



The Relationship Between Executive Function with Learning Agility in Police Officers

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Highlights

- Executive function can interfere with the effectiveness of work performance.
- Learning agility also has a positive effect on work engagement.
- Executive Function and learning agility in police officers.

Abstract

Background: Learning agility is the willingness to learn from experiences and apply those learnings to new situations. Agile knowledge profoundly impacts performance, so several companies are incorporating it into their learning strategy. In comparison, cognitive processes and behaviors indicate learning agility. Learning agility has been used in many companies as an essential consideration for selecting high-potential talent. *The study aims:* This study aimed to determine the relationship between executive function and learning agility in police officers. *Method:* The research method used is a correlational quantitative method with Spearman as a data analysis technique. The research participants are 107 police officers. Data collection on learning agility uses a learning agility scale (17 items, $\alpha=0,922$), and executive function uses a neuropsychological test tool. *Result:* Based on the results of the analysis test between executive function and learning agility on police officers with the Digit Span Backwards, Stroop Test, Trail Making Test A & B, Ruff's Five-point test, and the Verbal Fluency Test shows that there is no significant negative relationship between executive function and learning agility. *Conclusion:* Based on the analysis of the data, it was found that there is an essential relationship between executive function and learning agility in police officers.

Keywords: Learning Agility; Executive Function; Police Officers

INTRODUCTION

Human resources are an essential factor in an organization. Moreover, every organization will continuously improve the quality of its resources to achieve satisfactory performance. This quality improvement is also one of the efforts to make employees more motivated and have more explicit goals to be achieved. Improving the quality of human resources is one factor necessary for an organization to face in the current era of globalization. Likewise, for the Police, programs to improve human resources are implemented to enhance the quality of the Police.

The Indonesian Survey Institute (LSI) released the research results on the level of trust the Indonesian people have in law enforcement agencies on Wednesday (1/3/2023). Police occupy the last position because recently, there has been much bad news about police officers, such as protracted delays, abuse of authority, deviations from procedures, non-providing services, and requests for money and benefits. From the reality previously mentioned, it shows that the National Police as an institution has yet to be able to offer optimal performance in carrying out its duties and functions. Polri has made many changes to improve performance, which has already received a negative stigma from various parties, including from the public as Polri stakeholders.

The Indonesian National Police (Polri) is an institution that protects, serves the community, enforces the law, and maintains security and public order, which is the main task of the Police. The quality of the performance and service of the Indonesian National Police (Polri) is currently in the spotlight from various parties, from civil society to social media. Police are one of the state government's functions in maintaining public order and security, law enforcement, protection, and community service (Yulihastin, 2008). The National Police consists of various fields according to their respective needs, for example, the criminal justice sector, the traffic sector, the Mobile Brigade (car brigade), the Binmas (community development) sector, and others.

In the current era, with the development of increasingly modern information technology, members of the National Police are required to be able to follow and study every development of the times to modernize services so that services to the community can run effectively to realize law enforcement that is fast, precise, objective, transparent and legal certainty in society. The duties of the Police continue to increase along with the Covid-19 period. The National Police usually provide security and order; with the Covid-19 pandemic, the National Police are tasked with distributing necessities to the underprivileged. Not only that, but the National Police also has other additional tasks, including escorting the bodies of Covid-19, carrying out searches, and burying the bodies. In several cases, there have been acts of refusal to bury the bodies in various regions, which were carried out according to the Covid-19 protocol. These tasks are outside the usual Police practices but must still be carried out (Wardhana, 2020).

As an organization, the Police are demanded to have the courage to make adaptations and changes according to environmental developments, which of course, bring challenges to the security and order of a new society. In improving police services to the community, employees are also required to have the will and ability to learn quickly, and then the learning can be applied adequately to different conditions and in the future (De Meuse & Feng, 2015). Police officers must learn agility skills to meet organizational demands for agile human resources. Agility relates to facing difficulties by having the flexibility and agility to see existing solutions. Learning agility is the willingness and ability to learn from experience, then apply what has been learned to gain success in new situations (Lombardo & Eichinger, in De Meuse, Dai & Hallenbeck, 2010). People with high agility take the proper lessons from their experiences and apply these lessons in new situations; they tend to seek new challenges continuously, actively seek feedback from others to

grow and develop, tend to reflect self, evaluate experiences, and draw conclusions (De Meuse, 2010) than individuals who are in a rapidly changing environment, learning agility can help individuals and organizational members to overcome stagnation from crises that occur in organizations (Lim et al., 2017).

Learning agility is divided into four aspects: people agility, result-in agility, mental agility, and change agility (Lombardo & Eichinger, 2000). Agility, speed, and flexibility are essential for learning from new experiences (DeRue et al., 2012). Moreover, while cognitive processes and behaviors indicate learning agility, how it is demonstrated varies widely among personal attributes (Burke & Smith, 2019; De Meuse, 2022; DeRue et al., 2012; Lombardo & Eichinger, 2000).

Cognitive flexibility is the ability to adjust our thoughts and behavior in response to changing goals or our new environment. Cognitive flexibility refers to the ability to shift attention between task sets, attributes of a stimulus, responses, perspectives, or strategies (Miyake et al., 2000; Zelazo, 2016). It is generally conceptualized as a complex, later-developed ability made possible by increased control of inhibition and working memory (Chevalier et al., 2012; Cragg & Chevalier, 2009; Garon et al., 2008). Cognitive flexibility is one of the three aspects of executive function. Specifically, Zelazo, Blair, & Willoughby (2016) use these three models, namely cognitive flexibility, working memory, and inhibitory control (cognitive flexibility, working memory, and inhibitory control), as components that build executive function.

Executive function is defined as the ability to control and manage cognitive and behavioral processes, usually seen as processes used for the self-regulation of thoughts and behavior in order to achieve goals (Ursache et al., 2012). Zelazo, Blair, & Willoughby (2016) explains that executive function has several domains that are summarized and work together to achieve good executive function skills, namely cognitive flexibility is the ability of a person to think about things in more than one way when doing something and the ability to move from different ways of working. One way to another smoothly and fluidly without losing concentration. Then Inhibitory control is related to a person's ability to ignore existing disturbances. Inhibitory control keeps a person on track with proper procedures and resists inappropriate impulses. Then working memory is a person's ability to store information, manipulate it, and use it for several purposes.

Stress, poverty, and loss can harm executive function, whereas good parenting, quality early education, and training can improve executive function skills (Zelazo et al., 2016). Cognitive function is one of the brain's abilities, influencing a person's capacity to care for himself.

Employee work roles are very influential on the success of an organization. There is a positive relationship between cognitive behavior and employee career development; this has a positive impact when employees in carrying out their duties in the field can provide good service and will lead to increased organizational performance (Fransiskha et al., 2020).

Executive functions are needed for someone in work and daily activities. An employee should ideally be free from disturbance of noble functions so that it does not interfere with his activities in carrying out his work. However, few studies have investigated the association between executive function and learning agility. Caixeta et al. (2012) said that disturbances in executive function could interfere with the effectiveness of work performance, including the ability to work, so researchers are interested in focusing on one aspect of cognitive function with learning agility.

METHOD

Study design

This research uses a quantitative approach with a correlational research strategy (Sugiyono, 2017). Variables include learning agility as the dependent variable and executive function as the independent variable. This research was conducted at the Central Java Regional Police on March 15 - 16, 2023.

Participant

The participants of this research were 107 police officers, consisting of 92 men and 15 women. The respondent selection criteria applied by the researcher are: (1) worked as a police officer; (2) ages 25 – 40 years; (3) at least one year of working experience as a police officer. The sampling technique used is convenient sampling.

Instruments

The instrument used in this study was the learning agility scale from Lombardo and Eichinger (2000), which consists of four aspects: people agility, results agility, mental agility, and change agility. There are 17 items on this scale with Cronbach's $\alpha = 0.922$.

The executive function was measured by Digit Span Backward, Stroop Test 2 & 3, Trail Making Test (TMT) A&B, Ruff's Five Point Test, and Verbal Fluency Test.

The Digit Span instrument determines short-term auditory memory, attention, and anxiety (Estri et al., 2022). The subject is presented with a series of numbers (at a speed of one digit per second), and then the subject must repeat them in the opposite order. Tests are halted when the subject makes a mistake twice in a row or when the number sequences (8 sets) are completed (Widhianingtanti et al., 2018). Working memory scores have a positive meaning; high scores indicate high working memory skills. The internal reliability of the digit span test is at a score of 0.70 to 0.90. This shows the test has relatively high internal reliability (Conway et al., 2005). Groth-Marnat and Wright (2016) wrote that the reliability of the double-digit span subtest is $r = 0.93$.

The Stroop test determines the ability to inhibit cognitive impairment, attention, processing speed, cognitive flexibility, and working memory (Perianez et al., 2021). Stroop Test consists of three tasks, each lasting 45 seconds: (1) Word tasks: Reading the name of colors printed in black ink; (2) Color tasks: Naming colors of meaningless semantic symbols (XXXX) printed in colored ink (e.g., red, blue or green); and (3) Color-Word tasks: Reading the names of colors printed in colored ink so that the words and ink colors do not match (for example, the word blue is printed in red ink and the correct response is "Red"). Each task generates a score (color, word, and color-word) based on the number of completed items (Faraone et al., 2005). The reliability coefficient of the overall test-retest Stroop task is 67 (Franzen et al., 1987).

TMT A and B measure attention to speed, sequencing, mental flexibility, and visual search and movement functions. TMT is a valid and reliable test that can be used as an EF test measuring planning, mental flexibility, inhibition/interference control, and attentional set-shifting, as well as psychomotor speed and visual motor skills (Widhianingtanti & Sulastri, 2022). This test kit has moderate to high test-retest reliability in part A ($r=0.36$ to 0.79) and part B ($r=0.44$ to 0.89) in several studies (Centre for Research Excellence in Brain Recovery, 2017a). The trail-making test is very popular as a neuropsychological test and is included in a battery of neuropsychological tests (Tombaugh, 2004). This test tool tests visual abilities, scanning locations, information processing speed, and mental flexibility; TMT can also measure executive

function abilities. This is to what Reitan & Wolfson (in Bell-McGinty et al., 2002) said TMT is a test tool used to measure executive function in the elderly, especially attention, speed and mental flexibility. TMT can also measure spatial organization, memory, and recognition abilities, incredibly visual locations. TMT A measures planning, visual scanning, numerical sequencing, and visual and motor speed, while TMT B measures cognitive flexibility (Spren & Strauss in Bell-McGinty et al., 2002). TMT results (A and B) are in the form of numbers indicating the time it took the subject to complete the test; the higher the score means, the more time it takes and the worse the cognitive function. Moreover, conversely, the lower the score, the less time it takes and the better the cognitive function.

Ruff's five-point test was used to measure figural flexibility and persistence associated with executive functioning (Tucha et al., 2012). The reliability coefficients obtained were $r = 0.80$ ($p < 0.01$) (Fernandez et al., 2008). Verbal fluency is a test to determine verbal fluency. The subject was asked to say as many words as he knew with some prerequisites. The words the subject can produce are calculated based on analysis and existing norms to provide an overview of their verbal fluency (Sulastri et al., 2017). Verbal fluency is considered an executive internal language function, requiring self-monitoring, inhibition, access to one's lexicon, and word fluency. and working memory (Lezak et al., 2012).

Procedure

This research was conducted in the area of the city of Semarang. After getting the appropriate subject, the subject is given a scale and test. Filling in the scale is given via the Google form, then for measuring executive function, the subject is tested one by one and given the Digit Span test, Stroop Test, Trail Making A & B, Ruff's Five Point Test, and Verbal Fluency Test sequentially. In the end, 107 research subjects were obtained. Overall, data collection for this study took place in March 2023.

Data Analysis

The data analysis method used to see the relationship between Executive Function and Learning Agility is using Pearson product-moment correlation coefficient using a computer with the Statistical Packages for Social Sciences (SPSS) 26 program.

RESULT

Participant's characteristics

The total number of research participants who formed the basis of data analysis was 107 police officers. The descriptive data of research participants can be seen in Table 1.

Table 1.

Descriptive Data of research participants

	Demographic	Total	%
Age	25 – 30 years	39	36%
	31 – 35 years	12	11%
	36 – 40 years	6	6%
	41 – 45 years	14	13%
	46 – 50 years	16	15%
	51 – 55 years	20	19%
Gender	Men	92	86%
	Women	15	14%

Education	Highschool	49	46%
	S1	40	37%
	S2	18	17%
Working experience	0-5 years	27	25%
	6-10 years	14	13%
	11-15 years	9	8%
	16-20 years	9	8%
	21-25 years	17	16%
	>26 years	31	29%

Data analysis

Data analysis using the Pearson product-moment correlation coefficient yields results as listed in Table 2 below.

Table 2.

Result of data analysis

	PEARSON CORRELATION	LA
DIGIT SPAN	Pearson Correlation	.011
	Sig. (2 tailed)	.910
	N	107
STROOP 2	Pearson Correlation	.389**
	Sig. (2 tailed)	.000
	N	107
STROOP 3	Pearson Coefficient	.407**
	Sig. (2 tailed)	.000
	N	107
TMT A	Pearson Coefficient	-.006
	Sig. (2 tailed)	.952
	N	107
TMT B	Pearson Coefficient	.033
	Sig. (2 tailed)	.736
	N	107
RFPT	Pearson Coefficient	.066
	Sig. (2 tailed)	.502
	N	107
VFT	Pearson Coefficient	.139
	Sig. (2 tailed)	.152
	N	107

From the result of the non-parametric analysis using Spearman's rho, correlation between digit span, Stroop 2, Stroop 3, TMT A & B, Ruff's Five Point test, and Verbal Fluency Test, which are tests that uncovers executive function with learning agility, the results are:

- The relationship between digit span with learning agility obtained a correlation coefficient (r_{xy}) = 0.011 with $p = 0.910$ ($p > 0.05$), which means that there is no significant correlation between the two.
- The relationship between Stroop 2 with learning agility obtained a correlation coefficient (r_{xy}) = 0.389 with $p = 0.000$ ($p < 0.05$), which means that there is a significant correlation between the two, and Stroop test 3 and learning agility obtained a correlation coefficient (r_{xy}) = 0.407 with $p = 0.000$ ($p < 0.05$), which means that there is a significant correlation between the two.

- c. The relationship between TMT A & B and learning agility was obtained at TMT A, namely $(r_{xy}) = -0.006$ with $p = 0.952$ ($p > 0.05$), and TMT B, $(r_{xy}) = 0.033$ with $p = 0.736$ ($p > 0.05$), which means there is no significant correlation between the two.
- d. The relationship between Ruff's Five Point Test and learning agility obtained $(r_{xy}) = 0.066$ with $p = 0.502$ ($p > 0.05$), which means that there is no significant correlation between the two.
- e. The relationship between the Verbal Fluency Test and learning agility obtained $(r_{xy}) = 0.139$ with $p = 0.152$ ($p > 0.05$), which means that there is no significant correlation between the two.

DISCUSSION

Learning agility is the ability and willingness to learn from experience and then apply that learning to succeed in new situations (Lombardo & Eichinger in Robbins, 2013). Individuals will also actively seek feedback from others to grow and develop, tend to reflect on themselves, and evaluate experiences and draw conclusions (De Meuse, 2010) which are then assumed to be related to executive function, which is a high-level cognitive process that regulates thinking or formulating goals, planning and responding to changes in complex situations, where the existence of an excellent executive function will be able to increase learning agility because it is assumed that an employee who can formulate, plan and respond to changes in complex situations makes them able to control the conditions of learning agility to facilitate his work. Furthermore, if an employee cannot formulate goals and plan activities properly or respond well to changes in complex situations, then learning agility will not improve. However, in fact, in this study, based on the analysis of test results between executive function and learning agility in police officers, only the Stroop Test shows that executive function has a significant correlation with learning agility. The attention, processing speed, cognitive flexibility, and working memory that include the executive function (Perianez et al., 2020) can increase the ability to learn agility. So that if the police officer can plan an activity well or respond well to the situation in the surrounding environment, it does not increase his learning agility abilities either. DeRue (2012) states that a person must be able to change the framework (flexibility) that helps him understand how different things are interrelated or connected to learning agility.

The researcher describes that each individual or member of police officers cannot want what the individual does by the system and values according to the individual's wishes. The individual cannot ask, listen to and receive personal feedback from others carefully by considering the benefits and taking corrective action to improve the performance. One example is that in carrying out daily duties of members of police officers, they cannot carry out police duties at the initiative of members of the police officers themselves because the implementation of tasks has been regulated in the Organizational System of Police Work (SOTK) Republic of Indonesia National Police Regulation Number 14 of 2018 concerning organizational structure and regional police work procedures. In this case, the implementation of tasks must report in stages from the lowest rank to the highest rank, which oversees the work unit in each before and after the implementation of police duties, and if there are obstacles, members of the Police cannot make their own decisions, cannot listen to other people's suggestions others who are not their superiors but can only report the problem to their superiors who directly oversee the members of the police officers themselves to get solutions in solving problems in carrying out their duties.

An organization with an agile workforce that can pivot in real time is also valuable, especially if the employees already have the skills to do this successfully. Therefore learning

agility is essential for every employee, including members of the Police. Learning agility (mediated by job content on-the-job learning) was a better predictor of being identified as a high-potential employee (Dries et al., 2012). Besides that, learning agility also has a positive effect on work engagement. As employee learning agility develops, job engagement will increase. Employees with higher learning agility tend to have more robust job engagement. The involvement comes with feelings of importance and enthusiasm (Saputra & Abdinagoro, 2018).

Researchers rarely carry out research that examines the relationship between executive function and learning agility. In addition, the conditions for data collection were poorly controlled (implementation of neuropsychological tests). Even though they have chosen a conducive place, distractions can still come at any time and disturb the subject's concentration during the data collection process. The long duration of data collection (conducting neuropsychological tests) bored the subject, and they needed more focus on doing the neuropsychological test.

CONCLUSION

Based on the analysis of the data, it was found that there is a significant relationship between executive function and learning agility in police officers. Despite the limitations, from the test results and data analysis in the research, theoretical suggestions are obtained for readers who are interested in researching similar research so that they can consider several suggestions, namely using other variables that are better so that there is a better relationship between variables considering the importance of learning agility for employees.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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