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The Sustainability of Reskilling Projects Based on Employees' Readiness for a Career Shift: Pursuing Sustainable Careers by Transitioning into IT Professions

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Abstract: Today's organizations are highly responsive to external changes, which they also demand from their employees. All employees need competencies to respond to Industry 4.0, the green business economy, and post-COVID-19 work circumstances and to manage sustainable careers. One way of doing so is to take active part in reskilling projects and be ready for a career shift, which we believe can be foreseen in people's devotion to sustainable careers and can ensure the sustainability of the whole reskilling project. With the presumption that the concept of sustainable careers can be captured in terms of the concept of readiness for a career shift, this study aims to explore the potential of the scale of readiness for career shifts to predict participants' success in reskilling projects (in the context of IT professions). The research was conducted on 336 candidates who applied for Java and PHP programming positions and had no previous knowledge or experience in the field. The results show that the scale of readiness for career shifts has acceptable metric characteristics, and canonical discriminant analysis confirmed that the overall score can be used to predict outcomes in the reskilling project, while predictions based on single indicators were rather ambiguous. Therefore, the scale can be used as a tool in the process of selecting reskilling candidates (at least in professional transitions in the domain of IT), but further research on the topic might shed more light on the concept.

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1. Introduction

The concept of sustainability in a business context has provoked core reinterpretations of the basic premises of work life, leading to the redesign of the role of the function of human resources management (HRM) in organizations. Bal and colleagues asked for sustainable HRM that “systematically respects, protects, and promotes the dignity and sustainability of all relevant living and non-living ‘stakeholders’ within and beyond organizations” [1]. In line with the characteristics of the sustainable HRM paradigm focusing on employees as one of the key stakeholders in viable businesses, the concept of the individual career is confined to new features of the psychological contract. Employees expect the concept of the individual career to be agile and flexible and not only include their job-specific competencies. Jobs have become broadly defined, less structured, and more ambiguous, bringing more arrays of responsibility while expecting the same from the workforce [2]. In contingent, uncertain environments, to respond to the complexities, changes, and challenges they bring, employees are supposed to be proactive [3] and integrate multiple perspectives [4], not only in the context of work but also regarding their careers. One of the sources and predispositions for acquiring this point of view is a growth mindset, in which one strives toward an experiential learning process [5]. Nevertheless, all these goals cannot be achieved without considering other stakeholders, employers, and

HRM representatives, so one's sustainable career is seen as their "shared responsibility" [6] but also as a wider organizational and social system that includes organizations that deal with the training and development of employees, universities and other educational centers, the local community, and the state.

With the introduction of digitization in the work process and modern technologies to promote the green economy and development, and since the coronavirus pandemic, there have been increased initiatives and projects that arise with the idea that the development of the necessary competencies for the work environment is the joint responsibility of several stakeholders. In this paper, we will discuss the importance of reskilling projects, which are a popular global initiative. Reskilling refers to training individuals who have demonstrated the ability to learn new things and develop a new set of competencies with the aim of changing their careers and starting to work in entirely new roles. The need for reskilling is recognized by the European reskilling strategy [7] and the Reskilling Revolution, which is organized by World Economic Forum to develop new competencies for employees and help them find new jobs [8]. Researchers suggest that there is a need for reskilling projects in different fields of work [9]. However, the workforce must be ready to participate in reskilling projects to invest extra effort in developing necessary competencies and adapting to new jobs and working conditions. In many cases, the sustainability of reskilling projects depends precisely on the readiness of candidates to change their career and devote themselves fully to reskilling.

The aim of the reskilling projects can be seen in the raised employability of the workforce based on the sustainability of individual careers. The authors tried to grasp the core of the concept, offering different approaches to its content. Special interest is paid to creating a solid way to operationalize and measure it [10,11]. We believe that the readiness for career shifts, as we call it, is the closest way to define it.

Research Problem

Since candidates' readiness for a career shift is important for the sustainability and success of reskilling projects, researchers in the field have tried to determine the valid predictors of success in career shifts, as well as the obstacles that occur in the decision to change careers. Some of them have focused on personality traits [10,12–14], while others explain personal psychological resources [15], and there are some conclusions about what the main challenges are when deciding to change careers [16]. This paper aims to focus on personal factors that are important for readiness for a career shift and the success of reskilling projects.

We conducted this research to provide a framework and tool for selecting candidates suitable for a career change that would subsequently lead to the viability of the reskilling program itself. We presume that the training program has positive effects, which are measured against the criterion of the candidates' success and allow the project to be recognized as beneficial and effective, leading to its recurrence in future cycles. From that perspective, participants' success is seen as one of the evaluative criteria of the project and its sustainability, while their devotion to a sustainable career is seen as the predictor of their commitment and achievement (operationalized in the concept of career shift readiness), as well as of the distal effect of the reskilling project (in the sense of its growth).

Our general research questions represent the whole background of the following study and lead us toward concrete research goals and objectives that are just one part of the whole theoretical model:

- Is devotion to a sustainable career a predictor of a successful reskilling project?
- Can we operationalize the concept of sustainable careers by identifying relevant indicators? What indicators cover the concept's content?
- Do the indicators that we provide predict individual success in reskilling?
- Does the sum of individual success predict the success of the reskilling project?

Finally, questions that go beyond this study are given as follows:

- Is it possible to support reskilling project sustainability by providing an adequate selection methodology and by including the testing of candidates' devotion to a sustainable career?
- Is it possible to achieve a sustainable career through participating in reskilling projects?

So, we have three basic recurring presumptions in this study: (1) devotion toward a sustainable career is the main personal resource for success in reskilling projects and leads to individual success (and further sustainability of one's career) when accomplished; (2) it is possible to predict and measure this potential by identifying the correct indicators; and (3) the sum of individual accomplishments in the reskilling represents the effectiveness and, thus, sustainability of the project.

2. Conceptual Framework and Theoretical Background

To gain a better understanding of the concepts we have used, in the theoretical part, we will start from the main propositions and contextual framework (given in Figure 1), explaining the concept of a sustainable career, the importance of reskilling projects, and the framework we suggest for readiness for a career shift.

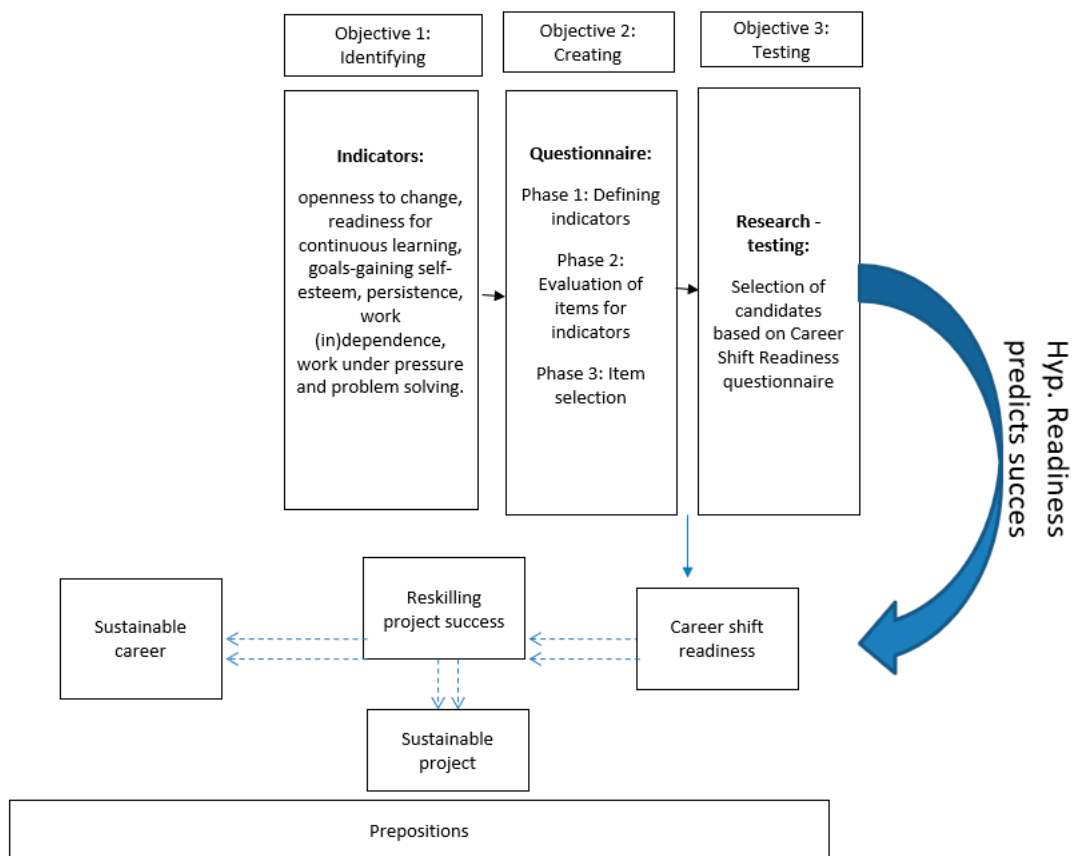


Figure 1. Main propositions and contextual framework.

2.1. Sustainable Career

The idea of common-good HRM protects human needs for security, safety, and meaningful work [17], along with challenges with emphasizing individual accountability for personal and professional development, which are interwoven. Employees are steered toward not only embracing new practices in the organization but also developing a variety of skills that will make them competitive in the labor market. This competitiveness is incorporated into the concept of employability, which replaces the concept of employment

as such. The concept of employability refers to the employee's "ability to operate effectively within the labor market" [18] and "to gain initial employment, maintain employment, move between roles within the same organization, obtain new employment if required and (ideally) secure suitable and sufficient fulfilling work" [18]. It means that the employee must take responsibility for their own career and development, which is no longer the only means of earning a living but is also the process of optimally using one's own competencies both within the organization and beyond a single concrete employment setting [19]. It also goes beyond the context of work, encompassing the perspective of one's whole life, with the idea that career decisions should include an awareness of their effects on the roles one has in other life spheres [20].

From the organizational point of view, employees with sustainable careers ensure their organizations' resilience to threats to their current stability due to turnover potential. This is the challenge contemporary organizations must face in terms of continuing to be proactive in enabling employees to develop "under their roof". As organizations need to distinguish themselves through their organizational culture to endure external pressures, employees can also develop irreplaceable skills that would make them unique in the labor market. In this context, sustainability refers to a "competitive advantage based on capabilities that are valuable, rare and difficult to imitate and substitute for" [2]. The question remains as to what those skills are that are crucial for making one's career sustainable without jeopardizing the specific organization's goals or threatening overall sustainability. In addition to functional capacities, different authors emphasize distinct qualities and competencies, but there is some consensus about one's adaptability and flexibility, along with a capacity for learning and self-organizing [2], self-awareness and self-efficacy [21], the ability to embrace the long-term perspective, the "big picture", innovativeness, and a collaborative approach. Newman [22] was one of the first scholars to address the concept of a sustainable career, describing it as being flexible with restorative and integrative potential in a way that creates meaning to the person. In his conception, renewability is emphasized as the durability and the ability to recharge, and flexibility is defined as the potential to "bend without breaking" and to be resilient and confident, which is accomplished by continuous learning to face and anticipate changes. He also added integrity, as well as integration that aligns values and actions, producing a meaningful contribution. This overlaps with the concept of career competencies, which are seen as the reflective, communicative, and behavioral prerequisites for career development and predictors of perceived employability [23], and which are enriched by the meta-competency of being in learning mode [5].

Bal [1] argues that the meaning of a sustainable career is created in the background of wider sustainability discourse that implies the preservation of resources, equality, progress through innovation, and the integration of multiple stakeholders. Yet, for most employees today, having a self-directing career related to their sense of purpose is not achievable, so the authors argue that a sustainable career is an empty concept and more of a privilege than a situation the labor market allows. This ethical issue may be addressed with the concept of corporate social responsibility and the idea of not simply preserving some careers but, rather, improving social justice (which starts at the governmental level) and insisting on ethical behavior [24]. There are also pitfalls for those who have the benefit of identifying their career as sustainable. Those employees, who are self-reliant, are in danger of blaming themselves for not attaining the ultimate achievement criteria, which might lead them to burnout and experiencing failure [1].

Embracing sustainable career pathways allows employees to develop skills as valuable players in their team (achieving the organization's goals and improving its performance) and, at the same time, empowers them to be independent and self-sufficient. One aspect of career sustainability is the lasting alignment of personal needs and values with organizational interests [25]. The career itself is seen as a dynamic, continuous, cyclical self-regulatory learning process [21] in which each person actively participates by adjusting their work capacities, as well as their jobs, to keep them sustainable [19]. The person–

career fit is always in progress and evolves over time, while the person gains deeper contextual and individual understanding by adapting and reshaping their perceptions of experiences and influencing their environment accordingly [21]. Briefly, a sustainable career is one that “enables being at least reasonably healthy, happy, and productive across the lifespan” [5]. Thus, indicators of achieved career sustainability, according to de Vos’s model [21], are health (well-being), happiness (satisfaction), and productivity (performance, organizational citizenship behavior, and employability). The model also recognizes some personal, multilevel contextual (social space) and temporal aspects of careers. At the individual- and personal-level dimensions of sustainable careers are agency and meaning, which put the employee in charge and control of their own career in ways that they consider valuable. This should be performed by preserving and generating personal resources [4]. Finally, we have the concept of human sustainability [6]. Researchers have also found links between sustainable careers and the personality traits of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness, as they influence the way people select, interpret, and react to life events [20]. So, it implies that, despite common characteristics, every sustainable career can also be described as idiosyncratic [6].

Reconciling the interests of all stakeholders, focusing on the common good, and overcoming the contradictions and paradoxes of contemporary existence are essential to sustainability. For an organization, this involves the need for trust and empowerment of employees, and for individual employees, a sustainable career, as I see it, is one of personal maturity. Nevertheless, Bal [1] and colleagues are skeptical of integrity and the sustainability of the concept of sustainable careers, referring to it as if it is an idealized construction. While deconstructing and (de)ideologizing it, they try to provide alternative conceptualizations.

2.2. Importance of Reskilling Projects

Based on the responsibility of the wider ecosystem for the development of the working environment and employees, there are initiatives that can be singled out as the responsibility of several stakeholders, the state, industry, innovation centers, universities, and employees, such as reskilling projects. The need to reskill employees has recently arisen as a response to the needs of companies but also to the wider social context, to provide employees with a systematic way of developing competencies that are lacking in the market and in individual industries. Reskilling is an important topic in all areas of work, among younger and older workers, and among highly qualified and less-qualified workers in all countries. There is a lot of research that predicts a huge transition in competencies and occupations for millions of people around the world to meet the changing employment demands [26–28], which significantly affects the concept of a sustainable career. Students need to take part in reskilling and upskilling to prepare to be more creative for today’s workplace [29–31]. Among employed workers, there is concern about the availability of key skills, and out of 71% of central executive officers (CEOs) who agreed with this, only 14% have made considerable progress in establishing an upskilling or reskilling program [32]. For example, it is estimated that 128 million adults in the European Union-28 (EU), Iceland, and Norway have low education, low-level skills, or medium education with a risk of skill loss and obsolescence [33].

Some of the reasons why there is now such a need for reskilling are the demands of Industry 4.0 and the presence of AI in all areas of work, the drive toward a green economy, and the consequences of COVID-19. Both AI technologies and the transformation of jobs since COVID-19 have brought more automation, data analysis, and application of technologies [34]. Whiting [35] suggests that the workforce needs reskilling in both the manufacturing and service firms to adopt Industry 4.0 principles. The EU Commission reported that two in five adults participate in learning every year in the EU, but there is still a gap regarding the needs of Industry 4.0 [36]. Green energy businesses are also rapidly changing the workplace environment. Mellett and Finnell [37] reported that the workforce

in the solar area increased by 25% in 2016, and employment in the wind area increased by 32%, with new demands for competencies. There is a comparable situation in manufacturing and the supply chain industry, where digitalization has made changes such as the digitalization of products and services and new digital business models, which require a new set of competencies and workforce capabilities [9,38]. The workforce in banking and financial services has been introduced to technological advancement and changes to the way businesses operate based on digitalization, mobile banking, “Fintech” banks, and the automation of back-office operations [39,40]. For example, it is estimated that 20.8% of the workforce in the United Kingdom (UK) in the sector (229,000 workers) is at risk of displacement (PWC). Even for some management skills and competencies, for example, across the UK, by 2030, it is estimated that 5 million workers will be under-skilled or partially under-skilled in basic digital competencies [41].

In his work, Li [28] analyzed the need for reskilling in different countries and explained why reskilling is a global issue [28,42]. There is evidence about reskilling needs in Africa regarding adaptation to Industry 4.0 [43,44]. In Mexico, manufacturing companies are behind in technology; many jobs could be replaced, and workers need a new set of competencies [45]. Even in developed countries such as the UK, Norway, and China, there is a constant need for upskilling and reskilling the workforce, as well as more funding for universities and research institutes to train the workforce [46,47].

To have a sustainable reskilling project, it is essential that all stakeholders be included in co-creating value [48,49]. Depending on the area and competencies for which reskilling is carried out and the scope of participants in the project, the local government, employment agencies, enterprises, the broad range of education and training providers, employers, and employees should be included [50]. Also, environmental factors should be taken into consideration, supporting the participants’ achievement in reskilling projects [51]. Three key actors in this context are industry, to explain skill needs; education, to respond to those needs; and government, to manage projects and bring actors together. Some challenges related to reskilling projects are as follows:

1. Employees’ readiness for a career shift: the readiness and willingness of the employee to change their career, to set aside time for reskilling, and to engage and dedicate themselves to developing a new set of competencies, which relates to their willingness to manage a sustainable career.
2. The participation of adults in the need for upskilling and reskilling: those workers who need reskilling the most show the least initiative to participate in such projects; in terms of socio-demographic characteristics, this would include low-skilled adults, older adults, and those living in rural areas⁶⁰.
3. Reskilling opportunities in less-developed countries: based on the experiences of the Western Balkan countries, obstacles for people to participate in reskilling projects include financial resources, poor projects and training offers dealing with education and reskilling, the ability to coordinate training dates with working hours, and family reasons [52].

All these challenges need to be underpinned by effective governance that actively involves key actors to co-create values in reskilling projects. This paper will emphasize the employee’s readiness for a career shift, incorporated in the strategic lead participants’ recruitment, as it is one of the elements that is seen as crucial for reskilling project success [53].

2.3. Readiness for a Career Shift

There are many initiatives around the world to reskill the workforce, to develop skills for the future, and to create a more sustainable workplace environment [7,8]. On the other hand, the workforce must be ready for life-long learning and investing extra effort in participating in reskilling projects and adapting to new jobs and working conditions. The

sustainability and success of reskilling projects often depend on the workforce's readiness for a career shift.

Hirschi and Läge define career readiness as the "readiness of an individual to engage in the career decision-making process and make a mature career decision" [54]. In the case of young people, students, and juniors, this represents a readiness to plan a career, make the right decisions about career paths, continuously learn and develop skills, and be adaptive to changes in work demands and needs [55]. In the case of older employees, this includes the readiness to learn new things, develop completely new skills, change job positions, and adapt to different circumstances in the workplace. Many researchers have tried to determine what characteristics of an individual determine if they are ready to participate in a reskilling project. Some researchers have focused on personality traits and have tried to explain personal readiness for change, including passion, resourcefulness, optimism, adventurousness, confidence, tolerance [56], curiosity, persistence, flexibility, optimism, and risk taking [57]. Kužet and colleagues [58] used Cattell's 16PF model to examine the importance of reasoning, tough mindedness, self-control, independence, anxiety, and extraversion for success in reskilling projects. Otto⁶¹ and colleagues analyzed the importance of the following characteristics: neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, uncertainty tolerance, self-efficacy, strength of vocational goals, intent toward vocational training, and job satisfaction. Magnano and colleagues [15] used the Career Adapt-Abilities Scale-International form to assess Concern, Control, Curiosity and Confidence, and Transition Inventory, which measure the perception of the psychological resources that individuals need and use during a career transition. Ghos [59] and colleagues explain potential barriers during career transitions and the individual availability of psychological resources to effectively navigate them.

There is a certain problem that may occur when individuals decide to participate in reskilling projects. Duru [16] and colleagues classified career decision making into the following three clusters: (1) A lack of readiness before the career transition begins. This could be explained as a lack of readiness to explore opportunities on the market regarding training opportunities, reskilling projects, and new employment options. Sampson [32] and colleagues tried to measure variables contributing to low readiness, and these included "personal characteristics, acute and/or chronic negative thoughts and feelings, limited knowledge of self, options, and decision making, limited life experience, prior experience with career interventions, limited prior experience with career resources, inappropriate expectations about career choice and career services". (2) A lack of information. (3) Inconsistent information during the decision-making process.

According to our present knowledge, there are a lack of studies aiming to explore the role of personality traits in the readiness for a career shift. Hence, our idea was to examine the importance of some theoretically and empirically deduced traits in the readiness for a career shift and the success of reskilling projects. For example, we analyzed the traits in Johnston's provided synthesis of studies concerning general career adaptability, while offering a useful framework for following their behavioral effects [60]. Based on a literature review, this research aims to give a conceptual framework, create indicators of a person's readiness for a career shift, develop a questionnaire, and evaluate it. Based on previous research [10,12–14], seven potential indicators of career shift readiness were identified. The conceptual framework includes seven competencies relevant for a career shift: openness to change, eagerness or continuous learning, confidence in achieving personal goals, persistence, independence/working with others, working under pressure, and problem solving.

3. Methodology

Starting from the proposition that it is possible to ensure the sustainability of a reskilling project by exploring the participants' inclination to a sustainable career, we tried to conceive of a concept that can predict success in achieving (at least) a first step toward

future employability in the constantly changing labor market. So, the objectives of the study are as follows:

- (1) To test the concept of readiness for a career shift as a predictor of the successful accomplishment of training goals in the reskilling process (in the context of IT professions).
- (2) To examine the predictive power of the indicators of participants' outcome in the reskilling project.
- (3) To create a framework to quantitatively represent these indicators in one concept called the scale of readiness for a career shift.

After identifying the (theoretically derived) potential predictors, we created an instrument that we believe that has the potential to predict the success of participants in the reskilling project and then tested the instrument as a selection tool in one project for reskilling the workforce in IT professions.

When there is a question of reskilling projects, the recruitment and selection strategy might be crucial, and creating a suitable competency model might be seen as one of the solutions [53]. Nevertheless, we believe that, aside from the concrete competencies relevant for some classes of work activities and tasks, there are also general potentials for career shifts that are equally important and more pervasive. We are trying to identify these more universal, personalized indicators. In Johnston's comprehensive study [60] based on the literature review in the domain, employment status and promotability, among others, were found to be outcomes of different adaptive readiness indicators.

Accordingly, we defined empirical hypotheses as follows:

Hypothesis (H1): *It is possible to predict the level of success in participating in a reskilling project based on the methodological concept of the scale of the readiness for a career shift.*

Hypothesis (H1a): *The relation of the overall score and the scores on the individual indicators will be positively correlated with the outcome of participation in the reskilling project.*

In the text below, the process of questionnaire development will first be presented. Thus, the process includes the application of the questionnaire and an assessment of the indicators in the selection process of candidates for the reskilling project. The reskilling project was conducted in the Republic of Serbia. The project aimed to reskill candidates without education or work experience in the information technologies (IT) field for junior positions in JAVA and Hypertext Preprocessor (PHP) programming.

3.1. Questionnaire

Based on the conceptual framework of readiness for a career shift, we developed a questionnaire on the readiness for a career shift. The questionnaire consisted of seven different indicators. The questionnaire was developed in three phases. As a result of phase 1, which included a literature review [14], seven indicators were chosen and selected: openness to change, readiness for continuous learning, goals and gaining self-esteem, persistence, work (in)dependence, working under pressure, and problem solving. In the second phase, each indicator was represented in terms of ten items, except problem solving, which consisted of fifteen items. While the first six indicators' items were in the form of a 5-point Likert scale, the problem-solving items were in the form of multiple-choice questions, with three answers offered, of which one was correct. Additionally, problem-solving tasks were created with respect to six diverse kinds of reasoning (inductive reasoning, analogical reasoning, decoding, finding imposters, syllogistic reasoning, and mathematical reasoning). The version we obtained, hence, contained seventy-five items grouped into seven indicators.

In phase three, six experts in human resource management rated the suitability of items on a 5-point-Likert scale. Based on the collected ratings, the 5 highest-rated items

for each indicator were selected, which yielded the final form of the 35-item questionnaire (see Appendix A).

3.2. Selection of Candidates Based on the Questionnaire on the Readiness for a Career Shift

To assess participants' competencies, the selection procedure included a questionnaire on the readiness for a career shift. The questionnaire consists of thirty-five questions. The first six areas of competence have 60% of the points from this test, while the seventh area (problem solving) has 40% of the points (Table 1).

Table 1. Structure of points on the questionnaire on the readiness for a career shift.

Area of Competences	N Questions	N Points	% of the Points
Openness to change	5	10	60%
Eagerness for continuous learning	5	10	
Confidence in achieving personal goals	5	10	
Persistence	5	10	
Independence/Working with others	5	10	
Working under pressure	5	10	
Problem solving	5	40	40%

After the examinations, participants attended an IT reskilling program. At the end of the program, their acquisition of key knowledge and skills was examined, and based on the result, they either obtained or did not obtain a certificate. To see if the questionnaire we developed played a role in the participants' success in the program, we tested the prediction of whether a certificate was obtained.

3.3. Sampling and Data Collection

The convenience sampling method was used. The sample consisted of 336 candidates who voluntarily applied for the Junior Java and PHP programmer reskilling project. The candidates were 55.6% female and 44.4% male. The candidates were tested online via the Microsoft Teams platform. The time for filling out the questionnaire was limited, i.e., candidates had 30 min to complete the test. Based on the scores on the questionnaire, candidates were ranked, and the 158 candidates with the highest scores passed the test. Then, they approached the reskilling project.

The JAVA and PHP reskilling projects were carried out according to the project activity plan from 29 August 2022 to 22 May 2023, in accordance with the curriculum, with a total of 250 h, in an online format. The teaching was intensive and well organized. Microsoft Teams and Moodle were used as online platforms, which facilitated collaborative work and enabled additional types of interactions. As an additional benefit, videos were made of complete lectures, exercises, and discussions of problems that the candidates solved together. The candidates could review these videos if some of the material remained unclear.

In addition to programming knowledge, during the course, candidates could participate in training and workshops to improve existing "soft skills" and acquire new ones. The workshops were held according to plan for 40 h in the period from 28 March to 24 May 2023.

Finally, at the end of the project, candidates took the final exam, where key knowledge and skills were examined. All candidates with 51% or more correct answers were considered to have finished the reskilling project successfully, i.e., these candidates had a positive outcome.

3.4. Research Variables and Design

In the present study, a correlational regression design was used to ascertain the predictive power of the overall score of readiness for a career shift and the predictive capabilities of individual indicators. In the first instance, the overall score of readiness for a career shift was utilized as a numeric predictor variable, while the attainment of certification, i.e., successful completion of the reskilling project, served as a categorical criterion. The categorical criterion has two levels: a positive outcome and a negative outcome. The first implies having successfully completed the final exam, while the latter implies failure in any instance in the reskilling project process (selection, attending, or final exam). In the second iteration, individual scores on all seven indicators of readiness for a career shift (openness to change, eagerness for continuous learning, confidence in achieving personal goals, persistence, independence/working with others, problem solving) were employed as numeric predictor variables, with the categorical criterion variable remaining identical to that in the first case. Because the predictor variable data were numerical and criterion data were categorical, we found these data to be appropriate for canonical discriminant analysis. The first model tested is depicted in Figure 2, whilst the second model is depicted in Figure 3.



Figure 2. Illustration of the model in the first iteration of CDA.

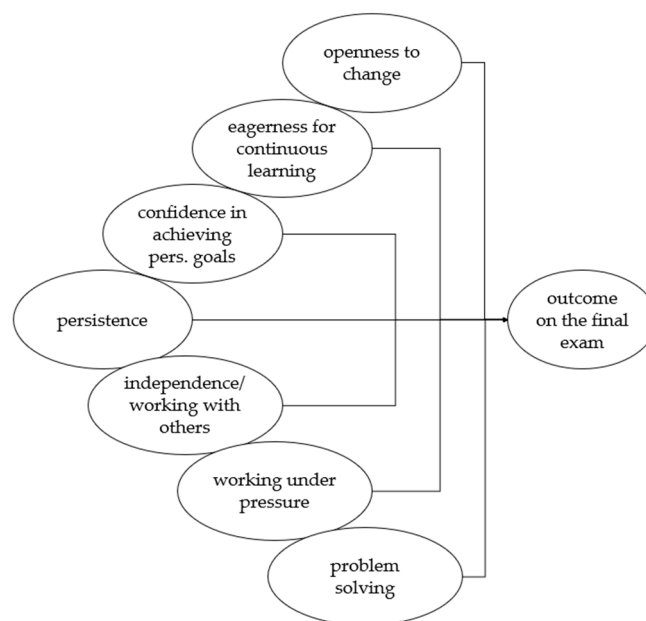


Figure 3. Illustration of the model in the second iteration of CDA.

3.5. Data Analyses

The data were analyzed in SPSS v26. To explore the overall distribution and the scores of the indicators, we counted the range, mean, and standard deviations for each of them. Additionally, we employed item analysis of the representativity, reliability, and homogeneity of composite instruments using the `rtt10g` macro in SPSS [61]. To predict the participants' success at the end of the reskilling program, we conducted canonical discriminant analyses (CDAs). In the first iteration of the CDA, we predicted success based on the overall score of the questionnaire, while in the others, we predicted the criterion using

each individual indicator. The goal of the second iteration was to assess which of the indicators of readiness for a career shift has the highest predictive power. In this iteration, we used the stepwise method to enter the predictors into the model to ascertain the significance of the contribution of each predictor. To assess the predictive power of predictor variables, we additionally computed the standardized coefficients of the canonical discriminant function, and we also computed the structure coefficients. While the former represents the weights of different indicators for calculating the canonical discriminant function, the latter indicates the direction and strength of the correlations between each indicator and the levels of the criterion variable.

4. Results

4.1. Descriptive Statistics and Item Analysis

Descriptive statistics revealed that the overall scores were distributed significantly and were positively asymmetric ($zSK = 2.71$), indicating that most participants scored below the mean. Ranges, means, SDs, and standardized skewness and kurtosis parameters for each indicator are shown in Table 2. The results indicate significantly negative asymmetric distribution for all indicators, except problem solving, which was significantly positively asymmetric, showing that most of our participants scored highly.

Table 2. Descriptive statistics and distribution parameters for each indicator score and for the overall score.

Variable	Empirical Min.	Empirical Max.	M	SD	*SK	*KU
Openness to change	3	5	4.42	0.43	-4.54	-0.23
Eagerness for continuous learning	3	5	4.13	0.41	-1.90	2.40
Confidence in achieving personal goals	2	5	4.48	0.48	-10.05	8.58
Persistence	2	5	4.22	0.57	-3.99	-0.70
Independence/Working with others	3	5	4.33	0.38	-3.47	-0.15
Working under pressure	2	5	4.11	0.54	-3.11	-0.70
Problem solving	4	20	17.30	4.02	-11.71	6.84
Overall score	52.80	97.60	85.98	9.01	-9.38	4.63

Cronbach's alpha reliability of the overall score was moderate at $\alpha = 0.751$. The rtt10g analysis revealed that the representativity of items used ranges from moderate (0.5163) to remarkably high (0.9456), with the Kaiser–Mayer–Olkin representativity measure equaling 0.8800. The H5 homogeneity indicator equaled 0.5080, suggesting that using both the overall and individual indicators scores is justified.

4.2. Predicting the Outcome of the Reskilling Project Using the Overall Score and Individual Indicator Scores for Readiness for a Career Shift: Canonical Discriminant Analysis

In accordance with the value of the H5 measure of construct homogeneity, two canonical discriminant analyses were conducted: one in which the outcome was predicted based on the overall score on our questionnaire and one in which the outcome was predicted based on the scores of individual indicators. The first CDA indicates that it is possible to predict the outcome of the reskilling project outcome based on the overall score ($\Lambda = 0.743$; $\chi^2(1335) = 99.128$; $p < 0.01$). The insight into centroids reveals that they (without certificate = -0.472; with certificate = 0.730) significantly discriminated between the groups. More precisely, the group of participants who did not obtain a certificate scored significantly lower on our overall test score compared to the group in which participants obtained a certificate.

In the second iteration of the CDA, we aimed to determine which indicators serve as significant predictors of the reskilling program's outcomes, this time using a stepwise method for adding predictors to the model. The results of this analysis indicate that four out of the seven indicators were significant predictors of the outcomes of the reskilling program, namely problem solving, goals and gaining self-esteem, continuous learning, and persistence. Therefore, the indicators openness to change, independence/working with others, and working under pressure were not significant. The initial model included only problem solving ($\Lambda = 0.807$; $F(1334) = 79.638$; $p < 0.001$). The second model, additionally, incorporated goals and gaining self-esteem ($\Lambda = 0.767$; $F(1334) = 50.508$; $p < 0.001$). The third model further encompassed continuous learning ($\Lambda = 0.746$; $F(1334) = 37.771$; $p < 0.001$). Finally, the last model included persistence as well ($\Lambda = 0.737$; $F(1334) = 29.571$; $p < 0.001$). The Standardized Canonical Discriminant Function Coefficients and structure coefficients obtained from both analyses indicate that, in this case, problem solving held the highest predictive power. The aforementioned coefficients are presented in Table 3. The data in the table show that the most incremental contribution to predicting the outcomes stemmed from the problem-solving indicator, which turned out to be the best predictor among all indicators.

Table 3. Standardized coefficients of the canonical discriminant function and structure coefficients in the stepwise method.

Indicator	Standardized Coefficients of Canonical Discriminant Function	Structure Coefficients
Problem solving	0.884	0.817
Eagerness for continuous learning	0.306	0.233
Confidence in achieving personal goals	0.269	0.452
Persistence	0.244	0.350

5. Discussion and Conclusions

From the scope of the empirical study and the results we obtained, we can say that some of our research questions remain open. Nevertheless, we might give some general conclusions referring to the concept we wanted to develop and test.

In summary, our results justify using the overall score of the questionnaire on readiness for a career shift as a predictor of the reskilling project outcomes. More specifically, based on the higher scores of participants, we can assume that they are more likely to complete the reskilling process successfully. The metric properties of the questionnaire we developed indicate acceptable internal consistency (Cronbach's alpha equal to 0.751), a moderate to high representativity of all items, and a moderate H5 measure of the homogeneity of the construct. Such homogeneity highlights the possibility for both overall and individual indicator scores to be used as predictors of the reskilling project's completion. The assessment of each indicator's significance revealed that problem solving, goals and gaining self-esteem, continuous learning, and persistence are significant predictors of the outcome, while openness to change, independence/working with others, and working under pressure are not significant predictors.

Therefore, the hypothesis about the possibility of predicting success in one reskilling project is confirmed. When we wanted to test the predictive power of the indicators of the concept, we found that some of them do not justify the overall result. Openness to change is essential to one's readiness to make transitions in one's life and career, which is not a novel concept and has been used in different related instruments [10,57,62,63]. Nevertheless, these instruments use slightly different labels for the concepts referring to curiosity [10] or to exploration [64]. While independence is seen as an important factor in readiness for a career change in some studies [11,65,66], we did not prove its predictive power in predicting success in one step of a career transition. This could relate to the educational setting, which gives some support and reduces independence. The reason for the results

might also be inherent to the measurement concept. The positive effect of independence here is seen as the balance of cooperative and single activities. The highest scores were attributed to those who achieved that balance. Finally, working under pressure is often combined with distress while performing problem-solving tasks [67] and is part of the concepts of concern and confidence [10]. This concept might be more complex than what our indicator covers. Other theoretically supported indicators have been found to be good predictors of individuals' outcomes in reskilling projects, which is expected, and some parallels can be found in similar conceptions [10,12,57,64,67].

Regarding individual indicators, during our research, we showed that readiness for a career shift and success in reskilling projects depend mostly on problem solving and the individual's ability to think logically about the material in a relevant domain. The second important indicator of readiness is eagerness for continuous learning, i.e., the aspiration of a person to learn new things even in situations when there are no external rewards and the goal is far away. After that, there is confidence in achieving personal goals, which represents someone's ability to set personal goals and strive to achieve them, even in situations when there are challenges and obstacles to overcome. Persistence is important since it explains someone's readiness to concentrate on a task and strive to complete it for a long time. On the other hand, the results showed that some indicators could not be individual predictors of readiness for a career shift, and those are achieving a balance in independence and collaboration with others while completing tasks, as well as showing interest in new things, easily adapting to new work situations (openness to change), and working under pressure, which indicate the possibility of working with limited recourses on tasks that are difficult and have time pressure but still achieving goals. Nevertheless, the whole instrument, including all indicators together, is predictive. Viewing these results in the perspective of studies that are focused on the wider concept of career adaptability [60], we might see that curiosity, which, here, leads to learning eagerness, is an important indicator, as well as problem solving, which might be linked with control as an adaptability resource.

We can conclude that the concept could be seen as multidimensional and that individual predictors should not be used apart from the whole scale. These results might be the consequence of the one-time testing and the restrictive variability of the sample, but they are more likely the result of the inherent characteristics of the construct. This is a relatively new concept, and there should be more adjustments and validation of the scale. Further steps in developing the instrument might include validation studies and exploring construct validity through factorial analysis and concurrent validity with other relevant and more-established instruments.

We consider this research to be one phase of ensuring the sustainability of reskilling projects. This phase is about creating the framework for measuring an individual's potential for a career change in the context of their willingness to learn new skills to make themselves more employable. We also believe not only that this might affect an individual's career, but also that this success might result in the viability of the whole project. As the training success of participants is a measure of the effectiveness of the reskilling project, this project is recommended for the sustainability of projects in the future and could be repeated for the next generation of applicants.

The following question remains: are we ready to reskill? Since reskilling will be demanded in many job positions around the world, we should ask ourselves if we have important predictors to successfully navigate our career and to enable the sustainability of reskilling projects.

Although it seems that the responsibility for reskilling is placed on individuals, many other things must be provided as prerequisites to realize the reskilling project. As we have already mentioned in this paper, a quality reskilling program can be provided by employers, educational centers, universities, or states. It is necessary to implement reskilling projects in poorer countries where there is a prominent level of workers with low education

levels. It is necessary to adjust other conditions, such as the appropriate time for the implementation of activities on reskilling projects, so that individuals can coordinate all their business and private obligations with the obligations for the project. It is necessary to enable the financing of reskilling projects for vulnerable target groups. Special attention should be paid to encouraging and motivating poorly educated older workers whose jobs are at risk. To implement reskilling projects, it is also important to understand that not all career transitions are the same. There are many organizational and individual characteristics that could impact project success, such as industry, number of employees, company place, and personal traits. All these challenges can be overcome through the cooperation of key stakeholders on reskilling projects. As Claesson and Issa [51] claim, for success in reskilling projects, candidates need the institutionalized and integrated support of all the actors. Finally, the importance of the proper recruitment strategy needs to be emphasized [53].

The most important part of this paper is the presentation of the questionnaire to assess the readiness for a career shift. Assessing readiness for a career shift could serve for selection and counseling for career prequalification. We should, however, explain some limitations of the current study. The questionnaire that we developed has not gone through the complete process of validation, and, therefore, the conclusions based on these data must be given some attention. In future research, we will present a validation of the questionnaire. Second, the criterion defined as success in the reskilling project is defined as binary. Much more precise and reliable data could be obtained if the criterion was defined as some numerical indicator of success or as another relevant aspect of the reskilling process. Last but not least, despite the suitability of the canonical discriminant analysis for this research design, creating a design with more indicators and analyzing the data with a multivariate numerical method would provide us with much more of the information needed for understanding the essence of the role of readiness for a career shift in reskilling processes and creating a sustainable career. Hence, we suggest the development and validation of the readiness for a career shift as the next research problem in this field, considering that all aspects of this construct are important in the reskilling processes. Finally, there is a question of the whole theoretical background and hypothetical context, which is based on assumptions that the process of selecting participants devoted to a sustainable career and their success in the reskilling process may impact the sustainability of the reskilling project, and this is a complex issue that should be examined further, including more factors.

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Appendix A

Career Readiness Shift (CRS) Questionnaire

The career readiness shift (CRS) questionnaire has 35 questions that should check candidates' readiness to attend the reskilling project. Time to complete the test is limited

to 30 min. Thirty questions refer to personal preferences, and for those questions there is a five-point scale where candidates should evaluate how much certain statements describe them, where numbers on the scale mean the following:

- 1—does not describe me at all (does not look like me at all).
- 2—partially describes me (looks a bit like me).
- 3—I am not sure (I cannot judge, it depends on the situation).
- 4—describes me well (I am usually like that).
- 5—describes me completely (that is me).

The next block of questions (the next five questions) is about solving problem situations. For those questions, there are three answers offered, of which only one is correct and the fourth answer is I do not know.

Indicators and Items

1. Openness to change
 - If some jobs require changing the way they are done, then that means they are not for me[®].
 - If a job can be done in an established way, I do not think there is any need to look for new ways to do it[®].
 - When the usual ways of solving a problem do not work, I can completely change my way of thinking.
 - I feel good when I change some established patterns according to which I perform duties.
 - I have no problem moving quickly from one task to something completely new.
2. Eagerness for continuous learning
 - People should advance in their careers based on years of experience, not some courses[®].
 - Learning new skills and knowledge is for school, not for adults[®].
 - I feel proud when I learn something new.
 - I prefer to research some things myself, rather than have someone “serve them on a plate”.
 - A job is boring if it only uses skills and knowledge that I have already mastered[®].
3. Confidence in achieving personal goals
 - It seems to me that many things that interest me in life are unattainable for me[®].
 - I used to miss something in life just because it seemed too hard for me[®].
 - Sometimes I give up even before I start working on something, because I am afraid, I will not succeed[®].
 - I just need enough time and I will achieve everything I set out to do.
 - I am personally responsible for my success or failure.
4. Persistence
 - If something does not work “from the first”, you just need to change the tactics and there is a high probability that it will be solved.
 - When something goes on for a long time, I often lose focus[®].
 - It has never happened to me to abandon something I started doing.
 - When I set my mind to something, I cannot sleep until I finish that.
 - I know that persistence will never leave me.
5. Independence/Working with others
 - I am happy to leave to others that part of the work that I consider to be theirs.
 - I like to share both credit and responsibility with my colleagues.
 - It often happens that I disagree with colleagues with whom I should be doing something[®].

- It is not difficult for me to coordinate with my colleagues when we are doing something.
 - I fit into the team very easily when we need to do something together.
6. Work under pressure
- I often have the impression that more is being demanded of me than I can manage.
 - The very idea that I have a lot of work always makes me extra nervous[®].
 - I get nervous when someone is waiting for me to finish what I am doing[®].
 - When I do not have enough time to do something “in peace”, I block it completely[®].
 - I notice that the shorter the deadline, the better the quality of my tasks.
7. Problem solving
- Continue the following sequence: 1, 3, 8, 19, 42, 89, 184, _
 - If Ivan can write 1/6 of the program in one month, and Maria can write 1/12 of the same program in one month, how many months will it take them to write the entire program together?
 - If “2 3 4 3 4 5 6 7 1 8 9 10 11 12 13 5 14 8. -15” means “I will go down to our club.—P”, what does the following message mean: “1 8 15 3 9 3 12 7 6 6 8 1 8 2.”?
 - Continue the series of letters: A, Š, B, DŽ, V
 - If the encrypted message reads: Nopmst, Opmđmwm, Ntpmw ab vg dtwi-obt dtjmt. Jmwopm, and we found out that part of the message reads: Hi Dragana, ?????? he offered me a job. Sandra. What is a decipher the name of the person from the message?

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