

---

# Money Is Not Everything! Or: The Importance of Working Time Characteristics and Appreciation for the Recommendation of One's Own Driving Profession

Patricia Tegtmeier, Ulrike Hellert, and Bianca Krol

---

## Abstract

The already existing shortage of qualified bus, tram and truck drivers will continue to increase in the coming years. Transport companies face a major challenge to ensure their human assets and competitiveness. Above all, suitable trainees must be obtained for the driving professions. The currently more than 800,000 professional drivers are playing a significant role as multipliers in this context. Research group DO.WERT conducted a survey among experienced professionals and trainees in various driving careers. Results indicate that only a quarter of the experienced workers would recommend their own driving profession. Crucial to a (non-)recommendation of the profession are experienced appreciation and working hours.

---

## Keywords

Skill shortage • Career choice • Working time • Time pressure • Appreciation

---

P. Tegtmeier (✉)

Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Dortmund, Germany

e-mail: [tegtmeier.patricia@baua.bund.de](mailto:tegtmeier.patricia@baua.bund.de)

U. Hellert

iap - Institut für Arbeit & Personal, FOM Hochschule für Oekonomie & Management, Essen, Germany

e-mail: [ulrike.hellert@fom.de](mailto:ulrike.hellert@fom.de)

B. Krol

ifes - Institut für Empirie & Statistik, FOM Hochschule für Oekonomie & Management, Essen, Germany

e-mail: [bianca.krol@fom.de](mailto:bianca.krol@fom.de)

## 1 Introduction

According to TÜV Rheinland [23, p. 12], there is already a shortage of qualified drivers. As a result of demographic change in combination with the high and specific workloads (e.g. long-lasting, security-related attentional demands, shift work, night work) this current staff shortage is going to spread significantly in the next few years. In part this development is based on the known overall social effect of demographic change: the baby boomers are increasingly reaching retirement age and simultaneously the group of people that enters into the workforce is sinking. Only about 2040 when the Baby Boomer generation has retired from the labor force, the age structure stabilizes [8, p. 4]. Thus, the proportion of over-50s employees among professional drivers in 10 years from about a quarter in 2001 has increased to just over 39 % in 2011. During the same period, the proportion of 25- to 35-year-olds has decreased from almost 22 % to only 14 % [2, p. 101]. Parallel to this development further increases in transport services are expected [4, p. 35]. Therefore, to secure their human assets and capacity to compete transport companies should increasingly seek younger employees and especially suitable trainees for the driving professions.

In addition to the overall demographic effects, specific logistical aspects exacerbate the shortage of qualified drivers. In the past career changers were usually hired to fill vacancies in driving occupations. The main qualification being a valid driving license, that often was acquired—free of charge for the companies—via the Bundeswehr [16, p. 21]. By the end of conscription the option to recruit these externally trained drivers ceased to exist. Although the end of conscription was foreseeable, the transport sector only after a considerable delay began, to train drivers itself. Currently, only one in three commercial transport operation is providing opportunities for apprenticeships in the dual system [23, p. 17]. Especially small companies seldom meet all standards required to train apprentices themselves [2, p. 122]. However, more than 80 % of companies in the traffic and logistics sector have fewer than 20 employees [16, p. 21]. Simultaneously, the requirements in this profession segment increased gradually over the past years. Besides additional technical knowledge, the demands of personal, activity-related and social-communicative skills have increased [7, p. 17]. Drivers, with the capacity and commitment to use their knowledge and skills actively, as well as suitable trainees are needed.

However, the declining population of school-leavers combined with falling numbers of apprentices due to a general academization [4, p. 28] lead to increased competition for suitable trainees between training establishments and various industries. In addition the career aspirations of potential apprentices are not evenly spread across the various professions. Professions are chosen according to their potentials for social approval and recognition. If the image of a profession appears unsuitable to achieve social recognition, it becomes unattractive irrespective of the actual professional content and the interests of potential trainees [6, p. 10]. A study researching the social prestige of different occupations found professional drivers ranking [22, p. 266] in the lowest-eighth of 128 assessed professions. The image of

driving professions is rather poor according to industry experts as well [2, p. 123, 16, p. 35]. Therefore, getting potential apprentices interested in the driving professions based on this image, seems rather unlikely. So even training-ready companies may not win enough young talent for apprenticeships. In 2011 seven percent of reported training slots remained vacant [2, p. 123].

Seeking competent advice plays an important part in choosing an occupation. In a longitudinal study on the transition from school to work “Hauptschüler/innen” (secondary school pupils) most frequently consulted family members and friends [13, p. 18]. Companies in logistics predominantly engage school leavers holding a “Hauptschulabschluss” (secondary general school certificate) as apprentices. Thus, the currently more than 800,000 professional drivers hold an important multiplier function as a source of information on the advantages and disadvantages of their own profession.

Within the framework of the research group DO.WERT<sup>1</sup> an empirical survey was performed focusing employability, health at work, organization of work, working time and qualification in various driving occupations. Shown below are the analysis of factors correlated with a positive recommendation of the own driving profession.

---

## 2 Method

The overall survey on professional conditions of the driving profession was conducted between September 2013 and May 2014. It consisted of a mix of quantitative and qualitative data collection with different groups of people: A quantitative questionnaire study was aimed directly at experienced professional drivers and trainees for transportation of cargo as well as apprentices for passenger transportation (FiF).<sup>2</sup> Semi-structured expert interviews<sup>3</sup> were a further data source. Experts being persons that could provide information about various aspects of (driving) work life based on a professionally close contact with drivers of different divisions.

---

<sup>1</sup> DO.WERT—Demography oriented organization and design in the logistics and transport sector—more value for smart, green and integrated transport is an interdisciplinary research group of the FOM University of Applied Sciences, funded 2013–2014 under the program FH structure by the Ministry of Innovation, Science and Research of North Rhine-Westphalia (NRW MIWF).

<sup>2</sup> FiF (Fachkraft im Fahrbetrieb)—Skilled Transport Employee (m/f) is a recognized public transport professional with 3 years of training. In addition to driver certification for buses, trams and underground trains also technical as well as business training content is conveyed.

<sup>3</sup> As experts persons are included that can be seen with regard to Gläser and Laudel “as a source of specialist knowledge about the social issues to be explored” [9, p. 12].

## 2.1 Questionnaire Survey

The survey of experienced professional drivers took place: in the context of qualification schemes at ongoing training providers, within the framework of regular truck meets, at local trucking companies, by sending questionnaires to trucking companies, and via an online questionnaire. Overall, drivers from different areas of transport could be reached. Access to the trainees for professional truck drivers as well as FiF apprentices was established via vocational colleges. The pupils had the opportunity to fill in the questionnaires during lessons.

In addition to general socio-demographic questions, items about work experience and the company the questionnaire consisted of items to different topics. Shown below are only the questionnaire aspects, with results later referred to are shown below.

*Time spent working* in 2013 was queried as a numeric in hours. Comparable questions were asked, e.g. in the context of the BIBB/BAuA employment survey<sup>4</sup> in 2012 [18]. Point of reference for information on the contractual and actual time of work was the weekly working hours. Further queried was the number of contractual and taken leave days, as well as the number of Saturdays and Sundays worked, number of days off that were occupationally not spent at home and sick leave days for 2013.

Items to *workload* were taken from the ISTA [21] and Hellert [11]. Six items were used to assess time requirements (e.g. “How often does it happen that you skip a 30-min break because of too much work?”) on a five-point Likert scale (1 = never, 5 = always). An item was added concerning problems based on working hours with family and friends on the same scale.

*Predictability of working hours* was assessed through two questions: a six-level item for knowledge of schedules in advance (1 = 0 to 1 day in advance, 6 = longer than 30 days in advance) and a four-level item on the frequency of short-term changes (1 = less than once a month, 4 = more than 4 times a month).

*Decision latitude* at work was determined through five items (e.g. “You have influence on the planning of working hours (shifts and overtime)”) from the ISTA scales [21]. An assessment was made on five-point Likert scales (1 = always, 5 = never).

*Job satisfaction and strain* were one item assessment each. Satisfaction with the existing working conditions as a whole was judged on a five-point scale (1 = very satisfied to 5 = very dissatisfied) [11]. Strain was surveyed through, whether the own current activity may be pursued until retirement under the current requirements, on a three-step scale (1 = yes probably, 3 = no, probably not). This item was supplemented by a possibility to an open response citing the terms and conditions that would be necessary from the perspective of the respondents.

---

<sup>4</sup>BIBB—Bundesinstitut für Berufsbildung, BAuA—Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.

Three items were assigned to *economic results* of work. Asked was who bears the costs for the mandatory training required by the professional drivers-qualification law (BKrFQG), the payment of premiums and the amount of the income—the latter as a six-level classification in 500 € increments (1 = less than 1000 €, 6 = 3000 € and more).

*Appreciation* has been obtained for three different groups (society in general, clients and dispatchers) on five-step Likert scales (1 = very much, 5 = very little/no).

*Advantages and disadvantages* of the own driving profession was queried by means of open-ended questions. A dichotomous question (Yes/No) was linked to whether the own profession would be recommended.

## 2.2 Expert Interviews

For the qualitative survey 13 expert interviews were conducted. The average interview length was 52 min. The shortest interview took 25 min, the longest interview comprised 84 min. The interview guide contained the same topics as the questionnaire. Additional information was asked about the employment structure in the driving profession and the recruitment of career changers vs. trainees in the context of the need for skilled workers. Four employees of different transport police directorates (prevention) were interviewed. Another four interviews were conducted with managers from different companies, including two from public transport and two cargo companies. Three interviews were conducted with OSH “working professional drivers” contacts and two teachers from education and training in the driving professions.

The evaluation of the interviews took place in the form of a qualitative content analysis according to Gläser and Laudel [9, p. 197–260]. The performance profile on social rating of occupations according to Goesmann [10, p. 40–60, see Table 1] served as a basis of content analysis as well as the open answers of the questionnaire.

The physical and mental effort to be provided is an aspect of the *effort category*. Details of both inhibiting and promoting working conditions at driving jobs are associated with this category.

Statements about the skills and qualifications needed are assigned to the *category resources*. The qualifications correspond to the formal requirements for the purposes of education and training as well as the acquired knowledge needed to perform the job.

The *factual result* includes the quality of task performance. This is sometimes difficult to distinguish from the resources mentioned above, if, as here, the quality of the result is closely linked to professional knowledge and skills [10, p. 50]. Allocated to this category were in particular, statements about concrete measurable skills. A key characteristic here was the possible visibility of performance and quality.

**Table 1** Profile on social rating of occupations

Dimension	Category
Effort	Resources needed: skill, competencies, qualifications Demands: physic or psychic
Result	Performance: workmanship Social: importance for society in general Economic: income, market demand
Person	Self-realization, authenticity

Source: Goesmann, C. (2010), p. 37 [10]

The problem solution for individual clients as well as the need for the goods and services for the population as a whole is represented in the category of *social result*.

The central aspect of the category *economic result* is the income as a financial indicator of a job well done. Other paid services such as paid premiums and reimbursement of training costs can be added as an expression of appreciation to the employees. Although not monetary job security can be assigned to the economic result as well.

The aspects of self-determination and self-realization in the profession are associated with the *person* dimension. Occasions for self-development, motivation and personal responsibility as well as obstructive factors were recorded. Also included were the reasons for the career choice in the driving professions.

### 3 Results and Discussion

The questionnaire respondents with a total of 436 participants divided into approximately 52 % experienced professional drivers and nearly 48 % apprentices (69 % trainee truck drivers and 31 % trainee FiF). The average age of experienced drivers was 47 years and ranged from 23 to 72 years—both the average age and the distribution corresponds to the socio-demographic data from other surveys concerning professional drivers [16]. According to the experts the partially high age of the driver shows three things: good new drivers lacking, companies now like to engage proven remaining forces back. There are drivers who not only can but also want to drive beyond the official retirement age—however, partly also because the pension has to be bolstered: “Sometimes you wonder at what age people do the job, yet this is certainly due to a certain necessity”.<sup>5</sup> The apprentices on average were about 22 years old with a span from 16 to 45 years. Their rather higher average age is likely due to the fact that companies prefer apprentices who at least possess a car driving license.

<sup>5</sup> Since a translation always includes an interpretation, the original quotations are provided in footnotes. “teilweise wundert man sich, in welchem Alter die Leute den Job noch machen, das ist sicherlich auch aus einer gewissen Not heraus”.

Approximately 4 % of experienced drivers were female. The ratio of female trainees was slightly higher with about 6 %. In detail the proportion of women was 17 % for FiF trainees, whereas female prospective truck drivers accounted for less than 2 %. Lohre et al. [16] show a similar distribution between the sexes for driving occupations. The interviewed experts suspected a general lack of interest on part of women. Specifically with regard to training, technically interested women would rather choose professions with a better image (for example, mechatronics). The experts, however, saw no significant reason in lack of physical strength. By using the existing technology for the driving professions this is no longer necessary in large scale usually. At the same time some of the interviewees reported enthusiastically partially coupled with amazement on the expertise and the technical and driving skills shown by women. Despite these abilities and partly attested positive impact on the working atmosphere and the general handling of the vehicles, the recruitment of women in the driving professions is not actively promoted. In the interviews a rather traditional idea of the distribution of employment and family work prevailed. As primarily seen responsible for family work, women have even greater problems than men concerning the dominant working hours in the driving profession: “Especially for younger women, our schedule is of course highly uninteresting. We just need to be very flexible and you can’t do that, if you regularly take children to school”.<sup>6</sup> Especially the (imputed) fertility was seen as an obstacle to hire female drivers: “the other (reason) is, of course, that you have to consider additional problems concerning women [. . .], I once had one, was really great that one, until she got a child.”<sup>7</sup>

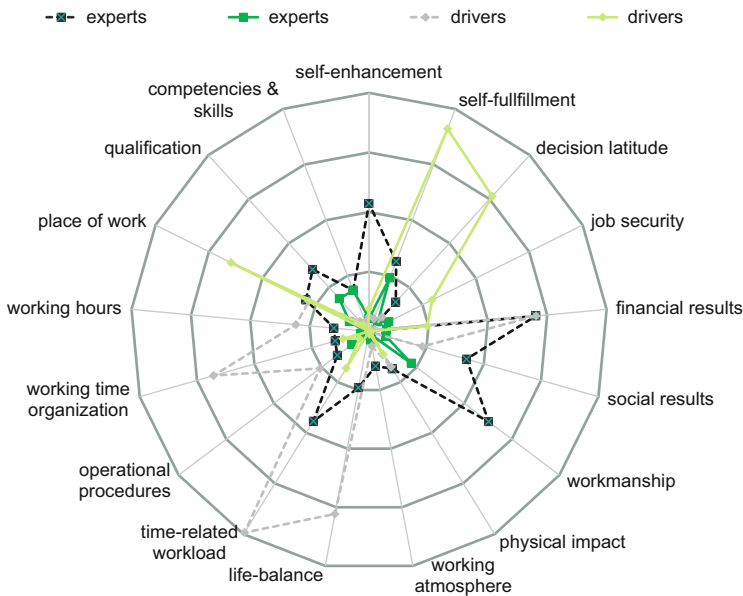
The note on working hours being unfavorable primarily for women seems too short-sighted. Already women in other service occupations, especially in retail and in clinical and home care, work similar hours and shift models. It is also questionable whether a division of work and family life on the basis of sex is continued to be practiced by younger generations. Work to family reconciliation is far more important for young professionals of both sexes than for previous generations (Hoffmann-Lun et al. 2005, p. 18). “I don’t take every extra shift—no one can pay me the quality time with my kids”,<sup>8</sup> as a male trainee expressed on a workshops, where result of the study were presented.

---

<sup>6</sup>“Gerade für jüngere Frauen ist der Fahrdienst natürlich hochgradig uninteressant. Wir müssen halt sehr flexibel sein und das geht nicht, wenn man regelmäßig Kinder in die Schule bringt”.

<sup>7</sup>“das andere ist natürlich, dass bei Frauen da halt eben andere Problemstellungen noch dazu kommen, die man berücksichtigen muss [. . .] ja, ich hatte mal eine gehabt, die ist supertoll hier gefahren, bis sie dann ein Kind bekommen hat”.

<sup>8</sup>“ich übernehm’ nicht jede Zusatzschicht—die Zeit mit meinen Kindern kann mir gar keiner bezahlen!”.



**Fig. 1** Job profile evaluation (open answers)

### 3.1 Assets and Drawbacks of Professional Driving

The drivers themselves see the benefits of driving occupations, first and foremost in the opportunities for self-development and self-fulfillment (Fig. 1). In the corresponding open questionnaire part answers indicative the fun of driving and the variety of activities were mentioned most frequently. Also frequently stated were the opportunities for independent and self-responsible work as one's own boss in the driver's cab. Furthermore, the specific workplace is a pro for the drivers—both the technical aspects as well as to be out on the road, to experience different places and people and especially not to be stuck in an office.

The interviewed experts were overall significantly more problem-centered in their statements. But the positive aspects were also seen especially in categories concerning self-development, authenticity and fulfillment: “I know many drivers who put their heart and soul into the business.”<sup>9</sup> They described the driving profession as best suited for individualists with a taste for single workstations, a high willingness to take on responsibility and an interest in the driving itself. According to those interviewed, the professional drivers can be mainly divided into two groups: one group deliberately chose the profession because of a fascination with the automobile and the fun in driving. Other important reasons for this group are, the realistic assessed chances to autonomy, variety and independence,

<sup>9</sup>“ich kenne viele Fahrer, die hängen mit Herzblut an der Sache”.



which the driving profession can provide: “to have a certain freedom that you’re not constantly sitting in the office but to be on the move”.<sup>10</sup> In many cases, members of this group have in advance knowledge about the driving profession and the associated requirements. Often these were mediated by family members in the same business. Women, who take a driving career, were more associated with this group by the interviewees. The other group was described by the experts as the “last resort”.<sup>11</sup> The driving jobs are the last chance of a job or a training place for these. The main reason to drive is purely financial. Within this group a rather resigned attitude towards the profession and the possibilities for self-realization prevails. The experts agreed less about the amounts of professional drivers in the two aforementioned groups. With regard to those undertaking the 3-year apprenticeship a 50:50 distribution was adopted. Career changers, so the assessment, disproportionately belong to the second group. The interviewees suspected regardless of group membership that missing advancement and growth opportunities in the long run lead to problems for job-related (self-)motivation.

Both experts and the drivers questioned saw the disadvantages of driving occupations, primarily in the form of physical and psychological requirements as well as the (visible) result of the work done. Both aspects including the respective quantitative data will be discussed in detail below.

### **3.1.1 Workload, Temporal Working Characteristics and Life-Balance**

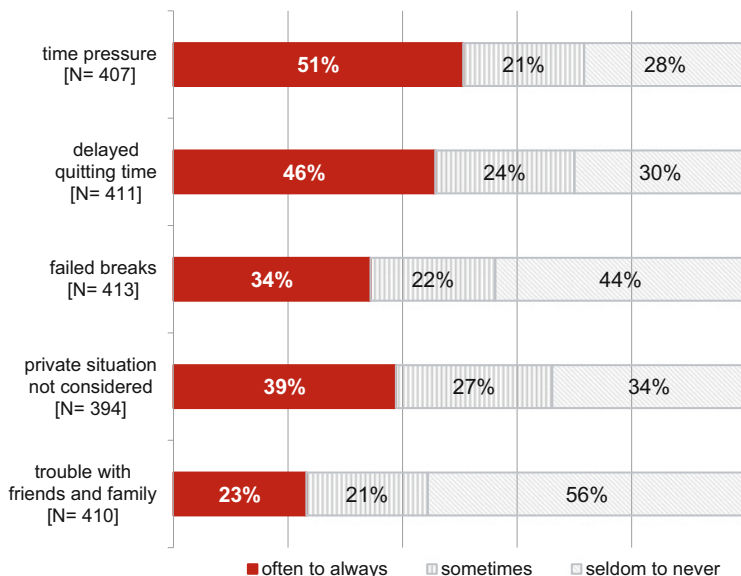
Working conditions in the driving professions were assessed as rather unfavorable by all experts. Mainly, the long to overlong working hours and the widespread shift work were mentioned in the interviews. A look at the questionnaire data shows that the contractual hours of respondents with work experience on average was 44.5 h per week. A quarter reported working hours beyond 48 h per week—a contractual basis inconsistent with the German working time laws.

With an average 51.5 h per week the actual hours worked by the experienced drivers are significantly higher than the agreed upon. More than 13 % of the respondents indicated that they actually work more than 60 h a week. Matched against IAB data of 2012 mean actual working hours exceeded that of the average male full-time worker by about 7.5 h per week [5]. The trainees stated an averaged 40.2 contractual hours per week. About 4 % indicated contractual working hours exceeding 48 h per week. The average hours worked by trainees was 46.5 h per week. Differentiated according to the two groups of trainees the actual working hours per week among trainees FIF ranged on an average of 39.9 h, while the trainees for BKF worked about 49.7 h. The interviewed experts linked especially these long hours both with insufficient rest and with significant impairment in regard to the compatibility of private interests and obligations and the driving

---

<sup>10</sup>“ne gewisse Freiheit zu haben, dass man nicht ständig im Büro sitzt, sondern auch draußen unterwegs ist”.

<sup>11</sup>“Auffangbecken Kraftfahrer”.



**Fig. 2** Time-related requirements and workload

profession. In particular, this poor compatibility was mentioned in the interviews as a main factor for the low attractiveness of the profession.

The vast majority of respondents (about 79 %) stated that they obtain their schedules with a very short lead of zero to one days. Furthermore, 38 % of drivers indicated that short-term changes in the work plan occur more than four times a month. Asked to what extent consideration is given to working time with regard to their personal situation almost 40 % of the experienced drivers and trainees replied rarely or never. Coordination with private appointments (e.g. for health care, administrative procedures, hobbies as well as with the family and friends) is a major challenge in this context. Not surprisingly about 23 % of the drivers reported often or always having problems with family or friends due to their working hours (Fig. 2). A significant correlation to the actual hours worked could be observed ( $r_s = 0.40$ ,  $p \leq 0.001$ )

The high concentration requirements and the very frequent time pressure have also been mentioned as stressful for drivers by the experts. In the open questionnaire stress and time pressure alongside permanent concentration and high responsibility ranged at the top of the mentioned disadvantages. Congested roads not only lead to conflicts with other road users. Combined with tight tour plans, and small time windows for loading and unloading at the ramp high flexibility and time requirements arise [20, p. 123]. In passenger transport increased time pressure results from very tight turning times, fast cycles and ever shorter rest breaks [17, pp. 53, 19, pp. 17]. About half of the sample stated that they are always or often under time pressure due to deadlines. Only one third was seldom or never under time pressure because of deadlines (Fig. 2). Compared to other professions the

perceived stress through time and deadline pressure is significantly higher [20, p. 126]. So the drivers are at a high risk as especially experienced time pressure is related to physical and emotional exhaustion and complaints such as depression, insomnia, nervousness and irritability [14, p. 107]. In addition one-third of all respondents also failed to take breaks (very) often because of too much work, and about 46 % of the total sample finished work later than intended always or often due to the amount of work. Thus, the employees lack the necessary regeneration from work in form of pre-planned rest periods. According to the Job Demands-Resources Model of Bakker and Demerouti [3, pp. 314, 2014: pp. 8] personal and work resources can act as a stress-reducing buffer for work requirements. A self-directed working time is such a factor to deal with job demands. For most professional drivers this resource is not available. Only about 25 % often have influence on the planning of their working hours. As might be expected in this context, 68 % of experienced and 47 % of drivers in training rated their workload as a high or very high—significantly correlated with time pressure ( $r_s = 0.47$ ,  $p \leq 0.001$ ), going without breaks ( $r_s = 0.47$ ,  $p \leq 0.001$ ) and delayed end of work ( $r_s = 0.45$ ,  $p \leq 0.001$ ).

In many interviews the unfavorable traffic and parking situation was cited as a further significant stress factor. Lack of parking for trucks and buses promotes exceedances of driving times and so affects recovery. According to experts, the alignment of the existing parking (cab to the motorway, lack of noise prevention, unfavorable parking lot lighting) contributes significantly to the lack of recovery and poor sleep quality.

The proportion of experienced drivers who declared that under current conditions they probably cannot drive until retirement added to 38 %. In addition to a connection to a high subjective work load ( $r_s = 0.41$ ,  $p \leq 0.001$ ) corresponding links are found in the data between the assessment of reaching retirement age in good health and aspects of the reconciliation of professional and private life. Drivers who often have problems with friends and family because of working hours, are also less likely to expect to drive up to retirement ( $r_s = 0.40$ ,  $p \leq 0.001$ ). If on the other hand their personal situation is taken into account in the organization of working time, they are also more optimistic to reach retirement still being professional drivers ( $r_s = 0.40$ ,  $p \leq 0.001$ ). In addition to the relationship between job demands and resources described above, an independent path between resources and (work) motivation exists [3, pp. 312]. This combination of resources and motivation is especially intensified by high job demands [3, p. 315] as could be found with professional drivers. Taking in mind the increased desire for compatibility a working time supporting the reconciliation of work and family can be an important motivational resource to try staying in the profession. At the same time stress-reducing effects can be assumed: Most drivers have little direct contact with colleagues. Exchange of experiences and peer support cannot be spontaneous, but only with organizational overhead. Also breaks are usually spent alone or with “unfamiliar” individuals [12, pp. 18]. Drivers therefore receive less help and support from colleagues as employees in other industries. This also might reduce the manageability, with negative impact on the salutogenesis [1]. They also less

often experience themselves as part of a community at work [15, p. 83]. Therefore, friends and family are all the more important as a resource to reduce strain and maintaining employability. A third of the trainees also did not think to reach retirement age as a driver. Since these are just at the beginning of their professional career, this assessment is all the more alarming.

### 3.1.2 The (Visible) Results of Work

Depending on existing qualifications and operationally acquired specialized knowledge and skills, the experts currently saw an already high job security for professional drivers. Increasing recruitment problems due to increasing shortage of qualified drivers expand the guarantee, to find and keep a job even further. Aware of the ongoing shortage, the apprentices in particular not only positively highlighted the foreseeable job security positively in the open answers of the questionnaire. They also foresaw an increase in wages.

At the same time, the experts and drivers alike were unanimous in their assessment that the wages paid customary in the market are too low. To ensure lower transport costs, cutting wages has been used in the industry as cost reduction for a long time. As a result, wages have dropped steadily for years. With 43 %, most of the experienced indicated to earnings between 2000 € and 2499 € gross per month. Another 23 % assigned themselves to the next smaller income category from 1500 € to 1999 €. Especially in the light of the time demands identified above, the de facto paid hourly wage is put in perspective considerably. Both professionals and experts were of the opinion that the payment is not adequate to the displayed high-quality performance and the requirements. The experts saw an expression of lack of appreciation in a payment this low.

Both the surveyed apprentices as well as experienced professionals felt little valued in their work. Over half of the respondents indicated that their activity is met with little to no appreciation by the society in general. The experts interviewed saw the reason for this in the missing knowledge about the importance and necessity of driving professions in the general population. The driving professionals share this problem with other service professions, whose importance for society is at most visible when expected services are not provided. “For customers, it’s invisible, that one tries to be punctual—which is sometimes impossible because of the traffic”.<sup>12</sup> As portrayed by the media, particularly traffic news, trucks are seen as the cause of high street wear, crowded freeways and traffic jams by many parts of society. In the open answers drivers several times described a resulting assessment by others as “being fools”<sup>13</sup> as a disadvantage of their profession. Almost all interviewees stated that the driving professions have significantly lower prestige in comparison with other (neighboring) EU countries.

<sup>12</sup> “Für die Kunden ist es unsichtbar, das seiner versucht pünktlich an Ort und Stelle zu sein—was manchmal aus verkehrstechnischen Gründen einfach nicht geht”.

<sup>13</sup> “Trottel der Nation”.

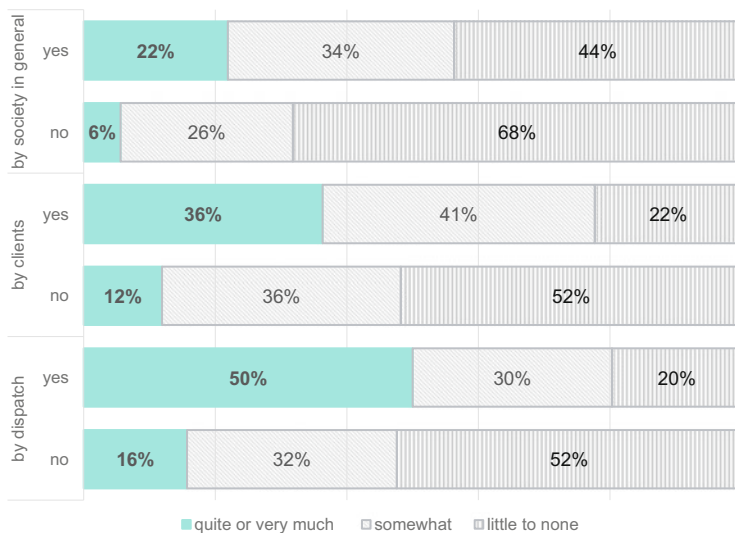
The professional environment has more direct information to assess the quality of performance and services provided by the drivers. Therefore, the recognition of mastery and effort shown by drivers through their customers and their dispatchers appears all the more important. The respondents felt valued a bit more by their direct customers than by society in general. After all, almost a quarter got quite or very much appreciation from this direction. On the part of the dispatchers under a third of the drivers was met with quite or very much appreciation. More than a third, however, felt little or unappreciated by this clientele. The experienced appreciation can be described as another important resource within of the above-described job-demand resources model (Sect. 3.1.1). The path to motivation seems rather obvious but there seems to be a direct connection to strain reduction as well. Interesting in this context is the relationship between the appreciation by the customers and dispatchers and temporal work characteristics for the respondents. A low predictability of working time (schedule known in advance  $r_s = -0.31$ ,  $p \leq 0.001$ ; short term changes  $r_s = -0.37$ ,  $p \leq 0.001$ ) went hand in hand with a lower sense of appreciation on the part of these two groups. Employees who often were under time pressure ( $r_s = -0.37$ ,  $p \leq 0.001$ ), had to skip breaks ( $r_s = -0.32$ ,  $p \leq 0.001$ ) or had a belated end of work ( $r_s = -0.36$ ,  $p \leq 0.001$ ) were also less likely to feel valued by their clients and/or dispatchers. So respondents saw a link between a very specific appreciation of their work and a well-designed work schedule. Likewise the interviewed experts linked time pressure due to deadlines to a very job-related and not enough on the driver-oriented schedule. In a successful scheduling and a concomitant communication between drivers and dispatch, the experts saw an important resource for the health of those employees and their loyalty to the company.

## 3.2 Recommending the Own Driving Profession

With 55 %, slightly more than half of the drivers would not recommend their profession. Only a quarter of the experienced employees would recommend joining their respective driving profession. In contrast, a total of approximately 65 % of the trainees supported a recommendation.

Drivers with lower subjective workload are also more likely to recommend their profession ( $r_s = -0.38$ ,  $p \leq 0.001$ ). Highest correlations were found for the work-related temporal factors time pressure ( $r_s = -0.33$ ,  $p \leq 0.001$ ) and going without breaks because of a high workload ( $r_s = -0.33$ ,  $p \leq 0.001$ ). If these time requirements were perceived less frequently, the drivers would be more likely to advise prospective apprentices to choose their profession. To a lesser extent fewer hours actually worked ( $r_s = 0.28$ ,  $p \leq 0.001$ ) and seldom having problems with family or friends due to working hours ( $r_s = 0.28$ ,  $p \leq 0.001$ ) were linked to a recommendation.

As an aspect of the visible result of the work, the economic result is considered first, because in addition to the requirements the income was listed as a disadvantage in particular. Suggestions to become a driver and wages were associated ( $r_s = 0.36$ ,  $p \leq 0.001$ ), however the direction of this relationship seemed rather



**Fig. 3** Recommendation of the own driving profession depending on the perceived appreciation

odd. Positive recommendations were combined with lower wages. As this might be due to more trainees with lower wages compared to experienced drivers recommending their profession this was further analyzed as part of a multiple logistic regression described below. Furthermore, mainly those would vouch for their profession who see their services valued (Fig. 2) by their clients ( $r_s = 0.37$ ,  $p \leq 0.001$ ) and most pronounced dispatchers ( $r_s = 0.40$ ,  $p \leq 0.001$ ). The relationship between appreciation by society in general and a positive recommendation of the own driving profession was also substantial but definitively smaller ( $r_s = 0.28$ ,  $p \leq 0.001$ ) (Fig. 3).

A logistic regression was completed to determine the important factors for not recommending one's own driving profession. Based on the correlations results described above, three work-related temporal factors (pressure, failed breaks and trouble with friends and family due to working time), the actual working hours, all three appreciation indicators and the income were included in the analysis. Since the focus was placed on individual stress factors, the overall workload was not part of the regression. The model includes dummy variables for each temporal factor contrasted against the highest category (often to always).<sup>14</sup> A dummy variable for the actual weekly working hours was build based on five categories used by the BAuA [18] and compared to the second lowest (representing the most common contractual working hours). Appreciation was contrasted against the highest option (rather much to plenty) and income to the lowest (below 1000 € per month). Table 2 shows the resulting coefficients and corresponding odds ratios in model 1.

<sup>14</sup>The five point scales for temporal factors and appreciation used in the questionnaire were collapsed into three point scales in order to enhance the contrasts.

Despite being a workload, the hours actually worked per week and problems with family and friends based on working time are no suitable predictor of the direction of the professional recommendation. The esteem by customers and society in general were not good indicators likewise. The expectations on the part of the drivers for these are probably very low, so that the absence fails to have a great influence. Appreciation by the dispatcher on the other hand is clearly an appropriate indicator of the career choice. As the lack of appreciation increases the chance that the own profession is considered not advisable increases by nearly 200 % ( $p < 0.05$ , odds ratio: 2.96). Missed breaks as a consequence of too much work ( $p < 0.001$ , odds ratio: 0.20) and time pressure ( $p < 0.05$ , odds ratio: 0.28) also have a good predictive potential for the direction of the professional recommendation. For respondents located in the reference group (high frequencies of time-related workload), the chance of non-recommendation increased dramatically. Income had a significant association with the professional recommendation in the four highest categories as well. However, this link is rather counterproductive intuitively—for the higher wage categories, the chance of not-recommendation is increased compared to the lowest. There were no significant interaction terms (for purpose of clarity interactions were shown in the table only if significant).

As described above, the trainees, who largely belonged into the lowest income category, recommended their driving profession more frequently. Therefore, group of respondents (dichotomous trainees and professionals) was added as a factor in model 2 (Table 2). Time pressure ( $p < 0.01$ , odds ratio: 0.06), failed breaks ( $p < 0.01$ , odds ratio: 0.15) and appreciation by the dispatch ( $p < 0.01$ , odds ratio: 4.90) remained significant predictors in Model 2. The direction of the link described above remained, and was even more pronounced in size. As can be seen, income was no longer connected to willingness to recommend after controlling for group membership. So, although many respondents were not satisfied with their payment, the income was no significant factor for a recommendation of the driving profession. It is crucial, whether the respondent was either an experienced driver or a trainee ( $p < 0.05$ , odds ratio: 194.33), with an increased chance that the profession was not recommended by the experienced. This distinctive group difference may be due to several factors. Differences between the groups in the reasons of career choice may be important. According to the experts, a lot more of the trainees had actively chosen this profession. In this case, these mostly knew in advance about benefits and disadvantages, leaving less potential for disillusionment. Furthermore, in case of an active decision for the profession it is more beneficial for the self-image of students to look at one's own driving career as desirable. Another possible cause may be that the trainees are not subject to the workload to the same degree compared to experienced drivers. However, both groups differed little in their data according to the frequency of time pressure, missed breaks and family problems due to work. Contrary to the experienced drivers, however, the vast majority of trainees reported actual working hours between 30 and 40 h per week. It can be assumed that in the case of apprentices, compliance with the law is ensured more strongly, so this might be another important factor influencing the group difference. In this context the significant interaction between the actual working week and the

**Table 2** Logistic regression of work-related temporal factors, actual weekly working hours, appreciation, income and the group questioned on intention not to recommend one's own driving profession to prospective trainees

Variable	Model 1		Model 2	
	B	Odds ratio	B	Odds ratio
Constant	-0.15		-0.81	
Time pressure (sometimes)	-0.78	0.46	-0.82	0.44
Time pressure (less often to seldom/never)	-1.29*	0.28	-2.80**	0.06
Failed breaks (sometimes)	-0.27	0.77	-0.47	0.62
Failed breaks (less often to seldom/never)	-1.61***	0.20	-1.93**	0.15
Trouble with family and friends due to working hours(sometimes)	-0.56	0.57	-0.71	0.49
Trouble with family and friends due to working hours (less often to seldom/never)	-0.66	0.52	-0.74	0.48
Hours actually worked (up to 30 h)	1.46	4.29	2.99	19.98
Hours actually worked (41 h to 48 h)	-0.19	0.83	1.04	2.84
Hours actually worked (49 h to 60 h)	-0.27	0.76	0.15	1.16
Hours actually worked (60 h and more)	-0.32	0.72	0.65	1.92
Appreciation society in general (medium)	-0.09	0.91	-0.19	0.82
Appreciation society in general (low to very low/none)	0.94	2.55	0.78	2.18
Appreciation clients (medium)	0.08	1.08	0.20	1.22
Appreciation clients (low to very low/none)	0.63	1.88	0.97	2.65
Appreciation dispatchers (medium)	0.47	1.60	1.09*	2.97
Appreciation dispatchers (low to very low/none)	1.09*	2.96	1.59**	4.90
Income 1000 € to 1499 €	0.93	2.54	-0.97	0.38
Income 1500 € to 1999 €	2.46***	11.72	-0.49	0.61
Income 2000 € to 2499 €	2.05***	7.78	-0.79	0.45
Income 2500 € to 2999 €	1.98**	7.26	-0.96	0.38
Income 3000 € and above	2.66*	14.26	0.20	1.23
Experienced vs. apprentices			5.27*	194.33
experienced: Hours actually worked (up to 30 h)			4.47	87.01
experienced: Hours actually worked (41 h to 48 h)			-3.65**	0.03
experienced: Hours actually worked (49 h to 60 h)			-2.07	0.13
experienced: Hours actually worked (60 h and more)			-3.66**	0.03
Nagelkerke pseudo r-square	0.452		0.525	

(continued)



**Table 2** (continued)

Variable	Model 1		Model 2	
	B	Odds ratio	B	Odds ratio
Chi-square	$\chi^2 = 118.97,$ df = 21, p < .0001		$\chi^2 = 141.86,$ df = 32, p < .0001	

*Notes:* The coefficients for the work-related temporal strains are contrasted with the highest frequency (often to always). The appreciation coefficients are contrasted with the high to very high category. The coefficients for actual weekly working hours are contrasted with the category (30–40 h) as this reflects the contractual hours rated mostly. The income coefficients are contrasted with the lowest category (below 1000 € gross per month). \*p < .05; \*\*p < .01; \*\*\*p < .001

group in the model 2 is interesting. Those who, despite their status as trainees, had actual weekly working hours between 41 and 48 (p < 0.01, odds ratio: 1.53) or more than 60 h (p < 0.01, odds ratio: 1.53) were even less inclined to recommend their profession to others in comparison with their experienced colleagues.

## 4 Conclusion

Above all it is the organizational and individual appreciation and work-related temporal factors that determine a (non-)recommendation of the profession. It appears that on account of the perceived appreciation it's not a "well done" and not basically a financial value, which causes a (non-)recommendation of ones driving profession. Rather, first and foremost it is the recognition of the demands and stresses of work and relevant support by employers and dispatchers. In light of the reported working time conditions and the esteem partly perceived as very low on part of the companies, an external image campaign appears ill-suited to attract potential trainees and career changers for the driving profession. At worst, such an image in retrospect might be perceived as a sham and lead to an increased dropout rate. Instead the support by the company as well as the dispatch is in demand. Caught between clients, profitability and drivers, especially dispatchers can only plan driver oriented, if the company management advocates this. Thus, a well-organized working time not only affects the workload and job satisfaction of current drivers to a great extent. It also has the potential to enhance the prospects to attract trainees based on the recommendations of the current drivers and such to prevent a shortage of skilled workers in the long run.

## References

1. Antonovsky A (1997) Salutogenese. dgvtv-Verlag, Tübingen
2. BAG (2012) Marktbeobachtung Güterverkehr – Auswertung der Arbeitsbedingungen in Güterverkehr und Logistik 2012. BAG Bund, Köln

3. Bakker AB, Demerouti E (2007) The Job Demands-Resources model: state of the art. *J Manag Psychol* 22(3):309–328
4. Bioly S, Klumpp M (2014) Statusanalyse der Rahmenbedingungen für Fahrberufe in Logistik und Verkehr. *ild Schriftenreihe Logistikkforschung*, Bd. 39. MA Akademie, Essen
5. Boeckler impuls (2014) Fremdbestimmt ist ungesund. 3/2014. geprüft am 9. July 2014. <http://goo.gl/E8BBKW>
6. Eberhard V, Scholz S, Ulrich JG (2009) Image als Berufswahlkriterium. Bedeutung für Berufe mit Nachwuchsmangel. *Bibb* 3/2009, 9–13
7. FOM Hochschule für Oekonomie & Management (ed) (2014) Logistik und demografischer Wandel. Arbeitsmarkt, Arbeitsbedingungen, Entwicklungsrisiken und Handlungsoptionen der Fahrberufe in Deutschland. DVV Media Group, Hamburg
8. Fuchs J, Söhnlein D, Weber B (2011) Projektion des Arbeitskräfteangebots bis 2050: Rückgang und Alterung sind nicht mehr aufzuhalten. IAB-Kurzbericht 16/2011. Institut für Arbeitsmarkt- und Berufsforschung, Nürnberg
9. Gläser J, Laudel G (2007) Experteninterviews und qualitative Inhaltsanalyse als Instrumente rekonstruierender Untersuchungen, 3rd edn. Verlag für Sozialwissenschaften, Wiesbaden
10. Goesmann C (2010) Verbandliche Arbeit als Kampf um Anerkennung. Die Erhöhung der sozialen Wertschätzung für die Altenpflege als Ziel intermediärer Organisationen. Der Andere Verlag, Tönning
11. Hellert, Ulrike (2001) *Humane Arbeitszeiten*. Hagener Arbeiten zur Organisationspsychologie 1. Lit, Münster
12. Hess K (2010) Gestaltung mobiler Arbeit. In: Brandt C (Hrsg), *Mobile Arbeit – Gute Arbeit?* (S. 17–32). ver.di., Berlin
13. Hofmann-Lun I, Gaupp N, Lex T, Reißig B (2005) Hauptschülerinnen und Hauptschüler – engagiert, motiviert, flexibel? *DJI Bull* 73:16–18
14. Junghans G (2013) Termin- und Leistungsdruck. In: Lohmann-Haislah A (ed) *Stressreport Deutschland 2012*. Psychische Anforderungen, Ressourcen und Befinden. Dortmund, BAuA, pp 107–112
15. Lohmann-Haislah A (2013). *Stressreport Deutschland 2012*. Psychische Anforderungen, Ressourcen und Befinden. BAuA, Dortmund
16. Lohre D, Bernecker T, Stock W, Düsseldorf K (2012) ZF-Zukunftsstudie Fernfahrer – Der Mensch im Transport- und Logistikmarkt. EuroTransportMedia: Verlag, Friedrichshafen. <http://goo.gl/Halp5O>, 2. Mai 2014
17. Nachreiner R, Arlinghaus A, Bockelmann M, Bruchhagen A (2013) Gesundheit im Fahrdienst. Zwischenauswertung der Online-Umfragen. Gawo, Oldenburg. <http://goo.gl/nTNXdP>, 2. Mai 2014
18. Nöllenheidt C, Wittig P, Brenscheidt S (2014) Grundausswertung der BIBB/BAuA-Erwerbstätigenbefragung 2012. Vergleich zur Grundausswertung 2006. BAuA, Dortmund
19. Resch H (2012) Arbeitsverdichtung im Fahrdienst als Folge der Restrukturierung im ÖPNV. Arbeitspapier 2012. Hans Böckler Stiftung, Düsseldorf
20. Roth J, Schygulla M, Dürholt H, Nachreiner F, Pankonin C (2004) Betriebs- und Arbeitszeiten beim Gütertransport und bei der Personenbeförderung. BAuA, Dortmund
21. Semmer NK, Zapf D, Dunckel C (1998) Instrument zur stressbezogenen Tätigkeitsanalyse ISTA. In: Dunckel C (ed) *Handbuch psychologischer Arbeitsanalyseverfahren*. Zürich, Hochschulverlag, pp 179–204
22. Tomasik MJ, Heckhausen J (2006) Sozialprestige von Ausbildungsberufen aus der Sicht von Realschüler/-innen. *Zeitschrift für Sozialpsychologie* 37(4):259–273
23. TÜV Rheinland (2012) Aktuelle Studie: Fahrermangel bei LKW bedroht auch die Verkehrssicherheit. <http://goo.gl/nk36L1>. 4 Apr 2014