



CONSUMERS´ GREEN ATTITUDE TOWARDS TRANSPORT

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Abstract

A sustainable transport is an increasing trend among green consumers. The automobile industry seems to contribute to an acceleration of this trend. Green cars offerings and fast development of green solutions has been crucial. Eco-friendly transport became an important topic and the consumers are expected to change their behavior. This paper aims to present insights in the consumer´s motivations to be green.

Keywords: Consumers´ attitude, green behavior, green solutions, eco - friendly transport

1. INTRODUCTION

The automotive industry and generally the ways of transportation have been one of the most widely discussed topics, nowadays. In the context of the personal transport, there are different concepts as car-sharing, carpooling, ridesharing and many other. These trends are of high interest among young generation representing their lifestyle and worldview. That is a reason why many mobile apps, blogs and influencers´ channels are targeted on the youngsters and have been dealing with that attitudes [1]. The other trend is growing walkability, but it is mainly assumed to incentive of health [2], not in the context of green behavior. The health as a main attribute of walking is also confirmed by De Vos, Derudder, Van Acker and Witlox [3], another aspect is cheapness. The environmental friendliness is on the third place.

One significant study aimed on motivation to use cars was conducted by Steg [4], she revealed three basic incentives for car use - instrumental, symbolic and affective. Instrumental factors mean flexibility and convenience; symbolic provide social status and self-esteem; and affective factors are mainly about pleasure of driving. The results are clear - the symbolic and affective functions of a car are much more important for consumers. In the detail, affective factor is important mainly for younger generation and low-income group of respondents; symbolic aspect is relevant for men, especially if they have higher mileage. Finally, segment with positive car attitude motives is very complex - all three functions are significant for these respondents. The instrumental factor is determinative for people with negative car attitude [4].

De Vos, Derudder, Van Acker and Witlox [3] describe the classic motives for car using - flexibility, reliability, comfort, time saving, privacy, safety - all of these factors are instrumental according to Steg [4]. The only one mentioned affective function - relax - has the least representation. Steg [4] acknowledges that most studies show the instrumental function of car as a main factor. But results are different in her study, because she does not aim the research task too apparent, what enables better explanation of the symbolic-affective motives.

Three functions - instrumental, symbolic and hedonic (the last corresponds to affective) - of car is also used by Schuitema, Anable, Skippon and Kinnear [5], but their study is aimed on electric vehicles only. It is confirmed that the instrumental factors are important for potential adoption of electric vehicles, but it is just indirect relation. The instrumental functions precede the hedonic and symbolic functions, which are directly connected to purchasing behavior. It is presented on the example of mileage - full electric vehicles have lower instrumental function in this context than plug-in hybrid vehicles, and its finally affects hedonic and symbolic aspects [5]. According to some official business documentation electric vehicles have even 500 km mileage. But the real tests prove barely half of that. Even there was not used rapid acceleration or inconsistent driving style, but on the other hand the air-condition was turned on in the recent test [6]. As well-known from previous tests, the



air-conditioning has impact on the mileage and this effect is more visible on the electric vehicles, which have shorter mileage than vehicles with internal combustion engines.

The sustainable consumers' transport consists from many factors. The main interest of this paper is followed by behavior of Czech consumers when they use their cars. The research was focused on frequency of a car use followed by the most important motivators and use of the air-conditioner in a car. These factors were matched with the level of respondents' education. The study presents result of the research carried out in the Department of Marketing and Management at the SKODA AUTO University in 2018. The research was designed to map the green behavior of the Czech population.

2. CZECH POPULATION AND SUSTAINABLE TRANSPORT

Sustainable transport is an increasing trend in CSR of business and green consumers, too. Consumers tend to share cars, use public transport and be eco-friendly in using cars. Lower emissions, consumption and reduction of using a car are the aims of modern consumers. Green aspects in consumers' life play an important role to feel socially responsible and to follow new trends. Following text describes these tendencies in the Czech population and communicates new findings about Czech consumers' green behavior.

2.1. The methodological bases

In order to study consumers' green attitude towards transport, an online survey was employed. It was conducted via internet at the beginning of June 2018 through Trendaro, which is an application operated by a professional survey company called Behavio Labs, s.r.o. A total of 1,000 respondents were chosen so that a representative sample of the Czech population was obtained (i.e. the proportion of women and men in the sample is the same as the proportion of women and men in the Czech population; and the same is true for other socio-demographic characteristics that were observed. Besides gender these were age, education and the size of respondents' hometown).

2.2. Results

In one of the questions the respondents were asked how often they use a car (any type of a car, even if they are not driving) with four possible answers: daily (47.3 %), at least once a week 31.1 %, at least once a month (11.1 %), less frequently or never (10.5 %). It turns out that the answers are different for people with different educational level (p-value of the corresponding Chi-square test is 1.2×10^{-5}). **Table 1** summarizes the resulting percentages, we can notice that people with basic education tend to use a car less frequently than people with higher educational level.

Table 1 Usage of a car depending on educational level of respondents.

	Basic	Secondary (without graduation)	Secondary (with graduation)	Tertiary	Altogether
Daily	33 %	49 %	50 %	43 %	47 %
Weekly	35 %	23 %	31 %	40 %	31 %
Monthly	15 %	11 %	11 %	11 %	11 %
Less frequently	17 %	17 %	8 %	6 %	11 %

People who answered that they use a car monthly (111 respondents) and people who answered that they use a car less frequently (105 respondents) were asked why they do not use a care more often. Out of these 216 people, 47 (22 %) said that using a car is expensive and they try to save money, 40 (19 %) said that using a



car is not ecological and they try to save the environment, and 174 (81 %) said that they have another reason why they do not use a car more often.

Another question asked what are the purposes for using a car and the respondents could pick from the following answers: shopping (83 %), picking up children or other family members (40 %), commuting (54 %), vacation travelling (54 %), weekend trips (69 %), job (23 %).

Again, it was studied whether there is any relation between these answers and education level of respondents. There seems to be no difference in the answers as far as shopping, commuting and job is concerned (p-values of the corresponding Chi-square tests are 0.0728, 0.8558 and 0.0683).

As for picking up children and other family members there is a significant difference in the answers depending on the education level (p-value of the corresponding Chi-square test is 0.00589). **Table 2** summarizes the resulting percentages, we can notice that the higher education level is the higher the percentage of using a car for picking up children and other family members is.

Table 2 Usage of a car for picking up children and other family members depending on education level of respondents

	Basic	Secondary (without graduation)	Secondary (with graduation)	Tertiary	Altogether
Not using	79 %	66 %	58 %	55 %	60 %
Using	21 %	34 %	42 %	45 %	40 %

As for vacation travelling there is a significant difference in the answers depending on the education level (p-value of the corresponding Chi-square test is 1.6×10^{-7}). **Table 3** summarizes the resulting percentages, we can notice that the higher the education level is the higher the percentage of using a car for vacation travelling is.

Table 3 Usage of a car for vacation travelling depending on the education level of respondents

	Basic	Secondary (without graduation)	Secondary (with graduation)	Tertiary	Altogether
Not using	63 %	57 %	46 %	32 %	46 %
Using	37 %	43 %	54 %	68 %	54 %

As for weekend trips there is also a significant difference in the answers depending on the education level (p-value of the corresponding Chi-square test is 1.4×10^{-9}). **Table 4** summarizes the resulting percentages, we can notice that the higher the education level is the higher the percentage of using a car for weekend trips is.

Table 4 Usage of a car for weekend trips depending on the education level of respondents

	Basic	Secondary (without graduation)	Secondary (with graduation)	Tertiary	Altogether
Not using	53 %	42 %	30 %	17 %	31 %
Using	47 %	58 %	70 %	83 %	69 %

Another question was how often the respondents use air-conditioner in a car with the following answers: never (232, i.e. 26 % of answers), only if I cannot open the window such as on a highway etc. (314, i.e. 35 % of



answers), I turn it on whenever it is hot inside a car (309, i.e. 35 % of answers), I do not turn it off, it runs all the time (40, 4 % of answers). Note that 105 respondents did not answer this question.

It turns out that there is a significant difference in the answers depending on education level. (p-value of the corresponding Chi-square test is 1.7×10^{-7}). **Table 5** summarizes the resulting percentages, we can notice that respondents with tertiary education tend to use the AC more often than people with lower level of education.

Table 5 Usage of AC in a car depending on the education level of respondents

	Basic	Secondary (without graduation)	Secondary (with graduation)	Tertiary	Altogether
Never	30 %	31 %	27 %	17 %	26 %
Occasionally	33 %	33 %	34 %	40 %	35 %
Sometimes	38 %	34 %	37 %	31 %	35 %
Always	0 %	2 %	2 %	11 %	4 %

Respondents who never use air-conditioning in a car (that means 232 respondents) were asked what is their reason for not using AC. 56 (24 %) said that using of AC increases consumption and therefore is expensive, 29 (13 %) said that using of AC is not ecological and they save the environment, and 182 (78 %) said that they have another reason.

Respondents who occasionally use air-conditioning in a car (that means 314 respondents) were asked what is their reason for not using AC more often, 172 (55 %) said that using of AC increases consumption and therefore is expensive, 97 (31 %) said that using of AC is not ecological and they save the environment, and 149 (47 %) said that they have another reason.

2.3. Discussion

Motivators of car use are instrumental, such as speed, flexibility, and convenience. But there are other motives playing an important role. Driver and owner of a car feels the exercising power, and the car supports social status [4,7]. Social status is significant for people with higher education. They earn much more money than people with lower level of education and they tend to show their power through the car. Education is one of the most important background factors affecting behavior [8], including attitudes to the transport. According to findings of this study, the lowest percentage of daily car use have respondents with elementary education. People with the higher education tend to commute much more than people with lower education. Therefore, most of higher educated people drive the car on daily or weekly basis. The use of car is connected to many motivators and it is necessary to describe more influences on transport behavior. But, the results of presented research show the continuity in the level of education and use of the car.

People are more environmentally educated and motivated to reduce a car use in short trips [9]. They can substitute driving a car in short trips for cycling. Drivers perceive the negative impact of their behavior and tend to use a car less frequently in other motivation to travel, too [10,11]. The reasons are price and environmental protection accordingly as research results show. The respondents use their car less frequently because that it is expensive and the second aspect is the interest to behave more ecological.

The ecological aspect becomes more and more important. But, the behavior in the context of car use appears to be more and more influenced by the lifestyle. Mothers use their car more frequently to pick up the children from the school. Picking up children is the motive for driving for 40 % of respondents. The higher education the higher percentage of use a car for picking up is. The lifestyle influences commuting and chosen means of transport. 54 % of respondents use the car for commuting and the continuity with education was confirmed. People with higher education and higher salaries tend to commute by a car. It is necessary to focus on feelings

of moral obligation to make a difference. Then it is possible to expect reducing the use a car [12]. The governments should communicate the importance of socially responsible and/or eco-friendly behavior, too.

The main motive for driving is shopping. 83 % of respondents use a car for shopping. There is the tendency to do week-shopping in supermarkets or hypermarkets in the Czech Republic. The need for use a car is significant. Vacation travelling or weekend trip is frequently stated motives for driving. Presented results confirmed the continuity between education and use a car for travelling.

Higher educated people use air-conditioning much more than people with basic education. The reason not to use AC is higher fuel consumption. People with lower education tend to save money and to think much more about the fuel consumption. Generally, the higher the education is the more frequent use of a car or AC is.

3. CONCLUSIONS

The paper presents the result of the research focused on green behavior of the Czech consumers with the aim to reveal motivation for a car use. The main area of interest was to find out why and when respondents are using their cars and if they use air-conditioning in the cars. These two aspects are the most important factors influencing the air pollution. Obviously, the frequency of car use and air-conditioning of car interior are the main air-polluters.

We have found that most of respondents use their cars on weekly or daily bases. The continuity between frequency of car use and education was confirmed as only 33 % of low educated people used a car daily, higher educated population did it more often. The found that reasons for not using car were mainly costs not the environmental protection.

The most noticeable motive for driving was shopping as 83 % of respondents used the car for their shopping. The shopping was followed by weekend trips (69 %), commuting and vacation travelling (54 %). The findings confirm the continuity between education and the motivation as the level of education correlates with frequency of driving intensity.

Another observed aspect was the use of air-conditioning. Responses were contingent on education, too. People with lower level of education tended more not to use AC ever. The reason why was higher fuel consumption and related costs not environmental respectfulness.

To conclude, our findings confirmed that higher, even the highest, education does not mean greener behavior automatically. Our previous research [13] showed that highly educated people separate waste, buy green products, think about sustainable packaging etc. more often because they are well informed about environmental protection. Nevertheless, in their driving behavior they did show inferior preparedness for being green. They drive on daily or weekly basis, they use their cars for frequent shopping, weekend trips, commuting or vacation trips, and switch on the air-conditioning more often than other respondents' groups. They need individual transport because of their jobs and lifestyle. This group of people shows enormous potential for being green even in their "driving life". Their level of education promises that they are among innovators or early adopters. Even now, they are buying new more ecological cars and are prepared to buy electric cars in the near future.

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