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DEFINITIONS AND MEASURES OF WORKPLACE LEARNING AND JOB SATISFACTION IN THE CONTEXT OF INDUSTRY 4.0

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Abstract

People obtain more knowledge, information and skills on the job market. Thus, the management of human resources is being more crucial for every organization. The concept of workplace learning is becoming an essential factor for businesses success, especially in the times of crisis. It helps companies to stay competitive on the market and helps them to respond promptly to the challenges caused by rapid changes due to the fourth industry revolution. The concept of "Industry 4.0" represents the fast gains of developed technologies and applications in industries that help with increasing the productivity, but also require the employees to continuously improve and learn in order to be able to integrate with new technological improvements. However, different authors have different definitions of what job satisfaction really is. It is an extensively researched yet a barely understood phenomenon in organizations. Job satisfaction yields to subjective perception of how one feels about work. Thus, various factors, both external and internal, are associated with it. This paper aims to provide the definitions and reviews of active workplace learning measures used in empirical studies in human resource development and most commonly used measures for job satisfaction. The research paper can provide organizations and practitioners with the information on different approaches that can be used to measure and identify employees' preferences and to help them find a way to satisfy their workers and keep them at their side in this fast-changing work environment.

Keywords: *workplace learning measurement, job satisfaction measurement, industry 4.0*

1. INTRODUCTION

The Fourth Industrial Revolution (Industry 4.0) is built on the grounds of the third industrial revolution (which used electronics and information technology to automate the production process) and has been occurring since 2011 when it was first introduced by the German government. Industry 4.0 has nine core elements: Big Data and Analytics, Autonomous robotics, Simulation, Horizontal and Vertical System Integration, Internet-of-Things, Cyber Security, The Cloud, Additive Manufacturing, and Augmented Reality (Moeuf et al., 2018; Rübmann et al., 2015). There are many benefits that Industry 4.0 brought to the market, such as improving product quality, reducing time (Szozda, 2017), and improving cooperation between the stakeholders (Oesterreich & Teuteberg, 2016). On the other hand, there are also many challenges that everyone

faces, such as high application costs, process requirements, organizational changes and legal uncertainty (Oesterreich & Teuteberg, 2016). Nguyen (2020) emphasises the importance of capability of organizations to adapt and change the way they conduct their business, improve employees' skills, and constantly adapt technology in their day to day business operations. It is very important for every organisation to find the right balance for their business and their employees with investing enough in their employees' workplace learning so they can feel valued and satisfied at work. Satisfied employees can bring additional value to their job and company overall. The purpose of this paper is to provide organizations and practitioners with definitions and measures of workplace learning and job satisfaction for their better understanding and hopefully for their better practice in their businesses.

2. WORKPLACE LEARNING

2.1. Literature review

Due to Industry 4.0 and rapid technological challenges that it brought to the market along with other diverse labour market changes, organisations have increasingly been trying to use workplace learning as an important strategy for their sustainable growth. Globalisation has made markets and the workplaces more mobile now than they have ever been before. It has become completely normal that the employees regularly change jobs and even careers. Industry 4.0 has made the on-going learning throughout individual's career more important than ever. Hence, the employees should continue to learn and personally develop on their jobs almost as if they were required to do so in order to stay competitive on the employment market, as well as for their personal and professional development. Sunyoung (2018) claims that learning enhances employees' abilities to adapt to changes and to increase their performance. Scholars have defined workplace learning in different ways and several definitions are included in the following text.

Workplace learning is seen as a crucial process in developing employees' professional skills and knowledge. It is also considered as a key element in solving organizational issues and is also seen as a smart investment that will facilitate a smoother transformation caused by the changes of Industry 4.0 (Clarke, 2005). In other words, workplace learning can be defined as a learning process with diverse activities and approaches that encourage employees to be a part of the company. Also, employees should share their reflections and progress based on their own experiences and knowledge with their subordinates. An essential defining aspect of workplace learning is that involvement in the work and learning are inextricably linked within the same course of action because one cannot be parted from other (Clarke, 2005; Eraut et al., 2002). Furthermore, Landy (1985) defines job training as "a set of planned activities on the part of an organization to increase the job knowledge and skills or to modify the attitudes and social behaviour of its members in ways consistent with the goals of the organization and the requirements of the job" (p. 306). Patrick (2000) says that training is a methodical development of the knowledge, skills, and expertise required by employee in order to productively perform a given task, which is their everyday job.

Furthermore, workplace learning can be individual in the work environment, considering the fact that it involves planned, cognisant learning activities that reflect on actual workplace experiences (Marsick, 1987; Raelin, 2000). Workplace learning can also be categorized as a developmental performance and educational efforts within the organisation, which should launch a culture of organisational learning. Thus, the principal unit of workplace learning is an employee (Raelin, 2000). Sunyoung (2018), in his paper; talks about broader definitions of workplace learning that were introduced by Marsick (1998) and Matthews (1999) and they include processes of learning. Marsick (1998) says that workplace learning refers to the way individuals (or a group) acquire, reorganise, interpret, and assimilate related information with skills and feelings. It is a principal way in which people conduct meaning in their personal and professional lives. Mathews (1999), on the other hand, argues in favour of workplace learning being a process of logical

learning aimed towards the desirable outcomes for individuals and organisations both and in those outcomes are the career goals of both former and the latter included.

2.2. Workplace learning measures

This section presents a review of nine different measures by nine different authors and the parameters that they used in conducting their measuring of workplace learning, along with its reliability. Table 1 shows the list of used measures and gives a detailed description of each measure and the differences between them.

First on the list is the Workplace Adaptation Questionnaire (WAQ) that was developed to measure socialization-related learning experiences of new employees (Morton, 1993). It has three measurement dimensions. The first one is establishing a relationship with co-workers. It focuses on employees' ability to identify the co-workers with useful information and workers who know their way around the organisation. Second dimension of WAQ is acculturation to the company and it focuses on the extent to which employees reported to have learned company's values norms, and culture. The third dimension is job knowledge which consists of the extent to which employees have reported to master their tasks on an everyday job. Next on the list in Table 1 is the Small Business Workplace Learning Survey (SBWLS) that was developed to measure the extent of workplace learning with the focus on small to mid-size businesses (Rowden, 2002). SBWLS includes formal, informal and incidental learning activities in the workplace as main categories. Thus, formal learning includes planned and organised training activities. Informal learning consists of unstructured activities or spontaneous demonstrations. Incidental learning focuses on normal workplace activities that actually result in learning even though that was not the purpose of the activity originally (Sunyoung, 2018).

Third measure dimension in Table 1 is Approaches to Work Questionnaire (AWQ). It was developed to measure a worker's motives, strategies and preferences about work (Kirby, Delva, Knapper, and Birtwhistle, 2003). The AWQ focuses on employees' intrinsic motivation to achieve certain performance and their work habits along with work preferences through three dimensions. The three dimensions in AWQ are *deep approach* with the focus on mindful approach to work. Next dimension is *surface disorganised* and it measures impulsive work habits, while the third dimension is *surface rational* which measures preferences for organized work. The next instrument is Workplace Climate Questionnaire (WCQ) which has been used to access employees' perceptions of social hold, everyday workload and one's work specifics (Kirby, Knapper, Evans, Carty and Gadula, 2003). The WCQ measures workplace learning environments in the form of three scales: good supervision scale that is supportive of work environment, workload scale that measures how heavy the workloads are, and the choice-independence scale that focuses on measuring the independence of employees in their workplace.

Next measure on the Table 1 is Informal Workplace Learning (IWL) Survey and was developed to measure informal learning activities, along with environmental inhibitors to informal learning and personal characteristics that influence informal learning in the workplace (Lohman, 2005). The three dimensions that this survey approaches are *talk with the others* which consists of the observation of others, sharing materials with others and similar activities that fall under the informal learning activities. Second dimension of IWL are *environmental inhibitors* of informal learning which consists of the following measures: lack of free time, lack of closeness to colleagues' work areas, lack of access to computer technology, lack of monetary rewards, and lack of recognition. The third dimension of the IWL survey are *personal characteristics* that influence informal learning with some of the reasons being initiative, self-efficacy, love of learning, and interest in profession. Furthermore, the Learning Opportunities Questionnaire has assessed the degree of learning opportunities related to jobs in the workplace. The basic concept of lifelong learning is the psychological bond (Schalk and van Woerkom, 2009). This questionnaire measures the extent of employees' opportunities to develop their skills through their job. Although

researchers have used the questionnaire to take measures of the workplace learning context (Fontana et al., 2015; Milligan et al., 2015, Schalk and van Woerkom, 2009), there is no explanation for the validation process of this measure (Sunyoung, 2018).

Self-regulated Learning in the Workplace Questionnaire (SRLWQ) was developed to cover a broad range of learning behaviours that are relevant to intentional learning within the workplace (Milligan et al., 2015). SRLWQ is formed in three dimensions; first one being a *forethought dimension* which focuses on goal setting, strategic planning, and self-efficacy. Then comes the *performance dimension* that measures task strategies, elaboration, and critical thinking. The third dimension is *self-reflection* that measures self-evaluation and self-satisfaction. The penultimate measure is the Workplace Learning Activities (WLA). It was developed to measure diverse formal and informal learning activities in the work environment (Fontana et al. 2015). WLA is structured in eleven dimensions. Those dimensions are: acquiring new information, working alone or with others to develop solutions to problems (or develop new ideas), following new developments in the field, performing new tasks, asking colleagues for advice, attending a training course, observing strategies to complete the task, find a better way to deal with task and receiving feedback on tasks from colleagues. The last measure in the Table 1 is the Informal Workplace Learning Outcomes questionnaire which was developed to measure informal learning effect (Kyndt et al., 2014). The questionnaire consists of three parts: generic learning outcomes which are learning outcomes that are characteristic for the job of socio-educational care workers, then comes the job-specific learning outcomes and organizational-level outcomes which focus on learning outcomes of workers who take on some wider organisational responsibility. The questionnaire has been used with various professional groups including nurses, police department, social workers and teachers (Sunyoung, 2018).

Next on the list is the Innovative Work Behaviour (IWB) which was invented by Messmann in 2012 to address the problems or change the status quo situations in companies. IWB was conceptualised in four dimensions in order to inspire the development of innovations and understanding of employees' innovative work behaviour. First dimension is the *opportunity exploration* which focuses on attention to one's work environment and keeping up with the work's latest events and next developments including changes in organization structures etc. Second dimension is the *idea generation* which focuses on expressing and discussing the ideas that are necessary for changes to occur due to current problems. Also, critical thinking is crucial to solve work related problems. Third dimension is *idea promotion* which consists of a supervisor and colleagues' support in a way of keeping them informed and up to date with processes and work information. Fourth dimension is *reflection* and it includes the progress of innovation development which is based on assessment of performance and outcomes based on certain criteria in order to improve strategies for potential situations. Reflection helps one observe what has been achieved in practice (Messmann and Mulder, 2012).

Last instrument on the list of workplace learning measurers is from author Nikolova et al. (2014) named Learning potential of the workplace (LPW). LPW is multidimensional instrument consisted of four dimensions. Those dimensions are: *learning through reflection, learning through experimentation, learning from colleagues and learning from supervisor*. The reliability of the dimensions vary, like shown in a table 1, from 0.83 to 0.91 which are all high results of validity. Those four stages are part of multidimensional concept of interactional learning and task-related learning through which individuals should be able to perceive and process. Each dimension has three items as subscale with five point rating scale. (Nikolova, Van Ruysseveldt, De Witte and Syroit, 2014)

Table 1 List of workplace learning measures

Measurement	Authors	Dimensions	No. of items	Reliability
Workplace Adaptation Questionnaire	Morton (1993)	1. Establishing relationships	5	0.83
		2. Acculturation to the company	5	0.82
		3. Job knowledge	5	0.81
Small Business Workplace Learning Survey (SBWLS)	Rowden (2002)	1. Formal learning	6	0.81
		2. Informal learning	8	0.73
		3. Incidental learning	7	0.78
Approaches to Work Questionnaire (AWQ)	Kirby, Delva, Knapper, and Birtwhistle (2003)	1. Deep approach	10	0.72
		2. Surface - rational	10	0.72
		3. Surface - disorganised	10	0.74
Workplace Climate Questionnaire (WCQ)	Kirby, Knapper, Evans, Carty and Gadual (2003)	1. Good supervision scale	5	0.84
		2. Workload scale	5	0.80
		3. Choice-independence scale	5	0.80
Informal Workplace Learning Survey (IWL)	Lohman (2005)	1. Informal learning activities	8	0.63
		2. Environmental inhibitors	40	0.79
		3. Personal characteristics	32	0.84
Learning Opportunities	Sschalk and von Woerkom (2009)	Learning opportunities	6	0.93
Self-Regulated Learning in the Workplace Questionnaire (SRLWQ)	Miligan et. al (2015)	1. Forethought	17	0.89
		2. Performance	19	0.88
		3. Self-reflection	6	0.86
Workplace Learning Activities (WLA)	Fontana et. al (2015)	Workplace learning activities	11	0.85
		1. Generic learning outcomes	8	0.87
Informal Workplace Learning Outcomes	Kyndt et al. (2014)	2. Job-specific learning outcomes	4	0.76
		3. Organizational-level outcomes	10	0.78
		1. Opportunity exploration	4	0.76
Innovative Work Behaviour (IWB)	Messmann and Mulder (2012)	2. Idea generation	5	0.85
		3. Idea promotion	7	0.83
		4. Reflection	8	0.86
		1. Interactional learning- Learning from colleagues	3	0.83
Learning potential of the workplace (LPW)	Nikolova et al. (2013)	2. Interactional learning- Learning from supervisors	3	0.90
		4. Task-based learning. Learning through reflection	3	0.91
		4. Task-based learning. Learning through experimentation	3	0.90

Source: Author

3. JOB SATISFACTION

3.1. Literature review

The prompt alterations that Industry 4.0 has brought to the market, such as technological advancements or new jobs with new applications, or even the simple capability to communicate and cooperate with each other in a smart environment with smart devices, have all made it common nowadays that employees are satisfied with some aspects of their job or certain models of training and dissatisfied with the other. Maybe their work environment is not comfortable for them, or their organization is lacking in benefits. It is important for managers to find out preferences of their own employees and to examine what works the best for the organisation and the employees both. Different authors have different opinions on job satisfaction definition. A few of the most quoted authors with their respective definitions are mentioned in the following paragraphs.

Job satisfaction is defined as “how people feel about their jobs and different aspects of their jobs. It is the extent to which people like or dislike their jobs” (Spector, 1997, p. 2). Job satisfaction is usually measured by degrees and can be examined through multiple viewpoints using various instruments and categories. That will be mentioned later in the text, in a review of measures that show how different some categories can actually be. For instance, a person can be satisfied with certain elements of their job, but also feel neutral about some other, and then be dissatisfied with another element. Elements of a job can also have differing degrees of importance, which can then further cause those elements to be weighed differently while assessing overall job satisfaction (Spector, 1997). Rowden and Conine (2005) say that 'job satisfaction is how people feel about their jobs and different aspects of their jobs. There are important reasons why organizations should be concerned with job satisfaction. First, the humanitarian perspective is that people deserve to be treated fairly and with respect. Job satisfaction is to some extent a reflection of good treatment'. Everyone likes to be treated right, fair and equal so it seems a good start for every company to work on those aspects for the benefit of their employees.

Hoppock defines job satisfaction as a combination of psychological, physiological, and environmental conditions that can together make a person claim to be satisfied with their job if that is the case (Hoppock, 1935). This approach also implies that job satisfaction is under the influence of external factor. However, there is also something internal that has to do with how one feels. Perhaps, job satisfaction presents a set of factors that give a feeling of satisfaction when combined in the right way. Moreover, Vroom emphasises job satisfaction with a slightly different spin to it. His focus, when it comes to satisfying employees, is on the role of the employee in the workplace. In that case, job satisfaction can be seen rather as one's emotional orientation towards different work roles within the company (Vroom, 1964).

George et al (2008) define job satisfaction as a compilation of feelings and beliefs that one has about their current job. The level of satisfaction that someone has with their status in the company can range from extreme satisfaction to extreme dissatisfaction. In addition, people can have attitudes about their jobs as a whole or about various aspects of their jobs. For instance, one aspect could be the type of work they do, or their relationship with co-workers, or even their supervisors or subordinates, as well as their pay check. According to Kaliski (2007), job satisfaction can be looked at as one's sense of accomplishment and success on the job. Furthermore, job satisfaction is generally alleged to be directly linked to productivity and personal well-being. Job satisfaction also implies that one is doing a job he or she enjoys and is doing it well and is rewarded for the hard work. The term also is seen as happiness with one's work which leads to recognition, increased income, promotion, and the achievement of the goals that lead to a feeling of completion.

3.2. Job satisfaction measurement

The following are the most used instruments for job satisfaction measurement, according to Škarica (2020).

- Job Descriptive Index - JDI (Smith *et al.*)
- Job Satisfaction Survey - JSS (Spector)
- Minnesota Satisfaction Questionnaire - MSQ (Weiss)

Along with those, the following instruments are often used as well (Škarica, 2020).

- Job Diagnostic Survey - JDS (Hackman, Oldman)
- Nordic Questionnaire for Monitoring the Age Diverse Workforce (Ilmarinen *et al.*)
- Michigan Organizational Assessment Questionnaire (Cammann *et al.*)

Van Saane (2003) has put together job satisfactions instruments divided into multidimensional instruments for specific jobs and global job satisfaction instruments among which author have taken out few with the highest Cronback's alpha value which indicates instrument's reliability. Those are following:

- Job in General scale - JIG (Balzer *et al.*)
- Emergency Physician Job Satisfaction scale - EPJS
- McCloskey/Muller Satisfaction Scale - MMSS
- Nurse Satisfaction Scale - NSS
- Measurement of Job Satisfaction - MJS

The above listed instruments for job satisfaction measurement have been included in Table 2 for an easier review. The first instrument on the list is *Job Descriptive Index* which is one of the most used questionnaires for job satisfaction. It was developed in 1969 by Smith, Kendal and Hulin (Tutuncu and Kozak, 2007). It consists of 25 statements divided into five sections. Those sections are *current job satisfaction, pay check satisfaction, satisfaction with the ability for promotion, satisfaction with the superiors, and satisfaction with work colleagues*. Having in mind that JDI instrument measures different dimensions of job satisfaction, it is highly recommendable not to sum up the values of the before mentioned dimensions and present them as a total job satisfaction value. They should rather be used separately and presented as satisfactory or non-satisfactory for each of the dimensions respectively (Spector 1997:12). Job in General scale job satisfaction instrument (JIG) was developed as global job satisfaction instrument and was planned to be used along with previous mentioned JDI. The JIG has 18 items that measure job satisfaction and three response choice for it. Its reliability is 0.92 which indicates high validity of the construct.

Second instrument is *Job Satisfaction Survey* (JSS) which was developed by Spector and is consisted of 36 questions that span through nine dimensions. Each of those nine dimensions consists of four questions that evaluate thoughts of employees about their job and the aspects of the job. All results are included in the final result of all the dimensions combined together (Spector 1985; JSS 2011). Those nine dimensions are *pay check, promotion, superiors, privileges, contingent rewards, operative procedures, co-workers, nature of work, and communication*.

The following instruments from Table 2 constitute the Minnesota Satisfaction Questionnaire (MSQ), which is often used to measure job satisfaction, and it was made as a result of a project did on Minnesota University - Work Adjustment Project (Martins and Proença, 2012). The longer version of MSQ consists of 20 dimensions with subscales with a total of 100 questions (Fields, 2002). In 1967, Weiss and colleagues have made a shortened version that contains 20 questions which measure extrinsic and intrinsic dimensions of job satisfactions. Those dimensions are *capability usage, achievements, job activity, promotion, co-workers, creativity, moral values, responsibility, safety of workplace, social service, social status, supervision from the superiors, work*

conditions, authority, pay check, company, technical surveillance, independence, recognition, and diversity (Škarica, 2020).

Job Diagnostic Survey was designed with the purpose of diagnosing existing jobs and determining if they ought to be redesigned in order to improve the motivation and productivity of the employees, and to evaluate the effects that job changes have on employees (Hackman and Oldham, 1975). It's designed in five core dimensions: *skill variety, task identity, task significance, autonomy, and feedback from the job itself*. JDS also has two supplementary dimensions: *feedback from agents* (supervisors), and *dealing with others* (co-workers or clients) (Hackman and Oldham, 1975). The Nordic Questionnaire for Monitoring the Age Diverse Workforce (QPSNordic-ADW) was developed in 2005 when Nordic Council of ministers launched a project with the aim of developing a specific questionnaire for monitoring the needs and preferences of employees approaching the age of 60, or to be more specific - 55 years and above (Lindström et al., 2007). This version of QPSNordic questionnaire is conceptualised on three levels: *task level-job demands*: control at work, role expectation and predictability at work; *social and organizational level*: social interaction, leadership, communication, organizational culture, and climate and group work; *individual level*: commitment to organization, mastery of work, preparedness for challenges, predictability, work motives, work centrality, interaction between work and private life (Lindström et al., 2007). Following instrument for measuring job satisfaction mentioned in Table 2 is Michigan Organizational Assessment Questionnaire (MOAQ). MOAQ was developed as an alternative to the Job Diagnostic Survey and thus includes subscales that assess the variables identified by Hackman and Oldham (1976). MOAQ consist of three variables that include descriptions of the work environment, psychological states, and employee responses (Bowling and Hammond, 2008).

Next on the list of job satisfaction instruments is Emergency Physician Job Satisfaction Measurement instrument (EPJS) developed by Lloyd in 1994. The EPJS is multidimensional instrument consisted of 6 work factors: *administrative autonomy, clinical autonomy, resources, social relationship, lifestyle and challenges* that are put into 79 items including 11 items from global job satisfaction scale. Its reliability is 0.83 on Cronbach's alpha and the instrument has produced stable, valid and reliable instrument for measuring emergency physician job satisfaction. Similar multidimensional questionnaire was designed by Mc Closkey and Mueller named McCloskey/Mueller Satisfaction scale (MMSS). Its reliability is 0.89 and is consisted of 31 items among eight factors with the five - point Likert scale response. Eight work factors in MMSS measures are: *extrinsic rewards, scheduling satisfaction, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility*. Measure of Jo Satisfaction is another instrument on van Saane's review of multidimensional instrument for specific job. This instrument was designed for use in the community nurse sector by Traynor in 1993. MJS measures five dimensions: *personnel satisfaction, workload, professional support, salary, and prospect and trainings* within 38 items and with five-point Likert scale response format. Its Cronbach's alpha internal consistency and reliability is 0.93 which was compared with Price Waterhouse work characteristics instrument to prove its validity. The last multidimensional instrument for specific job from van Saane review is the Nurse Satisfaction Scale (NSS) developed by Ng in 1993. NSS response format is seven-point Likert scale with 0.83 reliability value and seven work factors that were measured. Those seven dimensions in NSS are: *administration, co-workers, career, patient care, relation with supervisor, nursing education, and communication*. (van Saane et al., 2003)

Schmidt has combined Job Training and Job Satisfaction survey which is 'a 43-item, nine facet scale to assess employee attitudes about aspects of the job and aspects of job training' (Schmidt, 2004). The survey is consisted of two main scales: *job training* and *job satisfaction*, where each one has subscales. There are three subscales for job training satisfaction. Those are *organizational support for training* (4 items), *employee feelings about training and development* (4 items) and *employee satisfaction with training* (4 items). For job satisfaction scale, there are 6 subscales. Those are *opportunities and rewards* (12 items), *supervision* (4), *fringe benefits* (4),

operating rules and procedures (4), *co-workers* (3), *the nature of work performed* (4). The overall validity of this measure is $\alpha=0.83$.

Table 2 List of Instruments for job satisfaction measurement

Instrument	Authors	No. of dimensions	Scale
Job Descriptive Index (JDI)	Smith, Kendal & Hulin (1969)	5	YES/ NO/ Can't decide (?)
Job in General Scale (JIG)	Balzer et al. (1997)	18	YES/ NO/ Can't decide (?)
Job Satisfaction Survey (JSS)	Spector (1985)	9	Likert 1–6
Minnesota Satisfaction Questionnaire (MSQ)	Weiss (1967)	20	Likert 1–6
Job Diagnostic Survey – JDS	Hackman, Oldman (1975)	8	Likert 1–7 Likert 1–5
Nordic Questionnaire for Monitoring the Age Diverse Workforce	Ilmarinen, Tuomi and Klockars (1997)	12	Likert 1–5
Michigan Organizational Assessment Questionnaire	Cammann, C., Fichman, M., Jenkins, D. i Klesh, J. (1979)	4	Likert 1–7
Emergency Physician Job Satisfaction Scale (EPJS)	Lloyd ett al. (1994)	6	Likert 1–7
McCloskey/Mueller Satisfaction Scale (MMSS)	Mueller CW, McCloskey (1990)	8	Likert 1–5
Measure of Job Satisfaction	Traynor (1993)	5	Likert 1–5
Nurse Satisfaction Scale (NSS)	Ng (1993)	7	Likert 1–7
The Job Training and Job Satisfaction Survey	Schmidt	2	Likert 1–6

Source: Author

4. DISCUSSION

This study contributes to the technical literature because it gives an overview of both workplace learning and job satisfaction. It is a review of literature definitions and most commonly used (and most reliable) instruments for their measurement. There are articles that provide the review of the definitions of job satisfaction, such as Zhu (2012), Aziri (2011), van Saane (2003), Belias (2014), Škarica (2020). There are also some measures and theories that support this research and confirm its validity such as Messmann (2012), Schmidt (2004), and Rowden (2000). The articles that cover this subject, as was mentioned before, do not cover this topic in a specific way of reviewing solely the definitions and measures. This is the reason why this article comes in handy for managers and practitioners who would like to see how satisfied their employees are. In this paper they can find various definitions and measures that have high validity and reliability as the most commonly used ones by other researchers which prove them to be reliable measures for various businesses.

Regarding the workplace learning measures and definitions, this paper agrees with and accepts the attitudes of Sunyoung (2018) research, as well as Messmann (2012) and van Saane (2003) as it includes the before mentioned measures. This paper also supports Depesova (2015) research of lifelong learning in the professional practice, as well as Lee's (2003) research paper that had a different spin to it, but also covered the topic of employee development in a form of workplace learning as vital in maintaining developing capabilities of employees and organizations both. The intention of the author of this paper was to put together the concepts of workplace learning and job satisfaction to accentuate the importance of having both of them included in

business combined as inseparable elements in order to be competitive and successful on the market.

The importance of combining both investment in workplace learning and job satisfaction of employees in any given business has been recognised by other authors as well, such as Schmidt (2007), Vila (2005), Bakotić (2016), Blundell (1999), Rowden (2002), and Rowden (2005). Many authors have examined the relationship between workplace learning and job satisfaction. Schmidt (2007), for example, explicitly found a high correlation between job training satisfaction and overall job satisfaction among employees in customer contact positions. Furthermore, Rowden (2005) has come to a conclusion in his research that job satisfaction can be attributed largely to availability of learning opportunities at a certain workplace. Since there are many researches that have found strong correlations between workplace learning and job satisfaction, it is not an understatement to say that workplace learning contributes greatly to some aspects of job satisfaction.

Therefore, it is important for managers and practitioners to find the right approach to use when investing in their employees, and to ensure that they are satisfied with their job in order to stay competitive on the market and to keep the most valued workers for themselves. Learning opportunities change with the changes that have been brought by the Industry 4.0. That is the reason why the managers have to enhance those new opportunities that are presented in order to adjust to them in time and stay on top of their game. It takes time to keep employees in touch with all the changes and improvements that occur in the business, but it is a continuous process. Smart organizations should recognise the importance of making the right choices regarding this subject and find time and money to hold onto those opportunities as they might prove to be crucial for their business. It is evident from the researches how complex workplace learning and job satisfaction are and how differently they can be approached within a work environment. As has been said earlier, several studies have indicated relationship between the two and importance of integrating both accordingly, in order to stay competitive, no matter what the industry or the business. Employees always appreciate a good investment in them and show it through their performance afterwards.

5. CONCLUSION

Job satisfaction is perhaps a very subjective perception since it varies from one employee to another in how one feels about the work they do. Many factors can be linked with job satisfaction and are of crucial importance when it comes to one being satisfied or not satisfied with their work environment. It could be the wage, the benefits, a promotion, communication, co-workers, or opportunities to train, opportunities to learn in some form or simply how their supervisors treat them. The organizations struggle to find the right approach towards their employees and to assess and improve their job satisfaction. From that point of view, this paper provides various definitions of job satisfaction and workplace learning for better understanding of the terms. It also provides most commonly used measures that other companies or researches have used as their tools for measuring employees' job satisfaction or as investment in employees' learning at work. As it has been shown, there are different approaches regarding the subject and each organization should find adequate tool for their business in order to obtain prosperity or simply stay competitive on the market. It is also very important to point out that all of the methods and measurements mentioned above are dependent on continuous work within the changing work environment and demand an extremely high level of maintenance and complexity. With the right effort and a right team of people it is easier to accomplish anything in business just as is the case with this issue.

Schmidt (2007) says that 'opportunities for training and development are major factors in decisions regarding peoples' careers and are noted as reasons why employees stay with an employer and why they leave one employer for another'. Research results from Iliopoulos et al. (2018) show direct significant correlation between job satisfaction and workplace learning of NHS healthcare professionals which further proves the importance of employers' investment in

employees' learning thus enhancing their job satisfaction. It is a recommendation and a commitment for future researchers to be even more elaborate regarding this subject, and also to find out how strong the relationship between workplace learning and job satisfaction is, as well as if there are any significant differences between age, sex, or education within the context of Industry 4.0.

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