

TOYS FOR CARPET KNIGHTS: URBAN TRAVEL BEHAVIOUR AND ATTITUDES IN THE CITY OF CLUJ

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Abstract. This is an exercise in studying travel behaviour among morning commuters within the metropolitan area of Cluj, Romania, as well as their attitudes towards urban transport. We have designed and conducted an on-line survey amongst two major occupational groups, namely private and state sector employees. This survey concentrated upon the social and economic characteristics of these two commuter groups, while taking into account existing structural and functional patterns within the built environment. We have received answers that point to a noticeable difference between private and state sector employees, but the overall results are deeply worrying: Travel behaviour in Cluj is surprisingly immune to common sense. It is, however, deeply indebted to personal comfort. Hence, considering current development patterns affecting Romanian cities, this research exercise critically examines travel behaviour and calls for a paradigm shift, which would hopefully lead to more effective transport policies.

Key words: commuting, occupational groups, urban transport, online survey, Romanian cities.

1. Introduction

It is now more than a quarter century since Romania started its cumbersome transformation process towards a market-oriented democracy (Pasti, 1995, 2006; Gallagher, 2005, 2009). During this entire period, Romanian cities were at the heart of social and economic change. Thus, after an initial period of upheaval, they started experiencing almost continuous economic growth. One of the main consequences of this newly found financial prosperity was a

dramatic increase in car ownership, which, in turn, accelerated an incipient urban sprawl process that very soon became rampant (Toşa *et al.*, 2015a; Soaita, 2013).

The city of Cluj has experienced this phenomenon acutely over the past decade, with increasing real estate pressure, an intense blossoming of economic activities and a gradual improvement in transportation infrastructure being the main factors

behind its fair share of urban sprawl (Suditu *et al.*, 2010).

1.1. Background

Hence, even though Romania's accession to the EU meant increasing the effectiveness of the road transportation system on a national level (Robinson and Stanciu, 2003; Robinson, 2006), the well-known 'predict and provide' policies, such as road widening and traffic flow optimisation, have led to anecdotal traffic congestion and associated environmental externalities, especially within cities (Beca and Cadar, 2013; Toșa *et al.*, 2015b).

It is against this background that all major Romanian municipalities were compelled to conduct surveys and to develop sustainable urban mobility plans (SUMP), in order to be able to absorb EU funds, thereby following the European Union (EU) regulation concerning the *Urban Mobility Package*. The constituent municipalities of the Cluj-Napoca Metropolitan Area (CNMA) complied, and duly commissioned a comprehensive Sustainable Urban Mobility Plan (SUMP-CN) (Ove Arup and Partners, 2015).

This plan was released for public debate in November 2015. Unsurprisingly, its main priorities were accessibility, driven by social equity, and environmentally sustainable economic efficiency. Glamorous wordings indeed, as befits planning documents issued these days. Perusing the list of recommendations within the plan, we became curious whether this was merely empty rhetoric, or whether the plan had addressed matters related to mobility properly.

However, in order to decide upon the relevance of these recommendations, we need a preliminary exercise. We therefore find it timely to conduct a qualitative

analysis of travel behaviour patterns and to examine attitudes among different commuter groups. This exercise might also prove beneficial to fellow researchers, who regard the case of Cluj as a particularly rewarding field of enquiry. We shall then return to a critical appraisal of the SUMP-CN recommendations in a future article.

This paper is structured as follows: The remaining paragraphs within this section contain a brief, albeit critical, historical profile of Cluj, which mainly concentrates upon matters related to the built-up area, the housing stock and the evolution of the public transport system. Although rarely mentioned, these few facts provide valuable insights into current development trends, thereby rendering them more transparent.

The ensuing section is methodological in nature. It explains the research strategy, the data collection process and the analysis proper. It is followed by Section 3, which presents the results we have obtained, in terms of modal share, their spatial underpinnings, as well as the behavioural profile of morning commuters.

The paper concludes with an account of the findings and their policy implications, while at the same time sketching avenues for future research.

1.2. An historical overview

During socialist times, cities across Central and Eastern Europe were compact (Hirt, 2013). Romania has proved to be no exception to this rule, with the Systematisation Law of 1974 drastically curbing urban growth (Olteanu, 2013). In the particular case of Cluj, the built-up contours became fixed via the Government Ordinance 120/1976.

They were to remain unchanged until the year 2000.

However, after the fall of the communist regime, urban sprawl became the dominant trait of urban development. Against a background of rapid social and economic changes, this process has led to changes within both land-use patterns and transportation system dynamics (*cf.* Sykora, 2007).

As such, urban sprawl soon became manifest at all levels in Romania, thereby triggering investigations at local, regional and national levels (*cf.* Suditu *et al.*, 2010). Regrettably though, a consistent and coherent transportation systems perspective is currently lacking, with quantitative and qualitative studies being rather scarce (Boitor *et al.*, 2013).

1.2.1. Land-use and housing stock

At the dawn of the market-oriented democracy in 1990, the city of Cluj was one of the main industrial centres in Romania. It also ranked only second after Bucharest as an academic and medical centre.

Its urban form displayed the following quantitative profile: The most visible exponents of the socialist housing stock were the four storey high blocks of flats, which amounted to some 70% of the entire housing stock. Furthermore, the built-up area in Cluj comprised 3,987 hectares, i.e. more than two times less than it is today. Within city limits, the public transport system was the main commuting mode for everyone (Mitrea, 1998). All in all, this was an image of a highly compact city.

These figures are relevant in pointing to the hallmarks of socialist planning. Hence, the consumption of housing

within socialist states was restricted in accordance with national standards, which set a maximum living space per person and household, by taking into account the prevailing household structure and size. More importantly, a household could only own one dwelling and had limited choice over the type and size of the units, their location and their quality (Tsenkova, 2008). This rationing process led to high savings within the built-up area.

This is also the main psychological reason why, after 1990, residents were driven by the desire to switch from apartments to single-family homes. Hence, the city of Cluj experienced a real estate boom, which became rampant between the years of 2005 and 2008. It is precisely this phenomenon that led to a sharp increase in per capita consumption of built-up area, which spiked from 127.9 to 292.9 m²/person. As a consequence, the built-up area rose to 9,508 ha in 2014.

Furthermore, due to the huge disparity in size and potential between the city core and the other components of the metropolitan system, migration of both population and economic activities from the core towards the hinterlands sustained this on-going process of urban sprawl (*cf.* Soaita, 2013).

Against this background, Fig. 1 displays the population percentile changes within the metropolitan area of Cluj, with respect to the first population census after the regime change of 1989. Although a constant population growth rate characterised the city throughout the period covered by the censuses, an intensive migration soon became manifest towards the hinterlands, along the Someş River.

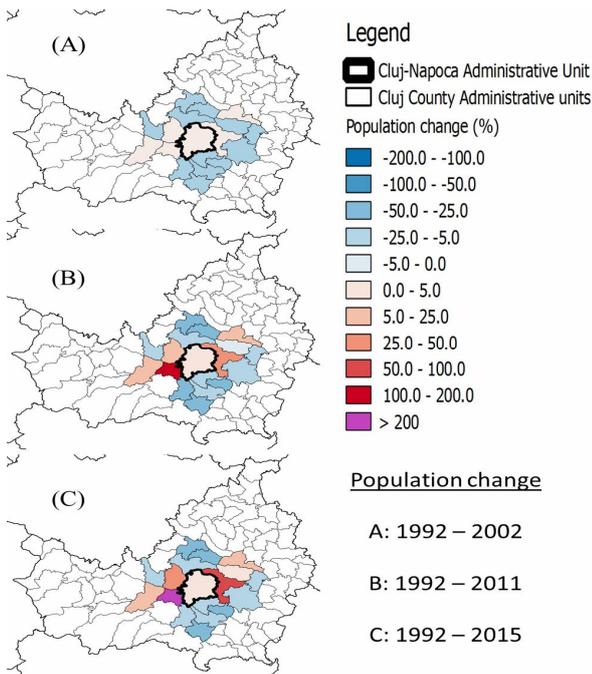


Fig. 1. Population distribution over time within CNMA

This uncontrolled urban expansion hindered local authorities in providing appropriate infrastructure and vital services to the migrating population, such as suitable road network, effective health services, and resilient public transportation (Ove Arup and Partners, 2015). Unfortunately, this state of affairs continues to this day.

1.2.2. Transportation system

The socialist public transport system in Cluj was geared towards connecting the high-density residential areas with the industrial platforms. Buses were the only vehicles operating within the public transport system until the introduction of trolleybuses in 1959. Increasing demand led to the introduction of a high capacity tramline in 1987.

Severe fuel rations and low car ownership entailed an extensive use of the public transport system. Hence, the elongated radial road network of Cluj

proved sufficient for the amount of existing traffic.

However, after the fall of the communist regime, the situation changed rapidly. Suffice it to say that the car fleet almost quadrupled between 1990 and 2016, rising from about 54,000 vehicles in 1990, to more than 200,000, in 2016. Against the background of an undersized growth of the road network, which only increased from 342 to 403 km during the same period, this remarkable rise in car ownership stifled the carrying capacity of the road network, while demanding an ever-increasing number of parking facilities.

Translated into an econometric perspective, Fig. 2 plots the overlap between the evolution in gross domestic product (GDP) within Cluj, expressed in purchasing power standard units (PPS) per inhabitant, and the concomitant deterioration in road network capacity. It is interesting to observe that the GDP (PPS/inhabitant) has reached approximately 65% of the European average value in 2013. Its growth translated most noticeably into an unparalleled rise in both motorised and non-motorised traffic. Hence, it is not difficult to understand why the city suffers from chronic parking deficiency.

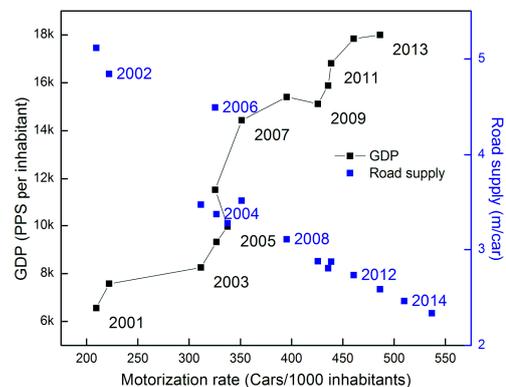


Fig. 2. Economic growth and mobility indicators

Parking on the road kerbside naturally followed, which, in turn, stifled the road network carrying capacity even further. In response, authorities counteracted the low levels of service through road widening and traffic flow optimisation, at the cost of both actual and perceived quality of pedestrian and bicycle spaces.

It is only recently that pedestrian friendly zones and bike-sharing system have been taken into account, albeit very timidly, thereby transforming them into a *pie in the sky* for concerned activists (ELTIS, n.d.).

2. Methodology

Travel behaviour research is usually scarce within post-socialist societies, with most available studies being exploratory in nature (*cf.* Bole and Gabrovec, 2014; Burgmanis, 2012; Pucher, 1999; Grime and Duke, 1996). A wider array of empirical studies concentrating upon the travel-to-work behaviour of government employees is available for some developing countries, motivated, no doubt, by the rapid economic growth and major demographic changes affecting them (Amoh-Gyimah and Aidoo, 2013).

Irrespective of their focus on developing or developed countries, authors usually draw their conclusions from field studies, which generally use disaggregated data that reflects travel behaviour patterns amongst different individuals (Commins and Nolan, 2011). This data then enters conditional logistic regression models, which reveal underlying factors affecting modal choice when commuting. Sometimes, the insights gained are complemented by qualitative research, in the guise of surveys directed at different categories of users (*cf.* Grzelishvili and Sathre, 2011; Jensen, 1999).

We have adhered to this type of research methodology only to a limited extent, mostly because of budgetary constraints. Nonetheless, we do hope that our findings will spark a renewed research effort amongst other scholars.

In the following sections, we shall present our research strategy, the data collection process and a general outline of the analysis proper. As we delved deeper into the subject matter, we quickly encountered vast swaths of uncharted territory. It is probably no mystery by now that Romanian data about mobility is notoriously scarce. When available, it is usually of a poor quality. Within such a context, research efforts have mostly remained shallow.

We must therefore stress at this particular point that our paper amounts to little more than a preliminary study. We shall return to this matter in the final section of the paper.

2.1. Research strategy

From the very beginning, we were very interested in gaining a deeper understanding of the following paradox: While congestion levels within the city become less and less tolerable, there seem to be more and more people in cars crisscrossing the city at every hour of the day. Hence, we wanted a clear answer to the following research question: What motivates people to use their privately owned cars for commuting, instead of relying more upon the public transport system?

At the core of our study was a web-based questionnaire, aimed at private and government employees, which comprised questions concerning travel behaviour, social and demographic characteristics, as well as attitudes

towards travel and the environment. The main idea behind the questionnaire was simple enough: To see how employees commuted during the morning rush hours, and to grasp their reasons for choosing a particular mode of transport.

In academic parlance, we began looking closer at modal share, travel behaviour and attitudes. In order to test whether these attitudes were rational, we checked them against unbiased measurements. Hence, we mapped distances between each respondent's home and the nearest public transport stop on his or her commuting route towards the workplace, as well as the Euclidean distances between home and work for each respondent. The results proved remarkable.

2.2. Data collection and analysis

Prior to delivering the questionnaire, we formulated official written requests to most of the administrative and government agencies within the city. We also sent e-mails to the large private companies working in the city. While most of the government institutions approved the distribution of the questionnaire via the employees' e-mail address, few private companies responded to our request.

We then administered the questionnaire via the *SurveyGizmo* on-line platform. We chose this platform because it has the benefit of allowing users to access the questionnaire through an Internet address link, in order to report data. In addition, considering the fact that respondents might lose patience while completing the questionnaire, and also due to a lack of habit in reporting personal data, we appreciated its added benefit of allowing them to stop and to

continue reporting data at some other time.

Hence, after a period of 60 days, we received a total of 804 responses. The completeness rate was around 58%, meaning that the remaining respondents terminated the interview before the data reporting process was complete.

At the end of the 60-day period, we started filtering the data sets and analysing them. In addition, we prepared reported home and workplace addresses for geocoding.

The instruments of choice for data analysis were the *R programming* environment and the *Libre Office Suite*, as we strongly favour an open source and free working environment. For visualisation purposes, we used the *Quantum Geographic Information System* (QGIS) application. We also used the on-line *Global Positioning System* (GPS) visualizer tool, with a *MapQuest Application Programming Interface* (API) developer key, in order to obtain geographic coordinates for home and work locations.

3. Results and discussion

After cleaning and filtering the raw data set, we were left with a final sample of 200 state sector employees and 126 private company employees. The main reason for such a reduced sample is under-reporting. Hence, among the completed questionnaires were 140 respondents for which we lacked either home or work addresses, or other social and economic variables, like age, gender, car ownership or income, which we needed in our analysis.

The general traits of the sample are displayed in Table 1. We can distinguish

between social characteristics, such as occupational status, income intervals and possession of a driver's licence, and demographic characteristics, such as gender, age and marital status. We have concentrated upon these indicators, as we believe that they are relevant and representative for our research. The following paragraphs will hopefully show why this is indeed so.

Looking at Table 1, we can observe the following: State sector employees seem to exhibit a higher share of women, and are, on average, of a higher age. They do, however, have an overall lower income. In contrast, private company employees are exhibiting almost opposite traits. Peculiar as they might seem at first glance, these patterns agree with the labour market composition and its evolution across post-socialist states (Sootla and Lääne, 2013).

Unfortunately, it seems that the advantages of male employment still remain manifest, after having been fostered by the socialist regimes under various guises (*cf.* Prodan and Manolescu, 2006; Silova and Magno, 2004). There is also an additional socialist legacy worth mentioning here: The share of state sector employees with

a higher age average implies almost insignificant labour dynamics within this sector.

Moreover, the age structure within our sample suggests that population ageing will definitely have an impact upon the performance the transport systems, as well as upon their future developments (Coughlin and Tompkins, 2009; Ryser and Halseth, 2012; EC, 2014).

Focusing upon the drivers within our sample, we learn from government data for the year 2009 that, out of 6.063 million drivers, approximately 70.3% are men. Now, in the county of Cluj, where about one third of the population owns a driver's licence, women account for 46.3% of the drivers. Our data shows a lower percentage of persons having a driver's licence among state sector employees, probably due to the higher share of women within the sample.

In contrast, highly paid professionals working in the private sector exhibit higher shares of a driver's licence ownership. At the same time, their households reveal a higher car ownership rate, 1.15 cars per household, compared to 1.09 cars per household in the case of their state employee counterparts.

Table 1. Socio-demographic characteristics of the sample

Characteristic	Details	State (%)	Private (%)
Occupation	Respondents	61.35	38.65
Gender	Female	74.00	59.52
Age intervals	<25	3.00	15.87
	26...45	47.50	78.57
	45...65	43.50	4.76
	>65	6.00	0.79
Marital Status	Married	67.50	50.00
Drivers licence	Car	67.00	83.33
Income intervals (in RON)	900-1500	29.00	10.32
	1501-2500	48.50	14.29
	2501-3000	0.00	8.73
	>3000	22.50	66.67

In short, it is plain to see that private sector employees are generally wealthier and that, consequently, they own, on average, more than one car per household, thereby needing more driver's licences. This much is fairly evident from simply looking at Table 1. Things become more interesting, however, when studying modal share.

3.1. Modal share

We then looked at modal share from a general perspective, i.e. taking into account the following three major transportation categories: Non-motorised, including walking and cycling, private motor vehicles and public transport.

For the two occupational groups mentioned above, as well as for a weighted average for the whole sample, commuting patterns are revealed in Fig. 3. Here, we can notice that private employees are more active and more mobile, even though we have no data on the complete set of daily activities that they might perform, besides their commuting pattern.

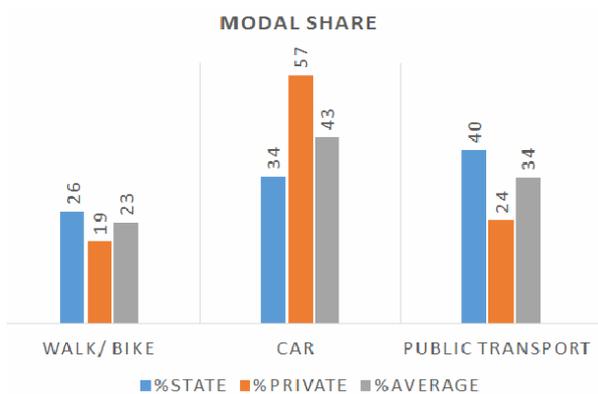


Fig. 3. Sample modal share

We further assumed that modal share is indicative for each respondent's commuting history. Hence, Figs. 4a and 4b show the time spans during which respondents used their preferred commuting mode. This we calculated by

transforming modal share preferences for each time period into per cents, thereby obtaining the relative modal share for each period, for both state and private sector employees. Note that summing up the percentages for the three transport modes used by all employees during one period always returns a value of 100%.

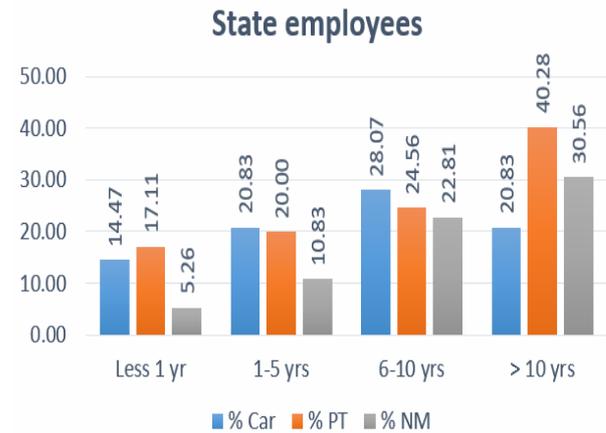


Fig. 4a. Historical mode use (%) - state

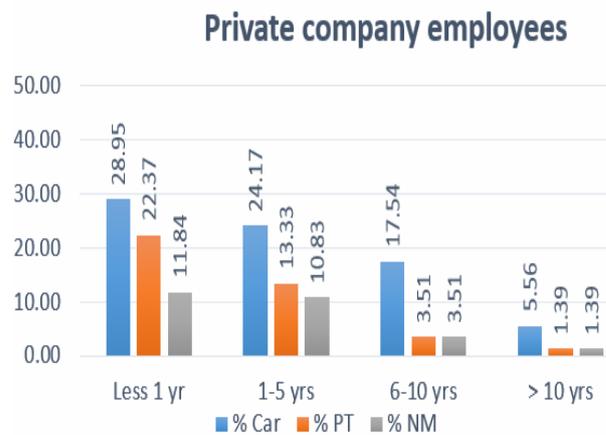


Fig. 4b. Historical mode use (%) - private

Now let us consider the modal share over time: For state sector employees, commuting by public transport seemed to be the norm until ten years or so ago, when the use of private cars caught up. It is interesting to note, however, that during the year of the survey (2015), public transport surpassed the use of privately owned cars anew. We cannot pinpoint the exact reasons for this shift in

preference, as prices for petrol remained relatively constant during 2015.

There are, however, two possible explanations for this particular state of affairs: It is either an improvement in public transport quality, or the fact that growing congestion affects fuel efficiency as well as commuting quality. If we take into account that state sector employees are generally older and paid less than their privately employed counterparts, then savings might be more likely to affect modal choice.

When it comes to private sector employees, however, the picture is far clearer: The privately owned car is the norm. Again, if we take a closer look at the year when the survey was conducted (2015), it is the public transport that now is, hopefully, beginning to catch up. However, it is still early days for us to ascertain whether this is a consistent trend or merely an accident. If it is indeed not a mere accident, then we might have the chance, for the first time in Cluj, to contradict the old adage that individual commuting habits hardly change over time, unless additional taxation applies.

3.2. Spatial characteristics

Social and economic variables, spatial characteristics, and modal features represent exogenous variables that affect modal choice for commuting. We noted earlier that there are important shares of state sector employees using primarily non-motorised and public transport for commuting, in contrast to private sector employees, who use their own cars.

In this section, we explore the spatial patterns of commuting, such as Euclidian distance from home to work, as well as the proximity of public transport stops near the origin and destination points for

morning commuters. Initially, we had reason to believe that the modal split differences observed among state and private sector employees are caused by such spatial considerations.

As mentioned earlier, we geocoded both home and work location for each respondent. It was therefore possible to calculate the walking distance between each home and the nearest bus, trolleybus or tram stop, which enabled each commuter to reach his or her work destination. For this purpose, we have employed the 'Directions' feature of the *Google Maps* platform. The final results are displayed in Fig. 5, and they are striking.

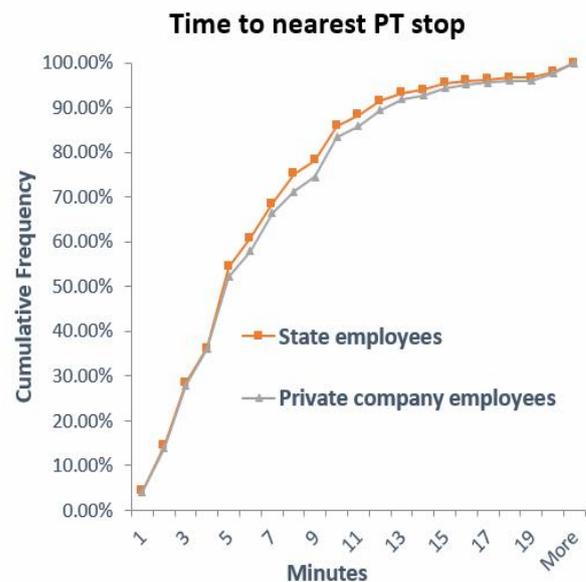


Fig. 5. Walking time to PT stop

More than half of the respondents from each occupational group within the sample live within less than seven minutes away from their relevant public transport stop. Furthermore, it is plain to see that variations in walking time to the nearest stop between the two categories are insignificant. There is therefore absolutely no reason to believe that distance towards the nearest bus stop is affecting modal choice for commuting.

Another measure to influence mode choice for commuting is the relative spatial location of home and work (Limtanakool *et al.*, 2006; Cervero, 2002). The reason for using such a measure is that we are currently unaware of the distances travelled by employees in each of the available modes. To further complicate matters, we also lack information concerning the level of service on each of the transportation network links, which, in turn, might influence the amount of travel time spent on commuting.

Fig. 6 thus plots the Euclidean distance between home and workplace for each occupational group. We obtained these distances through QGIS, by using the geocoded addresses for home and workplaces. Essentially, private sector employees live farther away from their workplace, most probably due to the residential migration of young people (*cf.* Beige and Axhausen, 2008). This supposition is supported by the expanding housing stock within the metropolitan area of Cluj, as revealed by the time dependent spatial distribution of population in Fig. 1.

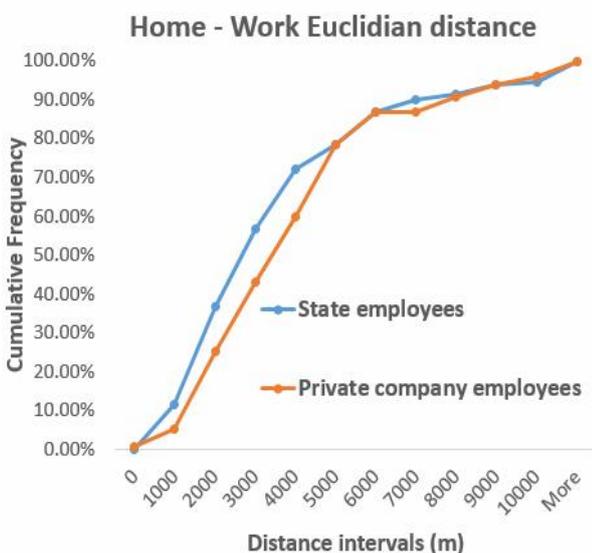


Fig. 6. Distance between home and work location

However, most of these variations in travel to work distance are small between the two occupational groups. Moreover, after reaching the 5-km limit, they tend to disappear altogether. We can therefore ascertain that travel-to-work distances hardly influence modal choice. In short, neither the distance to the nearest stop, nor the overall distance to the workplace is at stake here.

Pondering upon the meaning of these findings, we were able to find two interpretations for them: Firstly, if we take into consideration the historic development of Cluj, we encounter spatial concentrations of public institutions within, or quite near, the city centre. Following from this observation, we can infer that state sector employees enjoy the benefits of overlapping public transport routes, and, implicitly, a higher accessibility of their workplaces. And secondly, one might infer that new real estate developments offer a more generous parking supply, thereby encouraging the use of a privately owned car.

Nonetheless, one should not lose sight of the fact that the city of Cluj is a relatively accessible city, displaying high concentrations of both workplaces and amenities within a densely packed area. We are therefore far more inclined to attribute a private sector employee's propensity towards favouring the privately owned car when commuting to a question of social status.

In simple terms, we believe that, in general, the wealthier an employee is, the more likely it is for him or her to favour his or her own car over the public transport system. However, given the current congestion levels within the city centre, as well as the daily traffic jams

facing commuters travelling to the suburbs of Gilău and Floreşti, in the west, as well those travelling to Apahida and Dezmir, in the east, we consider such attitudes to be highly questionable, to put it mildly.

3.3. Attitudes

It is now time to consider the attitudes proper. Hartgen (1974) stated that the mode choice mechanism is determined primarily by situational constraints, such as car ownership and income, and only secondarily by the quality of alternative modes. In this section, we analyse the commuters' attitudes towards the modes available within the choice set, by examining the characteristics that respondents value.

The respondents were asked which features they value most when choosing their commuting mode. Data was reported on comfort, commuting time and cost. We aggregated state and private sector employees on each of their chosen commuting mode. By considering Figs. 7a and 7b, we notice the propensity of car commuters for appreciating comfort, irrespective of their particular occupational group.

Differences in attitude arise, however, when analysing commuting time and associated cost. As non-motorised commuting is hardly influenced by the level of service within the transportation network, it is more relevant to compare the public transport system with privately owned cars.

On the one hand, state sector employees associate public transport mainly with lower costs and, to a lesser degree, with shorter travel times. Thus, it seems likely that state sector employees associate lower costs primarily with transportation

expenditure, which is often a consistent part of the total income of an individual, especially if wages are relatively low (cf. Sugiarto *et al.*, 2014).

The shorter travel times within this sector are explained by the average of 1.21 transfers needed to reach the workplace, compared to the average of 1.52 transfers needed by private sector employees. To put this somewhat artificial figure into context, let us state that 79.5% of state employees commute to work without any transfer, compared to 55.6% of private company employees. However, this proportion is reversed in the case of commuters who need one transfer, with 20% of state sector employees needing a single transfer, compared to 38.1% of private sector employees.

These figures buttress our earlier observation that state sector employees have the benefit of working in or near the city centre, where the degree of accessibility is somewhat higher. Therefore, from a strictly temporal perspective, it is wiser for a state sector employee to commute by public transport, due to the connectivity of most of the public transport lines with the city centre.

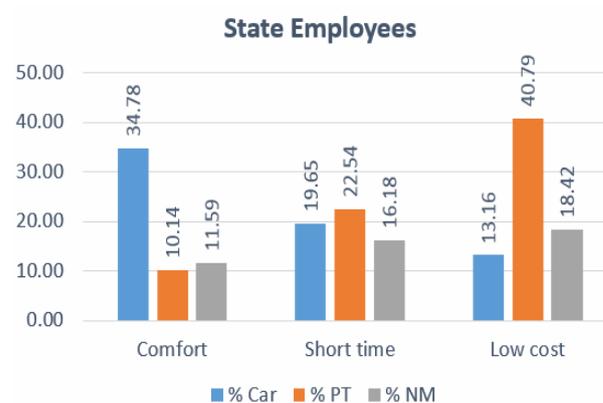


Fig. 7a. State employees commuting attitudes

Moving on, we observe that private sector employees value first and foremost

comfort and shorter travel times. Travel times, in this case, are partly explained by the number of transfers needed to reach the workplace. More transfers imply higher prices for the monthly public transport pass, which private employees need in order to commute.

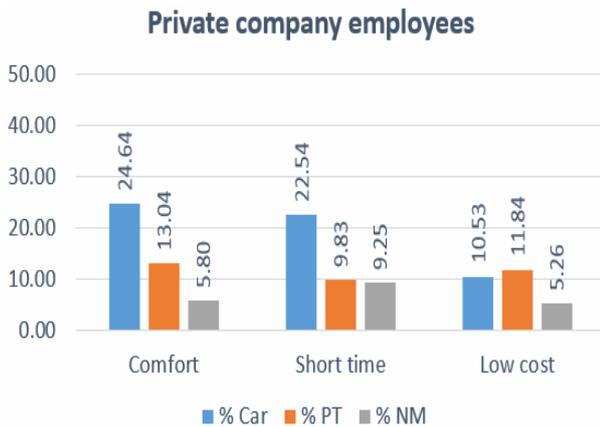


Fig. 7b. Private company employees commuting attitudes

One would expect, however, that private sector employees would value comfort more highly. In fact, only about a quarter of respondents within this category chose comfort as the main reason for commuting by car. In contrast, more than a third of the state sector employees made the same choice.

Surprisingly enough, we believe that this observation is linked to the modal share discussed earlier, especially if we consider that over the past year, few of the state sector employees used their car for commuting. Hence, decreasing comfort might actually be related to growing congestion levels, which inherently diminishes the comfort of the driver, by causing longer travel times and implicit stress.

Unfortunately, it seems that this diminishing comfort is not strong enough yet, in order to tip the balance in favour of the public transport system. It might

however explain the growing number of public transport users amongst the private sector employees during the past year (*cf.* Fig. 4b). Furthermore, it is clear that both categories have become more sensitive to the transportation system performance, as it directly affects departure for work times, as well as the overall duration of commuting (*cf.* Pendyala *et al.*, 2002).

4. Conclusions

This was a first exercise in revealing travel behaviour and attitudes of morning commuters in city of Cluj. In order to gain a comparative perspective, we studied both state and private sector employees. By identifying modal split differences, we further explored the particularities of each of the occupational groups.

An historical overview of commuting modes revealed an extensive, but slightly decreasing, use of public transport among state sector employees. At the same time, the use of the privately owned car amongst private sector employees is increasing. This is the first message of our paper.

We then plotted the accessibility of public transport stops against each respondent's residence, and we concluded that more than half of respondents, irrespective of their occupational group, lived less than seven minutes away from the nearest stop servicing public transport towards their workplace. In other words, the distance between home and the nearest stop does not influence modal share significantly. The same applies to the (Euclidean) distance between home and work. Hence, distance proved not to be an issue with using the public transport system more intensively. This is our second message.

However, in order to be completely honest about the limitations of our study, we did not have any information whatsoever concerning the performance of the transportation network. It remains for future research to delve deeper into this matter. For the time being, suffice it to say that direct observation of various routes showed us that the public transport is currently more than acceptable in quality, albeit with ample room for improvement.

Attitudes seem to be the key to better explain the prevailing modal share. We concentrated upon questions related to features such as comfort, travel time and travel cost for each mode of commuting. The results were somewhat surprising from a social and environmental perspective, although completely in line with our intuitive reasoning: Hence, while state sector employees value the lower travel costs and the shorter travel times offered by the public transport system, private sector employees seem to favour comfort above all else.

This is our third and final message: It seems that private sector employees, although being younger on average and earning higher wages, compared to their state sector counterparts, are less prone to use the public transport system, and hence contribute significantly to current congestion and pollution problems. This is a worrying conclusion, but we believe it should always be kept at hand when drafting public policies.

Again, to qualify the previous conclusion, we need to stress that, indeed, some of the new real estate developments, which mainly house office spaces, do not offer an easy connection to the public transport network. However, this is not the case for the vast majority of workplaces.

Furthermore, we were able to unearth an interesting trend, which evolved solely over the past year: Private sector employees have begun to use public transport more intensively. Although still sceptical in this respect, we are curious to see whether this becomes a substantial trend aimed at toppling car use as the most favoured mode of commuting. The reasons behind this incipient shift in perspective are still unclear to us for the time being, but we believe that they might have to do with intolerable congestion levels.

To sum up, the imperfect and often rigged transition to the market economy has initially caused confusion, and subsequently brought about an uneven and an unfair urban development within the city and its metropolitan area. Hence, pedestrian as it might seem at first glance, we need to constantly remind ourselves that modern-day cities are the result of yesterday's planning decisions. Generally, most of these decisions have proved to be unwise and unprofessional. As one of their main consequences, a dominating logic obedient to the motor car has pervaded planning decisions. The effects of such planning practices are still with us today.

In short, the intention of this research paper was to question that *status quo*. As befits a preliminary study such as this present one, we have also drafted a list of open questions, aimed at guiding further avenues of research:

Firstly, we have arrived at the conclusion that relations between modal choice, the transportation network characteristics and the functional as well as spatial architecture of the city are poorly understood in the case of Cluj. This lack of understanding necessarily translates,

in our opinion, into poorly designed and poorly detailed transport policies. Furthermore, until these matters are laid to rest, targeted policies, such as mobility management for private companies (telecommuting), parking management or congestion charging in downtown areas, as well as public transport network performance assessment per current needs and commuting patterns remain void of strength and applicability.

Secondly, the complexity of mode choice behaviour requires further studies in discrete choice analysis, in order to obtain a comprehensive review of the relative influence of exogenous variables on the studied outcomes. In simpler terms, we acknowledge the clear limitations of our study, but we intend to remedy them at a later stage, as we get hold of more data. Hence, once these connections are found and explored, policymakers could then concentrate solely upon designing inclusive accessibility and equity policies for the future, as well as transport and land-use policies to encourage sustainable commuting behaviour and to promote compact urban forms in emerging urban areas. Until then, current policy recommendations remain largely empty rhetoric.

Thirdly, considering the findings of this study, we may conclude that the development patterns developing in Cluj have brought about social and economic segregation among commuters. The extensive use of privately owned cars has grave repercussions upon the level of service and perceived quality of other transport modes. Undoubtedly, this is a question of responsible citizenship, both social and environmental, which, unfortunately, is largely absent from what we gather.

Moreover, we feel that the municipality, as well as the academic environment, for that matter, is lacking a responsive and professional team of researchers and policy makers. We therefore strongly believe that more profound and systemic action is urgently needed in this direction. This paper can be read as an incipient commitment to such an endeavour.

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