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AN EMPIRICAL STUDY ON THE RELATIONSHIP BETWEEN BENEFITS AND INTENTION TO PURCHASE ELECTRIC VEHICLES

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Abstract

India's Government and people both seem to be placing more emphasis on environmental safety. On the other hand, transport is regarded as a movable source of pollution. Fossil fuel consumption in transport is responsible for the great majority of urban air pollution and approximately one-sixth of global greenhouse gas emissions (Qian & Yin, 2017). The rising usage of fossil fuel-powered cars has a detrimental effect on the environment as well as human health, leading to numerous fatal diseases. However, it has been noted that the use of electric cars (EVs) could be a useful strategy for lowering carbon emissions from the transportation industry (Wang et al., 2017). The study's objectives were to determine how the use of EV technology affected the growth of sustainable businesses and to examine respondents' attitudes about EVs. An empirical study was conducted to examine respondents' perceptions. The data were gathered using purposeful sampling. 116 respondents in total are interviewed. To gather the data, a systematic questionnaire was created. The data analysis process makes use of a variety of instruments. The study's primary research was conducted. Despite the need for further analysis of the other parameters, it was shown that subsidy is highly connected with decreased carbon emission. The respondents had no knowledge of carbon credit programmers. It was observed that as the price of oil rises and respondents are granted exemption from toll and parking fees, their intention to purchase electric vehicles also rises.

Keywords: *Benefits, Electric Vehicles, Intention to Purchase, Carbon Emission, Subsidy*

INTRODUCTION

Globalisation has solved many of the world's trade problems. Globalisation has sparked numerous partnerships that have helped the nation's economy grow. Even transportation activities have been impacted by globalisation; the volume, scope, and intensity of these activities have altered, creating a mutual dependence across many businesses. However,

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the carbon emissions of the vehicle were being highlighted by environmental concerns. The ecological equilibrium is disrupted by poor emissions and climate change, which impacts both human health and living situations. As carbon and other gases are released, the air's purity slowly deteriorates, contributing to the greenhouse effect. 24 percent of greenhouse gas emissions come from only the transportation system.

This knowledge led to a strong desire to create electric cars (EVs) and promote a global green transportation system. Major problems like carbonization, ecological balance, commercialization, and technological innovation are all resolved by this transition.

The electric cars include those with electric drivetrains, battery-powered cars, hybrid EVs, and fuel cell-powered cars. The goal of sustainable development is to support the long-term health of the ecosphere through both ecological and economic means. Regarding policy, upstreaming and waste management, supply chain bottlenecks, etc., the adoption of electric vehicles is rather difficult.

Numerous researchers have looked into the impact of EVs. Patents, prototype counts, research and development, fuel price economy subsidies, social impact, and financial investment are all part of the commercialization and development process of this electric vehicle sector. Studies on electric vehicles (EVs) examine particular aspects of the market. Numerous researchers have noted technological innovation in manufacturing, etc. The scientometrics-based approach used by the electric vehicle (EV) business deals with problems including complexity, multiformity, and uncertainty, among others.

The ability of the industry's stakeholders, including the public, suppliers, and governments, to remain dedicated and actively involved in developing the sector's future was crucial to the sector's success. Corporate governance, corporate social responsibility, mergers and acquisitions, and other related topics are still not being handled by the EV business. The system's development scenario aims to investigate the motivations behind EVs. Environmental issues, energy security, business strategy, and acquisitions are listed as the driving forces.

REVIEW OF LITERATURE

One of the most crucial methods for reducing pollution and boosting sustainability, according to research, is the use of electric vehicles (EV). According to Adnan et al. (2017), electric vehicles can encourage cleaner, greener economies throughout the world and lower pollution. There has been increasing awareness among the people about the harmful repercussions and human costs of fossil fuel powered vehicles. However, in addition to consumer environmental knowledge, preferences, and aspirations, there are other factors driving the adoption of electric vehicles (Adnan et al., 2017; Dash, 2021). Government support, economic policies, environmental advantages, psychological needs of people, and demographic concerns are some of the factors that affect the adoption of EVs (Chu et al., 2019; Dash, 2021; Naushad, 2018; Schuitema et al., 2013). However, according to Chu et al. (2019) and Khurana et al. (2020), attitude is the most significant element in determining whether someone buys an electric vehicle. Although attitudes

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towards a goal can express both positive and negative energy (Khurana et al., 2020), there are a few factors that are commonly present and support a positive outlook on EV adoption.

Government financial and non-financial incentives work best as motivators for people to purchase electric vehicles for transportation. (Bjerkan et al., 2016; Quak et al., 2016). Additional financial incentives, adaptable legislation that encourages speedy adoption, and cheap taxes on electric vehicles are all factors that can hasten the adoption of electric vehicles (Hertzke et al., 2018; Jin et al., 2014). However, research by Bjerkan et al. (2016) and Khurana et al. (2020) has shown that monetary incentives are the factor that has the most influence on people's attitudes towards adopting EVs. According to surveys, consumers are more likely to purchase electric vehicles if they believe the cost would be lower. Businesses find it difficult to maintain an affordable pricing without incentives (Mersky et al., 2016; Quak et al., 2016). Understanding how financial incentives impact how individuals form ideas on EV adoption is crucial.

The second factor influencing EV adoption is the accessibility of a reliable charging infrastructure. Consumers would require at first place sufficient infrastructure to purchase the electric vehicles, which shall aid in the adoption of the same on a larger scale (Adepetu et al., 2016; Javid & Nejat, 2017; Mersky et al., 2016). Consumers who purchase electric vehicles continue to place a high value on resources and technologies that are simple to acquire and use (Funke et al., 2019; Jin et al., 2014). Switching to EVs is highly suggested due to their cost and readily available charging infrastructure (Bjerkan et al., 2016; Khurana et al., 2020). Users and early adopters would require the provision of public charging stations to motivate them to switch over to electric vehicles from the fossil fuel powered vehicles.(Kumar & Alok, 2020). The improved infrastructure not only promotes EV adoption, but it also influences attitudes favourably (Khurana et al., 2020; Schuitema et al., 2013). A favourable attitude would be developed towards EV adoption if there is sufficient accessibility towards charging infrastructure. (Melliger et al., 2018).

More people might like to purchase EVs provided they come across increasing instances of people using EVs. It suggests that a person's relationships with their family, friends, and loved ones may influence their decision to make a purchase. Consumers consider the preferences of their family members before making a purchase. According to Ali and Naushad (2021) and Venkatesh and Davis (2000), buyers unquestionably prefer to spend their money on items that are regarded as socially acceptable. These factors will be taken into consideration by customers when choosing an electric vehicle. Due to the increasing level of public acceptability of electric vehicles, consumers will be more likely to purchase one. Customers want their friends, family, and other close individuals to admire and value the products they purchase. In order to continue making similar purchases in the future, customers are both urged and encouraged to do so (Chen & Tung, 2014). Social reinforcement has a big impact on whether individuals buy electric cars (Axsen et al., 2013). Social reinforcement has an impact on consumers' intentions and purchasing behaviour (Ali et al., 2020). Additionally, it supports the development of a favourable

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mindset towards the use of electric vehicles (Kim et al., 2014; Rasouli & Timmermans, 2016).

EV adoption has picked up pace as there has been increasing anxiety towards protection of the environment. (Quak et al., 2016). Knowing about new environmental problems and the potential effects they may have on the environment entails having environmental care... According to numerous surveys, people's decisions to purchase electric vehicles are heavily influenced by environmental considerations (Peters & Dütschke, 2014). Finally, having an environmental concern has a significant beneficial influence on the development of attitudes towards the adoption of EVs (Schuitema et al., 2013). When making purchases, customers put price first and consider cost to be a key indicator of a product's quality. Customers seek out reasonably priced products that are made ethically as a result. When the benefits outweigh the disadvantages, people are more inclined to purchase the products (Turrentine & Kurani, 2007). This is particularly true given the growing use of pricey electric cars. Given their high cost, some buyers might be put off from buying electric cars. Cost is the primary consideration when deciding whether to utilise an electric car in poor nations like India (Lieven et al., 2011).

The price of the initial purchase must also be considered (Lane & Potter, 2007). Financial factors are always put first when people decide to buy electric cars (Lebeau et al., 2013). Price is one of the primary factors that greatly modifies opinions about the adoption of EVs (Dash, 2021). The study's most important conclusion relates to the client's opinion on EV adoption. An individual's attitude towards a situation, a thing, or a collection of things is referred to as their attitude. It makes reference to a person's ideas, opinions, and beliefs. According to Eagly and Chaiken (2007), a person's attitude is their ongoing reaction to a good, service, or brand. Since electric vehicles are more environmentally friendly, consumers believe they help the nation project a clean, green image.

If the market wants to grow, it is vital to understand consumer behaviour. Negative qualities should be avoided and those that encourage buyers to purchase a product should be emphasised. According to research on EV adoption, there are numerous components accessible that can influence consumers' purchase decisions. However, previous research has shown that attitudes frequently have indirect impacts that are mediated by certain ways (Khurana et al., 2020; Ertz et al., 2016; Kim et al., 2014; Lebeau et al., 2013). A number of factors may greatly influence consumer adoption of EVs. According to research, consumers are frequently more inclined to connect their beliefs with behavioural intentions when other elements have a favourable impact on how they view sustainability (Li et al., 2017).

However, a significant amount of earlier research has examined a variety of adoption-related challenges for EVs, particularly at a time when governments all over the world are urging the rapid uptake of EVs in response to escalating environmental concerns. The rate of EV adoption in India is not at a level that is preferable. Cities in India are where it is most concentrated. Therefore, it's important to take into account why people choose to drive electric cars.

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NEED FOR THE STUDY

India has yet to make a name for itself in this industry even as EV technology is gaining popularity around the world. The Indian government has outlined a path for all-electric vehicles that is both ambitious and desirable. By 2030, 40% of private vehicles and 100% of public transportation vehicles might be all electric, presenting a game-changing option for shared, connected, and electric mobility (SIAM, 2017). By maximising the use of electric vehicles, this goal must be expanded in order to have a future of fully electric mobility. The study's objectives were to determine how the use of EV technology affected the growth of sustainable businesses and to examine respondents' attitudes about EVs. A challenge the nation currently faces is the requirement for thorough market research in order to accomplish this goal.

OBJECTIVES

1. To study the relationship between benefits and intention to purchase Electric Vehicles
2. To analyse the perception of the respondents about Electric Vehicles

Research Methodology: Empirical research was undertaken to analyse the respondent's perception. Purposive sampling was used to collect the data. A total of 116 respondents are interviewed. A structured questionnaire was developed to collect the data. Different tools are used for analysing the data. Primary research was undertaken for the study.

Hypothesis

H0: Increased subsidy and reduced carbon emission through use of EV's are not related to each other.

Study was conducted to know whether increase in subsidy will boost the sales of EV's is related to reduced carbon emission which could be a sustainable business model, correlational anlaysis was conducted.

Correlations

			Increased subsidy will boost sales	Reduced carbon emission will result in sustainable business model
Spearman's rho	Increased subsidy will boost sales	Correlation Coefficient	**1.000**	**.589****
		Sig. (2-tailed)	**.**	**.000**
		N	**116**	**116**
	Reduced carbon emission will result in sustatinable business model	Correlation Coefficient	**.589****	**1.000**
		Sig. (2-tailed)	**.000**	**.**
		N	**116**	**116**

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

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The correlation between the variables is 58.9% which expresses a moderate relationship between the two. Hence it could be said that through increased subsidy, sales might boost as EV's becomes more attractive and could be the source a sustainable business model. Moreover the significant value is less that 0.05 because of which it can be interpreted that there is a significant relationship between the two. Hence null hypothesis was rejected.

Various factors are responsible for being unaware of Carbon Credit. To know which factor is contributing majorly for this, 'Multiple Response Analysis' was conducted. The following table explains the most responsible factors which contribute for not being aware of the CC standards.

Reason_For_Unawareness_About_CC: Frequencies				
		Responses		**Percent of Cases**
		N	**Percent**	
$Reason_For_Unawareness_About_CC[a]	No Govt. initiative for awareness.	**24**	**6.5%**	**20.7%**
	No skill enhancement course on it	**24**	**6.5%**	**20.7%**
	Complications in understanding rule given by ICAI	**111**	**30.1%**	**95.7%**
	No media coverage	**104**	**28.2%**	**89.7%**
	No syllabus in Course	**106**	**28.7%**	**91.4%**
Total		**369**	**100.0%**	**318.1%**
a. Dichotomy group tabulated at value 1.				

From the above it is clear that 3 major factors are responsible for making the respondents not being aware of the concept. Out of total 116 respondents, 28.2% of the respondents perceive that it is highly complicated to understand the rules given ICAI. And 28.7% of the respondents perceive that since there is no much awareness created by media, they are not able to equip themselves well about CC and they also perceive that there should be an inclusion in the syllabus itself to have effective implementation of CC across the nation.

H_{02}: Willingness to purchase EV is independent of parking and toll exemption given on purchase of EV

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.908[a]**	**.825**	**.823**	**.65622**
a. Predictors: (Constant), Parking and toll exemption will result in purchase decision				
b. b. Dependent Variable: Willingness to purchase EV				

In a metropolitan city, parking and toll fee exemption matters. In order to know the influence of the same on purchase decision, Regression analysis was conducted. The R^2 is explaining 82.5% of influence on the DV which is willingness to purchase EV. In order to know whether this impact is significant or not, ANOVA test is conducted.

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ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	**231.210**	**1**	**231.210**	**536.912**	**.000[b]**
	Residual	**49.092**	**114**	**.431**		
	Total	**280.302**	**115**			
a. Dependent Variable: Willingness to purchase EV						
b. Predictors: (Constant), Parking and toll exemption will result in purchase decision						

The significance value is less than 0.05, hence the impact is significant enough to say that parking and toll exemption will influence the purchase decisions and reject the null hypothesis.

H_{03}: Increase in oil price and Purchase decisions of the respondents are not related to each other

Correlations				
			Increase in oil price is directly correlated with purchase of EV's	Willingness to purchase EV
Spearman's rho	Increase in oil price is directly correlated with purchase of EV's	Correlation Coefficient	**1.000**	**.875****
		Sig. (2-tailed)	**.**	**.000**
		N	**116**	**116**
	Willingness to purchase EV	Correlation Coefficient	**.875****	**1.000**
		Sig. (2-tailed)	**.000**	**.**
		N	**116**	**116**
**. Correlation is significant at the 0.01 level (2-tailed).				

From the above, it is clear that there is a high level of correlation between the two. It is 87.5% which is sufficient to say that there is a high level of relationship between increasing oil price and the respondents EV purchase decisions. The significant value is also less than 5% which is sufficient to say that there is a high level of significant relationship between the two variables. The null hypothesis was rejected.

FINDINGS

The goal of the study was to comprehend how salaried personnel would perceive the influence of EV technologies on sustainable business development. Utilising electric vehicles is vital to achieve the sustainable development goals. The carbon emission is reduced as a result. Consequently, a study was done to determine, from the respondents' viewpoints, the elements that influence EV purchase decisions. To analyse the same phenomenon, other hypotheses were created.

The government offers subsidies for EV purchases. A correlational analysis was done to see whether this incentive is associated with decreased carbon emission from replacing

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petrol or diesel—both of which contribute to carbon emission—with EVs. The moderate link between the two led to the conclusion that other elements must be considered in addition to subsidies to fully support the move to electric vehicles. However, the connection was substantial enough. The null hypothesis was thus disproved.

As a result of rising carbon emissions, businesses have the option of purchasing carbon credits to promote emission reduction. Multiple answer analysis was carried out to determine whether the respondents are aware of this notion or not. They gave a number of explanations for why they were unaware of carbon credits. The respondents mentioned that difficulties in grasping the topic and enough media coverage in addition to its inclusion in the curriculum were major causes.

Parking and toll fee exemptions matter in a big metropolis. For the same, a hypothesis was formed. Regression analysis was done to determine the impact of the same on buying decisions. The R2 accounts for 82.5% of the influence on the DV, or readiness to buy EV. The significance value resulted in the rejection of the null hypothesis. Correlational research was carried out to investigate whether the decision to acquire an EV and the rise in oil prices are related. The two variables had a strong and significant association. Therefore, the null hypothesis, according to which an increase in oil prices is connected with the decision to buy an EV, was rejected. The desire to purchase EVs rises in tandem with rising oil prices.

CONCLUSION

India wants to change its auto sector by putting an emphasis on e-mobility, thus it must address the information gap as well as the lack of understanding of potential obstacles to EV adoption. It is vital to identify and categorise these barriers into different groups because there has only been a little amount of research in this area done in India. This study shall benefit public organizations, businesses, government as well as suppliers and manufacturers of the automobile sector, regarding green business solutions, e-mobility and sustainability in the form of various solutions. Adoption hurdles are needed to be overcome by developing and offering methods. When these obstacles are removed, more consumers will be drawn to electric vehicles. Additional research might concentrate on the impact of the parameters found in this study as well as the acceptance of new technologies while purchasing electric automobiles.

References

1. Adepetu, A., Keshav, S., & Arya,V. (2016). An agent-based electric vehicle ecosystem model: San Francisco case study. Transport Policy, 46, 109-122. https://doi. org/10.1016/j.tranpol.2015.11.012
2. Adnan, N., Nordin, S. M., Rahman, I., & Amini, M. H. (2017). A market modeling review study on predicting Malaysian consumer behavior towards widespread adoption of PHEV/EV. Environmental Science and Pollution Research, 24(22), 17955-17975. https://doi.org/10.1007/s11356-017-9153-8
3. Ali, I., & Naushad, M. (2021). Determinants of customer satisfaction in online grocery shopping. International Journal of Data and Network Science, 5(3), 383-390. http://dx.doi.org/10.5267/j.ijdns.2021.5.005

ISSN: 1673-064X
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DOI 10.17605/OSF.IO/ETGFJ

4. Ali, I., & Naushad, M. (2022). A Study to Investigate What Tempts Consumers to Adopt Electric Vehicles. World Electric Vehicle Journal, 13(2), 26. https://doi.org/10.3390/wevj13020026
5. Ali, I., Naushad, M., & Sulphey, M. M. (2020). Do trust and corporate social responsibility activities affect purchase intentions? An examination using structural equation modeling.
6. Innovative Marketing, 16(4), 62-73. http://dx.doi.org/10.21511/im.16(4).2020.06.
7. Bell, E., Bryman, A., & Harley, B. (2018). Business research methods. Oxford University Press
8. Chen, M.-F., & Tung, P.-J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. International Journal of Hospitality Management, 36,221-230. https://doi.org/10.1016/j.ijhm.2013.09.006
9. Dash, A. (2021). Determinants of EVs adoption: A study on green behavior of consumers. Smart and Sustainable Built Environment, 10(1), 125-137. https://doi.org/10.1108/SASBE-02-2019-0015
10. Egnér, F., & Trosvik, L. (2018). Electric vehicle adoption in Sweden and the impact of local policy instruments. Energy Policy, 121, 584-596. https://doi.org/10.1016/j.enpol.2018.06.040
11. Fenger, J. (1999). Urban air quality. Atmospheric Environment, 33(29), 4877-4900. https://doi.org/10.1016/S1352-2310(99)00290-3
12. Funke, S. Á., Sprei, F., Gnann, T., & Plötz, P. (2019). How much charging infrastructure do electric vehicles need? A review of the evidence and international comparison. Transportation
13. Research Part D: Transport and Environment, 77, 224-242. https://doi.org/10.1016/j.trd.2019.10.024
14. Green, E. H., Skerlos, S. J., & Winebrake, J. J. (2014). Increasing electric vehicle policy efficiency and effectiveness by reducing mainstream market bias. Energy Policy, 65, 562-566. https://doi.org/10.1016/j.enpol.2013.10.024
15. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). Multivariate data analysis. Upper Saddle River, NJ: PrenticeHall.
16. Hertzke, P., Müller, N., Schenk, S., & Wu, T. (2018, May 4). The global electric-vehicle market is amped up and on the rise. McKinsey Center for Future Mobility. Retrieved from https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-global-electricvehicle-market-is-amped-up-andon-the-rise
17. Javid, R. J., & Nejat, A. (2017). A comprehensive model of regional electric vehicle adoption and penetration. Transport Policy, 54, 30-42. https://doi.org/10.1016/j.tranpol.2016.11.003
18. Khan, M. S., Saengon, P., Alganad, A. M. N., Chongcharoen, D., & Farrukh, M. (2020). Consumer green behaviour: An approach towards environmental sustainability. Sustainable Development, 28(5), 1168-1180. https://doi.org/10.1002/sd.2066
Kim, J., Rasouli, S., & Timmermans, H. (2014). Expanding scope of hybrid choice models allowing for mixture of social influences and latent attitudes: Application to intended purchase of electric cars. Transportation Research Part A: Policy and Practice, 69, 71-85. https://doi.org/10.1016/j.tra.2014.08.016
19. Kline, R. B. (2006). Principles and Practice of Structural equation modeling. Guilford Press
20. Lane, B., & Potter, S. (2007). The adoption of cleaner vehicles in the UK: exploring the consumer attitude-action gap. Journal of Cleaner Production, 15(11-12), 1085-1092. https://doi.org/10.1016/j.jclepro.2006.05.026

ISSN: 1673-064X
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DOI 10.17605/OSF.IO/ETGFJ

21. Li, W., Long, R., Chen, H., & Geng, J. (2017). A review of factors influencing consumer intentions to adopt battery electric vehicles. Renewable and Sustainable Energy Reviews, 78, 318-328. https://doi.org/10.1016/j.rser.2017.04.076
22. Melliger, M. A., van Vliet, O. P., & Liimatainen, H. (2018). Anxiety vs Reality-Sufficiency of battery electric vehicle range in Switzerland and Finland. Transportation Research Part D:
23. Transport and Environment, 65,101-115. https://doi.org/10.1016/j.trd.2018.08.011
24. Moons, I., & De Pelsmacker, P. (2012). Emotions as determinants of electric car usage intention. Journal of Marketing Management, 28(3-4), 195-237. https://doi.org/10.1080/0267257X.2012.659007
25. Naushad, M. (2018). A study on the antecedents of entrepreneurial intentions among Saudi students. Entrepreneurship and Sustainability Issues, 5(3), 600-617. https://doi.org/10.9770/jesi.2018.5.3(14)
26. Peters, A., & Dütschke, E. (2014). How do consumers perceive electric vehicles? A comparison of German consumer groups. Journal of Environmental Policy & Planning, 16(3), 359-377. https://doi.org/10.1080/1523908X.2013.879037
27. Quak, H., Nesterova, N., & van Rooijen, T. (2016). Possibilities and barriers for using electricpowered vehicles in city logistics practice. Transportation Research Procedia, 12, 157-169. https://doi.org/10.1016/j.trpro.2016.02.055.
28. Sarstedt, M., Hair Jr, J. F., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher order constructs in PLS-SEM. Australasian Marketing Journal (AMJ), 27(3), 197-211. https://doi.org/10.1016/j.ausmj.2019.05.003
29. Sourkounis, C., & Einwächter, F. (2011). Smart charge management of electric vehicles in decentralized power supply systems. 11th International Conference on Electrical Power Quality and Utilisation. Lisbon, Portugal.
30. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance
31. Model: Four longitudinal field studies. Management Science, 46(2), 169-332. https://doi.org/10.1287/mnsc.46.2.186.11926.
32. Werther, B., & Hoch, N. (2012). E-mobility as a challenge for new ICT solutions in the car industry. In R. Bruni, & V. Sassone (Eds.), Trustworthy Global Computing. TGC 2011. Lecture Notes in Computer Science, 7173 (pp. 46-57). Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-30065-3_3