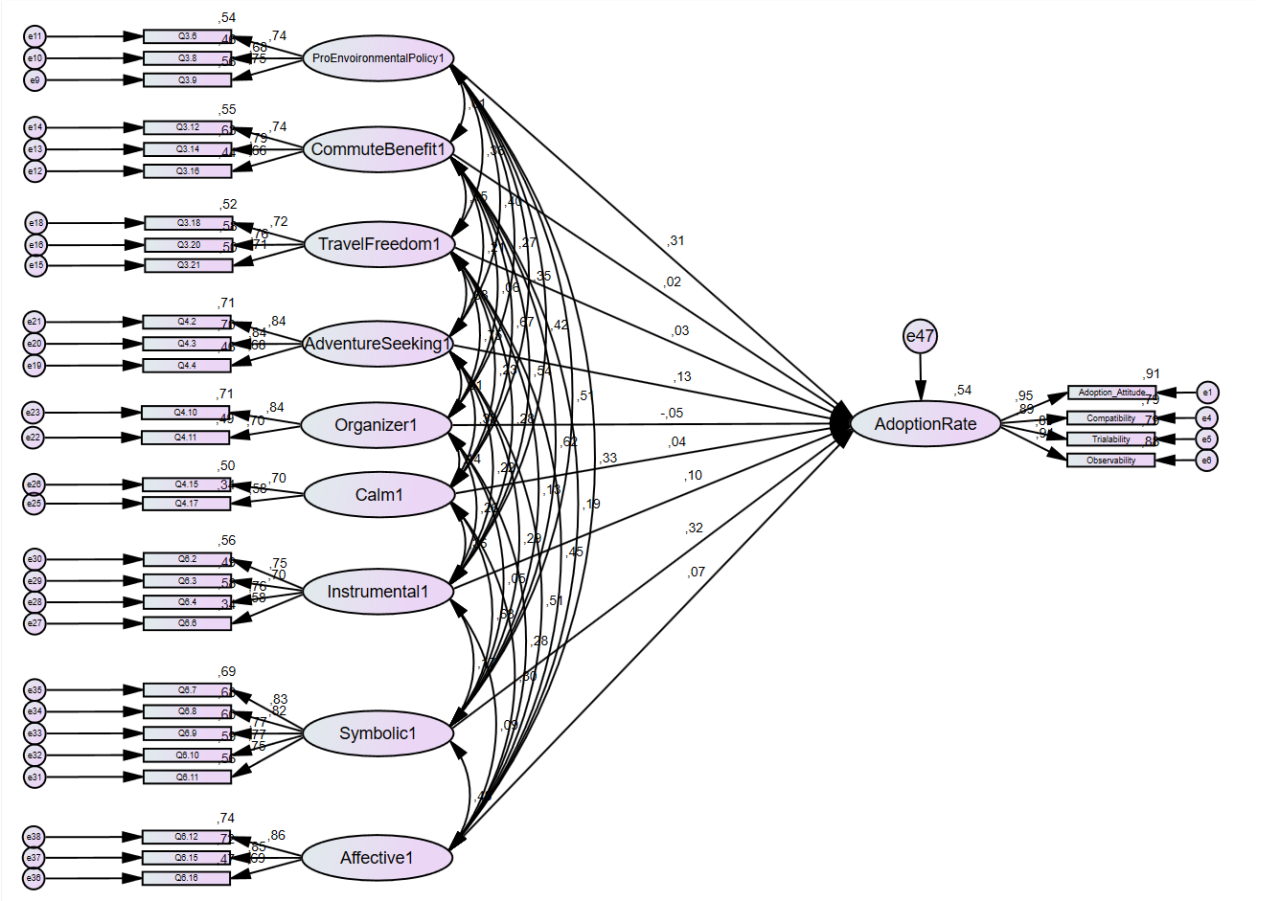

Figure 4 - Model representation

Nevertheless, three structural paths showed non-significant coefficients, therefore rejecting the associated hypotheses (De Carvalho & Chima, 2014). Note that two of these components belong to the construct of *Driver's Personality*, namely the *Organizer (β = - .050, p = .977)* and the *Calm (β = .039, p = .358)*, while the remaining, *Travel Freedom (β = .036, p = .641)*, belongs to the *Driver's Attitudes* construct.

The remaining factors are significant at the .05 level, except for *Commute Benefits, Adventure Seeking* and *Instrumental Perception of Car* that reached a .01 significance level.

5.4.3.4. Model discussion and findings

The results highlight that the attitudinal model for car choice (Choo & Mokhtarian, 2004) could also be employed to predict the adoption of EDVSS. However, considering the required adjustments, the moderate explanatory power and the weak factors loadings over the dependent variable it is noticeable that still almost half of the variability could be captured by other unobserved factors.

CONSTRUCT	FACTOR	ESTIMATES (unstandardized)	SIG.	FACTOR LOADINGS (β)	Hypotheses	Result
Driver's Attitudes	Pro-Environmental Policy	,265	**<.001**	.31	H2b: Attitudinal propension towards pro-environmental policies increases the likelihood of adopting EDVSS	Supported
	Commute Benefit	,017	**,005**	.02	H2b: benefitting from commutes increases the likelihood of adopting EDVSS	Supported
	Travel Freedom	,036	,641	.03	H2b: Feeling free while driving increases the likelihood of adopting EDVSS	Rejected*
Driver's Personality	Adventure Seeking	,140	**,006**	.13	H3: Being adventure seeker increases the adoption of EDVSS	Supported
	Organizer	-,050	,977	-.05	Not hypothesised	-
	Calm	,039	,358	.04	Not hypothesised	-
Car Perceptions	Instrumental	,101	**,004**	.10	H5b: instrumental car perception negatively impacts the willingness to adopt EDVSS	Rejected
	Symbolic	,242	**<.001**	.32	H5a: Symbolic car perception positively impacts willingness to adopt EDVSS, more than affective one.	Supported
	Affective	,076	**,034**	.07	H5a: affective car perception positively impacts the willingness to adopt EDVSS, less than symbolic one.	Supported

Rejected* = the factor is not significant, implying the automatic rejection of the hypothesis.

Moreover, it is not possible to draw some conclusions relatively some factors and the driver's lifestyle construct that resulted in not being valid in the analysed sample.

Regarding driver's attitudes, the factor that has the major effect over the adoption rate is *Pro-Environmental Policy* ($\beta = .31, p < .001$). A higher involvement in environmental causes seems to increase the adoption of EDVSS. The result is compatible with the consideration that vehicle subscription services could provide drivers with a tool for accessing alternative powertrain solutions limiting the financial risk associated with the transition. However, a poor relationship could be found with respect to the *Commute Benefit* factor ($\beta = .02, p = .005$). The result reveals

that no substantial effect could be generated on adoption when the driver shows a form of appreciation from the commute experience. Both results supported the respective hypothesis.

Driver's personality resulted in an overall weak relationship with the dependent variable, and only one factor resulted being significant, namely the *Adventure Seeking* personality trait ($\beta = .13$, $p = .006$). Therefore, the more dynamic and resourceful the driver is, the higher is the likelihood that he will opt for an EDVSS. The result supported the hypothesis H3.

The more interesting results are encountered in relation to the car perceptions. In particular, instrumental perceptions surprisingly resulted in having a positive effect on the adoption ($\beta = .10$, $p = .004$). Therefore, the model states that even when drivers consider cars as mere means of transport, drivers could be still attracted by a subscription offer. We could hypothesise that the all-inclusive nature of the offer, although not at the core, appeals the ones that want to reduce the hassle of owning a car. This, however, lead to the rejection the hypothesis *H5b*, stating that people featuring an instrumental perception are likely to have a negative willingness to access the car through subscriptions.

Lastly, hypothesis *H5a* is accepted by the model. Indeed, both symbolic and affective factors influenced positively adoption. However, the former has a stronger effect ($\beta = .32$, $p < .001$) than the latter ($\beta = .07$, $p = .034$), that is even weaker than the *instrumental perceptions*. Therefore, the model supports the belief that EDVSS offer people characterised by a symbolic car perception a benefit that particularly attracts them. On the contrary, affective car perceptions resulted in substantially lowering the propension towards adoption. It is suspected that people that affectively relate with their car do not benefit from the possibility of changing the car continuously.

6. DISCUSSION AND CONCLUSIONS

Overall, the research obtained interesting contributions to the extant literature with respect to the co-creative field of knowledge and in the application of the attitudinal model for car choice to alternative uses. The analysis demonstrated that a relationship between EDVSSs and co-creation indeed exists and that it is possible to use the attitudinal model of car choice developed by Choo & Mokhtarian (2004) to predict the adoption of EDVSSs.

In detail, the first part was devoted to shed some light on the relationship between co-creative practices and vehicle subscription services. Starting form structured industrial and theoretical information that included several contributions from different field of knowledge, we hypothesised that people that share the characteristics defining co-creators could be more incline in adopting a an EDVSS since it allows them to take part in a community.

The empirical outcome resulted in being particularly surprising, highlighting that customer participation behaviour (Yi & Gong, 2013) could boost the adoption of EDVSS. In fact, people that are spontaneously search for information, that share their knowledge, that respect their roles assuming their responsibility and that easily interact with the counterparts and the other consumers are more likely to subscribe to an EDVSS.

The result contributes to extend the knowledge in the field of co-creation, suggesting that experience-driven vehicle subscription platforms could be a new virtual place where companies could develop their collaborative initiatives. Linking co-creation with subscription opens an entire new path of research that could become extremely relevant both in the industry as well in the academic field. The former will obtain powerful insight to sustain the management in the migration between the different environments, the latter could benefit of powerful results that could be applied to different applications being the subscription-based business model a quite diffused business model across different industries.

Considering that being co-creators boosts the adoption of EDVSS, manufacturers could leverage the subscribers to generate proprietary co-creative initiatives without forcing people to participate. In a sense, subscription platforms could become simultaneously a commercial solution and a new product development (NPD)/marketing tool for the company. Thus, developing a subscription-based offer could become for the manufacturer not only a necessity to cope with the intense competition but a long-term strategy tool to develop and then implement customers-oriented activities.

Note that this is not, however, possible in any case, being some requirements underlaid the vehicle subscription service design. Principally customers should be given the possibility to access top-tier vehicles with top-notch equipment, to let them taste the ultimate driving experience of the brand. Then the platform should go beyond the traditional characteristics of only-transactional environment. This means that developing a tool that would allow the customer only to choose the car and pay, without creating a content sharing participative environment, then the potentiality of co-creative practices would be lose in a blow.

The second part represents an attempt to extend the application of the existing attitudinal model of car choice developed by Choo & Mokhtarian (2004), integrating the suggested contribution by Steg (2005) relatively car perceptions. Overall, the study resulted in successfully explicating the adoption. The model demonstrated a moderate explicatory power, showing that the attitudinal model of car choice dimensions where able to explicate the adoption of EDVSS. Nevertheless, the result has been reached by excluding some items and factors, therefore we suspect that EDVSS adoption could be motivated by additional items that were not observed in the study. However, the model validates the majority of the related hypotheses, allowing to conclude that it could be consider a useful tool to cope with EDVSS targeting actions. The result demonstrated that the car choice model could be also applied in explaining the car ownership options. As observed in the theoretical framework, models of car choice are essential to understand the motives of the purchase and to therefore develop tailored interventions to regulate the car usage. Therefore, the same advantages could be pursued with respect the type of car access. The outcome of the model could be used by managers to plan their EDVSS marketing strategies and specifically communication campaigns. In particular, it allows the comprehension of the factors boosting the adoption. People that are driven by a symbolic perception of the car, resourceful and active, and open to green solutions seems to be at the core of the customers profile.

7. LIMITATIONS AND FURTHER RESEARCH

The study provides the incredible potential of identifying a new potential way to establish competitive advantage in the long run. The empirical evidence however should acknowledge several issues. The relatively novelty of the service type in automotive, and its piloting phase run in US only in recent times, did not allow to test whether the findings could be replicated in time and in different countries. It is then suggested to replicate the study not before one to two years to allow the service diffusion in other geographical regions. Moreover, it is highly suggested to observe the phenomenon with intertemporal data to trace the development of the adoption curve.

Indeed, it is suspected that the adopter's profile could vary over time as suggested by (Rogers, 1976).

The moderate explicatory power of the attitudinal model could motivate the investigation towards either the enrichment of the existing tested model or the application of alternative ones. However, we suggest the development of updated items that should be then validated to be applied directly to adoption of EDVSS. It is suspected that some of the existing will lose their explicatory power when applied to other countries, de facto limiting the applicability beyond the US borders.

Undoubtedly, the research can represent the starting point for automotive related studies in observing the transition towards new car access options for the future. It also represents a successful attempt to relate co-creative practices to the automotive industry.

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9. Appendix

9.1. Table 1: T-test of sample significance

9.1.1. Overall population

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Age	380	45,2289	15,27817	,78375

One-Sample Test

Test Value = 45.56

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Age	-,422	379	,673	-,33105	-1,8721	1,2100

9.1.2. Only Males

One-Sample Statistics[a]

	N	Mean	Std. Deviation	Std. Error Mean
Age	187	44,7059	15,34072	1,12182

a. Gender = Male

One-Sample Test[a]

Test Value = 45.11

	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference Lower	Upper
Age	-,360	186	,719	-,40412	-3,3237	2,5155

a. Gender = Male

9.1.3. Only Females

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Age	193	45,7358	15,24001	1,09700

a. Gender = Female

One-Sample Test[a]

Test Value = 46

	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference Lower	Upper
Age	-,241	192	,810	-,26425	-3,1183	2,5898

a. Gender = Female

9.2. Table 2: Cronbach's Alpha computation for relevant constructs

9.2.1. Adoption Scale

9.2.1.1. Adoption Attitude

Case Processing Summary

		N	%
Cases	Valid	404	100,0

	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,885	,885	4

Item Statistics

	Mean	Std. Deviation	N
Premium car subscription services are a good idea	4,29	1,807	404
Premium car subscriptions are a wise idea	4,22	1,773	404
I like the idea of using premium car subscription services	4,05	1,946	404
Using premium car subscriptions would be a pleasant experience	4,55	1,748	404

Inter-Item Correlation Matrix

	Premium car subscription services are a good idea	Premium car subscriptions are a wise idea	I like the idea of using premium car subscription services	Using premium car subscriptions would be a pleasant experience
Premium car subscription services are a good idea	1,000	,729	,731	,579
Premium car subscriptions are a wise idea	,729	1,000	,736	,523
I like the idea of using premium car subscription services	,731	,736	1,000	,644
Using premium car subscriptions would be a pleasant experience	,579	,523	,644	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Premium car subscription services are a good idea	12,82	22,696	,783	,628	,840
Premium car subscriptions are a wise idea	12,90	23,297	,759	,620	,849
I like the idea of using premium car subscription services	13,06	21,043	,818	,671	,825
Using premium car subscriptions would be a pleasant experience	12,57	25,099	,644	,440	,890

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
17,12	39,440	6,280	4

9.2.1.2. Relative Advantage

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,925	,925	5

Item Statistics

	Mean	Std. Deviation	N
Premium car subscription services would enable me to accomplish my tasks more quickly	4,12	1,820	404
Premium car subscription services would improve the quality of my car travels	4,64	1,801	404
Premium car subscription services would enhance the effectiveness of my commutes	4,23	1,798	404
Premium car subscriptions would make my commutes easy	4,25	1,802	404
Premium car subscriptions would give me greater control over my travels	4,44	1,838	404

Inter-Item Correlation Matrix

	Premium car subscription services would enable me to accomplish my tasks more quickly	Premium car subscription services would improve the quality of my car travels	Premium car subscription services would enhance the effectiveness of my commutes	Premium car subscriptions would make my commutes easy	Premium car subscriptions would give me greater control over my travels
Premium car subscription services would enable me to accomplish my tasks more quickly	1,000	,651	,745	,681	,708
Premium car subscription services would improve the quality of my car travels	,651	1,000	,683	,691	,714
Premium car subscription services would enhance the effectiveness of my commutes	,745	,683	1,000	,770	,735
Premium car subscriptions would make my commutes easy	,681	,691	,770	1,000	,751
Premium car subscriptions would give me greater control over my travels	,708	,714	,735	,751	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Premium car subscription services would enable me to accomplish my tasks more quickly	17,55	41,563	,782	,625	,913
Premium car subscription services would improve the quality of my car travels	17,03	42,078	,766	,592	,916
Premium car subscription services would enhance the effectiveness of my commutes	17,44	40,843	,833	,706	,903
Premium car subscriptions would make my commutes easy	17,42	41,067	,819	,684	,906

Premium car subscriptions would give me greater control over my travels	17,24	40,553	,824	,682	,905

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21,67	63,229	7,952	5

9.2.1.3. Complexity

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,878	,879	3

Item Statistics

	Mean	Std. Deviation	N
Learning to operate premium car subscription services would be easy for me	4,96	1,633	404
Overall, if I were to use the described service, it would be easy to use	5,00	1,542	404
It would be easy for me to become skilful at using a premium car subscription service	5,03	1,551	404

Inter-Item Correlation Matrix

	Learning to operate premium car subscription services would be easy for me	Overall, if I were to use the described service, it would be easy to use	It would be easy for me to become skilful at using a premium car subscription service
Learning to operate premium car subscription services would be easy for me	1,000	,691	,701
Overall, if I were to use the described service, it would be easy to use	,691	1,000	,730
It would be easy for me to become skilful at using a premium car subscription service	,701	,730	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Learning to operate premium car subscription services would be easy for me	10,03	8,277	,748	,560	,844
Overall, if I were to use the described service, it would be easy to use	9,99	8,625	,770	,596	,824
It would be easy for me to become skilful at using a premium car subscription service	9,96	8,524	,778	,607	,816

Scale Statistics

Mean	Variance	Std. Deviation	N of Items

14,99	17,975	4,240	3

9.2.1.4. Compatibility

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,885	,885	3

Item Statistics

	Mean	Std. Deviation	N
Premium car subscriptions would be compatible with most aspects of my travels	4,54	1,778	404
Premium car subscriptions would fit my travelling preferences	4,45	1,800	404
Premium car subscription would fit well with the way I like to drive	4,53	1,776	404

Inter-Item Correlation Matrix

	Premium car subscriptions would be compatible with most aspects of my travels	Premium car subscriptions would fit my travelling preferences	Premium car subscription would fit well with the way I like to drive
Premium car subscriptions would be compatible with most aspects of my travels	1,000	,752	,654
Premium car subscriptions would fit my travelling preferences	,752	1,000	,751
Premium car subscription would fit well with the way I like to drive	,654	,751	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Premium car subscriptions would be compatible with most aspects of my travels	8,98	11,198	,752	,584	,858
Premium car subscriptions would fit my travelling preferences	9,07	10,445	,827	,684	,791
Premium car subscription would fit well with the way I like to drive	8,99	11,221	,751	,583	,859

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13,52	23,307	4,828	3

9.2.1.5. Trialability

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,907	,908	3

Item Statistics

	Mean	Std. Deviation	N
I want to be able to use a premium car subscription service on a trial basis	4,52	1,893	404
I want to be able to properly try out a premium car subscription service	4,44	1,878	404
I want to be permitted to use a premium car subscription service on a trial basis long enough to see what it can do	4,55	1,902	404

Inter-Item Correlation Matrix

	I want to be able to use a premium car subscription service on a trial basis	I want to be able to properly try out a premium car subscription service	I want to be permitted to use a premium car subscription service on a trial basis long enough to see what it can do
I want to be able to use a premium car subscription service on a trial basis	1,000	,806	,705
I want to be able to properly try out a premium car subscription service	,806	1,000	,787
I want to be permitted to use a premium car subscription service on a trial basis long enough to see what it can do	,705	,787	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I want to be able to use a premium car subscription service on a trial basis	8,99	12,769	,799	,663	,881
I want to be able to properly try out a premium car subscription service	9,07	12,277	,863	,746	,827
I want to be permitted to use a premium car subscription service on a trial basis long enough to see what it can do	8,96	12,847	,785	,634	,893

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13,51	27,164	5,212	3

9.2.1.6. Observability

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,942	,942	6

Item Statistics

	Mean	Std. Deviation	N
I will use a premium car subscription service when many use it	4,06	1,932	404
I will use a premium car subscription service when I have seen others using this service	4,00	1,867	404
I will use a premium car subscription service as soon as I get to know about it	4,00	1,886	404
I will use a premium car subscription service if it becomes popular	3,95	1,884	404
I will wait until other customers start to use a premium car subscription service	4,19	1,810	404
I will use a premium car subscription service when other people have successful experience of using it	4,14	1,904	404

Inter-Item Correlation Matrix

	I will use a premium car subscription service when many use it	I will use a premium car subscription service when I have seen others using this service	I will use a premium car subscription service as soon as I get to know about it	I will use a premium car subscription service if it becomes popular	I will wait until other customers start to use a premium car subscription service	I will use a premium car subscription service when other people have successful experience of using it
I will use a premium car subscription service when many use it	1,000	,816	,740	,750	,649	,739
I will use a premium car subscription service when I have seen others using this service	,816	1,000	,729	,782	,683	,771
I will use a premium car subscription service as soon as I get to know about it	,740	,729	1,000	,745	,625	,695
I will use a premium car subscription service if it becomes popular	,750	,782	,745	1,000	,678	,760
I will wait until other customers start to use a premium car subscription service	,649	,683	,625	,678	1,000	,789
I will use a premium car subscription service when other people have successful experience of using it	,739	,771	,695	,760	,789	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I will use a premium car subscription service when many use it	20,27	68,288	,837	,729	,930
I will use a premium car subscription service when I have seen others using this service	20,33	68,623	,861	,759	,927
I will use a premium car subscription service as soon as I get to know about it	20,34	70,100	,794	,647	,935
I will use a premium car subscription service if it becomes popular	20,38	68,857	,842	,716	,929

I will wait until other customers start to use a premium car subscription service	20,14	71,984	,765	,644	,938
I will use a premium car subscription service when other people have successful experience of using it	20,19	68,325	,851	,753	,928

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
24,33	98,738	9,937	6

9.2.2. Attitudes Scale

9.2.2.1. Travel Dislike

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,598	,605	4

Item Statistics

	Mean	Std. Deviation	N
Traveling is boring	2,8193	1,91235	404
The only good thing about travelling is arriving at your destination	3,6064	1,99529	404
I like exploring new places	2,4282	1,50179	404
Getting there is half the fun	2,9134	1,60796	404

Inter-Item Correlation Matrix

	Traveling is boring	The only good thing about travelling is arriving at your destination	I like exploring new places	Getting there is half the fun
Traveling is boring	1,000	,530	,166	,118
The only good thing about travelling is arriving at your destination	,530	1,000	,114	,125
I like exploring new places	,166	,114	1,000	,610
Getting there is half the fun	,118	,125	,610	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Traveling is boring	8,9480	13,260	,411	,292	,502
The only good thing about travelling is arriving at your destination	8,1609	13,123	,383	,285	,529
I like exploring new places	9,3391	15,793	,384	,382	,529
Getting there is half the fun	8,8540	15,574	,353	,376	,547

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
11,7673	22,636	4,75768	4

9.2.2.2. Pro-Environmental Policy

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,806	,803	6

Item Statistics

	Mean	Std. Deviation	N
To improve air quality, I am willing to pay a little more to use an electric or other clean-fuel vehicle	4,57	1,780	404
We should raise price of gasoline to reduce congestion and air pollution	3,53	1,931	404
We need more public transportation, even if taxes have to pay for a lot of the costs	4,64	1,814	404
I limit my auto travel to help improve congestion and air quality	4,13	1,845	404
We can find cost-effective technological solutions to the problem of air pollution	5,05	1,531	404
We need more highways, even if taxes have to pay for a lot of the costs	4,20	1,808	404

Inter-Item Correlation Matrix

	To improve air quality, I am willing to pay a little more to use an electric or other clean-fuel vehicle	We should raise price of gasoline to reduce congestion and air pollution	We need more public transportation, even if taxes have to pay for a lot of the costs	I limit my auto travel to help improve congestion and air quality	We can find cost-effective technological solutions to the problem of air pollution	We need more highways, even if taxes have to pay for a lot of the costs
To improve air quality, I am willing to pay a little more to use an electric or other clean-fuel vehicle	1,000	,511	,528	,549	,342	,294
We should raise price of gasoline to reduce congestion and air pollution	,511	1,000	,511	,488	,165	,449
We need more public transportation, even if taxes have to pay for a lot of the costs	,528	,511	1,000	,490	,395	,399
I limit my auto travel to help improve congestion and air quality	,549	,488	,490	1,000	,337	,390
We can find cost-effective technological solutions to the problem of air pollution	,342	,165	,395	,337	1,000	,230
We need more highways, even if taxes have to pay for a lot of the costs	,294	,449	,399	,390	,230	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
To improve air quality, I am willing to pay a little more to use an electric or other clean-fuel vehicle	21,56	41,076	,626	,437	,762
We should raise price of gasoline to reduce congestion and air pollution	22,60	40,122	,600	,429	,768
We need more public transportation, even if taxes have to pay for a lot of the costs	21,49	40,146	,656	,438	,755
I limit my auto travel to help improve congestion and air quality	22,00	40,256	,635	,415	,759
We can find cost-effective technological solutions to the problem of air pollution	21,08	47,971	,387	,215	,811
We need more highways, even if taxes have to pay for a lot of the costs	21,93	43,739	,482	,267	,795

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
26,13	58,526	7,650	6

9.2.2.3. Commute Benefit

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

,737	,735	6

Item Statistics

	Mean	Std. Deviation	N
My commute is a real hassle	3,83	1,915	404
My commute trip is a useful transition between home and work	4,52	1,651	404
The travelling that I need to do interferes with doing other things I like	4,02	1,886	404
I use my commute time productively	4,62	1,655	404
Travel time is generally wasted time	3,85	1,832	404
Getting stuck in traffic doesn't bother me too much	3,66	1,897	404

Inter-Item Correlation Matrix

	My commute is a real hassle	My commute trip is a useful transition between home and work	The travelling that I need to do interferes with doing other things I like	I use my commute time productively	Travel time is generally wasted time	Getting stuck in traffic doesn't bother me too much
My commute is a real hassle	1,000	,170	,581	,097	,477	,312
My commute trip is a useful transition between home and work	,170	1,000	,218	,552	,173	,314
The travelling that I need to do interferes with doing other things I like	,581	,218	1,000	,224	,546	,344
I use my commute time productively	,097	,552	,224	1,000	,108	,334
Travel time is generally wasted time	,477	,173	,546	,108	1,000	,289
Getting stuck in traffic doesn't bother me too much	,312	,314	,344	,334	,289	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
My commute is a real hassle	20,67	35,756	,502	,389	,691
My commute trip is a useful transition between home and work	19,98	39,739	,407	,333	,718
The travelling that I need to do interferes with doing other things I like	20,49	34,191	,598	,459	,662
I use my commute time productively	19,88	40,406	,370	,348	,727
Travel time is generally wasted time	20,65	36,739	,488	,346	,696
Getting stuck in traffic doesn't bother me too much	20,84	36,536	,471	,229	,701

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
24,50	50,931	7,137	6

9.2.2.4. Travel Freedom

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,757	,768	5

Item Statistics

	Mean	Std. Deviation	N
In terms of local travel, I have the freedom to go anywhere I want to	5,36	1,509	404
In terms of long-distance travel, I have the freedom to go anywhere I want to	4,92	1,702	404
The vehicles I travel in are comfortable	5,43	1,410	404
It is nice to be able to do errands on the way to or from work	5,29	1,467	404
I am willing to pay a toll to travel on an uncongested road	4,47	1,785	404

Inter-Item Correlation Matrix

	In terms of local travel, I have the freedom to go anywhere I want to	In terms of long-distance travel, I have the freedom to go anywhere I want to	The vehicles I travel in are comfortable	It is nice to be able to do errands on the way to or from work	I am willing to pay a toll to travel on an uncongested road
In terms of local travel, I have the freedom to go anywhere I want to	1,000	,551	,566	,523	,218
In terms of long-distance travel, I have the freedom to go anywhere I want to	,551	1,000	,448	,421	,282
The vehicles I travel in are comfortable	,566	,448	1,000	,536	,210
It is nice to be able to do errands on the way to or from work	,523	,421	,536	1,000	,231
I am willing to pay a toll to travel on an uncongested road	,218	,282	,210	,231	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
In terms of local travel, I have the freedom to go anywhere I want to	20,10	20,677	,636	,466	,674
In terms of long-distance travel, I have the freedom to go anywhere I want to	20,55	19,985	,578	,361	,693
The vehicles I travel in are comfortable	20,04	21,857	,594	,413	,692
It is nice to be able to do errands on the way to or from work	20,18	21,679	,575	,374	,697
I am willing to pay a toll to travel on an uncongested road	21,00	23,337	,299	,097	,801

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25,47	31,679	5,628	5

9.2.3. Personality Scale

9.2.3.1. Adventure Seeking

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,780	,785	8

Item Statistics

	Mean	Std. Deviation	N
I am adventurous	4,81	1,659	404
I am seeking variety	5,00	1,511	404
I am spontaneous	4,70	1,615	404
I like taking risks	4,21	1,773	404
I like to stay close to home	4,34	1,697	404
I am ambitious	5,00	1,460	404
I like moving at high speeds	4,32	1,801	404
I like being outdoors	5,26	1,602	404

Inter-Item Correlation Matrix

	I am adventurous	I am seeking variety	I am spontaneous	I like taking risks	I like to stay close to home	I am ambitious	I like moving at high speeds	I like being outdoors
I am adventurous	1,000	,702	,565	,357	-,007	,480	,316	,519
I am seeking variety	,702	1,000	,570	,317	,028	,426	,266	,492
I am spontaneous	,565	,570	1,000	,445	,008	,330	,329	,407
I like taking risks	,357	,317	,445	1,000	,113	,284	,423	,160
I like to stay close to home	-,007	,028	,008	,113	1,000	,123	,132	,045
I am ambitious	,480	,426	,330	,284	,123	1,000	,290	,423
I like moving at high speeds	,316	,266	,329	,423	,132	,290	1,000	,237
I like being outdoors	,519	,492	,407	,160	,045	,423	,237	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I am adventurous	32,84	49,652	,666	,589	,724
I am seeking variety	32,66	51,844	,637	,555	,732
I am spontaneous	32,96	51,402	,603	,449	,735
I like taking risks	33,45	52,719	,470	,312	,758
I like to stay close to home	33,31	62,613	,092	,043	,818
I am ambitious	32,65	54,500	,526	,309	,750
I like moving at high speeds	33,33	53,086	,444	,239	,763
I like being outdoors	32,39	53,659	,501	,352	,753

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
37,66	67,978	8,245	8

9.2.3.2. Organizer

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,717	,719	3

Item Statistics

	Mean	Std. Deviation	N
I am efficient	5,35	1,498	404
I am on time	5,53	1,605	404
I like following routines	4,94	1,614	404

Inter-Item Correlation Matrix

	I am efficient	I am on time	I like following routines
I am efficient	1,000	,595	,388
I am on time	,595	1,000	,399
I like following routines	,388	,399	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I am efficient	10,47	7,247	,588	,381	,570
I am on time	10,29	6,723	,592	,387	,558
I like following routines	10,88	7,682	,441	,194	,745

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15,82	14,228	3,772	3

9.2.3.3. Loner

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,515	,517	2

Item Statistics

	Mean	Std. Deviation	N
I like being alone	4,70	1,659	404
I like being independent	5,58	1,478	404

Inter-Item Correlation Matrix

	I like being alone	I like being independent
I like being alone	1,000	,349
I like being independent	,349	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I like being alone	5,58	2,185	,349	,122	.
I like being independent	4,70	2,752	,349	,122	.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items

10,28	6,648	2,578	2

9.2.3.4. Calm

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,544	,543	4

Item Statistics

	Mean	Std. Deviation	N
I am aggressive	3,70	1,836	404
I am patient	4,89	1,669	404
I am restless	3,99	1,751	404
I like being in charge	4,75	1,577	404

Inter-Item Correlation Matrix

	I am aggressive	I am patient	I am restless	I like being in charge
I am aggressive	1,000	,055	,399	,346
I am patient	,055	1,000	,141	,175
I am restless	,399	,141	1,000	,260
I like being in charge	,346	,175	,260	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I am aggressive	13,63	11,514	,393	,223	,414
I am patient	12,44	14,922	,161	,042	,603
I am restless	13,34	11,904	,399	,186	,411
I like being in charge	12,58	12,940	,384	,157	,431

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
17,33	19,785	4,448	4

9.2.4. Lifestyle Scale

9.2.4.1. Frustrated

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,618	,611	5

Item Statistics

	Mean	Std. Deviation	N
I often feel like I don't have much control over my life	3,63	1,937	404
I am generally satisfied with my life	5,14	1,596	404
Work and family do not leave me enough time for myself	3,84	1,851	404
I wouldn't necessarily have to like my work that much, as long as I made enough money	4,22	1,683	404
I feel that I am wasting time when I have to wait	4,52	1,639	404

Inter-Item Correlation Matrix

	I often feel like I don't have much control over my life	I am generally satisfied with my life	Work and family do not leave me enough time for myself	I wouldn't necessarily have to like my work that much, as long as I made enough money	I feel that I am wasting time when I have to wait
I often feel like I don't have much control over my life	1,000	-,099	,470	,313	,348
I am generally satisfied with my life	-,099	1,000	-,002	,129	,165
Work and family do not leave me enough time for myself	,470	,002	1,000	,363	,359
I wouldn't necessarily have to like my work that much, as long as I made enough money	,313	,129	,363	1,000	,344
I feel that I am wasting time when I have to wait	,348	,165	,359	,344	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I often feel like I don't have much control over my life	17,72	19,382	,411	,291	,542
I am generally satisfied with my life	16,21	26,666	,056	,069	,698
Work and family do not leave me enough time for myself	17,51	18,915	,484	,297	,500
I wouldn't necessarily have to like my work that much, as long as I made enough money	17,13	20,413	,453	,209	,522
I feel that I am wasting time when I have to wait	16,83	20,302	,484	,235	,508

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21,35	30,143	5,490	5

9.2.4.2. Family/Community Oriented

Case Processing Summary

	N	%

Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,693	,699	4

Item Statistics

	Mean	Std. Deviation	N
I'd like to spend more time with my family and friends	5,16	1,512	404
My family and friends are more important to me than my work	5,35	1,553	404
I'd like to spend more time on social, environmental, or religious causes	4,65	1,714	404
Occasionally, I'd be willing to give up a day's pay to get a day of work	4,26	1,744	404

Inter-Item Correlation Matrix

	I'd like to spend more time with my family and friends	My family and friends are more important to me than my work	I'd like to spend more time on social, environmental, or religious causes	Occasionally, I'd be willing to give up a day's pay to get a day of work
I'd like to spend more time with my family and friends	1,000	,530	,484	,260
My family and friends are more important to me than my work	,530	1,000	,367	,262
I'd like to spend more time on social, environmental, or religious causes	,484	,367	1,000	,301
Occasionally, I'd be willing to give up a day's pay to get a day of work	,260	,262	,301	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I'd like to spend more time with my family and friends	14,26	13,560	,572	,381	,572
My family and friends are more important to me than my work	14,07	13,938	,506	,308	,611
I'd like to spend more time on social, environmental, or religious causes	14,77	13,018	,506	,278	,608
Occasionally, I'd be willing to give up a day's pay to get a day of work	15,16	14,589	,344	,121	,715

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19,42	22,215	4,713	4

9.2.4.3. Status Seeking

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,693	,680	4

Item Statistics

	Mean	Std. Deviation	N
To me, the car is a status symbol	3,84	1,916	404
A lot of the fun of having something nice is showing it off	4,00	1,868	404
To me, the car is nothing more than a convenient way to get around	4,87	1,726	404
The one who dies with the most toys wins	3,06	2,045	404

Inter-Item Correlation Matrix

	To me, the car is a status symbol	A lot of the fun of having something nice is showing it off	To me, the car is nothing more than a convenient way to get around	The one who dies with the most toys wins
To me, the car is a status symbol	1,000	,710	,071	,579
A lot of the fun of having something nice is showing it off	,710	1,000	,033	,547
To me, the car is nothing more than a convenient way to get around	,071	,033	1,000	,144
The one who dies with the most toys wins	,579	,547	,144	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
To me, the car is a status symbol	11,94	16,056	,658	,557	,505
A lot of the fun of having something nice is showing it off	11,78	16,862	,617	,534	,536
To me, the car is nothing more than a convenient way to get around	10,91	25,143	,098	,024	,823
The one who dies with the most toys wins	12,72	15,903	,597	,384	,544

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15,78	29,822	5,461	4

9.2.4.4. Workaholic

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,632	,614	4

Item Statistics

	Mean	Std. Deviation	N
I'm pretty much a workaholic	3,88	1,865	404
I'd like to spend more time on work	3,74	1,927	404
I generally try to spend some time each week just on myself	5,16	1,464	404
I don't like to stay in one place for long	4,23	1,746	404

Inter-Item Correlation Matrix

	I'm pretty much a workaholic	I'd like to spend more time on work	I generally try to spend some time each week just on myself	I don't like to stay in one place for long
I'm pretty much a workaholic	1,000	,617	,136	,330
I'd like to spend more time on work	,617	1,000	,039	,381
I generally try to spend some time each week just on myself	,136	,039	1,000	,204
I don't like to stay in one place for long	,330	,381	,204	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I'm pretty much a workaholic	13,13	12,728	,550	,399	,451
I'd like to spend more time on work	13,27	12,601	,527	,422	,468
I generally try to spend some time each week just on myself	11,85	19,379	,156	,057	,708
I don't like to stay in one place for long	12,79	14,724	,429	,190	,549

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
17,01	23,526	4,850	4

9.2.5. Car-related Perceptions Scale

9.2.5.1. Instrumental

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,802	,803	5

Item Statistics

	Mean	Std. Deviation	N
For me, the car has instrumental functions only	4,20	1,724	404
It does not matter to me which type of car I drive	4,09	1,829	404
I only have a car to travel from A to B	4,31	1,800	404

The functional quality of a car is more important to me than its make	4,92	1,741	404
If I did not need a car, I would dispose of it immediately	3,92	1,938	404

Inter-Item Correlation Matrix

	For me, the car has instrumental functions only	It does not matter to me which type of car I drive	I only have a car to travel from A to B	The functional quality of a car is more important to me than its make	If I did not need a car, I would dispose of it immediately
For me, the car has instrumental functions only	1,000	,523	,572	,423	,424
It does not matter to me which type of car I drive	,523	1,000	,550	,379	,391
I only have a car to travel from A to B	,572	,550	1,000	,436	,440
The functional quality of a car is more important to me than its make	,423	,379	,436	1,000	,354
If I did not need a car, I would dispose of it immediately	,424	,391	,440	,354	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
For me, the car has instrumental functions only	17,24	30,365	,643	,427	,746
It does not matter to me which type of car I drive	17,35	30,105	,603	,386	,758
I only have a car to travel from A to B	17,13	29,346	,665	,456	,738
The functional quality of a car is more important to me than its make	16,52	32,454	,508	,261	,787
If I did not need a car, I would dispose of it immediately	17,52	30,741	,515	,267	,787

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21,44	45,557	6,750	5

9.2.5.2. Symbolic

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,892	,893	5

Item Statistics

	Mean	Std. Deviation	N
A car provides status and prestige	3,98	1,854	404
My car shows who and what I am	3,78	1,923	404
I may be jealous of someone with a nice car	3,66	2,049	404
You can know a person by looking at his or her car	3,92	1,851	404

The brand of a car is more important to me than its functional qualities	3,55	2,034	404

Inter-Item Correlation Matrix

	A car provides status and prestige	My car shows who and what I am	I may be jealous of someone with a nice car	You can know a person by looking at his or her car	The brand of a car is more important to me than its functional qualities
A car provides status and prestige	1,000	,731	,639	,612	,600
My car shows who and what I am	,731	1,000	,634	,627	,580
I may be jealous of someone with a nice car	,639	,634	1,000	,623	,591
You can know a person by looking at his or her car	,612	,627	,623	1,000	,616
The brand of a car is more important to me than its functional qualities	,600	,580	,591	,616	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
A car provides status and prestige	14,92	43,758	,766	,614	,862
My car shows who and what I am	15,12	43,076	,761	,611	,863
I may be jealous of someone with a nice car	15,24	42,282	,732	,537	,870
You can know a person by looking at his or her car	14,98	44,533	,730	,535	,870
The brand of a car is more important to me than its functional qualities	15,35	43,220	,697	,491	,878

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
18,90	65,990	8,123	5

9.2.5.3. Affective

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,837	,841	5

Item Statistics

	Mean	Std. Deviation	N
I love driving	4,95	1,756	404
I know of a dream car that I would love to posses	4,81	1,901	404
I would love to drive in the newest Ferrari, Porsche or Jaguar	4,17	2,146	404
I like to drive just for the fun	4,67	1,869	404
I feel free and independent if I drive	5,13	1,650	404

Inter-Item Correlation Matrix

	I love driving	I know of a dream car that I would love to posses	I would love to drive in the newest Ferrari, Porsche or Jaguar	I like to drive just for the fun	I feel free and independent if I drive
I love driving	1,000	,441	,432	,740	,574
I know of a dream car that I would love to posses	,441	1,000	,612	,459	,441
I would love to drive in the newest Ferrari, Porsche or Jaguar	,432	,612	1,000	,504	,340
I like to drive just for the fun	,740	,459	,504	1,000	,598
I feel free and independent if I drive	,574	,441	,340	,598	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I love driving	18,77	35,594	,686	,581	,793
I know of a dream car that I would love to posses	18,92	35,487	,617	,443	,811
I would love to drive in the newest Ferrari, Porsche or Jaguar	19,55	33,761	,590	,441	,823
I like to drive just for the fun	19,06	33,714	,731	,625	,779
I feel free and independent if I drive	18,60	38,152	,598	,424	,816

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23,73	53,063	7,284	5

9.2.6. Co-creative Practices Scale

9.2.6.1. Information Seeking

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,740	,741	3

Item Statistics

	Mean	Std. Deviation	N
I usually ask others for information on what a service offers	4,28	1,760	404
I usually search for information on where a service is located	5,13	1,566	404
I usually pay attention to how others behave to use a service well	4,61	1,631	404

Inter-Item Correlation Matrix

	I usually ask others for information on what a service offers	I usually search for information on where a service is located	I usually pay attention to how others behave to use a service well
I usually ask others for information on what a service offers	1,000	,442	,539
I usually search for information on where a service is located	,442	1,000	,483
I usually pay attention to how others behave to use a service well	,539	,483	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I usually ask others for information on what a service offers	9,74	7,582	,571	,334	,651
I usually search for information on where a service is located	8,89	8,854	,526	,280	,699
I usually pay attention to how others behave to use a service well	9,42	7,985	,603	,365	,610

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
14,02	16,210	4,026	3

9.2.6.2. Information Sharing

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,867	,867	4

Item Statistics

	Mean	Std. Deviation	N
I usually clearly explain what I want the employee to do to help me	5,10	1,636	404
I give the employee proper information to help me	5,36	1,529	404
I usually provide the necessary information so that the employee can perform his or her duties	5,32	1,550	404
I usually answer all the employee's service-related questions	5,36	1,504	404

Inter-Item Correlation Matrix

	I usually clearly explain what I want the employee to do to help me	I give the employee proper information to help me	I usually provide the necessary information so that the employee can perform his or her duties	I usually answer all the employee's service-related questions
I usually clearly explain what I want the employee to do to help me	1,000	,642	,593	,565
I give the employee proper information to help me	,642	1,000	,700	,588
I usually provide the necessary information so that the employee can perform his or her duties	,593	,700	1,000	,636
I usually answer all the employee's service-related questions	,565	,588	,636	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I usually clearly explain what I want the employee to do to help me	16,04	15,991	,688	,480	,843

I give the employee proper information to help me	15,78	16,095	,752	,580	,816
I usually provide the necessary information so that the employee can perform his or her duties	15,82	15,970	,750	,579	,817
I usually answer all the employee's service-related questions	15,78	16,953	,682	,473	,844

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21,14	27,665	5,260	4

9.2.6.3. Responsible Behaviour

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,862	,862	4

Item Statistics

	Mean	Std. Deviation	N
I usually perform all the tasks that are required by a service	5,29	1,564	404
I usually adequately complete all the expected behaviours of a service	5,26	1,487	404
I usually fulfill responsibilities to the business	5,37	1,486	404
I usually follow the employee's directives or orders	5,16	1,450	404

Inter-Item Correlation Matrix

	I usually perform all the tasks that are required by a service	I usually adequately complete all the expected behaviours of a service	I usually fulfill responsibilities to the business	I usually follow the employee's directives or orders
I usually perform all the tasks that are required by a service	1,000	,685	,625	,593
I usually adequately complete all the expected behaviours of a service	,685	1,000	,613	,577
I usually fulfill responsibilities to the business	,625	,613	1,000	,567
I usually follow the employee's directives or orders	,593	,577	,567	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I usually perform all the tasks that are required by a service	15,79	14,160	,746	,564	,809
I usually adequately complete all the expected behaviours of a service	15,82	14,797	,732	,546	,815
I usually fulfill responsibilities to the business	15,72	15,121	,697	,486	,829
I usually follow the employee's directives or orders	15,93	15,660	,664	,441	,842

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21,09	25,385	5,038	4

9.2.6.4. Personal Interaction

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,916	,917	5

Item Statistics

	Mean	Std. Deviation	N
I am usually friendly to the employee	5,58	1,473	404
I am usually kind to the employee	5,67	1,444	404
I am usually polite to the employee	5,62	1,455	404
I am usually courteous to the employee	5,52	1,515	404
I don't act rudely to the employee	5,50	1,487	404

Inter-Item Correlation Matrix

	I am usually friendly to the employee	I am usually kind to the employee	I am usually polite to the employee	I am usually courteous to the employee	I don't act rudely to the employee
I am usually friendly to the employee	1,000	,732	,728	,626	,675
I am usually kind to the employee	,732	1,000	,726	,693	,678
I am usually polite to the employee	,728	,726	1,000	,705	,627
I am usually courteous to the employee	,626	,693	,705	1,000	,681
I don't act rudely to the employee	,675	,678	,627	,681	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I am usually friendly to the employee	22,31	26,587	,789	,647	,897
I am usually kind to the employee	22,23	26,553	,813	,665	,892
I am usually polite to the employee	22,27	26,632	,798	,657	,895
I am usually courteous to the employee	22,37	26,442	,770	,614	,901
I don't act rudely to the employee	22,39	26,883	,755	,584	,904

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
27,89	40,741	6,383	5

9.2.6.5. Feedback

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,735	,737	3

Item Statistics

	Mean	Std. Deviation	N
If I have a useful idea on how to improve service, I let the employee know	4,84	1,631	404
When I receive good service from the employee, I comment about it	5,31	1,520	404
When I experience a problem, I let the employee know about it	5,11	1,457	404

Inter-Item Correlation Matrix

	If I have a useful idea on how to improve service, I let the employee know	When I receive good service from the employee, I comment about it	When I experience a problem, I let the employee know about it
If I have a useful idea on how to improve service, I let the employee know	1,000	,438	,500
When I receive good service from the employee, I comment about it	,438	1,000	,511
When I experience a problem, I let the employee know about it	,500	,511	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
If I have a useful idea on how to improve service, I let the employee know	10,43	6,697	,539	,295	,676
When I receive good service from the employee, I comment about it	9,95	7,162	,545	,305	,664
When I experience a problem, I let the employee know about it	10,16	7,139	,596	,355	,608

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15,27	13,904	3,729	3

9.2.6.6. Advocacy

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,860	,861	3

Item Statistics

	Mean	Std. Deviation	N
I usually say positive things about the services I use and their employees to others	5,29	1,484	404

I usually recommend the services I use and their employees to others.	5,18	1,499	404
I usually encourage friends and relatives to access the service I use	5,04	1,551	404

Inter-Item Correlation Matrix

	I usually say positive things about the services I use and their employees to others	I usually recommend the services I use and their employees to others.	I usually encourage friends and relatives to access the service I use
I usually say positive things about the services I use and their employees to others	1,000	,689	,633
I usually recommend the services I use and their employees to others.	,689	1,000	,697
I usually encourage friends and relatives to access the service I use	,633	,697	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I usually say positive things about the services I use and their employees to others	10,22	7,891	,717	,520	,821
I usually recommend the services I use and their employees to others.	10,33	7,518	,767	,588	,775
I usually encourage friends and relatives to access the service I use	10,47	7,510	,724	,530	,816

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15,51	16,067	4,008	3

9.2.6.7. Helping

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,895	,896	4

Item Statistics

	Mean	Std. Deviation	N
I usually assist other customers if they need my help	5,01	1,517	404
I help other customers if they seem to have problems	4,95	1,519	404
I teach other customers to use the service correctly	4,78	1,553	404
I give advice to other customers	4,72	1,579	404

Inter-Item Correlation Matrix

	I usually assist other customers if they need my help	I help other customers if they seem to have problems	I teach other customers to use the service correctly	I give advice to other customers

I usually assist other customers if they need my help	1,000	,767	,633	,651
I help other customers if they seem to have problems	,767	1,000	,662	,659
I teach other customers to use the service correctly	,633	,662	1,000	,722
I give advice to other customers	,651	,659	,722	1,000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I usually assist other customers if they need my help	14,44	17,031	,769	,632	,865
I help other customers if they seem to have problems	14,50	16,841	,788	,651	,858
I teach other customers to use the service correctly	14,67	16,915	,755	,589	,870
I give advice to other customers	14,74	16,661	,762	,597	,868

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19,45	28,968	5,382	4

9.2.6.8. Tolerance

Case Processing Summary

		N	%
Cases	Valid	404	100,0
	Excluded[a]	0	,0
	Total	404	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,728	,737	3

Item Statistics

	Mean	Std. Deviation	N
If service is not delivered as expected, I would be willing to put up with it	4,10	1,783	404
If the employee makes a mistake during service delivery, I would be willing to be patient.	5,02	1,444	404
If I have to wait longer than I normally expected to receive a service, I would be willing to adapt.	4,73	1,513	404

Inter-Item Correlation Matrix

	If service is not delivered as expected, I would be willing to put up with it	If the employee makes a mistake during service delivery, I would be willing to be patient.	If I have to wait longer than I normally expected to receive a service, I would be willing to adapt.
If service is not delivered as expected, I would be willing to put up with it	1,000	,385	,490
If the employee makes a mistake during service delivery, I would be willing to be patient.	,385	1,000	,573

If I have to wait longer than I normally expected to receive a service, I would be willing to adapt.	,490	,573	1,000

Item-Total Statistics

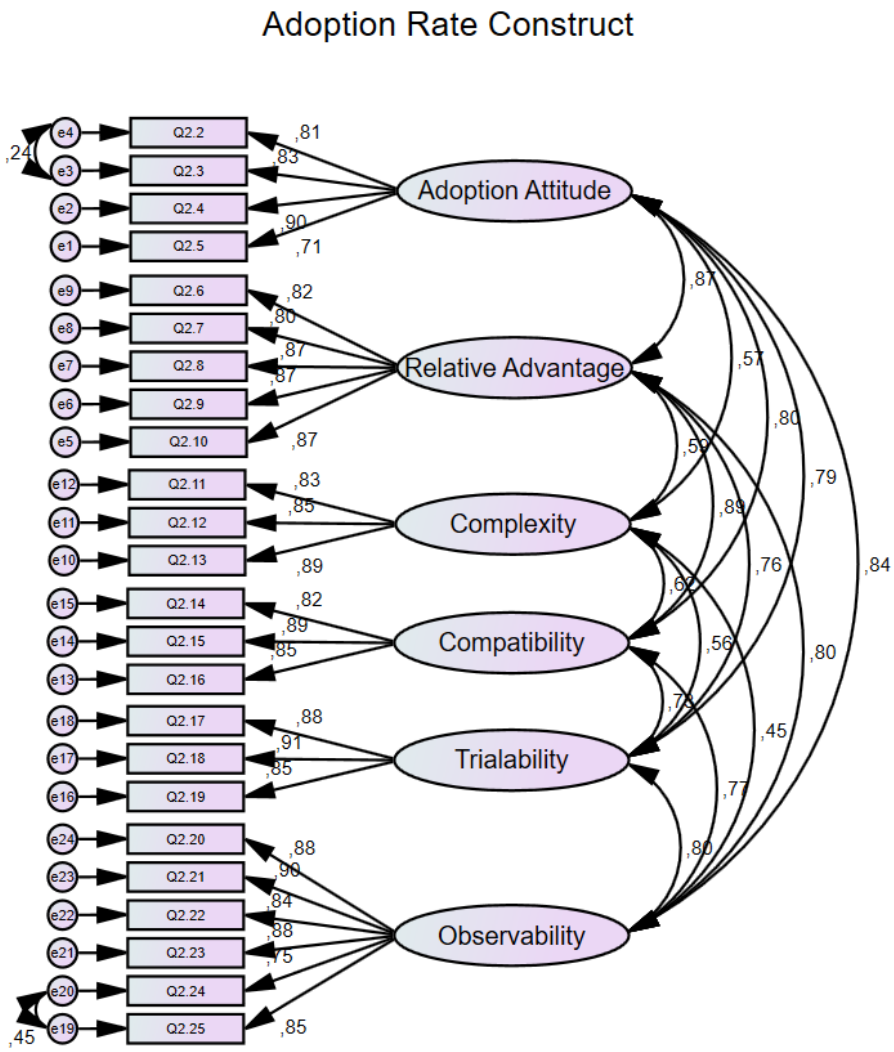
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
If service is not delivered as expected, I would be willing to put up with it	9,75	6,879	,494	,256	,728
If the employee makes a mistake during service delivery, I would be willing to be patient.	8,83	8,109	,545	,342	,652
If I have to wait longer than I normally expected to receive a service, I would be willing to adapt.	9,12	7,245	,632	,413	,547

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13,85	14,679	3,831	3

9.3. Validity Test

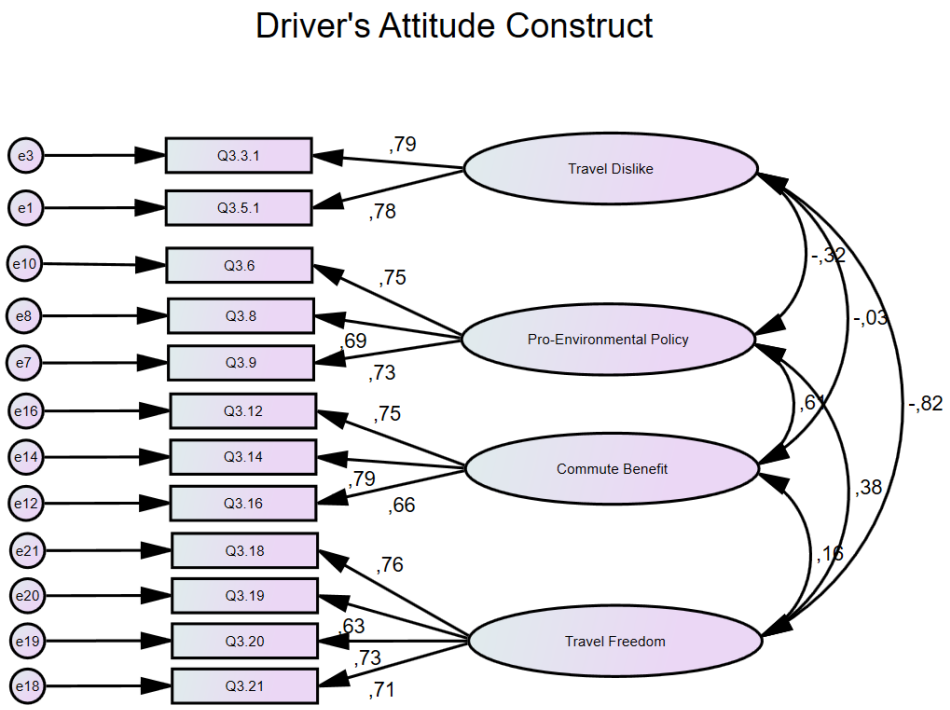
9.3.1. Adoption Rate Construct Validity Test – CFA



Validity and Reliability

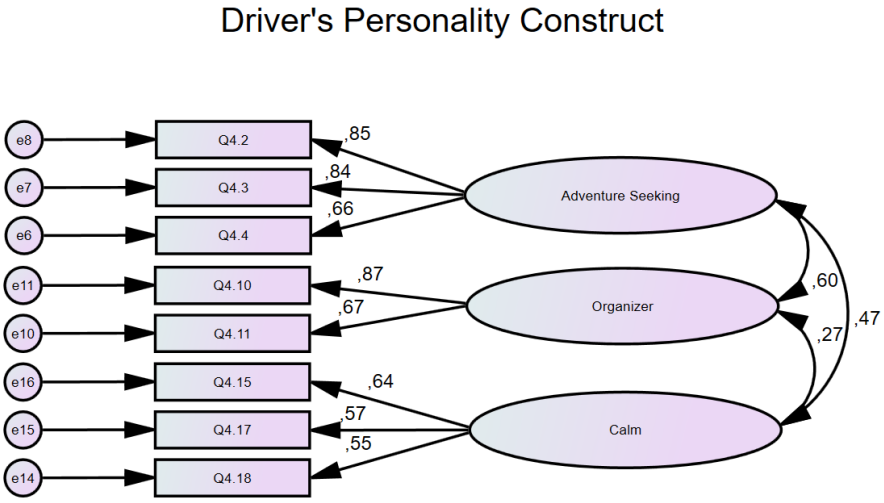
	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Trialability	0,914	0,780	0,645
Adoption_Attitude	0,855	0,665	0,778
Relative_Advantage	0,926	0,715	0,787
Complexity	0,893	0,736	0,383
Compatibility	0,889	0,729	0,787
Observability	0,940	0,724	0,728

9.3.2. Driver's Attitude Construct Validity Test – CFA



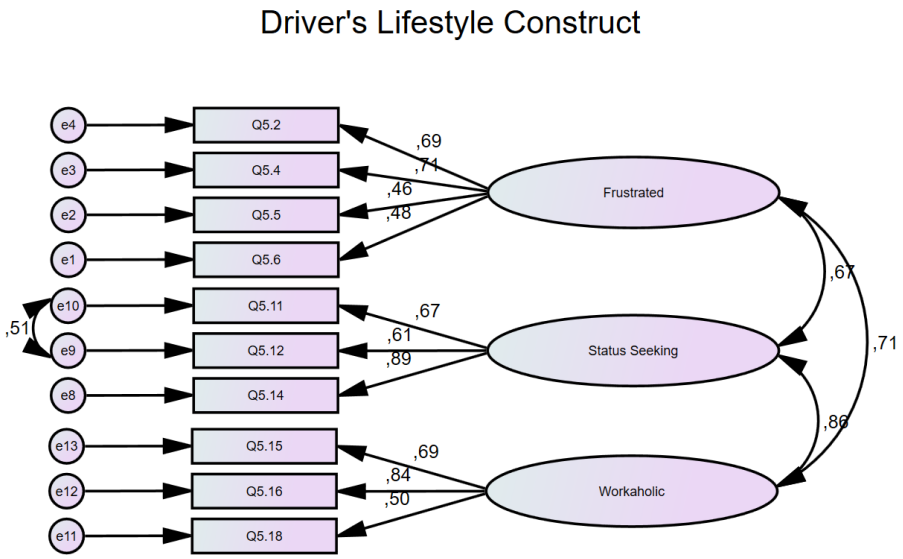
Validity and Reliability			
	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Commute Benefit	0,777	0,539	0,372
Travel Dislike	0,759	0,612	0,667
Pro-Enviornmental Policy	0,766	0,521	0,372
Travel Freedom	0,800	0,502	0,667

9.3.3. Driver's Personality Construct Validity Test – CFA



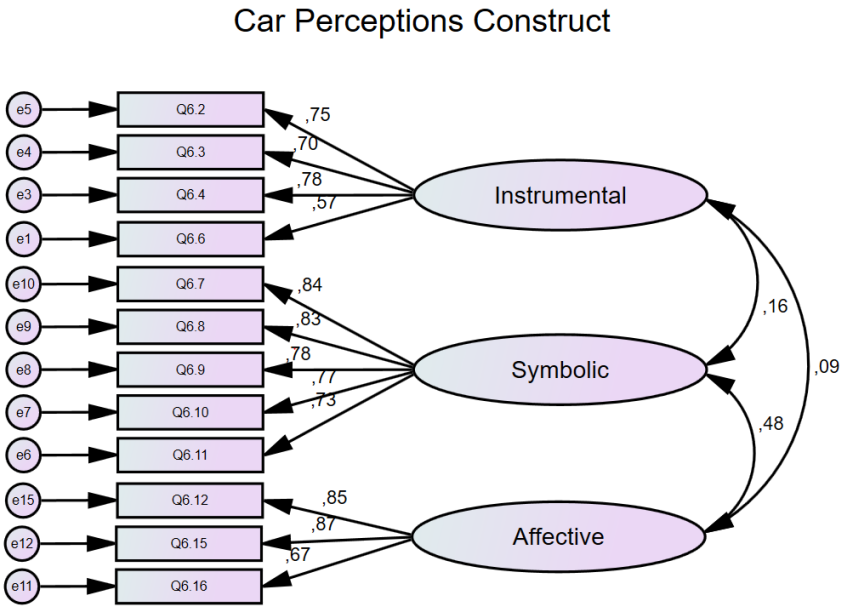
Validity and Reliability			
	Composite Reliability	Average Varaince Extracted	Maximum Shared Variance
Commute Benefit	0,777	0,539	0,372
Travel Dislike	0,759	0,612	0,667
Pro-Enviornmental Policy	0,766	0,521	0,372
Travel Freedom	0,800	0,502	0,667

9.3.4. Driver's Lifestyle Construct Validity Test – CFA



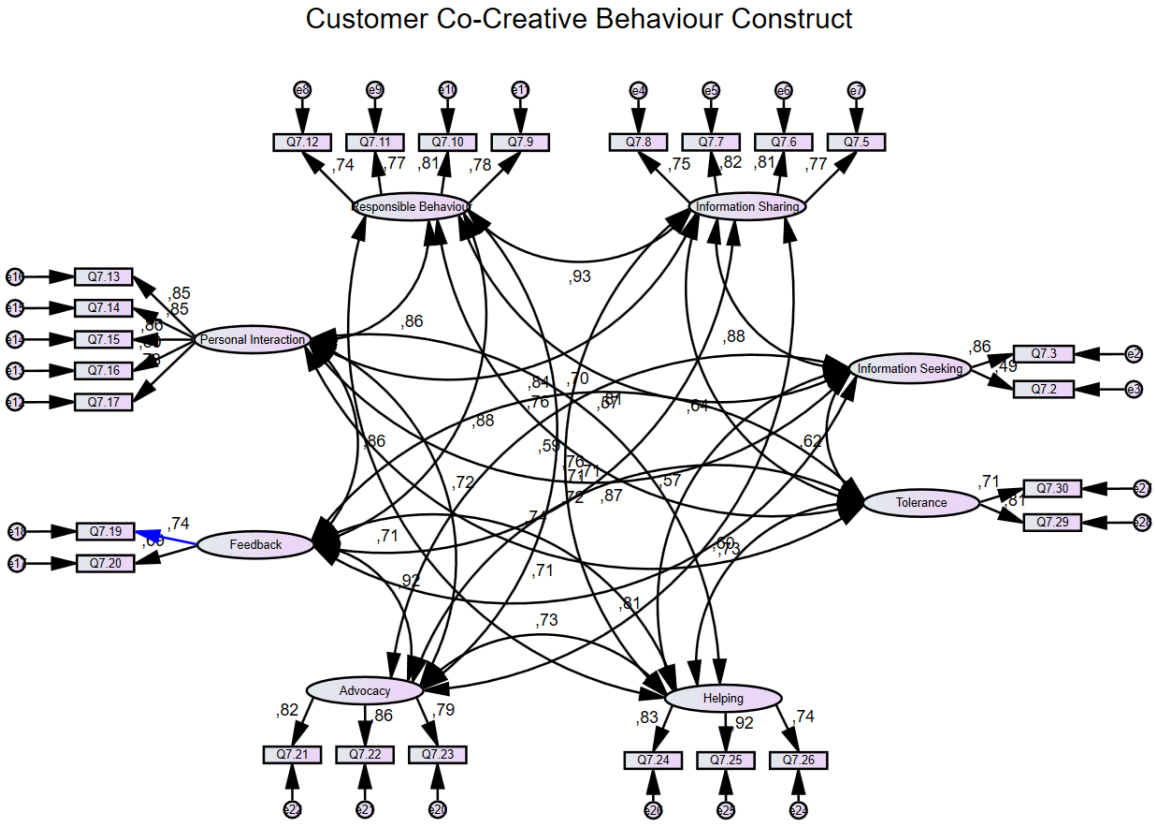
Validity and Reliability			
	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Status Seeking	0,772	0,537	0,734
Frustrated	0,680	0,356	0,500
Workaholic	0,725	0,479	0,734

9.3.5. Car Perceptions Construct Validity Test – CFA



Validity and Reliability			
	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Symbolic	0,891	0,622	0,228
Affective	0,794	0,499	0,026
Instrumental	0,843	0,644	0,228

9.3.6. Customer Co-Creative Behaviour Construct Validity Test – CFA



Validity and Reliability

	Composite Reliability	Average Variance Extracted	Maximum Shared Variance
Helping	0,871	0,693	0,542
InformationSeeking	0,696	0,498	0,774
InformationSharing	0,869	0,625	0,865
ResponsibleBehaviour	0,857	0,600	0,865
PersonalInteraction	0,916	0,685	0,738
Feedback	0,699	0,514	0,839
Advocacy	0,863	0,678	0,839
Tolerance	0,735	0,583	0,507

9.4. Table 3: Sample analysis

9.4.1. Sample income distribution

Statistics

Your household income

N	Valid	380
	Missing	0
Mean		5,76
Median		5,00
Skewness		,396
Std. Error of Skewness		,125
Kurtosis		-,796
Std. Error of Kurtosis		,250
Percentiles	25	3,00
	50	5,00
	75	8,00

Your household income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $10,000	32	8,4	8,4	8,4
	$10,000 - $19,999	28	7,4	7,4	15,8
	$20,000 - $29,999	44	11,6	11,6	27,4
	$30,000 - $39,999	50	13,2	13,2	40,5
	$40,000 - $49,999	44	11,6	11,6	52,1
	$50,000 - $59,999	45	11,8	11,8	63,9
	$60,000 - $69,999	23	6,1	6,1	70,0
	$70,000 - $79,999	36	9,5	9,5	79,5
	$80,000 - $89,999	20	5,3	5,3	84,7
	$90,000 - $99,999	10	2,6	2,6	87,4
	$100,000 - $149,999	27	7,1	7,1	94,5
	More than $150,000	21	5,5	5,5	100,0
	Total	380	100,0	100,0	

9.4.2. Sample economic independency rate

Are you economically independent?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	337	88,7	88,7	88,7
	No	43	11,3	11,3	100,0
	Total	380	100,0	100,0	

9.4.3. Sample educational attainment

Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than high school	3	,8	,8	,8
	High school graduate	34	8,9	8,9	9,7
	Some college	79	20,8	20,8	30,5
	2 year degree	33	8,7	8,7	39,2
	4 year degree	157	41,3	41,3	80,5
	Professional degree	63	16,6	16,6	97,1
	Doctorate	11	2,9	2,9	100,0
	Total	380	100,0	100,0	

9.4.4. Sample employment status

Employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed full time	251	66,1	66,1	66,1
	Employed part time	59	15,5	15,5	81,6
	Unemployed looking for work	9	2,4	2,4	83,9
	Unemployed not looking for work	10	2,6	2,6	86,6
	Retired	37	9,7	9,7	96,3
	Student	7	1,8	1,8	98,2
	Disabled	7	1,8	1,8	100,0
	Total	380	100,0	100,0	

9.4.5. Sample employment status per gender

Employment status

Gender			Frequency	Percent	Valid Percent	Cumulative Percent
Male	Valid	Employed full time	137	73,3	73,3	73,3
		Employed part time	24	12,8	12,8	86,1
		Unemployed looking for work	4	2,1	2,1	88,2
		Unemployed not looking for work	1	,5	,5	88,8

		Retired	16	8,6	8,6	97,3
		Student	5	2,7	2,7	100,0
		Total	187	100,0	100,0	
Female	Valid	Employed full time	114	59,1	59,1	59,1
		Employed part time	35	18,1	18,1	77,2
		Unemployed looking for work	5	2,6	2,6	79,8
		Unemployed not looking for work	9	4,7	4,7	84,5
		Retired	21	10,9	10,9	95,3
		Student	2	1,0	1,0	96,4
		Disabled	7	3,6	3,6	100,0
		Total	193	100,0	100,0	

9.4.6. Sample location of residence

Where do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural area	173	45,5	45,5	45,5
	Urban area	207	54,5	54,5	100,0
	Total	380	100,0	100,0	

9.4.7. Sample driving licence ownership rate

Do you own a driving licence?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	377	99,2	99,2	99,2
	No	3	,8	,8	100,0
	Total	380	100,0	100,0	

9.4.8. Sample car ownership rate

Do you own a car?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	363	95,5	95,5	95,5
	No	17	4,5	4,5	100,0
	Total	380	100,0	100,0	

9.5. Table 4: Part one analysis outputs

9.5.1. Potential confounding effect of “Household Income” on “Adoption Rate”

9.5.1.1. Testing homogeneity of error variances

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Adoption Rate	Based on Mean	1,122	11	368	,343
	Based on Median	,924	11	368	,517
	Based on Median and with adjusted df	,924	11	347,500	,517
	Based on trimmed mean	1,117	11	368	,347

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Dependent variable: Adoption Rate
b. Design: Intercept + Q8.10

The preliminary test is aimed at defining whether the distributions of the different sample groups are featured with equal variance in their errors distributions. The condition is satisfied being the p-values higher than the threshold of α=0.05.

9.5.1.2. Testing normality of errors

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Adoption_Rate	,082	380	,000	,977	380	,000

a. Lilliefors Significance Correction

However, testing for normality the distribution of errors outlines that they are not distributed as a normal (p-value lower than 0.05 ensures a quite secure rejection of the null hypothesis, that the distribution is normal). Since analysed data does not fit the normal distribution, the condition of normality, hypothesis for the application of the ANOVA is not satisfied. By accepting the limitation, in sufficiently large random sample, it is however possible to still apply ANOVA - (Glass, Peckham, & Sanders, 1972), (Harwell, Rubinstein, Hayes, & Olds, 1992).

9.5.1.3. ANOVA test for relationship diagnosis

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Adoption Rate	Between Groups	11821,035	11	1074,640	,963	,480
	Within Groups	410731,099	368	1116,117		
	Total	422552,134	379			

9.5.2. Potential confounding effect of "Household Income" on "Co-Creative Behaviour Score"

9.5.2.1. Testing homogeneity of error variances

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
CoCreative Behaviour	Based on Mean	3,279	11	368	,000
	Based on Median	2,049	11	368	,023
	Based on Median and with adjusted df	2,049	11	282,617	,024
	Based on trimmed mean	3,012	11	368	,001

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Dependent variable: CoCreative Behaviour
b. Design: Intercept + Q8.10

The preliminary test is aimed at defining whether the distributions of the different sample groups are featured with equal variance in their errors distributions. In the following case, being the p-value significantly lower than the threshold, it is concluded that the distribution of Co-Creative Behaviour Score is characterised by a heteroskedastic distribution of the error variances, violating the hypothesis of means equality. Therefore, it is not possible to apply traditional One-Way ANOVA to observe the existence of possible significant relationships.

9.5.2.2. Testing normality of errors

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for CoCreative_Behaviour	,108	380	,000	,953	380	,000

a. Lilliefors Significance Correction

Moreover, the analysis for normality of Co-creative behaviour score residuals demonstrate that the distribution differs from the normal in a significant level. Therefore, both homoskedasticity and normality of errors are indeed not satisfied. As suggested by Lantz (2013), when both homoskedasticity and normality of errors hypothesis are violated, the more effective tool to diagnose eventual relationship is represented by the Kruskal Wallis test, a non-parametric method for more than two groups of comparison to observe whether exists at least one group stochastically dominating over the alternatives.

9.5.2.3. Kruskal Wallis test for relationship diagnosis

Test Statistics[a,b]

	CoCreative Behaviour
Kruskal-Wallis H	6,336
df	11
Asymp. Sig.	,850

a. Kruskal Wallis Test
b. Grouping Variable: Your household income

By performing the Kruskal Wallis test it is possible to observe that the distribution levels of the co-creative behaviour scores do not significantly change when grouped for the level of household income. Indeed, the sig. of .850, substantially higher than the .05 threshold, lead us to accept the hypothesis of equality in medians.

9.5.3. Potential confounding effect of "Economic Independency" on "Adoption Rate"

9.5.3.1. Testing homogeneity of error variances

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Adoption Rate	Based on Mean	1,917	1	378	,167
	Based on Median	1,421	1	378	,234
	Based on Median and with adjusted df	1,421	1	373,319	,234
	Based on trimmed mean	1,836	1	378	,176

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Dependent variable: Adoption Rate
b. Design: Intercept + Q8.9

The p-values are all higher than the threshold, implying the acceptance of the hypothesis of the test, namely that all error variances are equal across groups. Homoscedasticity hypothesis is then respected.

9.5.3.2. Testing normality of errors

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Adoption_Rate	,089	380	,000	,974	380	,000

a. Lilliefors Significance Correction

Both Kolmogorov-Smirnov and Shapiro-Wilk tests featured a p-value lower than the .05 threshold meaning that we should reject the hypothesis of normality in distribution of errors. Therefore, the normality hypothesis is violated. Zimmerman (1987) suggest the use of Mann-Whitney U when the normality assumption is not respected, being a non-parametrical method that guarantee an acceptable level of reliability.

9.5.3.3. Mann-Whitney U test for relationship diagnosis

Test Statistics[a]

	Adoption Rate
Mann-Whitney U	6110,500
Wilcoxon W	7056,500
Z	-1,673
Asymp. Sig. (2-tailed)	,094

a. Grouping Variable: Are you economically independent?

The null hypothesis implies the similarity in medians between the two different groups. The p-value is here higher than the α=.05, meaning that there is no significant evidence to reject the null. Therefore, by accepting the hypothesis H_0, it is possible to conclude that there is no significant effect of economic independency on adoption rate.

9.5.4. Potential confounding effect of "Economic Independency" on "Co-Creative Behaviour Score"

9.5.4.1. Testing homogeneity of error variances

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
CoCreative Behaviour	Based on Mean	7,464	1	378	,007
	Based on Median	5,261	1	378	,022
	Based on Median and with adjusted df	5,261	1	369,482	,022
	Based on trimmed mean	6,575	1	378	,011

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Dependent variable: CoCreative Behaviour
b. Design: Intercept + Q8.9

Based on the Leven's test for homoscedasticity of errors, it is possible to conclude that the groups do not have an equivalent errors distribution (p-value is lower than the .05 threshold, the null hypothesis of equality of variances is then rejected).

9.5.4.2. Testing normality of errors

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Eco-Indep Standardized Residual for CoCreative_Behaviour	,118	380	,000	,937	380	,000

a. Lilliefors Significance Correction

Testing for normality, both tests outcomes display a significance level below the .05 threshold, implying the rejection of the null of normality in errors distribution. Therefore, also this second hypothesis is violated. It is necessary to proceed with the non-parametrical Kruskal-Wallis test to assess the relationship.

9.5.4.3. Kruskal Wallis test for relationship diagnosis

Test Statistics[a,b]

	CoCreative Behaviour
Kruskal-Wallis H	,042
df	1
Asymp. Sig.	,837

a. Kruskal Wallis Test
b. Grouping Variable: Are you economically independent?

The result of the test, with a p-value higher than the threshold of .05, implies that it is necessary to accept the null hypothesis of equality of medians, therefore it is concluded that no significant effect is produced by the economic independency on the co-creative behaviour score.

9.5.5. Potential confounding effect of "Age" on "Adoption Rate" and "Co-Creative Behaviour Score"

All the variables examined can be considered continuous (Pearson's correlation hypothesis), being the adoption rate and the co-creative behaviour score transformations obtained by the computation of the sum of the relative items (Babbie, 2013).

Correlations

		Your age	Adoption Rate
Your age	Pearson Correlation	1	-,187**
	Sig. (2-tailed)		,000
	N	380	380
Adoption Rate	Pearson Correlation	-,187**	1

	Sig. (2-tailed)	,000	
	N	380	380

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Your age	CoCreative Behaviour
Your age	Pearson Correlation	1	,109*
	Sig. (2-tailed)		,034
	N	380	380
CoCreative Behaviour	Pearson Correlation	,109*	1
	Sig. (2-tailed)	,034	
	N	380	380

*. Correlation is significant at the 0.05 level (2-tailed).

The Age variable affects significantly both the adoption rate and the co-creative behaviour score. Note that the correlation of age with the adoption rate is significant at the α=.01 level, while with the co-creative behaviour score is at the α=.05 level.

9.5.6. Correlation of variables when "Co-Creative Behaviour Score" is split between its main contributors "Customer Participation Behaviour Score" and "Customer Citizenship Behaviour Score"

Correlations

		Adoption Rate	Customer Citizenship Behaviour	Customer Participation Behaviour	Your age
Adoption Rate	Pearson Correlation	1	,310**	,500**	-,187**
	Sig. (2-tailed)		,000	,000	,000
	N	380	380	380	380
Customer Citizenship Behaviour	Pearson Correlation	,310**	1	,762**	,171**
	Sig. (2-tailed)	,000		,000	,001
	N	380	380	380	380
Customer Participation Behaviour	Pearson Correlation	,500**	,762**	1	,016
	Sig. (2-tailed)	,000	,000		,758
	N	380	380	380	380
Your age	Pearson Correlation	-,187**	,171**	,016	1
	Sig. (2-tailed)	,000	,001	,758	
	N	380	380	380	380

**. Correlation is significant at the 0.01 level (2-tailed).

9.5.7. Correlation of "Adoption Rate" and "Co-Creative Behaviour Score" controlling for "Age"

Correlations

		Adoption Rate	CoCreative Behaviour
Adoption Rate	Pearson Correlation	1	,420**
	Sig. (2-tailed)		,000
	N	380	380
CoCreative Behaviour	Pearson Correlation	,420**	1
	Sig. (2-tailed)	,000	
	N	380	380

**. Correlation is significant at the 0.01 level (2-tailed).

9.5.8. Partial correlation of "Adoption Rate" and "Co-Creative Behaviour Score" controlling for "Age"

Correlations

Control Variables			Adoption Rate	CoCreative Behaviour
Age	Adoption Rate	Correlation	1,000	,451
		Significance (2-tailed)	.	,000
		df	0	377
	CoCreative Behaviour	Correlation	,451	1,000
		Significance (2-tailed)	,000	.
		df	377	0

9.5.9. Multiple linear regression model explaining "Adoption Rate" as a function of the main components of "Customer Co-Creative Behaviour Score".

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,512[a]	,262	,259	28,75201

a. Predictors: (Constant), Customer Citizenship Behaviour, Customer Participation Behaviour

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110894,554	2	55447,277	67,072	,000[b]
	Residual	311657,580	377	826,678		
	Total	422552,134	379			

a. Dependent Variable: Adoption Rate
b. Predictors: (Constant), Customer Citizenship Behaviour, Customer Participation Behaviour

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	35,961	7,491		4,801	,000
	Customer Citizenship Behaviour	-,317	,128	-,169	-2,480	,014
	Customer Participation Behaviour	1,489	,162	,629	9,218	,000

a. Dependent Variable: Adoption Rate

9.5.10. Multiple linear regression model explaining "Adoption Rate" as a function of the main components of "Customer Co-Creative Behaviour Score" and potential confounders

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,543[a]	,294	,285	28,23504

a. Predictors: (Constant), Age, Customer Citizenship Behaviour, Your household income, Are you economically independent?, Customer Participation Behaviour

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	124392,856	5	24878,571	31,207	,000[b]
	Residual	298159,278	374	797,217		
	Total	422552,134	379			

a. Dependent Variable: Adoption Rate
b. Predictors: (Constant), Age, Customer Citizenship Behaviour, Your household income, Are you economically independent?, Customer Participation Behaviour

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	55,791	9,848		5,665	,000
	Customer Citizenship Behaviour	-,168	,132	-,090	-1,276	,203
	Customer Participation Behaviour	1,347	,164	,569	8,233	,000
	Your household income	-,305	,464	-,029	-,658	,511
	Are you economically independent?	-3,814	4,649	-,036	-,820	,412
	Age	-,383	,098	-,175	-3,903	,000

a. Dependent Variable: Adoption Rate

9.6. Attitudinal Model Analysis

9.6.1. Influential Analysis – Cook's Distance Observation

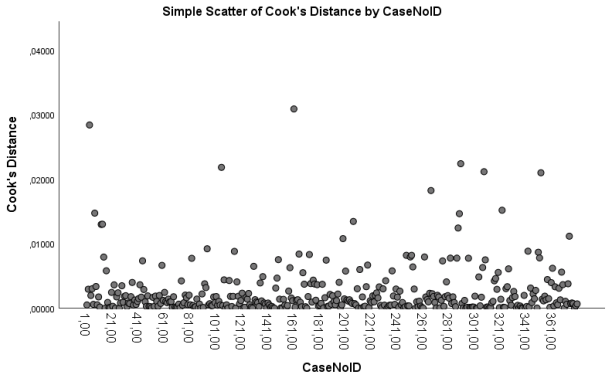


Figure 5 - Cook's Distance Travel Dislike

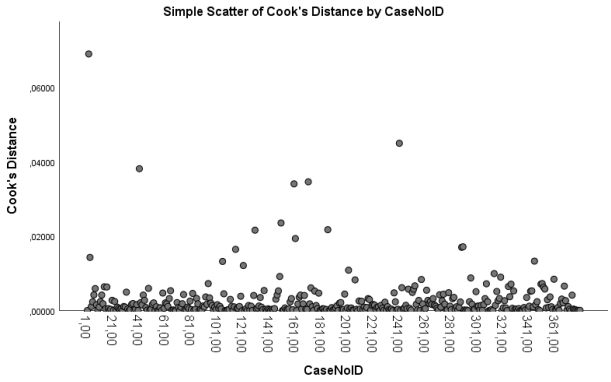


Figure 6 - Cook's Distance Pro-Environmental Policy

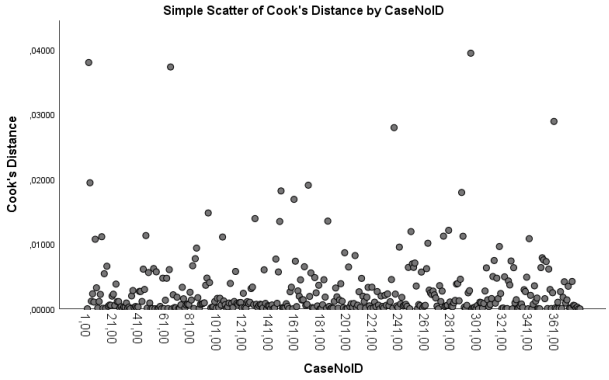


Figure 7 - Cook's Distance Commute Benefit

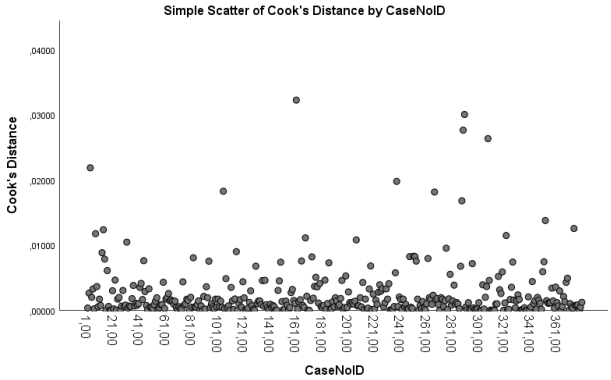


Figure 8 - Cook's Distance Travel Freedom

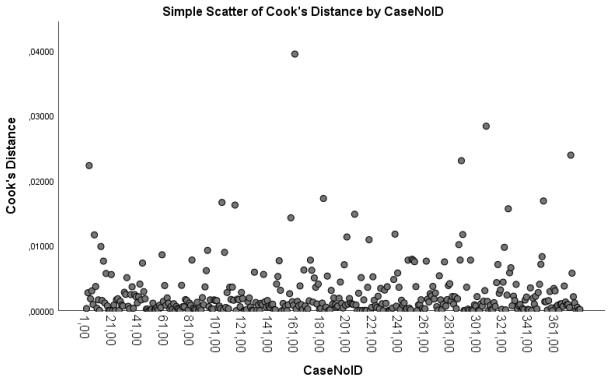


Figure 9 - Cook's Distance Adventure Seeking

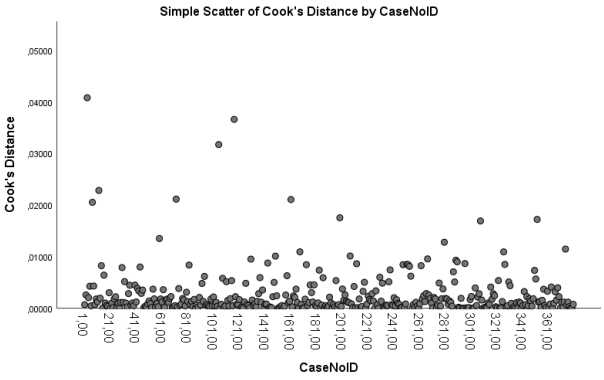


Figure 10 - Cook's Distance Organizer

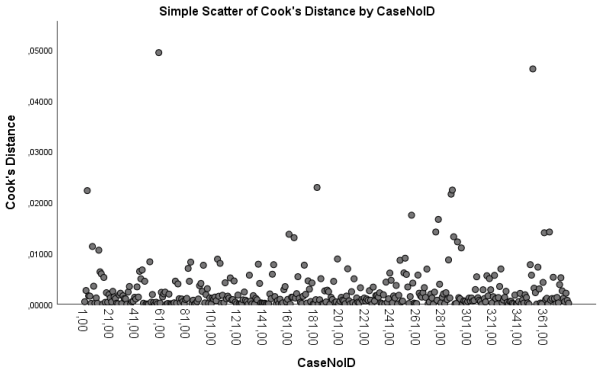


Figure 11 - Cook's Distance Calm

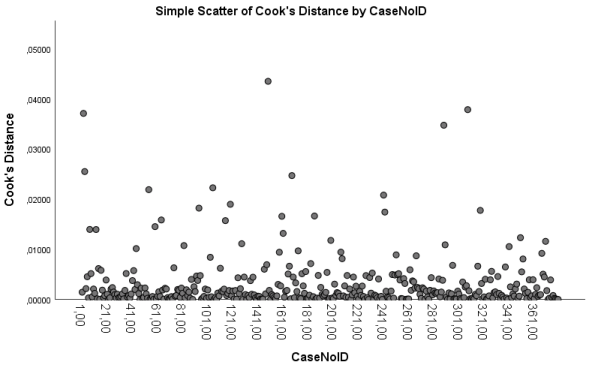


Figure 12 - Instrumental

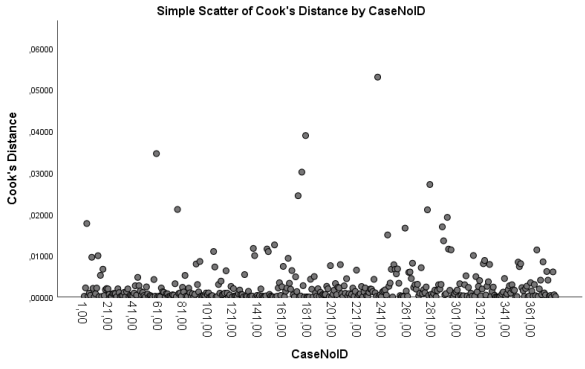


Figure 13 - Cook's Distance Symbolic

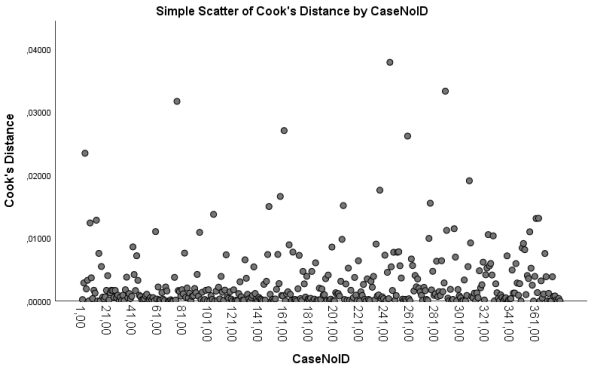


Figure 14 - Cook's Distance Affective

9.6.2. Multicollinearity Hypothesis Testing

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	TravelFreedom	,142	7,040
	CommuteBenefit	,316	3,160
	ProEnvironmentalPolicy	,356	2,813
	TravelDislike	,126	7,923
	Calm	,495	2,021
	Organizer	,449	2,226
	Affective	,576	1,735
	Symbolic	,470	2,127
	Instrumental	,736	1,359

AdventureSeeking	,299	3,346

a. Dependent Variable: AdoptionRate