

PERSONS WITH DISABILITIES IN HORTICULTURE – PREFERENCES FOR EDUCATION AND EMPLOYMENT

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Abstract

This paper is about motivation of persons with disabilities (PWDs) for horticultural activities and training in order to improve their employment opportunities in an open labour market. A quantitative survey about PWDs' willingness for employment in horticulture sector was conducted among the users of the compensation to employment in Zagreb (Croatia). The convenient sample consisted of 236 respondents. Apart from sociodemographic variables, the respondents were asked about their educational background, additional skills and knowledge for employment, health indicators, well-being perception and horticultural preferences. The majority of the respondents loved plants (88%) and staying in the nature (93%). One third of the respondents were interested in ornamental horticulture education. The preferable profession, chosen among 12 sectors of different professions, was gardening, in 38% respondents.

The research indicated that education and practicing of horticulture have significant potential in raising the quality of life of PWDs in various ways – as an excellent area for employment, reducing the PWDs' high unemployment rate, and as an activity with significant benefits to their personal development, rehabilitation, and, in raising the level of their life satisfaction.

Key words: *persons with disabilities, inclusion, open labour market, economic independence, horticulture industry, quality of life, horticultural therapy*

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Introduction

The right to work is a fundamental human right. In Croatia, where the unemployment rate is generally high and slowly decreasing, taking care of the socio-economic status of vulnerable groups, especially persons with disabilities (PWDs), is a huge challenge. The vast majority of PWD never succeed in finding employment. Partially, the reason for this lies in their inadequate competences, due to inadequate educational programs which are not adjusted to the open labour market¹. The general problem lies in the perception of the PWDs' labour potential, only through their diagnosis and disability, which consequently leads to their passive status in the society and their exclusion from the labour market and the society in general. The paradoxical fact is that the community invests in education and training of PWD, but does not provide employment². Creating policy measures for the employment of PWDs requires a systematic approach and the implementation of projects addressing social inclusion in all developmental periods of disabled children and young PWDs³, generally emphasizing person's abilities and adaptation of programs to individual needs.

Croatia is among the first signatories of the Convention on the Rights of Persons with Disabilities (CRPD, 2006)⁴, and since then, numerous steps towards improving the status of PWDs in the society could be noticed. Certainly, one of the most important national documents, stimulating the employment of PWDs in an open labour market is the "Act on Vocational Rehabilitation and Employment of Disabled Persons"⁵.

Although the aforementioned Act, which is in force since 1st January 2015, and which stipulates quotas as well as financial incentives for an employer employing PWDs, it is necessary to invest a lot of energy and work in raising public awareness of PWDs' of all age and their remaining capabilities, through the individual approach and research of their motivation in order to offer modern training programs tailored

¹ Marko Marinić – Stanko Rihtar, *Živjeti s invaliditetom u urbanoj sredini – analiza kvalitete života osoba s invaliditetom u Gradu Zagrebu*, Institut društvenih znanosti Ivo Pilar, Zagreb, 2016.

² Kristina Urbanc, „Medicinski, socijalni ili neomedicinski pristup skrbi za osobe s invaliditetom“, *Ljetopis socijalnog rada*, 12 (2006.) 2, 321–333.

³ Lelia Kiš-Glavaš, „Aktivnosti i prepreke u zasnivanju radnog odnosa za osobe s invaliditetom“, *Hrvatska revija za rehabilitacijska istraživanja*, 45 (2009.) 1, 63–72.

⁴ „Convention on the Rights of Persons with Disabilities (CRPD)“, <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html> (12. 2. 2017.)

⁵ „Act on Vocational Rehabilitation and Employment of Disabled Persons (Zakon o profesionalnoj rehabilitaciji i zapošljavanju osoba s invaliditetom)“, *Narodne novine*, 2013., 157, 2014., 152.

to the nowadays needs and the labour market. The aim should be to maximize the employment of PWDs in the open labour market⁶, which would certainly represent the highest standards of integration. Empowerment of women with disabilities is of particular importance, because the feeling of discrimination, and the inability to equally participate in the society is typically strong among them⁷.

1. Why Ornamental Horticulture?

According to the Rural Development Programme of the Republic of Croatia for the Period 2014-2020⁸, flower production is present on smaller areas and it predominantly involves seasonal; annual and biennial flowers. In the 2008-2012 period, flowers and decorative plants were cultivated on an average area of 321.8 ha. The production is not specialized, the demand for ornamental plants is greater than supply, and therefore the majority of ornamental plants are imported⁹.

In accordance with the aforementioned and having in mind excellent natural and climate growing conditions, Croatia has a great potential for the employment and rehabilitation of PWDs in ornamental horticulture. Horticulture as a therapy¹⁰ brings the scientifically proven therapeutic values and rehabilitation benefits to people in a sense of their overall well-being and quality of life. A quantitative synthesis of the evidence that gardening is beneficial for human health is provided through the meta-analysis of 21 articles (22 case studies) with results from 76 comparisons between control and treatment groups¹¹.

⁶ Zdenko Babić, Zdravka Leutar, „Položaj osoba s invaliditetom na tržištu rada RH“, *Socijalna ekologija*, 19 (2010.) 2, 195–214.

⁷ Marko Marinić, „Women with disabilities and loneliness“, in: *Proceeding papers from Eighth Regional Conference of the European Society of Women in Theological Research (ESWTR) for Central and Eastern Europe*, Institute of Social Sciences Ivo Pilar, Split, 2013., 160–173.

⁸ Ministarstvo poljoprivrede, „Program ruralnog razvoja Republike Hrvatske za razdoblje 2014.-2020.“, <http://www.mps.hr/ipard/default.aspx?id=129> (22. 3. 2017.).

⁹ Belgian Embassy in Zagreb, „Horticulture in Croatia, Flanders Investment and Trade Market Survey“,

http://www.flandersinvestmentandtrade.com/export/sites/trade/files/market_studies/2016-Croatia-Horticulture.pdf

(22. 3. 2017.)

¹⁰ American Horticultural Therapy Association (AHTA), „Horticultural therapy (HT) definition“,

<http://www.ahata.org/ahata-definitions-and-positions> (13. 2. 2017.)

¹¹ Masashi Soga, Kevin J. Gaston, Yuichi Yamaura, „Gardening is beneficial for health: A meta-analysis“, *Preventive Medicine Reports*, 5 (2017.), 92–99.

Horticultural therapy in Croatia is not yet recognised as a profession, and there is no education for the Horticultural Therapist qualification acquisition. For now, the only verified university module is the "Introduction into Horticultural Therapy" at the graduate level of the study programme "Ornamental Plants" at the University of Zagreb Faculty of Agriculture^{12,13}. In the last decade, several initiatives aiming to promote benefits of plants and horticultural activities in education, rehabilitation and employment, as well as infrastructural work have been done, that could be supportive in different types of Horticultural Therapy: *Social* (for example: Multi-sensory Garden in the Sports and Recreational Centre Jarun, Zagreb¹⁴; Community gardens, for example: in Čakovec, Ivanić-Grad, Karlovac, Osijek, Ozalj, Pula, Rijeka, Samobor, Sesvete, Slavonski Brod, Split, Varaždin, Virovitica, Zagreb); *Therapeutic* (for example: Therapeutic Garden in the Psychiatric Hospital Rab and in The University Hospital Centre Zagreb (KBC Zagreb)¹⁵; *Professional* (Green Classroom at the University of Zagreb Faculty of Education and Rehabilitation Sciences¹⁶ and Experimental Garden at the University of Zagreb Faculty of Agriculture^{17,18}).

Keeping in mind all the foregoing, i.e. the idea of educating people with disabilities for horticultural work and the various potential benefits that such employment could bring¹⁹, the main goal of this paper is to gain an initial insight into the actual motivation of PWDs for education and employment in horticulture.

¹² Darija Kuharić, Mirela Grgić, Ljubica Ranogajac, „Hortikulturalna terapija – teorijske postavke i primjena u praksi“, *Ekonomski vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues*, Vol. XXIII (2010.) 2, 515–522.

¹³ Vesna Židovec – Martina Skendrović Babojelić – Danijel Šarić – Miroslav Poje (ed.), *Osnove ukrasne hortikulture u obrazovanju i terapiji*, manual, Sveučilište u Zagrebu Agronomski fakultet, Zagreb, 2015.

¹⁴ Rea Fulgosi Masnjak, Tina Runjić, Ivanka Mlinarić, „Multisenzorični vrt“, *Agronomski glasnik*, 3-5 (2003.), 99–116.

¹⁵ Josip Dujmović, „Terapijski vrtovi i terapijska hortikultura kao intervencija u zdravstvu“, *Socijalna psihijatrija*, 44 (2016.) 1, 14–21.

¹⁶ M. Novak, 139., „Zelena učionica: vrt Edukacijsko-rehabilitacijskog fakulteta – uloga vrtova u razvoju kvalitete života“, <http://www.citymaking.eu/vrtovi-nasega-grada-studije-i-zapisi-opraksama-urbanog-vrtlarenja/> (14. 2. 2017.)

¹⁷ Sanja Morić – Ines Vršek, „Pokusni vrt Zavoda za ukrasno bilje, krajobraznu arhitekturu i vrtu umjetnost i njegova edukacijska uloga“, *Proceedings, XXXIX. Znanstveni skup hrvatskih agronoma, Agronomski fakultet Sveučilišta u Zagrebu, Opatija, 2004.*, 847–850.

¹⁸ Documentary film on IPA (IV) PROJEKT, „Education as Preparation for Work in Ornamental Horticulture“, https://www.youtube.com/watch?v=2Y6T9oI_6Ss (14. 2. 2017.)

¹⁹ Ines Vršek i dr., *Studija izvodljivosti mjera za poboljšanje kvalitete života osoba s invaliditetom kroz zašljavanje u proizvodnji ukrasnog bilja*, feasibility study, Agronomski fakultet Sveučilišta u Zagrebu, Zagreb, 2003.

2. Methods

Empirical research was conducted during the second half of 2012 on a convenient sample of PWDs in Zagreb, the users of compensation to employment²⁰. The study was initiated and carried out by the Association for Promotion of Equal Opportunities in collaboration with the scientists from the University of Zagreb Faculty of Agriculture and the Institute of Social Sciences Ivo Pilar, and the employees of Social Welfare Centres. The interviewing procedure was conducted by the trained employees of 10 Social Welfare Centres in Zagreb (Črnomerec, Dubrava, Maksimir, Medveščak, Novi Zagreb, Peščenica, Sesvete, Susedgrad, Centar and Trnje) through a method of direct, personal interviewing.

2.1. Sample

The sample consisted of adult persons of working age population; 236 PWD; recipients of compensation to employment, out of which 47% of women and 53% of men. The majority of respondents were of the youngest work age population (18 – 25 yrs.), within significant decrease of percentage of respondents of other age groups (as shown in Table 1.).

Table 1. *The age of respondents*

Age [yrs.]	N	%
18 – 25	80	33.90
26 – 30	56	23.73
31 – 35	41	17.37
36 – 45	31	13.14
46 – 55	16	6.78
> 55	12	5.08
Total	236	100.00

The majority of respondents have secondary education, i.e. they have finished high school - usually three years (72.46%) as shown in Table 2.

Table 2. *The level of respondent's education*

Education level	N	%
Without any school	1	0.42
Elementary school finished	5	2.12

²⁰ More about in: „Social Welfare Act (Zakon o socijalnoj skrbi)”, *Narodne novine*, 2013./57, 2014./152, 2015./ 99, 2016./ 52, 2017./16.

3 yrs. high school finished	171	72.46
4 yrs. high school finished	47	19.92
Higher school finished	2	0.85
Without answer	10	4.24
Total	236	100.00

It is evident that the most of respondents, although belonging to the group of persons with disabilities which receives compensation to employment, had no officially assessed disability level. Merely one fifth of themselves clearly declares about their disability level (shown in Table 3.)

Table 3. *Officially assessed disability level*

Disability level	N	%
< 40%	12	5.08
41% - 60%	9	3.81
61% - 89%	17	7.20
81% - 100%	12	5.08
Without officially assessed level	117	49.58
Without answer	69	29.24
Total	236	100.00

Here is a sort of disclaimer. Namely, it is not possible to show the kinds of respondents' disabilities, because the focus of the research was primarily on specific persons with disabilities and their personal affinities toward employment rather than disability categorization. Therefore, the results obtained cannot be applied to any particular category of persons with disabilities, but they need to be considered more on a principled basis, i.e. as an initial scientific insight, i.e. a pilot analysis aimed at obtaining basic indicators of the investigated problem.

2.2. Instrument

The questionnaire consisted of different sets of variables (personal wellbeing index, life satisfaction, mobility difficulties, sociodemographic characteristics etc.), and for the purpose of this research a special set of questions was designed, referring to the preferences of PWDs for education and employment in the field of horticulture, but also generally to their view and attitude towards plants. The most frequent were the questions of Likert-type, however, the questions of open and closed type were also offered. The average duration of the survey was 20 minutes, and the results in this paper are used exclusively in a cumulative sense, i.e. as overall statistical indicators.

2.3. Data processing

After filling in the questionnaire, the data were entered into the computer, and for the final processing and interpretation of the results obtained, the SPSS package was used.

3. Results

The respondents were firstly asked a few general questions about their experience of plants and nature. Thus, 93% of them responded that they loved spending time outdoors, and 88% generally loved plants.

Offering them a list of greenery classified in the specific groups and asking them to indicate their affective experience for each of them on a 5-level scale (where the answer “1” means that they do not like the greenery at all, and the answer “5” means that they like it very much), the respondents expressed the strongest affinity towards flowers ($M = 4.30$), followed by lawns ($M = 3.90$), trees ($M = 3.88$), pot plants ($M = 3.88$), and at the end, towards cut flowers ($M = 3.74$) and bushes ($M = 3.11$).

Furthermore, we wanted to examine whether they had already worked with greenery in some way, at least occasionally and in their leisure time, and whether they had practiced some form of gardening, growing or ornamental plants maintenance. A little over a third of respondents answered affirmatively (36.1%), and through additional analysis (5-level scale: 1-never, 5-daily) we discovered that these activities mainly included home plant growing, i.e. growing flowers in an apartment / house ($M = 2.32$), on a balcony / terrace ($M = 2.21$), and on a window ($M = 2.13$).

In the next step we tried to detect their reasons for working with greenery, i.e. the meaning that this activity had for them. We offered them several statements, again on the 5-level scale where the response “1” means that they do not agree with the particular statement at all, and the answer “5” means that they completely agree with it. The results are shown in Table 4., in which it is clearly demonstrated that the most common answers are: “Working with plants gives me a sense of satisfaction” ($M = 3.32$); “Working with plants relaxes me” ($M = 3.29$); “Working with plants is important to me because of aesthetic reasons – plants enrich the space in which I live” ($M = 3.27$); “Working with plants allows me to move away from everyday problems” ($M = 3.08$) and “Working with plants serves me as a form of exercise, physical activity” ($M = 3.05$).

Table 4. *Reasons for working with plants*

Statement	Minimum	Maximum	Mean	Std Deviation
1. Working with plants relaxes me	1	5	3.29	1.528
2. Working with plants gives me a sense of satisfaction	1	5	3.32	1.566
3. Working with plants serves me as a form of exercise, physical activity	1	5	3.05	1.558
4. Working with plants allows me to move away from everyday problems	1	5	3.08	1.536
5. Working with plants is important to me because of aesthetic reasons; plants enrich the space in which I live	1	5	3.27	1.529
6. Through working with plants I produce food for my personal needs	1	5	2.69	1.58
7. I work with plants due to financial reasons	1	5	2.05	1.31
8. Working with plants is a part of my family tradition	1	5	2.55	1.528
9. Through working with plants I hang out and exchange experiences with people of the same interest	1	5	2.65	1.512

In line with the aim of this research, we intended to examine the interest of PWDs for education in horticulture, cultivation and maintenance of ornamental plants. The results presented in Table 5. display that more than one third of the respondents (34.4%) are interested in this kind of training, of which both women and

men are represented in equal proportions. Additional verification of the difference between men and women in the responses was tested by the Chi-square test that found no statistically significant differences in the responses of these two subgroups ($\chi^2 = 1.011$; $p > 0.05$).

Table 5. *Interest for education in horticulture in relation to sex*

			Are you interested in education (seminars, courses, workshops, lectures) in gardening, growing and maintaining of ornamental plants?	
			Yes	No
Sex	Male	%	31.3	68.7
	Female	%	37.7	62.3
	Total	%	34.4	65.6

Naturally, the aim of education is finding employment in the profession, and therefore we examined the respondents' affinities towards employment in horticulture, cultivation and maintenance of plants. The question was listed on a single scale along with various other occupations, and the respondents were asked which of the professions, according to their own preferences, they would like to have. The results are shown in Table 6. from which it is evident that the work in horticulture, plant growing and maintaining have a very high position compared to others. A total of 38.4% of respondents expressed a positive attitude towards horticulture sector as their potential employment, which positions it as the third most preferred within a group of 12 different sectors of professions, right after work in tourism, hospitality and gastronomy (43.1%) and trade, sales and marketing (39.3%).

Table 6. *Interest in employment in horticulture in relation to other professions*

Profession sector	Yes	No
	%	%
1. Gardening, Growing and Maintaining Plants	38.4	61.6
2. Mechanical engineering, Electrical engineering	15.0	85.0
3. Trade, Sales, Marketing	39.3	60.7
4. Administration	23.1	76.9
5. Law	8.0	92.0
6. Design and Art	25.8	74.2

7. Education and Children Care	32.8	67.2
8. Traffic and Transport	18.9	81.1
9. Construction and Architecture	15.6	84.4
10. Health and Beauty Care	20.5	79.5
11. Tourism, Hospitality, Gastronomy	43.1	56.9
12. Accounting, Economy	19.7	80.3

We examined if there was a difference in the preferences of employment in working with greenery in relation to sex and found that there was no statistically significant difference ($\chi^2 = 0.916$, $p > 0.05$). Both men and women express equal desire to work in this profession, and the Pearson correlation shows us that there is no significant correlation of our questions to the level of education either ($r=0.147$, $p>0.05$). The same is evidenced with respect to age ($r=-0.161$, $p>0.05$), i.e. persons of all age groups have similar preferences toward the analysed topic.

4. Discussion and Conclusions

In the beginning of the results analysis, and in accordance with our expectations, we found that nearly all respondents PWDs preferred greenery and spending time outdoors. They displayed particular affinity for flowers, lawns, pot plants and trees, but we believe that these or similar percentages would have been obtained if the research had been conducted on the general population sample as well. In fact, it can be said that we are all witnesses of the positive experience of the greenery, its impact on people and the desire to stay and be engaged in it. Not surprisingly, and according to recent media reports, there is an increase in the popularity of rural, agro-tourism in Croatia, which could also be considered a form of passive horticultural therapy in some way.

Furthermore, we discovered that more than a third of respondents were already in some way engaged in gardening, growing and maintaining of plants. A very small percentage of them were doing it for financial reasons, which actually implies that there is an unquestionable intrinsic motivation for active engagement in working with plants, even when it does not bring direct financial profit.

The aforementioned was also confirmed by the subsequent analysis: “Working with plants gives me a sense of satisfaction”, “Working with plants relaxes me”, “Working with plants allows me to move away from everyday problems”, “Working with plants serves me as a form of exercise, physical activity”, etc. are only a few of the most common respondents’ answers, which clearly indicate the inclination towards horticultural therapy. Persons with disabilities are virtually on their own initiative already taking steps for which they are certain are beneficial for them, although not, or at least not enough in the financial sense.

Interest in education in horticulture, cultivation and maintenance of plants exhibits quite a high rate also. More than a third of the respondents are interested in this form of education, irrespective of sex. Although it might have been expected that women would be significantly more interested in this kind of training, the latter was not shown. In addition, our subsequent analysis clearly indicates that the same number of men and women would also prefer to become professionals in horticulture industry. Persons with disabilities (who gave an affirmative answer to the question about the desire for employment in this segment) see horticulture industry as a good employment opportunity, regardless of sex, and, further on, regardless of their current level of education. The fact that working in horticulture, cultivation and maintenance of plants is so highly positioned in relation to quite a number of other activities that we listed in this question, clearly implies that the educational, and then the social, economic and even health policies should certainly keep this in mind in the future.

It is this aforementioned finding that clearly confirms the fact that education and employment are closely intertwined, which applies especially to persons with disabilities. Without the educational policy and the employment policy compliance optimal solutions cannot be reached, despite the aforementioned, and in itself very positive Law on Professional Rehabilitation and Employment of Persons with Disabilities. To sum up everything said, it is evident that in Croatia there is a need to increase the production of flowers and the engagement in horticulture, and there is a significant challenge regarding difficulties in employing PWDs, and there is a discrepancy between the inappropriate educational models available to PWDs on one side, and the real needs of the open labour market on the other side. Therefore, it appears that the education and employment of PWDs in horticulture industry would produce multiple benefits, both for the society and for at least a part of the PWD population.

OSOBE S INVALIDITETOM U HORTIKULTURI – PREFERENCIJE ZA EDUKACIJU I ZAPOŠLJAVANJE

Sažetak

U radu je riječ o motivaciji osoba s invaliditetom za aktivnosti i obuku u hortikulturi kako bi se unaprijedile njihove mogućnosti za zapošljavanjem na otvorenom tržištu rada. Provedeno je kvantitativno istraživanje o spremnosti za zapošljavanje u sektoru hortikulture među osobama s invaliditetom koje su korisnici naknade do zapošljavanja. Uzorak je bio prigodan, a sačinjavalo ga je 236 ispitanika. Osim socio-demografskih varijabli analiziran je i njihov obrazovni status, dodatne vještine i znanja za zapošljavanje, zdravstveni pokazatelji te hortikulture preferencije. Rezultati pokazuju da većina ispitanika voli biljke (88%) i boravak u prirodi (93%), dok je trećina ispitanika zainteresirana za edukaciju u ukrasnoj hortikulturi. Vrtlarstvo je za 38% ispitanika preferirana struka, izabrana između 12 sektora različitih zanimanja.

Dodatne analize jasno pokazuju da edukacija i prakticiranje hortikulture aktivnosti za osobe s invaliditetom imaju znatan potencijal. I to na različite načine – zbog velikoga (poljo) privrednog potencijala Hrvatske i potrebe za hortikulture proizvodima kao izvrstan model za unaprijeđenje ove gospodarske grane; kao izvrsno područje za zapošljavanje, a time i smanjenje vrlo visoke stope nezaposlenosti osoba s invaliditetom; te kao aktivnost sa znatnim dobrobitima u njihovu osobnom razvoju, rehabilitaciji i općenito u podizanju kvalitete života barem jednoga dijela ove vrlo vulnerabilne populacije.

Ključne riječi: osobe s invaliditetom, inkluzija, otvoreno tržište rada, ekonomska neovisnost, hortikultura industrija, kvaliteta života, hortikultura terapija.