INTELLECTUAL PROCESSES AND PSYCHOMOTOR PERFORMANCE OF PROFESSIONAL DRIVERS IN CONVENTIONAL PSYCHOLOGICAL TESTS AND TEST2DRIVE

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Introduction: Drivers' examinations constitute a very important area of traffic and transport psychology. Along with technological advances, the testing procedures changed over the years. The most recent response to these changes is the development of Test2Drive – an innovative battery of tests that is fully compliant with the effective methodologies. The objective of this article is to confirm whether the results of conventional tests are correlated with corresponding Test2Drive test results. The study was aimed at determination of potential correlations between conventional tests and Test2Drive components in corresponding areas of intellectual capacity and psychomotor fitness.

Methods: Tests were conducted using the conventional instrumentation currently in use in psychology labs, including swirl meters, cross-type machines, simple reaction time tests, and Poppeleuter's test as well as using the alternative Test2Drive system developed as a response to the methodology changes introduced in 2014. The study was conducted in 30 professional drivers, aged 23-62, who underwent tests at the LINIA drivers' training center.

Results: The analysis of results revealed a correlation between both types of tests with regard to oculomotor coordination as tested on a cross-type machine and using the SPANT test as well as visual attention as tested using Poppelreuter's test and the PUT test. Correlations were also observed between variables such as age, number of collisions and number of fines and the results of the Test2Drive battery of tests. Studies revealed no correlations between tests with regard to anticipation as tested using a swirl meter and the PAMT test as well as reaction speed as measured by the simple reaction time test and the SIRT test.

Discussion: The obtained results confirm that psychological examinations are a good basis for prediction of traffic behaviors of drivers.

Conclusions: Correlations between individual tests demonstrate that Test2Drive is a tool that may successfully replace instrumentation that has been used in drivers' examinations to date.

Keywords: anticipation, attention, drivers' examinations, psychomotor fitness, oculomotor coordination, Test2Drive

INTRODUCTION

The profession of a driver is not only important and necessary, but also particularly difficult. Pursuant to the Ordinance of the Minister of the Economy and Labor of 8 December 2004 [8] on the classification of professions and specialties for labor market and the applicability of this classification, the driver's profession encompasses three professional subgroups including: passenger car drivers (including taxicab drivers); bus and tram drivers (bus, trolley coach, tram drivers); truck drivers (hauler and truck drivers).

Due to the associated risks, the access to the driver's profession is restricted to individuals with particular predispositions, which helps, to some extent, to eliminate the risks for drivers themselves and individuals in their immediate surroundings. The obligation to perform entry-level and periodic health checks in drivers is regulated by the Road Transportation Act of 6 September 2001 [14]. The requirement of psychological examination was also introduced by the Act of 5 January 2011 on vehicle drivers [15].

In recent years, new professional drivers' examination methods were developed so as to correspond with the requirements of the changing work conditions and the technical progress. In order to minimize the causes of traffic accidents and thus to increase the safety of traffic, it was required that psychologists studied the regularities of drivers' traffic behaviors. Preliminary analyses suggested that the causes of traffic incidents should be sought primarily among human personality traits. Therefore, the psychologists defined a set of traits as well as a canon of behaviors considered to be correct while driving vehicles. The next step in their work was to develop criteria and methodologies for the assessment of these traits and behaviors.

In Poland, first regulations were provided by the Car Traffic Rules of 1910. The rules defined the physical, psychomotor and personality traits required from driver candidates The rules evolved in the following years, with the first assessment methodology being developed in 1964. [1]. The methodology was updated as the result of continued studies of traffic and transport psychologists, leading to updates being published in 1979, 2000, and 2003 [3,13].

The revised methodology introduced by the Ordinance of the Minister of Health of 08 July 2014 [9] on psychological examinations of individuals applying for driver's licenses, drivers and individuals performing professional duties of drivers led to modification of the hitherto effective tests.

Researchers' efforts led to the development of Test2Drive, a system fully corresponding to conventional methods and compliant with the updated methodology. Despite numerous similarities to the instrumentation that has been used to date, the new system provides a new approach to drivers' examinations [12].

The Test2Drive battery of tests provides common location and form for all tests used to measure intellectual capacity, cognitive processes, personality, temperament and psychomotor fitness of subjects. The Test2Drive system is a tool characterized by maximum similarity to the conventional psychological measurement instrumentation and thus ensures the maintenance of optimum psychometric parameters.

The differences between the Test2Drive system and the conventional instrumentation consist mainly in the form of both examination platforms. All tests used to measure the aforementioned capacities, both the instrumentation-based an the "paper and pencil"-based tests, are implemented into a computer system. Subjects carry out the required tasks a the touch screen; the unified form of the test package is of great convenience for both the psychologists and the subjects [6].

Driver's functioning model

Determination of whether a particular driver is capable of safe functioning in traffic requires the assessment of specific traits and capabilities such as:
- intellectual and cognitive capacities allowing for adequate evaluation of road situations and appropriate decision-making;
- temperament and personality traits that impact responsibility of actions, emotional self-control or behavior styles;
- psychomotor and psychophysical fitness allowing for agile action corresponding to the decisions and realization of the planned maneuvers [11].

The driver's functioning model is well illustrated by the following figure based on the aforementioned mental processes that impact driver's behaviors on the road.

The model facilitates understanding of actions performed by the driver in a particular sequence. The first stage is governed by the intellectual capacity and the cognition processes manifested as situational awareness. This ability allows the driver to notice the stimuli that affect their situation and understands what is going on around them. They
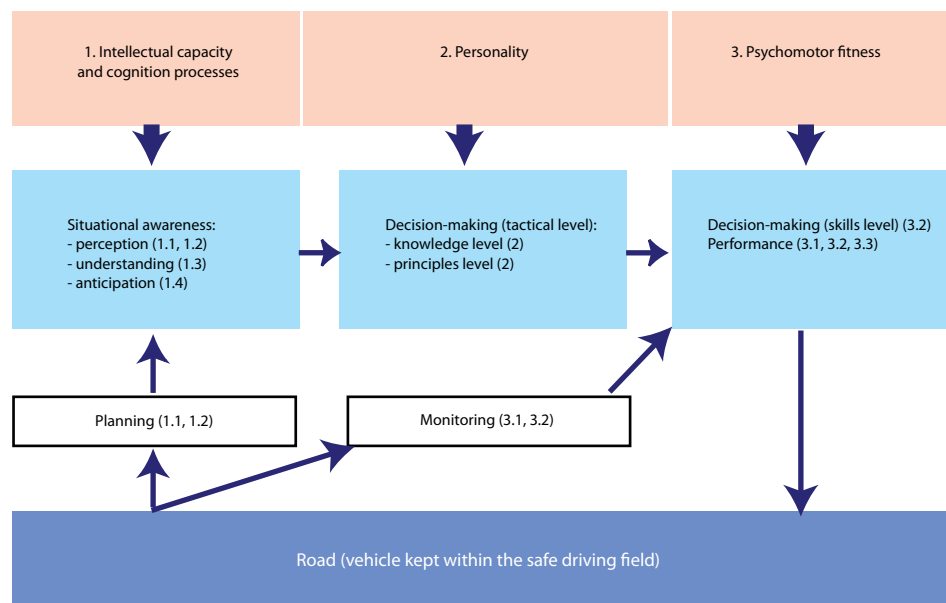
Fig. 1.   Driver's functioning model including the key assessment criteria [11] p.17.

are able to foresee the events that would happen on the road [11].

Personality traits determine the decision-making process, both on the levels of knowledge and principles. The impact of personality traits may be manifested e.g. in the understanding of a norm which is determined, among other factors, by emotional maturity, as well as in the reaction profile, manifesting the level of stress experienced by the driver.

The role of psychomotor fitness is important particularly at the final stage of the tasks. It impacts the realization and completion of the entire process. Psychomotor fitness is responsible for the decision-making process; however, in contrast to the second stage, it is important at the level of capabilities being mastered rather than only at the tactical level [11].

When discussing the operation of this scheme, one must notice that each stage of the driving process can be ascribed with a certain psychological variable and each activity performed by the driver involves a different psychological process. The reported psychological variables sum up to the total picture and the efficacy in all aspects is the basis for proper functioning in the traffic.

Areas of study

Intellectual capacity

In the context of traffic and transport psychology, intellectual capacity is defined as a set of predispositions that facilitate the driver's development and maintenance of adequate situational

awareness [12]. Situational awareness allows the foresight of changes that may occur in traffic in near future and is strongly connected with the decision-making process [10]. Legal regulations precisely define the areas to be examined by the psychologists in the context of determining the driver's intellectual capacity.

Pursuant to the Ordinance of the Minister of Health of 8 July 2014: "With regard to the intellectual capacity and cognition processes, the licensed psychologist selects diagnostic tools and techniques that permit determination of the efficacy of perception, attention, situational awareness and anticipation" [9].

Perception

Perception is defined as the development of a subjective image of the surroundings with particular objects being singled out in the subject's mind. In traffic situations, perception is considered to occur when the driver perceives it within the complex environment elements of importance from the standpoint of driving safety [12]. Perception is one of the functions of visual attention understood as the search for objects with appropriate orientation in the surroundings, or the processing of information and identification of objects [5].

Attention

One of the definitions of attention includes recognition and selective, conscious processing of visual information. In the context of drivers' examinations, it is worthwhile to focus on the attention as the required psychophysical function facilitat-

ing safe driving. Studies conducted at the Motor Transport Institute suggest that attention plays the most important role in numerous maneuvers performed while driving vehicles [1].

Anticipation

Anticipation is understood as the ability to foresee traffic situations that are about to occur in the immediate future [11]. Anticipation is also manifested as targeting the perception and readiness to react to an emerging stimulus. Anticipation directs the driver towards particular activities and adequate responses before the stimulus actually emerges so that proper decision may be made. The driver has the chance to react in advance and thus e.g. to avoid a danger.

Psychomotor fitness

Motor reactions are the final elements and results of driver's processes. Examination of psychomotor fitness facilitates observation of the subject in various situations, often associated with independent factors. The Ordinance of the Minister of Health of 8 July 2014 precisely defines the scope of examinations pertaining to psychomotor fitness: "With regard to psychomotor fitness, the licensed psychologist selects diagnostic tools and techniques that permit determination of the speed and adequacy of reactions as well as oculomotor coordination" [9].

Reaction speed

According to the psychological definition, the assessment of the reaction speed consists in verification whether the time between the stimulus and the reaction is not too long within a large set of samples [11].

Reaction adequacy

In the context of drivers' examinations, the adequacy of reactions is defined as selection of the appropriate behavior pattern with simultaneous suppression of inappropriate patterns.

Oculomotor coordination

The definition of oculomotor coordination adapted for the context of professional drivers' examinations is as follows: "(Oculomotor coordination is) the ability to perform tasks requiring varied motor responses to stimuli that deliver the complete information required" [12].

METHODS

This study compares the results of conventional tests and Test2Drive battery components in the domains of intellectual processes and psychomotor fitness. Intellectual processes are discussed by means of the following abilities: perception, attention and anticipation. Components of psychomotor fitness include reaction speed, reaction adequacy and oculomotor coordination.

The study included an attempt to determine the potential correlations between conventional tests and their equivalent components of the Test2Drive battery of tests aimed at the same examination domains.

Hypotheses

Hypothesis 1. There exists a correlation between the results of tests carried out to assess oculomotor coordination, i.e. between the cross-type machine tests and the SPANT test.

Hypothesis 2. There exists a correlation between the results of tests carried out to assess reaction speed, i.e. between the simple reaction time tests and the SIRT test.

Hypothesis 3. There exists a correlation between the results of tests carried out to assess visual attention, i.e. between the Poppelreuter's test and the PUT test.

Hypothesis 4. There exists a correlation between the results of tests carried out to assess anticipation, i.e. between the swirl meter test and the PAMT test.

Hypothesis 5. There exist correlations between the results of the aforementioned tests and actual behaviors reported in the surveys, including the number of collisions and the number of fines as well as another independent variable, i.e. age.

The study to assess potential correlations between conventional tests and Test2Drive tests were conducted in 30 professional male drivers aged 23 to 62 years. On the basis of completed drivers' surveys, one may conclude that all drivers were characterized by different job seniority and operated different types of vehicles, mostly the heavy trucks. The subject group consisted also of bus drivers and passenger car drivers including driving instructors and rescue service workers. In their surveys, the subjects responded whether they had been involved in collisions or accidents and whether they were given any fines. They also described other difficult traffic situations which were one of the differentiating elements within the subjects' group.

The tests were carried out in the psychology lab of the LINIA drivers' training center, specialized in psychotechnical examinations of drivers. The subjects reported at the lab for obligatory examinations or in order to obtain an upgrade to

a higher driver's license category. After completing the tests using conventional instrumentations, the subjects voluntarily performed the Test2Drive battery of tests.

Verification of the aforementioned research hypotheses was carried out using conventional tools such as swirl meter, Poppelreuter's test, simple reaction time test, cross-type machine, driver's survey. In addition, the following Test2Drive tests corresponding to the conventional methods were used: PUT, PAMT, SPANT, SIRT, and CHORT.

Presented below are brief characteristics of each study tool.

Conventional methods

Swirl meter

Swirl meter test facilitates the assessment of the ability to evaluate rotational speeds which is related to the ability to make appropriate decisions and foresee near-future situations in traffic.

Poppelreuter's boards test

The test is used to assess the level of concentration and the abilities of attention divisibility and set-shifting. The rated parameters consist of, interchangeably, the longest series of correctly recorded numbers, defined as the performance, i.e., the measure of motivation level, and the number of errors that suggests neurotic vs. non-neurotic adaptation to the task and indicative of anxiety-driven behaviors [2].

Simple reaction time test

According to the methodology of 2003 as well as the earlier methodologies, the simple reaction time test is used to assess the speed and uniformity of reaction to light and sound stimuli. The most common parameter is the mean time of reaction to all stimuli.

Cross-type machine

The objective of the cross-type machine test is to assess the speed of psychomotor reactions, attention focus, perception speed and accuracy as well as the speed of decision-making process in time-constrained tasks according to the methodology of 2003 and earlier methodologies. The measured parameter is the task completion time [2].

Driver's survey

In the survey, drivers answer open-ended questions regarding marital status and professional career. Responders enter their personal data, age, and education. They answer questions regarding their family status and health. They also enter details on their professional career.

Test2Drive instrumentation

PUT – visual attention test

PUT tests are carried out to diagnose the function of visual attention i.e. the perception and identification of important objects within the field of view. The measured parameters include the basic variables such as mean time of searching neutral matrices indicative of the efficacy of perception, or the percentage of correct responses indicative of ability to correctly recognize the visual material and thus of the quality of attention [11].

PAMT – anticipation test

The objective of the PAMT test is to assess the efficacy of motion anticipation processes in complex and dynamic situations approximating real-life traffic situations. The test examines the ability to assess and foresee motion and to make appropriate decisions [11]. Measured parameters include the percentage of correct answers [11].

SPANT – two-dimensional oculomotor coordination test

SPANT is a tool for the assessment of oculomotor coordination in complex situations requiring spatial orientation. SPANT test is analogous to the conventional cross-type machine test. Basic variables taken into consideration when assessing potential correlations include median reaction time, median motor time and percentage of correct answers [11].

SIRT – simple reaction time test

The objective of the SIRT test is to assess the reaction speed and stability. The result of the simple reaction time test is the basic indicator in the interpretation of psychomotor fitness tests. The test is also used to assess the information processing ability, in particular attention and executive function.

Basic variables taken into consideration when assessing potential correlations include median reaction time (indicative of information processing speed), median motor time, and delayer reaction time (indicative of the stability of motor processes). A number of additional variables are also available including the mean simple reaction time, the minimum simple reaction time or percentage of correct answers [11].

CHORT – reaction and choice time test

The test assesses the speed and adequacy of reactions in complex situations; it allows evaluation of the speed and stability of complex reactions. Reaction speed is assessed using the median reaction time.

Important variables taken into account when assessing potential correlations included median reaction and choice time indicative of the speed of processing complex information (perception, cognitive analysis, decision-making speed), median motor time, and percentage of correct answer as the measure of qualitative efficacy of recognition and decision-making processes. Additional variables are also taken into account including mean reaction and choice time and maximum reaction time [11].
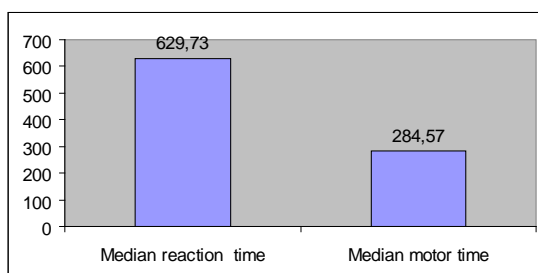
RESULTS

The study evaluated potential correlations between corresponding conventional tests and Test2Drive elements used to assess equivalent domains of intellectual capacity and psychomotor fitness. In addition, existence of correlations between the Test2Drive results and variables such as the number of collisions, number of fines, or driver's age, were assessed.

Tables below present distribution of mean results in conventional tests and each of the Test-2Drive battery components.
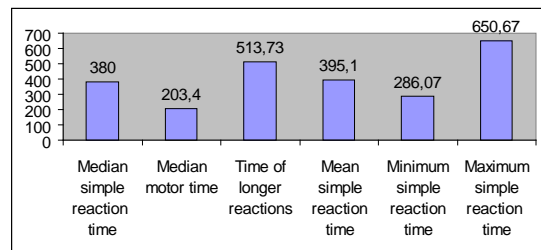
Tab. 1.   Distribution of means in conventional tests.
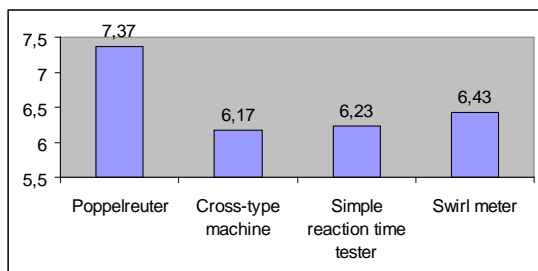
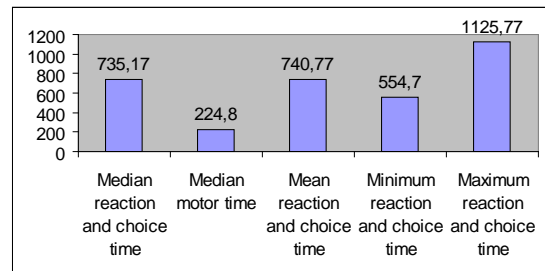Tab. 2.   Distribution of means in the SPANT test.

Correlations between the results of tests assessing oculomotor coordination

Tab. 3.   Distribution of means in the SIRT test.

Tab. 4.   Distribution of means in the CHORT test.

Kendall tau-b correlation analysis revealed the relationship between the results of tests used to assess the oculomotor coordination i.e. the cross-type machine test results and the SPANT - variable of median reaction time: τ-b=-0.37; $p<0.01$. The minus sign indicates that the higher the result of the oculomotor coordination test, the lower the median reaction time.

Correlation between oculomotor coordination and median motor time was also demonstrated (τ =-0.35; $p<0.01$). The minus sign indicates that the higher the result of the oculomotor coordination test, the lower the median motor time.

The third result obtained for the oculomotor coordination variable consisted in positive correlation with the percentage of correct answers (τ=0.41; $p<0.01$). The lack of minus sign indicates that the higher the result of the oculomotor coordination test, the higher the percentage of correct answers. The first hypothesis was confirmed: there exists a correlation between the conventional test and the equivalent Test2Drive component as regards oculomotor coordination.

Correlations between the results of tests assessing the reaction speed

Kendall tau-b correlation analysis revealed no statistically significant relationships between the simple reaction time measurements and SIRT test results. None of the significance levels exceeded 0.05. The second hypothesis was not confirmed: no correlation exists between the conventional test and the equivalent Test2Drive component as regards the reaction speed.

Correlations between the results of tests assessing visual attention

Kendall tau-b correlation analysis revealed a relationship between the visual attention test results and mean neutral matrix search times: τ-b=-0.30; p<0.05. The minus sign indicates that the higher the visual attention level, the shorter the mean neutral matrix search time.

Relationship between visual attention test results and the percentage of correct answers in the PUT test was also demonstrated: τ-b=0.25; p<0.05. The minus sign indicates that the higher the visual attention level, the better the percentage of correct answers in the PUT test.

The second hypothesis was not confirmed: correlation exists between the conventional test and the equivalent Test2Drive component as regards visual attention.

Correlations between the results of tests assessing anticipation

Kendall tau-b correlation analysis revealed no statistically significant relationships between the anticipation test results, i.e. swirl meter test results and PAMT test results (p>0.05)).

The fourth hypothesis was not confirmed: no correlation exists between the conventional test and the equivalent Test2Drive component as regards anticipation.

Correlations between the Test2Drive variables and the number of collisions

Analysis of the results of Student's t-test for independent samples revealed statistically significant differences between individuals with or without history of collisions for the following variables:
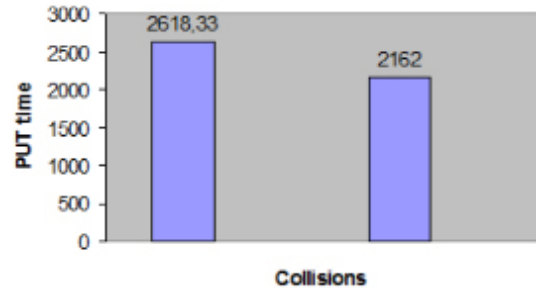- PUT time - t(28)=2.23; p<0.05. Higher PUT times were observed in subjects with the history of collisions vs. subjects with no history of collisions.
- Median motor time - t(28)=2.14; p<0.05. Higher median motor times were observed in subjects with the history of collisions vs. subjects with no history of collisions.
- Median reaction time - t(28)=2.07; p<0.05. Higher median reaction times were observed in subjects with the history of collisions vs. subjects with no history of collisions.

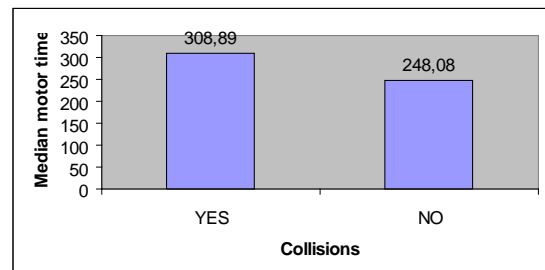History of collisions had no effect on the remaining variables.

Collisions vs. the test variables

Analysis of the results of Student's t-test for independent samples revealed no statistically sig-nificant differences between individuals with or
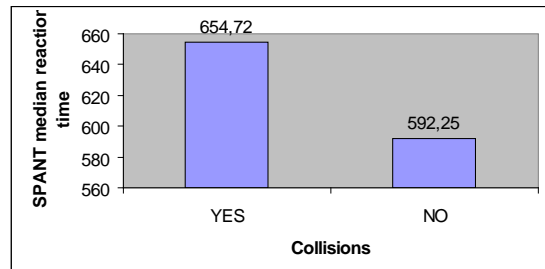

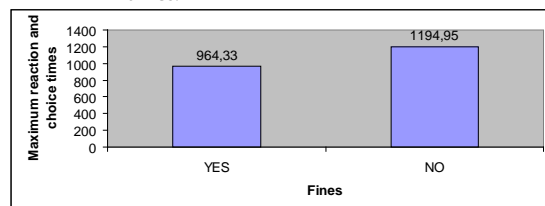Tab. 5. Number of collisions vs. PUT time.

Tab. 6. Number of collisions vs. median motor time.

Tab. 7. Number of collisions vs. SPANT median reaction time.

Tab. 8. Fines vs. maximum reaction and choice times.

without history of collisions for all the tested variables:

Fines vs. the test variables

Analysis of the results of Student's t-test for independent samples revealed no statistically significant differences between individuals with or without history of fines for maximum reaction and choice time: t(27,09)=2.08; p<0.05. Higher maximum reaction and choice times were observed in subjects with the history of fines vs. subjects with no history of fines.

Age vs. the test variables

Kendall tau-b correlation analysis revealed positive relationships between the subjects' age and the following variables:
- The older the subject, the higher the PUT time results.
- The older the subject, the higher the SIRT median simple reaction time results.
- The older the subject, the higher the SIRT mean simple reaction time results.
- The older the subject, the higher the median reaction and choice time results.
- The older the subject, the higher the median motor time results.
- The older the subject, the higher the mean reaction and choice time results.
- The older the subject, the higher the maximum reaction and choice time results.
- The older the subject, the longer the median motor time.
- The lack of minus sign indicates that the older the subject, the higher the result for a particular variable.

Negative correlations were also demonstrated between the subjects' age and the following variables:
- The older the subject, the lower the percentage of correct PUT test answers.
- The older the subject, the lower the percentage of correct PAMT test answers.
- The older the subject, the lower the percentage of correct test answers.

DISCUSSION

Statistical analysis of the selected tests showed that only a part of the tested hypotheses could be confirmed by the results obtained in the study. Positively verified hypotheses will be discussed first, followed by the remaining hypotheses along with possible factors responsible for negative results.

The studies show that there exists a correlation between the results of tests carried out to assess oculomotor coordination, i.e. between the cross-type machine tests and the SPANT test. The correlation is justified by the high similarity of both tests. Booth tests have the same procedure as the SPANT test is a modern analogy of the cross-type machine test. Therefore, the analysis of tests showed that the higher the cross-type machine test result, the shorter the time required to pass the SPANT test which stems from the identity of both tests.

Another hypothesis confirmed in the study was that concerning the existence of a correlation between visual attention tests, i.e. Poppelreuter's test and the PUT test. Both tests measure the basic visual mechanisms of searching and identification of objects within the field of view. Based on the study results one may conclude that both tests are correlated and the modern method is equivalent to the conventional one. The study showed that the better the visual attention, the shorter the times required to search neutral matrices and the higher the percentage of correct answers in the PUT test. The correlation is justified by the similarity of both tests that focus on the same area.

The studies show that there exists no correlation between the results of tests carried out to assess reaction speed, i.e. between the simple reaction time tests and the SIRT test.

Both tools are used to measure the reaction times and stability of the reaction speed; however, certain differences exist between both tools, mainly with regard to the testing procedure itself. The simple reaction time test is an instrumentation-based test. The subject reacts as if they were vehicle drivers, i.e. by pressing the brake pedal upon the occurrence of a visual or sound signal. In case of the SIRT test, the subject reacts only to visual stimuli by moving their finger over the red field as quickly as possible.

Both tests are used to assess the speed and stability of reactions. However, according to the literature, the simple reaction time test is a tool characterized by low stability. Studies on the test revealed that the simple reaction time measure is characterized by low temporal stability in case of simple reaction time to all stimuli and thus cannot be considered satisfactorily reliable. In addition, also the mean time of reaction to optical stimuli was considered not satisfactorily reliable in terms of temporal stability [3]. SIRT test is characterized by very good psychometric characteristics and high reliability; however, due to the differences in the measurements, low stability of the simple reaction time measure and, first of all, to the differences in the test procedure itself, no correlations can be established between both tests.

The statistical analysis revealed that there is no correlation between the swirl meter test and the PAMT test results. A dispute is under way in psychological literature with regard to the nature of the swirl meter test. The swirl meter test is often classified as a speed test since its accuracy in the assessment of anticipation has not been confirmed. Due to the similar objective of the test, i.e.

the assessment of the decision-making ability in complex environments, it was assumed that the PAMT test was an equivalent of the swirl meter test. However, the study showed no correlation between both tests. The cause of this phenomenon should be sought in the fact that both tests, despite the certain similarity between them, are in fact used to measure two distinct domains. The lack of correlation is mainly due to the character of the swirl meter test which can hardly be classified as an anticipation test. Another feature responsible for the lack of correlation is the low stability of the swirl meter test. The lack of statistically significant correlation between the results of both tests shows that they can not be considered equivalent to each other.

Conclusions from the verification of the next hypotheses pertain to correlations between individual Test2Drive battery components and the number of collisions, number of fines and age.

Studies showed that drivers with a history of collisions demonstrated longer times of searching for important elements. This means that visual attention is very important for the safety of driving. Proper function of visual attention mechanisms is important for safe driving.

Drivers with a history of collisions demonstrated longer times of searching for important elements in the PUT test. This was evidenced by higher median motor times as compared to subjects with no history of collisions and higher median reaction times.

The analysis of results revealed that drivers with a history of collisions demonstrated higher median reaction times as measured in the SIRT test. This means that their movements are slower, or, in the terms of the test, they take longer to react to the emerging stimulus. Results showed that drivers with a history of collisions required longer times when solving SIRT test tasks. This translates to traffic situations when drivers' movements and reactions to stimuli occurring within the traffic are slower. There is also a higher likelihood for these drivers to be involved in collisions.

No correlations with the collision status were demonstrated in the remaining tests; in addition, no correlation between the age and the collision status could be observed.

Another part of the fifth hypothesis relates to drivers with a history of fines. As shown by the study results, drivers with a history of fines demonstrated longer reaction and choice times.

The analysis revealed that the test results were also correlated with the driver's age.

The older the driver, the longer the time required to perform the PUT test and thus the slower the ability to search and identify objects within the field of view. Therefore, one may conclude that the level of visual attention is decreased with age and drivers require longer times to react to the stimuli occurring within the traffic. In addition, older subjects not only require longer times to carry out the test, but also deliver a lower percentage of correct answers.

The older the driver, the worse the SIRT test result, namely the longer median simple reaction time. Longer simple reaction times may be caused by independent factors; however, it is worth noting that reaction speeds are decreased with age. The same conclusions can be drawn for from the analysis of the mean simple reaction time parameter. On the basis of the analysis of the results one may conclude that the increase in the mean simple reaction time is associated with reduced oculomotor coordination which worsens with age.

CONCLUSIONS

Psychological examinations of drivers are a crucial diagnostic element required to verify the subject's predisposition to the profession of a driver.

Traffic behaviors of drivers depend on several characteristics such as intellectual capacity, personality traits, and psychomotor fitness. The conducted study confirms the possibility for predicting traffic behaviors on the basis of psychological examination results.

The Test2Drive battery is an implementation of the updated methodology of psychological measurements. As demonstrated by the study results, the battery may replace the traditional instrumentation that is currently used in psychology labs.

To a large extent, both tests cover the same areas and are mutually correlated. This means that they are equivalent and that Test2Drive may be successfully used as a replacement of instrumentation that has been used to date. In most cases, lack of correlations between conventional tests is due to the differences in the instrumentation design or certain differences in test areas. This, however, is not an obstacle for considering Test2Drive the successor of conventional measurement methodologies.

In addition, due to its form, Test2Drive streamlines the psychological examinations process for both psychologists and subject drivers. Thanks to its multimedia form, Test2Drive takes less time to complete and is simpler than the conventional examination. Another significant advantage con-

sists in the fact that all tests used to measure every characteristic are available from a single location, i.e. the computer system. In addition, the system stores the personal data provided by subjects and delivers reports after completion of all required examinations.

Therefore, the study results demonstrate that correlations between the conventional tests and Test2Drive tests support the claim that Test2Drive is a tool capable of replacing the instrumentation that has been used to date.

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