

FACTORS THAT INFLUENCE THE CAREER PATH AND CAREER SATISFACTION OF A PHARMACY GRADUATE IN ROMANIA

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Manuscript received: April 2021

Abstract

Career and job satisfaction remain conspicuous factors both for managers and employees, essential for recruitment, retention and the overall organization's productivity and success. To investigate the factors that influence the career and job satisfaction among the community of pharmacy graduates, a questionnaire was conceived. The sample includes 340 respondents which filled the questionnaire between mid-February 2021 and mid-March 2021. The main objective of the present research was to investigate the degree of job satisfaction of Romanian pharmacy graduates and the factors that are associated with it. Logistic regression analysis was performed based on the questionnaire dataset. The obtained results indicate that recent graduates most probably pursue residency and have a job in the same time. Despite that, the extent postgraduate studies correspond to the job description as well as higher monthly income increases the likelihood a person is satisfied with job.

Rezumat

Satisfacția cu privire la locul de muncă precum și cea legată de carieră reprezintă factori esențiali pentru recrutare și angajare, dar și pentru productivitatea și succesul organizației. Pentru a investiga factorii care influențează satisfacția cu privire la carieră și locul de muncă, în cazul absolvenților facultăților de farmacie, a fost conceput un studiu pe bază de chestionar. Eșantionul include 340 de repondenți care au completat chestionarul în perioada februarie 2021 – martie 2021. Principalul obiectiv al studiului a fost să analizeze gradul de satisfacție al licențiaților în Farmacie din România și factorii de influență. În acest sens, s-a utilizat metoda regresiei logistice, aplicată pe datele de chestionar. Rezultatele au indicat faptul că absolvenții ultimei promoții aleg să continue studiile cu cele postuniversitare de rezidențiat, dar să aibă și un loc de muncă în sectorul privat în același timp. De asemenea, în urma studiului, s-a constatat că gradul de similitudine al postului cu specialitatea studiilor și venitul lunar influențează semnificativ satisfacția cu privire la locul de muncă.

Keywords: pharmacy, graduates, career path

Introduction

The lack jobs for the young university graduates reflect the recent decrease in the medium qualified-jobs. To this, tendency technological advances contributed significantly [6]. Nonetheless, compared to the IT sector, related studies show an increase in vacancies for many jobs in health and care supporting staff (World Economic Forum, 2020). For all aforementioned jobs the expected competences include computer literacy and office software proficiency. LinkedIn (2021) analysed jobs trends from its “Job on the

Rise” report for 15 countries world-wide [10]. For a first job or new opportunity on the labour market, the LinkedIn's predictions highlight position in e-commerce, healthcare or digital content as being in demand this year. As World Economic Forum (2020) noted in their report, the pandemic-related disruptions in 2020 have led to a particular global urgency and need for new technology job roles [21]. In addition, increasing demand for care economy jobs can point to new ways in which young professionals can achieve their career path. One study by the National Intelligence Council [13] estimates that automation

may affect a share of the workforce and may require requalification. Also, their research pointed out that access to continued education may influence the way countries respond to these labour-market disruptions. Moreover, developing economies are likely to be more susceptible in providing education and proper training for the new graduated sector of the workforce.

Big data technology process is crucial for companies within the Healthcare and Pharmaceutical industry that want to sustain their competitiveness and strive for a better market position. In their study, Pesqueira, Sousa and Rocha highlight that, in order to adapt their employee skills to big data, the main goal of organizations operating in Healthcare and Pharmaceuticals should be tracking novel big data skills [14]. The medical Internet of Things, a concept introduced by Industry 4.0, demonstrates their advantages on intelligently connect the healthcare systems. For example, Reinhardt *et al.* studied the adoption and integration of 4.0 concept in the modernisation of the pharmaceutical and biopharmaceutical industries in Ireland [16]. The research reveals variations in knowledge for the 4.0 concept based on seniority, function and industry. However, Industry 4.0 is still in pole position and its roadmap is not fully drawn [18].

Judge, Heller and Mount highlights that a good career planning along with all related traits leads to happiness in life and job satisfaction among individuals [8]. Zhang *et al.* describe career intention among final-year pharmacy undergraduate students in China and identify driving factors, such as gender, family background, psychological self-gratification and employment guidance [22]. By looking into the pharmacy student's behaviour, McEwen Smith *et al.* analysed the factors associated with their choice of pre-registration training programmes [12]. Their research reveal that most pharmacy students in England and Wales emphasise long-term career aspiration to be very important when they select the pre-registration training programs providers. Moreover, McCarthy and Weber argue that the motivational factor that stands behind pharmacy students pursue of residency and training programs are the main drivers for a certain career path [11]. Nonetheless, the obtained income presents strong influence over the long-term aspirations. Ives *et al.* point out that students become aware of the importance of career development strategies early as from college [7]. According to a recent study in Estonia, students' feedback on competency-based pharmacy education highlights the need to pay more attention to the development of digital and transferable skills in regard to qualitative continuous development of future

pharmacists [19]. Findings from Wilby and Rainkie reveal that pharmacy programs may have to carefully address the way they position the profession in their recruitment strategies [20].

Given this context, the aim of this paper is to perform an analysis, to understand what are the main determinants of pharmacy graduates career path in Romania, as well the factors that influence their job satisfaction with regard to professional development. An important aspect of this research is also the socio-political point of view. Recent public policies could influence young pharmacists' job satisfaction as well as their income.

Materials and Methods

Methodology

For the purpose of this paper a questionnaire aimed at pharmacy graduates was conceived (Table I). The questionnaire was distributed through the College of Pharmacists from Romania (CPhR) and the on-line platforms implemented by the Faculty of Pharmacy ("Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania), between mid-February 2021 and mid-March 2021 and it consists of 14 questions addressing the following items: the year of graduation; the extent the field of study at bachelor and post-graduate level corresponds to the job description; number of interviews attended; professional competencies, soft skills, internships; graduates' career path; overall job satisfaction; respondents' satisfaction with respect to income; and sex, age and approximate monthly income.

The year of graduation was considered to be important because any graduate in pharmacy can apply for residency (Government Ordinance 18/29 August 2009, modified to date) at any time after becoming a bachelor [5]. The time interval between graduation and application for residency is potentially driven by their skills acquired during the faculty years and after graduation, as well as their personal experience on the labour market (career path) and the requirement of the employer. Age and sex were collected because these two variables often represent predictors for job satisfaction [15]. Moreover, age at graduation and could be an important factor for the decision to continue the education and for the option for a specialization domain, as it may partially reflect the dynamics of the pharmaceutical market. It appears to be a significant correlation between the approximate level of income and job satisfaction [2]. Thus, the respondents were requested to provide an approximation of their current monthly income.

Table I

The questionnaire made for the pharmacy graduates

No.	Item	Answers
1.	Year of graduation	2015
		2016
		2017
		2018
		2019
		2020
2.	The extent bachelor degree provided knowledge suitable for employment	not at all
		not so much
		to some extent
		very much
		totally
3.	The extent mandatory internship was useful in finding a job	not at all
		not so much
		to some extent
		very much
		totally
4.	Number of interviews attended until a job was found	1
		2
		3
		4 or above
5.	Option after graduation	continuing studies through residency and obtaining a job
		continuing studies through residency
		continuing studies with a Master or PhD programme and obtaining a job
		obtaining a job
6.	The extent bachelor domain and job correspond	not at all
		not so much
		to some extent
		very much
		totally
7.	The extent post-graduate studies and job correspond	not at all
		not so much
		to some extent
		very much
		totally
8.	Competencies that are not fully covered during bachelor studies	Accounting
		Communication
		computer literacy
		marketing
		professional level of a second language
9.	Perceived benefit of assimilating non-mandatory internships with mandatory internships	not at all
		not so much
		to some extent
		very much
		totally
10.	Job satisfaction regarding professional opportunities	not at all satisfied
		not so satisfied
		somehow satisfied
		very satisfied
		totally satisfied
11.	Job satisfaction regarding income	not at all satisfied
		not so satisfied
		somehow satisfied
		very satisfied
		totally satisfied
12.	Sex	male
		female
13.	Age (years)	Open item
14.	Approximately monthly income (RON)	Open item

With regard to graduates' career path, four possibilities were identified: continuing studies through residency and obtaining a job, continuing studies through residency, continuing studies with a Master or PhD programme and obtaining a job, obtaining a job. In order to assess the main determinants of a career path of for pharmacy graduates, a logistic regression has been performed.

$$\log\left(\frac{p}{1-p}\right) = c + a_1 \text{Number of interviews attended} + a_2 \text{Year of graduation} + \varepsilon$$

$$p = \begin{cases} 1 & \text{if the person chooses to continue the studies through residency and have a job simultaneously} \\ 0 & \text{if the person chooses any other option} \end{cases}$$

Job satisfaction was classified into two categories as follows: the variable takes value 1 if the person is satisfied or very satisfied with his/her professional development and 0 otherwise. Next, a logistic regression

$$\log\left(\frac{q}{1-q}\right) = c + b_1 \text{The extent postgraduate studies correspond to the job description} + b_2 \text{Monthly income} + \varepsilon$$

$$q = \begin{cases} 1, & \text{if the person is satisfied or very satisfied with regard to his or her professional opportunities} \\ 0, & \text{otherwise} \end{cases}$$

The dependent variable takes the value 1 if the person chooses to continue the studies through residency and have a job simultaneously and 0 otherwise. This approach is based on the fact 153 out of 340 respondents chose this kind of career path. Several logistic regression models using the questionnaire data were applied until a valid one with significant coefficients was obtained.

model was applied for identification of the determinants for job satisfaction with regard to professional development opportunities:

Results and Discussion

The sample of this study consisted of 309 females and 31 males, mostly less than 30 years old. Considering job satisfaction by career path (Figure 1), approximately 40% of those who chose to continue their studies through residency are satisfied or very satisfied with their career path. The results are similar for those who choose to have a job and continue their studies through residency. However, graduates who chose to have a job only slightly less satisfied while those who combine master or PhD studies with a job are more satisfied. As pharmacy residency is a form of paid professional training ensured by the Romanian government [5], this offers both financial security and opportunity for continued education.

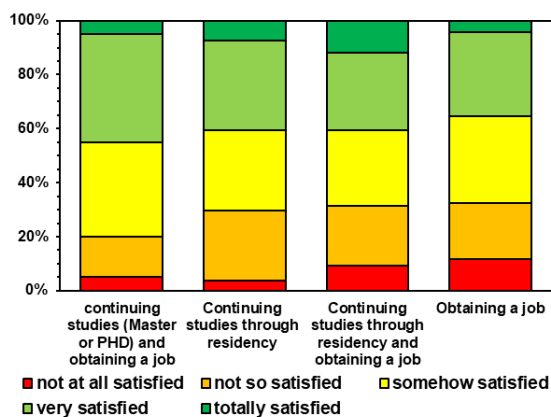


Figure 1.

Job satisfaction by career path

Figure 2 shows graduates' satisfaction with regard to the income by career path. Approximately 30% of those who chose to have job or to combine a job with residency or master and PhD studies are satisfied or very satisfied with regard to their income. Almost

half of those who continued their studies through residency chose are satisfied or very satisfied with their income. These results might be due to the fact that the income for pharmacy residents increased with approximately 25% in 2020 compared to 2017 [9].

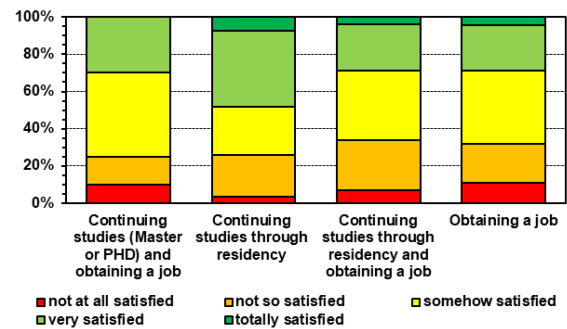


Figure 2.

Income satisfaction by career path

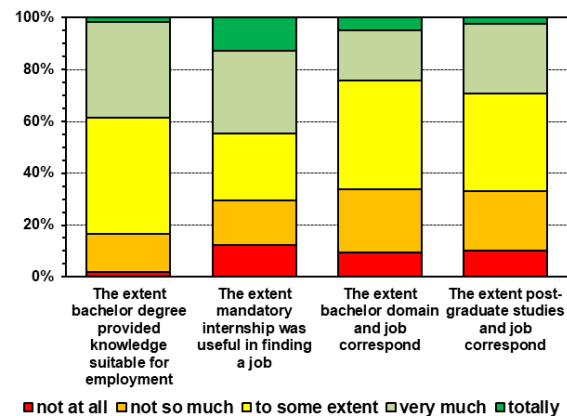


Figure 3.

Overall perception with regard to job and studies

The study caught the overall perception of graduates regarding job and studies (Figure 3). Most of the

graduates consider that their bachelor studies provided them suitable knowledge for their job only to some extent, while most of them have jobs with a different profile than their specialization. However, the response clearly confirms that mandatory internship during studies was useful or very useful in finding a job. This finding is consistent with previous research. For example, Andrei *et al.* concluded that internships are key elements for pharmacy students' initial training and significantly increase chances to get a first job [1].

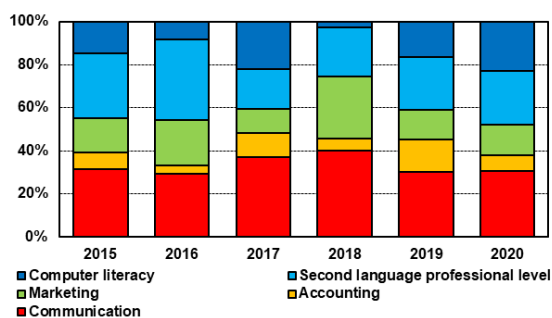


Figure 4.

Competencies not sufficiently covered during studies, by year of graduation

The assessment of the opinion on the competencies in relation with the year of graduation of the respondent indicated that they are not sufficiently covered during studies (Figure 4). Most of the respondents mentioned communication followed by a second language at professional level and computer literacy. This finding is in line with the conclusions of Ciolan *et al.*, which stated that several additional competencies need to be covered by pharmacy curriculum: negotiation skills, supply chain, price settings and communication [4]. Also, Cerbin-Koczorowska *et al.* pointed out those pharmacy students should gain inter-professional skills as well, especially during postgraduate studies [3]. The share of graduates that are satisfied or very satisfied increased significantly in 2020 compared to the two previous years for both variables. An increase in the share of graduates that are to some extent satisfied is observed both in 2019 and 2020 (Figure 5) compared with 2016 - 2017 period. However, the share of graduates that are to some extent satisfied is higher in 2015. The share of graduates that are not satisfied in regard to the income shows a considerable decrease particularly in 2020 compared with previous year.

$$\log\left(\frac{p}{1-p}\right) = -1163.8 + 0.22 \text{ Number of interviews attended} + 0.57 \text{ Year of graduation} \quad (1)$$

$$p = \begin{cases} 1 & \text{if the person chooses to continue the studies through residency and have a job simultaneously} \\ 0 & \text{if the person chooses any other option} \end{cases}$$

$$z_{\text{Number of interviews attended}} = 1.78, z_{\text{Year of graduation}} = 8.37$$

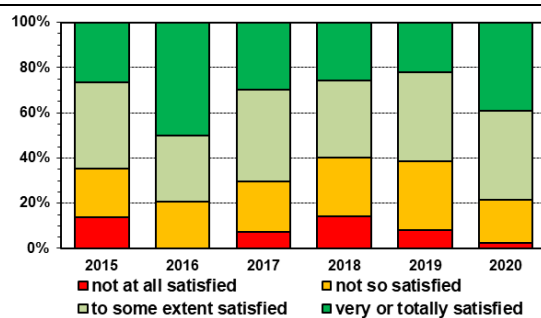


Figure 5.

Income satisfaction by year of graduation

Figure 6 present graduates' overall job satisfaction and shows that the share of graduates that are very or totally satisfied approximately doubled in 2020 compared with 2019 and exceeds the share from 2015. Clearly, in terms of the overall job satisfaction, the share of graduates that are to some extent satisfied is higher in 2020 compared with previous four years.

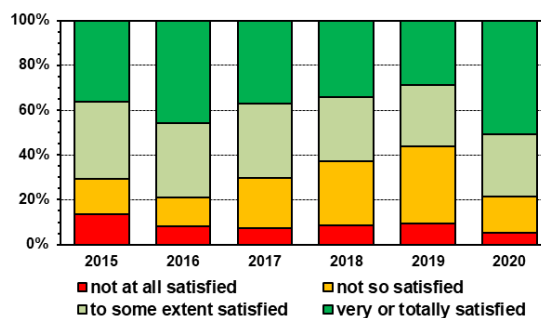


Figure 6.

Overall job satisfaction by year of graduation

Equation 1 presents the results of the logistic regression model applied for the assessment of the main determinants of a career path of pharmacy graduates. The Hosmer-Lemeshow test shows that the logit model is suitable for modelling the dependent variable while the LR test that the model is valid. 71.47% of the observations were correctly assigned to the dependent variable. Both coefficients are significant at 10% level. The model reveals that the more interviews a person attends, the more likely is to continue the studies through residency and have a job simultaneously. Moreover, the likelihood of choosing such a career path increases as the year of graduation increase. More specifically, recent graduates most probably pursue residency and have a job in the same time.

Model specificity = 71.12%; Model Sensitivity = 71.9%; Overall % Correct = 71.47%.

H-L Statistic = 4.37; Prob Chi-Sq = 0.8214; LR Statistic = 91.5; Prob (LR Statistic) = 0.00.

Equation 2 presents the results of the logistic regression model aimed at understanding the main factors that influence job satisfaction with regard to professional opportunities. As one can observe, the Hosmer-Lemeshow test shows that the logit model is suitable

$$\log\left(\frac{q}{1-q}\right) = -3.1 + 0.36 \text{The extent postgraduate studies correspond to the job description} + 0.0003 \text{Monthly income (2)}$$

$$q = \begin{cases} 1, & \text{if the person is satisfied or very satisfied with regard to his or her professional opportunities} \\ 0, & \text{otherwise} \end{cases}$$

$$Z_{\text{The extent postgraduate studies correspond to the job description}} = 2.7, Z_{\text{Monthly income}} = 4.35$$

Model specificity = 88.1 %; Model Sensitivity = 34.7%; Overall % Correct = 68.4%.

H-L Statistic = 4.9; Prob Chi-Sq = 0.75; LR Statistic = 33.6; Prob (LR Statistic) = 0.00.

Conclusions

Career path development and job satisfaction are significantly influenced by extrinsic factors. Pharmacy graduates may be more satisfied with the job they have as long as the income increases, in particular among those with extent postgraduate studies correspond to the job description. In this respect, for this very reason they chose certain type of jobs or engage in a specific activity that offer the possibility of increasing the income.

1214 places for Residency in Units subordinated to the Ministry of Health and local public authorities, session 15.11.2020, were available [17]. The number increased compared to 2019 (714 places) and also compared to previous years (225 places in 2018, 129 places in 2017 and 126 places in 2016). Regarding the specialities available, in 2020 there were 4 specialities compared with 2016 (only 2).

The share of graduates that are very or totally satisfied almost doubled in 2020 compared with 2019. The share of graduates that are to some extent satisfied is higher in 2020 compared with previous four years. The explanatory memorandum of the CPhR (College of Pharmacists from Romania) no 1878/29.07.2019 had a positive influence on the adoption of a public policy that clearly proved to be effective.

Overall, further research in this area is still needed to guide the understanding of factors that influence the job and career satisfaction of pharmacy graduates.

Conflict of interest

The authors declare no conflict of interest.

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for modelling the dependent variable while the LR test shows that the model is valid. 68.2% of the observations were correctly assigned to the dependent variable. Both coefficients are significant at 1% level. The extent postgraduate studies correspond to the job description as well as higher monthly income increases the likelihood a person is satisfied or very satisfied with his/her job.

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