

## Criterion Validity of the Assessment Centres for Supervisors in the Automotive Company

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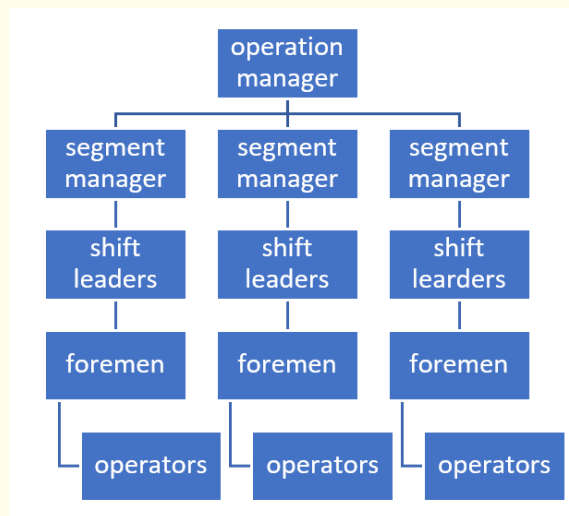
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### Situation

The consulting company TRAICON was asked by an automotive company to assess their shop-floor leaders (foremen) in order to select possible candidates for higher positions (shift leaders) and to suggest further developmental interventions for assessees.

The automotive company is a supplier of parts for final automobile manufacturers (Škoda, Mercedes, VW, Audi etc.). The company is situated in Czechia and employs about 2000 workers. The company consists of several departments including R & D, construction, continuous improvement etc. Most of people work in an operation department.

Operation department is organized as follows.



**Figure 1**

Foremen manage assembly lines operated by 4 to 20 people. Some assembly lines are automatized, others need more manual work. People of operations department work in 3 or 4 shift system.

Because of a general lack of workforce leaders have to face massive turnover and increasing demands of subordinates.

### Objective of the Study

The main objective of the research was to validate assessment centre tools for selection of foremen. For this purpose we looked for correlation between the AC methods and criteria (superiors' evaluation).

### Procedure

1. At the beginning the supervisors' competencies were specified at a workshop where the operations manager, the segment leaders, and personnel people participated. The following supervisors' competencies were set up as a workshop outputs: leadership and motivating, focus on performance, effective organization of work, consistency, flexible problem-solving, communication, team co-operation, resistance to critical situations, and focus on priorities.
2. Later we selected methods of measuring the competencies.
3. In interviews with segment managers we collected a range of situations which may be critical for foremen performance and we discussed possible solutions of the situations.
4. We let segment leaders evaluate various types of solutions according to fitness to company objectives.
5. We developed a range of methods for assessing a potential of participants.
6. Participants were assessed in groups of 4 to 6 people (foremen). Every group of participants were assessed by two consultants. The group assessments lasted 7 hours.
7. All the foremen were evaluated by their superiors - shift leaders - on the basis of above mentioned 9 criteria.
8. Correlations between assessment results and superiors' evaluation were computed.
9. Results were discussed with the operation manager and the segment leaders in order to explain research findings.

### Methods

#### Predictors

In order to assess the competencies the following methods were used:

- AMT Adaptive Matrices Test (logical reasoning as an indicator of general intelligence)
- ANBE (on-line test measuring 40 personality traits)
- Coat-stand (exercise based on individual ability to think out number of possible use of a presented object)
- Morning Shift at Assembly Department (case study asking participants to define priorities from 27 tasks emerging during the fictive morning shift and to formulate optimal solutions of the described situations; performed individually in a limited time)<sup>1</sup>.

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<sup>1</sup>The example of item and evaluation: "Your team members are to be punished on their wages because of decrease of quality. What kind of measures will you implement?"

- I will ask them to be more responsible (0 points)
- I will organize more training (1 point)
- I will analyse causes (2 points)
- I will open the team discussion about quality issues (3 points)"

- Presentation of Unpopular Measures (role playing; individuals presented unpopular measures to the rest of the group and were asked to react on their objectives, e.g. change of group performance standards, accepting a conflict person to a work group, addition of extra administrative duties etc.)<sup>2</sup>.
- Lost in the Desert Exercise (traditional team game based on a group decision-making and group discussion in a simulated critical situation)
- Behavioural interview (set of questions focused on participants’ behaviour in various situations, e.g. persuasion of other people, conflict resolution, overcoming obstacles etc.)
- Career interview (discussion about participants CV, experience, and career aspirations)

**Criteria**

Shift leaders (as direct superiors) evaluated participants on the 9 criteria reflecting above mentioned competencies on a scale 0 (weak) to 9 (excellent).

**Results**

**Tests of abilities**

		AMT	Morning shift-conception	Morning shift-operative issues
Superior’s rating	Leadership and motivating	-0,09	0,09	-0,03
	Focus on performance	-0,08	0,18	-0,11
	Effective organization of work	-0,01	0,21	0,05
	Methodicalness	-0,08	0,06	-0,16
	Flexible problem solving, creativeness	0,30	0,04	0,00
	Communication	0,14	-0,04	-0,07
	Team co-operation	0,03	-0,15	-0,08
	Handling with critical issues	0,13	-0,11	-0,11
	Focus on priorities	0,12	0,20	-0,10
One-tailed test:		p < 0.05		
N = 69		p < 0.01		

Results in the test of cognitive abilities (AMT) is highly correlated with the superiors’ evaluation of communication on the scale 0 to 9 as superiors prefer people who perfectly understand instructions and are able to clearly express their reports and/or needs.

Predictor conceptual organization of work was based on ability to select prioritized issues from 27 events required foreman actions during the morning shift (rank -5 to +5). This predictor was positively correlated to criteria effective organization of work and focus on priorities. On the other hand there is no relation between the results of handling with operative issues and any of the criteria. After post-research interviews with managers and shift-leaders we realized, that approach of segment-managers (who suggested scoring of

<sup>2</sup>The example of an instruction: “The occupation health and safety audit ordered to change work procedure. The new procedure is less comfortable for operators. They will have objections. Present them the situation and react on their objections”.

particular answers in the test) and shift-leaders (who evaluated assessees) was different. Segment managers stressed strict adherence to the rules and procedures whereas shift-leaders (intimately connected with shop floor issues) focused on use of informal solutions often circumventing the rules.

**Behaviour in group exercises evaluated by consultants**

		Consultants' evaluation			
		Leadership and motivating (presentation)	Problem solving and creativeness (coat-stand, Lost in the desert)	Communication and presentation (lost in the desert exercise, presentation)	Team-work (Lost in the desert exercise)
Superior's rating	Leadership and motivating	0,21	-0,06	-0,04	-0,08
	Focus on performance	0,06	-0,09	0,03	0,24
	Effective organization of work	0,06	-0,03	-0,08	0,00
	Methodicalness	0,01	-0,08	-0,11	0,13
	Flexible problem solving, creativeness	-0,11	0,29	-0,18	-0,22
	Communication	0,29	0,26	0,08	0,06
	Team co-operation	0,05	0,11	-0,23	-0,08
	Handling with critical issues	-0,02	0,02	-0,17	-0,21
	Focus on priorities	0,08	-0,01	0,06	0,04
One-tailed test:		p < 0.05		p < 0.05	
N = 69		p < 0.01		p < 0.01	

Both superiors (criteria) and consultants (predictors) used for their evaluation of assessees scales 0 - 9).

There is a significant relation between predictor leadership and motivating (individual presentation of unpopular measures ranked by consultants) and criterion leadership and motivating (superiors' evaluation).

Team-work level evaluated by consultants during the team-exercise is related to criterion focus on performance (according to superiors). According to consultants, those participants who presented higher effort to reach team objective were preferred.

Consultants evaluated level of problem solving and creativeness using number of produced ideas at the Coat-stand exercise and ability to come out with new solutions during the Lost in the Desert exercise. The evaluation correlated with the criterion flexible problem solving, creativeness.

There is a negative correlation between team-work according to consultants and criterion problem-solving, creativeness. It seems that innovators are prone to read negatively on any criticism of their excellent ideas.

People who are good problem-solvers and good leaders (according to consultants) are evaluated as good communicators by their superiors.

High level of communication skills in the Lost in the Desert exercise (by consultants) is surprisingly correlated to low level of team work ranked by superiors. Explanation may be that superiors prefer quiet doers who might be ideal team-members.

There is low correlation between team-work according to consultants and the criterion handling with critical issues according to superiors. Probably quick individual solvers are preferred by shift leaders over the time consuming team discussions in a critical events.

**Personality test**

Person's r coefficient (personality traits measured by ANBE test) and superior's evaluation of assessees on selected criteria.

		Cautious-ness	Profes-sional flexibility	Learning from experience	Calmness	Focus on results	Demandness	Directive-ness	Talkative-ness	Originality
Superior's rating	Leadership and motivating	-0,16	0,26	-0,19	-0,09	-0,04	0,28	-0,04	-0,09	-0,03
	Focus on performance	0,01	0,15	0,25	-0,10	-0,13	0,08	-0,04	-0,10	-0,25
	Effective organization of work	-0,01	0,18	0,02	-0,11	-0,34	0,12	0,01	-0,11	-0,19
	Methodical-ness	-0,06	0,12	0,04	-0,38	-0,14	0,19	-0,15	-0,38	-0,26
	Flexible problem solving, creativeness	-0,30	0,15	0,01	-0,09	-0,12	-0,07	-0,29	-0,09	-0,01
	Communica-tion	-0,08	0,18	-0,17	-0,08	0,03	0,20	-0,02	-0,08	-0,07
	Team co-operation	-0,05	0,01	-0,13	0,12	-0,05	-0,04	-0,14	0,12	-0,15
	Handling with critical issues	-0,20	0,17	0,02	-0,17	-0,04	0,12	-0,10	-0,17	-0,06
	Focus on priorities	-0,08	0,11	0,02	-0,05	-0,20	-0,06	-0,16	-0,05	-0,19
Two-tailed test:	p < 0.05						p < 0.05			
N = 69	p < 0.01						p < 0.01			

Personality traits measured by the test ANBE were not used as a selection criterion. They serve as a more deep description of attendant's personality. We were interested in how they influenced superiors' rating.

There is a significant relation between the criterion leadership and motivating and the trait professional flexibility (readiness to cope with various types of tasks and to accept new skills). That reflects shift leaders' focus on professionalism The relation between the leadership and motivating and the trait demandness expresses superiors' projection of the ideal leader and preference of an authoritative leadership style.

Criterion focus on performance is connected with the personality trait learning from experience.

Negative correlation values seem to be surprising. We tried to explain them in interviews with company managers. Strong negative relation between the criterion effective organization of work and the trait focus on results is very difficult to explain. It could be caused by age differences - old experienced foremen may be better organizers than young enthusiastic ones.

People positively evaluated as methodical ones are less calm (as they too much worry how to meet all regulations and objectives perfectly) and less talkative (they prefer working over the losing time by talking).

As flexible problem-solvers were evaluated less cautious people (who are not afraid of changes or innovative approach to problem solution) and less directive more open people.

### Findings

We recommend the following set of tools for assessments of shop-floor leaders:

1. Cognitive abilities tests
2. The coat-stand exercise
3. The morning shift case study - conceptual approach
4. The presentation of unpopular measures exercise

The Lost in the Desert exercise, the personality test, and the interview may be suggested as additional methods.

### Discussion

**Criteria:** The real meaning of criteria (competencies) was described to shift leaders (evaluators). In spite of that it is not sure if they were able to understand right meaning of the terms exactly (sometimes it may seem too abstract for them or they evaluated a person according to one accidental event - halo effect). So, there may be differences among evaluators in the meaning of particular criterion.

**Differences caused by levels of management:** There arises a question of what a successful pattern of behaviour is expected. We realized that segment managers have a different approach to evaluation of various types of behaviour in simulated situations compared to shift leaders. Whereas segment managers (who evaluated level of desirability of various types of actions) prefer acting strictly according to company rules; shift leaders (who evaluated participants) use more their common sense and understanding for situation needs. Thus, for the next time it seems better to co-operate with people on the same level of management when discussing standards of behaviour and evaluating subordinates.

**Differences among work-sites:** Requirements on foremen differ among various work-sites. There are assembly lines with about 5 workers and on the other site assembly lines with 20 workers. Leadership style is friendlier with lower level of inter-personal distance at little work sites compared to large work-sites where bosses behave more formally and strictly less respecting subordinates' needs. Some work sites are fully automatized and require high professional knowledge whereas others are operated by less qualified personnel with low level of regional language. The approach to leadership and handling with everyday issues is different according to specifics of the work-site what may bias results in simulated situations.

**Strive to meet company expectations:** Participants presume what kind of behaviour is expected by company managers and try to formulate their answers in simulated situations according to the expected behaviour instead of expressing their natural approach.

**Findings limited to specific organization:** The optimal reactions on question in simulations were formulated by managers in accordance with organizational rules and organizational culture and are hardly transferable to any other company.

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