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Age and job expectations—A study from the IT industry

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Abstract: In a time of a growingly age-diverse workforce, modern organizations are facing the challenge of simultaneously maintaining job satisfaction for both younger and older workers. In that regard, this study aims to analyse and further explore the difference in job expectations of employees from the IT industry who belong to different age groups. Based on the extant literature, an appropriate research model was designed, which was subsequently tested using the data gathered through the surveys conducted over the past fourteen years. The research results show that the main difference between younger and older employees within the IT industry is related to professional and personal growth. Specifically, younger employees primarily look for personal development and rapid professional advancement, which are of minor importance to their older counterparts. Intriguingly, the obtained results showed no difference between the younger and older employees regarding the work environment, including its competitiveness.

Keywords: aging; age-diverse workforce; knowledge workers; job expectations; job satisfaction

1. Introduction

Aside from the healthcare and social assistance industries, the IT industry is one of the fastest-growing industries in the current decade (U.S. Bureau of Labor Statistics, 2020). Besides, the IT industry is omnipresent and enormously impacts the economy and society (CompTIA, 2021). Given these facts, modern IT companies face numerous challenges, both technological and managerial. To deal with all the challenges posed, today's IT companies must have a large and capable workforce. Furthermore, those companies acutely depend on their most talented employees, and thus, the employee retention issue is of utmost significance because of the high turnover rate (Booz, 2018). Consequently, to make and keep their employees satisfied and motivated and thence willing to stay in the company, IT companies must adopt sound human resource management (HRM) practices and processes (Allen et al., 2008; Korsakienė et al., 2014).

Using a widely exploited job satisfaction concept, many studies have shown that high job satisfaction positively relates to employee retention and loyalty (e.g., Chen et al., 2011; Kazakov et al., 2020). As initially proposed by Porter and Steers (1973) and later confirmed by many other studies (Wanous et al., 1992), an essential determinant of employees' job satisfaction is the extent to which their job expectations are met. A recent longitudinal study on job satisfaction among IT professionals (Bezdrob and Šunje, 2021) showed that employees' job expectations determine the principal intrinsic factor that differentiates job satisfaction from non-satisfaction. IT professionals are fully aware of the importance and value they possess in the labour market, as well as their ease of mobility between different companies. Therefore, HR managers of IT

companies need to properly identify their employees' specific job expectations and then devise and apply suitable mechanisms and processes to meet those expectations (Allen et al., 2008; Šajeva, 2007). In line with the previous reasoning, the following research question is posed:

RQ₁: What are the most significant factors that underlie employees' job expectations within the IT industry?

As the IT industry matures, the industry's employees' age structure becomes equal to society's age structure in general. Not only are employees older on average, but they also belong to highly diverse age groups (Truxillo et al., 2014). Since employees' chronological age significantly affects their job attitudes (Ng and Feldman, 2010), the issue of job expectation differences between diverse employees' age groups has become increasingly significant. This issue leads to the second research question of this study:

RQ₂: Do different age groups of technical staff in the IT industry have different job expectations?

These research questions determine the scope and purpose of this study. Specifically, this study aims to identify, explore, and analyse significant factors underlying employees' job expectations. Besides, the study primarily explores the variations in job expectations between different age groups of technical staff in the IT industry. Getting a deeper insight into the phenomenon of the differences in job expectations among the age-diverse workforce in the IT industry is the main motivation for this research.

To further investigate these issues, a relevant research design was prepared, and an appropriate research model was proposed. The research model was subsequently tested using the data gathered through the surveys conducted during the period of 14 years. For the purpose of data analysis, exploratory factor analysis (EFA) and multivariate analysis of variance (MANOVA) were employed.

Based on the job expectations theory, the study offers a rare insight into the issue of age-differentiated employees' job expectations. More specifically, the study shows that the main difference between the different groups of employees within the IT industry is related to professional and personal growth. At the same time, there are no differences related to the work environment or internal competitiveness. In addition, the study provides a few hints on human resources management practices that are directly related to the main study findings.

The following section provides insights into theoretical aspects related to the research topics, followed by a set of research hypotheses that delineate a conceptual model of employees' job expectations concerning their age. The third section describes the data and data analysis methods used in the study and ends with a detailed interpretation and discussion of the results. Finally, the paper finishes with several concluding remarks and the main implications of the study from both theoretical and practical standpoints.

2. Literature review

Job satisfaction, or how people feel about their job—more (higher satisfaction) or less (lower satisfaction) positive—has a critical impact on the employees'

contribution to business outcomes, such as productivity, profitability, customer satisfaction, and similar (Robbins and Judge, 2017). One of the classical theories that supports and further explains the job satisfaction concept, is the well-known “met expectations hypothesis” (Porter and Steers, 1973). According to this theory, the more the employee’s expectations about the job are met, the higher the employee’s satisfaction with the job.

As the general population ages, especially in developed and industrialized countries (United Nations, 2019), all theories related to organizational behaviour should arguably be expanded with the proper age-diverse workforce considerations. Hence, this study addresses the aging perspective related to the “met expectations hypothesis,” with a particular emphasis on the IT industry.

2.1. Employees’ job expectations—The concept

Several theories are used to explain the job satisfaction concept. Among them, one of the most often used is Vroom’s (1995) “Expectancy theory,” which is strongly supported by many subsequent studies (Robbins and Judge, 2017). According to this theory, expectancy is defined as employees’ belief that their high efforts will lead to a particular outcome that will fulfil their personal objectives. Vroom’s theory was primarily used to explain and predict employees’ job satisfaction (Banks, 2007). Namely, employees will be satisfied if their efforts are rewarded in accordance with their beliefs, which, in turn, would likely lead to higher levels of motivation and, subsequently, many positive organizational outcomes.

Porter’s and Steers’ “Met Expectations Hypothesis” can be considered a variation of Vroom’s expectancy theory. In their seminal work, Porter and Steers hypothesized that employees’ propensity to withdraw might be predicted by the difference between what employees encounter on their jobs and what they expected to encounter (Porter and Steers, 1973). The main finding of Porter’s and Steers’ study (1973) is that job satisfaction significantly impacts employees’ decisions on withdrawal and absenteeism. Furthermore, they saw the employees’ job satisfaction as a sum of their met expectations on the job. In other words, they claimed that when employees’ job expectations are not substantially met, their tendency to leave the job will increase. Following Porter’s and Steers’ seminal work (1973), numerous studies have confirmed that met job expectations are strongly connected with employees’ job satisfaction and intentions to stay (Irving and Montes, 2009).

According to Porter’s and Steers’ study (1973), the met expectations definition has several facets. Apart from the basic hypothesis definition mentioned above, one more aspect of this definition is significant for this research—the meaning of expectations. Only expectations related to the important job outcomes for a particular group of employees, organization, or industry should be considered when testing the met expectation hypothesis. All other expectations should be excluded from the test as irrelevant and inconsequential (Wanous et al., 1992).

2.2. Employees' job expectations—The age-diverse workforce considerations

Recent statistics show that employees' average age increases globally, not only in the most developed and industrialized countries but also in (almost) all other countries (United Nations, 2019). This demographic change profoundly affects all organizations because their employees become both older on average and progressively age-diverse (Truxillo et al., 2015). Consequently, to keep their age-diverse employees satisfied with their jobs, organizations should treat them in a more age-differentiated way (Thielgen et al., 2015). In other words, organizations should concentrate on creating and maintaining a flexible working environment that is equally tailored to the employees of different age groups (Kollmann et al., 2020).

Aging is associated with considerable changes in people's intellectual abilities, personalities, affect, and emotions. All these changes substantially impact employees' work outcomes and attitudes (Kanfer and Ackerman, 2004). In general, it is considered that age is (likely) positively correlated with physical security, job security, and skill utilization, while it is (likely) negatively correlated with job variety, external goals, and supervisors' feedback. At the same time, the value of control, role clarity, interpersonal contacts, and valued social position (likely) do not change with aging (Warr, 2001). Regarding job attitudes, older employees show more favourable attitudes toward work tasks, colleagues, supervisors, and organizations than their younger colleagues (Ng and Feldman, 2010). According to the socioemotional selectivity theory, as people get older, their time perception significantly changes, and that change has a decisive impact on their selection and pursuit of social goals (Carstensen et al., 1999). Namely, the time horizon seems unconstrained at a younger age, so the young employees are focused on the long-term goals (e.g., gaining skills, knowledge, and experience). In contrast, their older counterparts perceive time as more constrained and focus on short-term goals, such as physical and psychological welfare (Carstensen, 1998).

Another important aspect of age-diverse workforce considerations is ageism—mainly negative stereotypes and prejudices against older employees (Iversen et al., 2009). According to the stereotype content model (SCM), the stereotype tightly connected with older people states that they are kind but incompetent (Cuddy et al., 2008). Assertions suggesting the low value of older employees' contribution can only further confirm existing stereotypes and make them particularly dissatisfied with their job (Kollmann et al., 2020). Thus, any human resource policy that improves the value of employees' contributions would increase the job satisfaction of older employees (Visser et al., 2021).

All these age-related changes and stereotypes significantly impact employees' job-related motives and, consequently, their job expectations. Many studies confirm the positive correlation between age and intrinsic job-related motives. Simultaneously, a negative correlation exists between age and extrinsic job-related and personal growth motives (e.g., Kollmann et al., 2020; Kooij et al., 2011; Thielgen et al., 2015). Younger employees primarily seek personal and vocational growth (Ebner et al., 2006) and mainly expect good and increasing material rewards (Kollmann et al., 2020). Older employees primarily seek security and pleasurable job outcomes (Ebner et al., 2006;

Kooij et al., 2011) and expect to contribute more to the tasks in which they participate (Kollmann et al., 2020). Finally, employees' expectations vary with age for different vocations. Namely, employees performing jobs that require a high level of domain knowledge and experience (e.g., professors, doctors, lawyers) show greater job expectations stability during their lifespan (Kanfer and Ackerman, 2004).

2.3. Employees' job expectations—The IT industry specificities

Many studies show that high job satisfaction has positive work outcomes across various industries (e.g., Abbas et al., 2021; Al-Dalahmeh et al., 2018; Prockl et al., 2017). Industry specificities, however, have a considerable impact on job satisfaction antecedents and determinants, particularly their importance. More specifically, in any sector, industry, and profession, some job satisfaction determinants outweigh others (e.g., Prockl et al., 2017). The same applies to the IT industry, i.e., the IT industry specificities have a considerable effect on the most important antecedents and determinants of employees' job satisfaction and, for that matter, on their job expectations.

The information technology (IT) industry is one of the fastest-growing industries in the world, with 5%–6% growth year over year (YoY) and a projected output in 2022 of \$5.3 trillion (CompTIA, 2021), and with annual employment growth of 4% (Statista, 2022). Rapid technological and environmental change and continuous and persistent product and service innovation are the main characteristics of the IT industry. In addition, the IT industry is highly attractive for both investors and employees, causing the most required jobs and skills to belong to the IT domain. Consequently, IT experts feel highly confident about their professional futures (CompTIA, 2021).

Because worldwide natural population growth is in constant decline—from 1.79% in 1950 to 1.06% in 2019 (Roser et al., 2019), it becomes clear that the “age issue” is of exceptional importance in the IT industry. Obviously, there exists a gap between available and needed workers in the IT industry, with good prospects of further deepening. The employment challenge that today's IT companies face is twofold. First, a considerable number of older employees (Baby Boomers) retire every year. At the same time, the total number of work positions in the IT industry increases (4% annual increase worldwide). Such developments create a workforce demand in the IT industry that cannot be met only with the natural ingress of young people (Millennials and Zoomers) into the workforce (McMullin and Marshall, 2010). To cope with this issue successfully, IT companies ought to develop and implement several related HR practices, all of which should be adjusted to the particular traits of their existing and future employees of different ages. Namely, hiring processes should be adapted to candidates of different ages (van Selm and van den Heijkant, 2021), formal training should be offered to and adjusted for employees across all age groups (Visser et al., 2021), and proper HR policies for work transitions across the life course should be designed and operationalized to support workers' flexibility (Cooke and Platman, 2010).

The mentioned IT industry specificities and general demographic trends considerably influence the employees' traits and behaviour and, consequently, their

job expectations. The majority of employees within the IT industry constitute the so-called “knowledge workers,” whose knowledge is their most potent asset (Drucker, 1974). That fact enables IT professionals to move freely and easily between various jobs and companies. Another notable characteristic of IT professionals is their high level of individualism (Sutherland and Jordaan, 2004). Thus, IT professionals mainly seek self-actualization, personal growth and progress, and work flexibility (Šajeva, 2007). Mobility and individualism, as IT professionals’ two most distinct traits, shape the antecedents and determinants of their job satisfaction and, consequently, their job expectations (e.g., Korsakienė et al., 2015).

2.4. Research model and hypotheses

The job expectations concept has often been used to explain different organizational behaviour phenomena. Following that approach, this study aims to create a suitable research design and a corresponding research model of employees’ job expectations capable of providing qualified answers to the research questions. The basis for this model design is the model from previous research on a similar topic, where three underlying constructs of employees’ job expectations were found to exist (Bezdrob and Bičo Čar, 2020).

It is generally considered that job satisfaction changes positively with age (Ng and Feldman, 2010), even though some studies have found that this relationship is not linear but U-shaped (Clark, 1996). This non-linear relationship is often explained by changes in employees’ job expectations. Namely, young employees are captivated by the novelty of their situation. They are more eager to gain work experience and advance in their careers, which results in higher work enthusiasm and job satisfaction. In contrast, older employees had more time to find a good job to their satisfaction (Clark et al., 1996). In addition, several studies (e.g., Park et al., 2019; Sutherland and Jordaan, 2004; Šajeva, 2007) have found that so-called „knowledge workers,” like IT professionals, primarily seek personal realization and professional development. Combining these two findings, the first hypothesis of the study can be posed as follows:

H₁: Personal realization and professional progress, as important constituents of the employees’ job expectations, are more important to younger engineering staff (juniors) than to their more senior counterparts (mediors and seniors). The term “medior” is used here to denote an intermediate age group. Even though it is not a “real” English word, the author decided to use it due to its habitual use in IT jargon (mainly to describe the mid-level expertise of software developers).

Younger workers significantly favour promotion opportunities more than older workers (Wright and Hamilton, 1978). Several studies confirm such findings, regardless of the generational cohort—Baby Boomers, Generation Xers, and Millennials. However, it is slightly more emphasized with Millennials (e.g., Magni and Manzoni, 2020; Ng et al., 2010; Terjesen et al., 2007). A further impetus for career advancement and rapid promotion is provided by the increased internal competitiveness of the modern work environment, which is especially noticeable in high-tech industries (Eisenhardt and Galunic, 2000). All of that leads to the second hypothesis of the study:

H₂: Career progress and promotion (through a competitive work environment), as an important constituent of the employees' job expectations, are more important to younger engineering staff (juniors) than to their more senior counterparts (mediors and seniors).

In accordance with Herzberg's two-factor theory (Herzberg et al., 1959), the general work environment factors (i.e., hygiene factors) need to be adequate so that employees are not dissatisfied. The adequacy of the general work environment, however, is something that knowledge workers not only expect but take for granted (CompTIA, 2021). Nevertheless, older workers were more likely to favour job security and organizational maturity (Tolbert and Moen, 1998). Then, the third hypothesis of the study is:

H₃: The maturity, organization, and stability of the work environment, as an important constituent of the employees' job expectations, are less important to younger engineering staff (juniors) than to their more senior counterparts (mediors and seniors).

These three hypotheses lay the foundation for the corresponding research design and the accompanying research model described in the following section. The proposed research design (**Figure 1**) comprises the most important facets of the job expectations concept for this research.

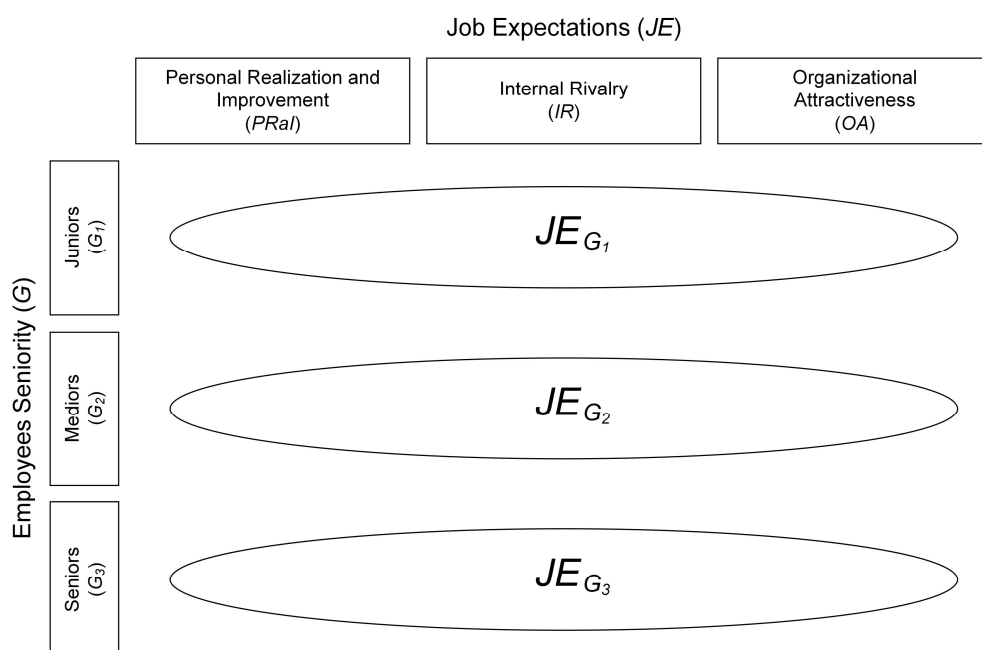


Figure 1. Layout of the research design.

3. Data and methodology

The research was conducted within an IT company ("The Company") founded in 1997 in Bosnia and Herzegovina. For many years "The Company" has employed about 60 full-time employees, most of them highly qualified in the different IT fields. The employees' average length of service is nine years, with a relatively low attrition rate compared to the industry average.

To test the research hypotheses, a suitable questionnaire was developed and sent

to all technical staff, who were not members of the company's management, each year during the period from the year 2008 to the year 2021. A total of 441 responses were received, provided by 76 persons employed by "The Company" in the same period. To preserve data independence, the responses were averaged over different seniority levels for each respondent, thus reducing the data set to 139 cases.

3.1. Research design and measures

This study analyses the difference in job expectations between various age groups of technical staff that work within the IT industry. To that effect, the corresponding research design was prepared (**Figure 1**), while MANOVA was employed to conduct appropriate testing.

As can be seen from **Figure 1**, the dependent second-order latent variable—"Job Expectations" (JE), is reflected by three indicators, also latent variables, which are described in the following subsection. These indicators are measured with the three sets of employees' job expectation measures, designated as JE_{Gi} ($i = 1, 2, 3$). Each measure-set (JE_{Gi}) relates to the single data cell of the research design vector. The independent variable "Employees Seniority" (G) establishes the vector's dimensions and determines different age groups of employees:

- Juniors (G_1)—age under 31 years;
- Mediors (G_2)—age between 31 and 40 years;
- Seniors (G_3)—age above 40 years.

The age groups (categories) were defined somewhat arbitrarily. Namely, these groups are based on the birth-year categorization of generations, which is a generally accepted approach in the Western world. Even though this approach is very often used, the definitions of generations regarding the groups' boundary years vary among different studies (Parry and Urwin, 2011). Following such an approach, here, group G_3 (Seniors) coincides with Generation X (people born between 1965 and 1980), while groups G_1 (Juniors) and G_2 (Mediors), taken together, coincide with Generation Y (people born between 1981 and 1996). Further division of Generation Y members into two groups was made because young people in Bosnia and Herzegovina usually enter the workforce aged 23 to 25 years, so group G_1 represents true novices in the IT industry.

Dependent variables

Following the previous research approach (Bezdrob and Bičo Ćar, 2020), a questionnaire with nine questions was used. Each question measures a particular job trait related to the employees' job expectations. The exploratory factor analysis was applied to the collected data to discover latent variables that underlie the job expectations concept.

The extracting procedure and follow-up analysis revealed three factors with eigenvalues greater or equal to Kaiser's criterion of 1. Together, these three factors have explained 52.2% of the variance. These factors, corresponding loadings after rotation, and Cronbach's α are presented in **Table 1**. As can be seen from **Table 1**, all factors have good reliability, with Cronbach's $\alpha \geq 0.7$.

Table 1. The extracted factors, corresponding loadings, and Cronbach's α .

Indicator	(Relates to)	PRaI	IR	OA
X ₁ —"Creativity"	(job and work environment creativity)	0.70		
X ₂ —"Challenge"	(challenge that work poses)	0.68		
X ₃ —"Improvement"	(professional growth opportunities)	0.72		
X ₄ —"Rank Advancement"	(potential for career advancement)		0.78	
X ₅ —"Competitiveness"	(work environment competitiveness)		0.76	
X ₆ —"Stability"	(work stability and security)			0.49
X ₇ —"Empowerment"	(responsibilities and authorities balance)			0.58
X ₈ —"Appreciation & Confidence"	(work environment friendliness)			0.59
X ₉ —"Organization"	(work organization)			0.84
Cronbach's α		0.77	0.75	0.71

The clusters of indicators suggest that the first factor relates to personal realization and professional improvement (advancement). The second factor relates to the competitiveness of the work environment, and the third factor relates to the quality of the work environment. Consequently, they are named *Personal Realization and Improvement (PRaI)*, *Internal Rivalry (IR)*, and *Organizational Attractiveness (OA)*. The three revealed factors, which were treated as dependent variables in the subsequent main analysis, are described in detail below.

a) Personal Realization and Improvement (PRaI)

This factor mirrors the first facet of the job expectations concept, which relates to the employees' personal realizations and professional progress. More specifically, it reflects the perceived importance of the self-actualization and professional advancement of each individual. It is measured by three indicators: "Creativity," "Challenge," and "Improvement" (Table 1).

b) Internal Rivalry (IR)

The second facet of the job expectations concept—opportunities for upward progression in career and internal competition—is represented by this factor. It reflects the perceived importance of advancement opportunities, both horizontally and vertically. It is measured by two indicators: "Rank Advancement" and "Competitiveness" (Table 1).

c) Organizational Attractiveness (OA)

This factor corresponds to the third facet of the job expectations concept, which relates to the work environment's maturity and attractiveness. It reflects the perceived importance of the organizational structure, work processes, and interpersonal relationships. It is measured by four indicators: "Stability," "Empowerment," "Appreciation & Confidence," and "Organization" (Table 1).

3.2. Results

Table 2 contains the means and standard deviations of all dependent variables for all three groups of independent variables G . The same data are graphically presented in Figure 2. To test the differences between the three age groups of

employees, MANOVA was employed, which simultaneously examines three aspects of the employees' job expectations.

Table 2. Descriptive statistics of dependent variables for groups of *G*.

Indicator	Group of <i>G</i>	N	Mean	Std. deviation
PraI—Personal realization and improvement	Juniors (<i>G</i> ₁)	59	0.355	0.933
	Mediors (<i>G</i> ₂)	48	-0.126	0.934
	Seniors (<i>G</i> ₃)	32	-0.467	1.004
IR—Internal rivalry	Juniors (<i>G</i> ₁)	59	0.151	0.893
	Mediors (<i>G</i> ₂)	48	-0.146	1.113
	Seniors (<i>G</i> ₃)	32	-0.059	1.001
OA—Organizational attractiveness	Juniors (<i>G</i> ₁)	59	-0.133	1.004
	Mediors (<i>G</i> ₂)	48	0.007	1.100
	Seniors (<i>G</i> ₃)	32	0.234	0.811

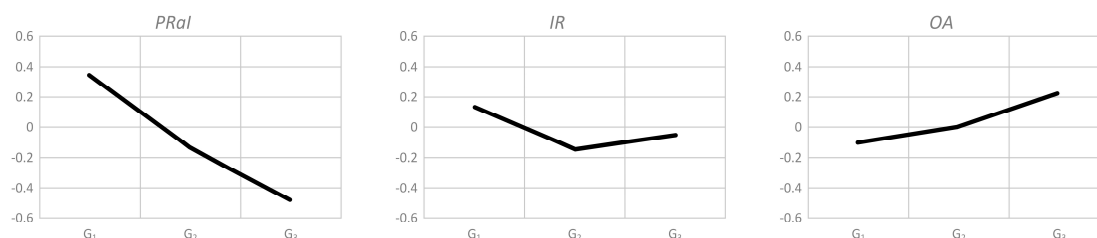


Figure 2. Graphical display of dependent variables for groups of *G*.

3.2.1. Assumptions

Assumptions for MANOVA are independence, multivariate normality, and homogeneity of covariance matrices. As previously mentioned, independence of observation is provided through averaging responses for each respondent.

There was only a slight deviation from a normal distribution for the third group of the *PraI* variable. However, since the MANOVA analysis is robust to modest violations of normality (Tabachnick and Fidell, 2007), it can be considered that the findings were not affected by the normality deviation.

Non-significant Box's test results [$M = 12.965$, $F(12, 52463) = 1.043$, $p = 0.405$] pointed out that there was no difference between the three groups on all variables collectively, so the homogeneity of covariance matrices was met. In addition, since Levene's tests are non-significant for all three variables [*PraI*: $F(2, 136) = 0.113$, $p = 0.893$; *IR*: $F(2, 136) = 0.792$, $p = 0.455$; *OA*: $F(2, 136) = 0.441$, $p = 0.644$], the assumption of univariate homogeneity was also met.

3.2.2. The MANOVA model estimation

The next step in the MANOVA procedure was to assess whether there were significant differences for all job expectations variables across the three age groups, first all variables together and then each of them individually (Hair et al., 2009). All commonly used multivariate tests are statistically significant at $p < 0.01$, indicating that the job expectations variables have a significant difference between the three age

groups (**Table 3**). This result suggests that there is a difference in combined employees' job expectations indicators between the three age groups.

Table 3. Multivariate tests for group differences in job expectations.

Test	Value	F	df ₁	df ₂	Sig.	Power ^a
Pillai's trace	0.148	3.597	6	270	0.002	0.952
Wilks' lambda	0.853	3.695	6	268	0.002	0.958
Hotellings T ²	0.171	3.792	6	266	0.001	0.963
Roy's largest root	0.164	7.361	3	135	0.000	0.983

^a Computed using $\alpha = 0.05$.

Univariate ANOVA tests for all three dependent variables show that only variable *PRaI* (*Personal Realization and Improvement*) has a significant main effect [$F(2, 136) = 8.40, p < 0.001, \eta^2 = 0.11$]. These results show that the difference in job expectations between the three groups of employees is primarily indicated by the variable *PRaI* (*Personal Realization and Improvement*) and, possibly, some underlying combination of the three indicators.

Finally, the examination of simple effects for each dependent variable separately was conducted. For that purpose, linearly independent pairwise comparisons of the estimated marginal means were applied (**Table 4**). This post hoc analysis shows that the differences between juniors and the other two age groups are positive and statistically significant for the indicator *PRaI* (*Personal Realization and Improvement*), while the difference between mediors and seniors is non-significant for the same indicator. Likewise, the differences between all three age groups are non-significant for both *Internal Rivalry* (*IR*) and *Organizational Attractiveness* (*OA*) indicators. These tests' outcomes, along with the significant multivariate interaction effect, fully support the first study hypothesis (H_1), whereas they do not provide support for the second (H_2) and third (H_3) study hypotheses.

Table 4. Estimated marginal means of dependent variables—Pairwise comparisons.

Dependent variable	Group (A)	Group (B)	Mean diff. (A—B)	Std. err.	Sig. ^a
PraI—Personal realization and improvement	G ₁	G ₂	0.481	0.185	0.031
		G ₃	0.822	0.209	0.000
	G ₂	G ₃	-0.481	0.185	0.031
		G ₁	0.341	0.217	0.354
	G ₃	G ₁	-0.822	0.209	0.000
		G ₂	-0.341	0.217	0.354
IR—Internal rivalry	G ₁	G ₂	0.297	0.194	0.385
		G ₃	0.209	0.219	1.000
	G ₂	G ₁	-0.297	0.194	0.385
		G ₃	-0.088	0.228	1.000
	G ₃	G ₁	-0.209	0.219	1.000
		G ₂	0.088	0.228	1.000
OA—Organizational attractiveness	G ₁	G ₂	-0.140	0.194	1.000
		G ₃	-0.366	0.219	0.289
	G ₂	G ₁	0.140	0.194	1.000
		G ₃	-0.226	0.228	0.964
	G ₃	G ₁	0.366	0.219	0.289
		G ₂	0.226	0.228	0.964

^a Bonferroni adjustment for multiple comparisons.

3.3. Interpretation of the results and discussion

The strong support for the first research hypothesis points toward the main difference between the three age groups of employees within the IT industry. Namely, young employees from the IT industry mainly look for personal development, which is in full congruence with the existing literature (e.g., Ebner et al., 2006; Kooij et al., 2011). They value personal growth (Terjesen et al., 2007; Titko et al., 2020) and expect rapid professional advancement and skill development (Ng et al., 2010).

A well-organized, respectful, and empowering work environment is important to most people, regardless of their age, gender, or professional background. In accordance with highly influential Herzberg's two-factor theory (Herzberg et al., 1959; Robbins and Judge, 2017), extrinsic factors (i.e., "hygiene" factors—administration, work conditions, salary, relationships, security, and similar) are the necessary precondition for employees' job satisfaction or, more precisely, for no job dissatisfaction. That means a pleasant and attractive work environment is not only expected but also implied, especially in work-intensive industries such as the IT industry (CompTIA, 2021). Consequently, it is not unexpected that the third research hypothesis was not supported. When it comes to the work environment's general characteristics, there are no significant differences in expectations between the three age groups of employees within the IT industry. Such findings align well with existing literature (e.g., Clark, 1996; Kowske et al., 2010; Mackay, 2018).

The most intriguing research finding is the non-significant difference between the three age groups of employees regarding internal competition (rivalry). Young employees, in general, seek rapid career advancement and promotion (e.g., Ebner et al., 2006; Ng et al., 2010). Additionally, "knowledge workers" from high-tech industries strongly favour individualism (Sutherland and Jordaan, 2004). Bearing in mind these two traits, one might expect young employees in the IT industry to favour a competitive work environment more than their older colleagues. Indeed, many high-tech companies promote internal competition to achieve the synergetic effects of different teams, departments, or businesses (Eisenhardt and Galunic, 2000; Taylor, 2010). On the other side, one can find quite different managerial approaches and business models that do not favour internal competition, at least not in small or medium companies (Brown, 2011; Marino and Zábojník, 2004). Since this research finding is aligned with the literature that advocates against internal competition, a possible explanation may be the organizational strategy that inclines toward more collaborative behaviour. More specifically, if the organizational strategy of "*The Company*" favours collaboration, which is recommended for small and medium companies (Marino and Zábojník, 2004), then the propensity toward internal competition is highly influenced by such strategy and is the same for all employees regardless of their age.

Limitations of the research

Several limitations apply to this research, both design-related and technical. A restricted set of observed variables was used to make research feasible, which is the main research design limitation. A smaller number of observed variables decreases the latent variables' elaborateness, which reduces the quality of representation of the employees' job expectations concept (research model). That also reduces the

reliability of the extracted factors. Consequently, one of the recommendations for possible future research would be to seek additional indicators and, perhaps, additional factors, which would improve factors' reliability and research model explanatory power.

The data analysis was conducted on a single sample collected from a single company that runs its business within a particular set of economic and political conditions in Bosnia and Herzegovina, which is the main technical limitation of the research. Therefore, no confirmation of the findings has been done, and the research results have low generalization potential. Besides, the sample size used is just adequate for this research design and does not enable the detection of small effects in the underlying population. Some future research may remedy the described technical limitation by applying this (or similar) research design to different datasets (collected from other companies) or, better yet, to a completely different context.

4. Conclusion

According to Porter's and Steers' seminal work (1973) and many subsequent studies (Wanous et al., 1992), when employees' job expectations are met, their job satisfaction and organizational commitment are increased, which has numerous positive outcomes for any organization. On the other side, many studies show that employees' job attitudes, satisfaction, and expectations significantly change with their chronological age (Kowske et al., 2010; Ng and Feldman, 2010; Ng et al., 2010). Given the maturity of the IT industry, its rapid growth, and the continuous struggle for talent, this research aims to explore all the more important relationships between the employees' age and their job expectations. To achieve all research objectives, a suitable longitudinal research model was designed and tested using the data collected over 14 years from an IT company in Bosnia and Herzegovina.

The study provides a deeper insight into the scarcely explored issue of age-differentiated employees' job expectations (within a highly attractive IT industry) and offers a few related hints on human resources management practices. Based on the main study findings, it is possible to draw a few theoretical and practical implications from the study, which are listed below.

4.1. Theoretical implications

This study emphasizes the importance of the aging factor within the job expectations theory and, subsequently, the broader job satisfaction theory. It supports previous findings that employee age is an important issue, whose further research significantly contributes to the theory's development (Grah et al., 2019; Kollmann et al., 2020).

The obtained research results strongly suggest that young employees in the IT industry primarily pursue the job's individualistic features, which dictate their main job expectations. Specifically, young employees seek rapid professional growth (Ng et al., 2010) and creative, dynamic, and challenging jobs (Terjesen et al., 2007). In other words, what they expect the most from the job is fast and gainful personal advancement.

Another important research finding is related to the characteristics of the working environment. Even though some extant research findings have revealed that older employees show higher job insecurity, work satisfaction, and satisfaction with coworkers (e.g., Kowske et al., 2010; Ng and Feldman, 2010), this study shows that employees from all three age groups value organization and comfort equally. A well-organized, stable, and empowering working environment is equally important to and expected by all employees, regardless of their age. At least, that is the case for the highly attractive and propulsive IT industry.

Finally, young employees are very enthusiastic about their work (Clark et al., 1996), eager to learn (Terjesen et al., 2007), and impatiently want to advance in a career (Ng et al., 2010). However, the obtained research results have shown that they do not want or expect a competitive environment any more than their older counterparts. This interesting and somewhat unexpected research finding may be an indirect consequence of the organization's collaborative strategy (Marino and Zábojník, 2004) or a direct consequence of more general IT professionals' awareness of their human capital value (Drucker, 1974). Whatever the reason may be, that could be a fruitful path to pursue in future research.

4.2. Practical implications

The “met expectations” hypothesis, initially proposed by Porter and Steers (1973), is arguably well known to most HRM practitioners. Namely, organizational managers should ensure that employees' expectations are continuously monitored and fulfilled, thus providing for a higher level of job satisfaction and, consequently, higher productivity and lower attrition. As the findings of this study confirm, such an assertion is also valid under quite specific market conditions in Bosnia and Herzegovina. Namely, the study results show that HR managers can rely on the best practices and insights related to talent management from highly developed business environments, regardless of their economic conditions.

The most important practical implication of this research, however, is related to employees' demographic characteristics. The obtained research results point out how job positions should be tailored to accommodate age-diverse employees. Namely, to attract, retain, and further develop its workforce, the responsible people from the IT companies—managers and HR experts—should clearly define HR policies that would strictly take into consideration ever more age-diverse employees. Such policies would bring about the appropriate procedures and practices that would comply with the differences in the job expectations of the employees from the different age groups.

More specifically, the study results show that HR managers and professionals need to design, develop, and carry out age-differentiated HR practices, which is well aligned with extant literature (e.g., Boehm et al., 2021; Truxillo et al., 2014). Combining all research findings, it can be concluded that personal advancement is just that particular job expectation that makes the difference between young and older employees within the IT industry. Therefore, to attract and retain the most wanted and valuable young talents, HR managers of IT companies should devise a highly creative and challenging working environment that provides an opportunity for fast and beneficial professional advancement. On the other hand, fulfilling the job expectations

of older employees and, consequently, increasing their job satisfaction is more complex. For them, a simple increase in pay or a higher position may not be enough or will even be counterproductive. They much more value meaningful and secure jobs (Kooij et al., 2011). Thus, HR managers (and managers in general) need to create an environment where (primarily) older employees will be engaged in tasks that provide a meaningful contribution to the whole organization and where they will feel appreciated as valuable team members. Besides, the study results show that such an environment certainly will not decrease the fulfilment of younger employees' expectations.

Conflict of interest: The authors declare no conflict of interest.

References

- Abbas, Z., Ansari, J., Gulzar, S., et al. (2021). The Role of Workload, Nepotism, Job Satisfaction, and Organizational Politics on Turnover Intention: A Conservation of Resources Perspective. *Organizacija*, 54(3), 238–251. <https://doi.org/10.2478/orga-2021-0016>
- Al-dalahmeh, M., Masa'deh, R., Abu Khalaf, R. K., & Obeidat, B. Y. (2018). The Effect of Employee Engagement on Organizational Performance Via the Mediating Role of Job Satisfaction: The Case of IT Employees in Jordanian Banking Sector. *Modern Applied Science*, 12(6), 17. <https://doi.org/10.5539/mas.v12n6p17>
- Allen, M. W., Armstrong, D. J., Reid, M. F., & Riemenschneider, C. K. (2008). Factors impacting the perceived organizational support of IT employees. *Information & Management*, 45(8), 556–563. <https://doi.org/10.1016/j.im.2008.09.003>
- Banks, C. H. (2007). Met Expectations Hypothesis: The Use of Direct Measures to Develop Participant Surveys. *Online Journal for Workforce Education and Development*, 2(4), 1–16.
- Bezdrob, M., & Bičo Čar, M. (2020). “What the Engineers Want” – job expectations of the employees in IT industry. In: Karabegović, I. (editor). *New Technologies, Development and Application III, Proceedings of the International Conference “New Technologies, Development and Applications”*; 25–27 July 2020; Sarajevo, Bosnia and Herzegovina. Springer; 2020. Volume 128. pp. 955–963. https://doi.org/10.1007/978-3-030-46817-0_108
- Bezdrob, M., & Šunje, A. (2021). Transient nature of the employees' job satisfaction: The case of the IT industry in Bosnia and Herzegovina. *European Research on Management and Business Economics*, 27(2), 100141. <https://doi.org/10.1016/j.iedeen.2020.100141>
- Boehm, S. A., Schröder, H., & Bal, M. (2021). Age-Related Human Resource Management Policies and Practices: Antecedents, Outcomes, and Conceptualizations. *Work, Aging and Retirement*, 7(4), 257–272. <https://doi.org/10.1093/workar/waab024>
- Booz, M. (2018). These 3 industries have the highest talent turnover rates. Available online: <https://www.linkedin.com/pulse/3-industries-have-highest-talent-turnover-rates-michael-booz> (accessed on 5 November 2023).
- Brown, J. (2011). Quitters Never Win: The (Adverse) Incentive Effects of Competing with Superstars. *Journal of Political Economy*, 119(5), 982–1013. <https://doi.org/10.1086/663306>
- Carstensen, L. L. (1998). A Life-Span Approach to Social Motivation. In: Heckhausen, J., Dweck, C. S. (editors). *Motivation and Self-Regulation across the Life Span*. Cambridge University Press; pp. 341–364. <https://doi.org/10.1017/cbo9780511527869.015>
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54(3), 165–181. <https://doi.org/10.1037/0003-066x.54.3.165>
- Chen, G., Ployhart, R. E., Thomas, H. C., et al. (2011). The Power of Momentum: A New Model of Dynamic Relationships between Job Satisfaction Change and Turnover Intentions. *Academy of Management Journal*, 54(1), 159–181. <https://doi.org/10.5465/amj.2011.59215089>
- Clark, A. E. (1996). Job Satisfaction in Britain. *British Journal of Industrial Relations*, 34(2), 189–217. <https://doi.org/10.1111/j.1467-8543.1996.tb00648.x>
- Clark, A., Oswald, A., & Warr, P. (1996). Is job satisfaction U-shaped in age? *Journal of Occupational and Organizational Psychology*, 69(1), 57–81. <https://doi.org/10.1111/j.2044-8325.1996.tb00600.x>

- Cooke, M., & Platman, K. (2010). Flexibility/security policies and the labor market trajectories of IT workers. In: McMullin, J. A., Marshall, V. W. (editors). *Aging and Working in the New Economy: Changing Career Structures in Small IT Firms*. Edward Elgar Publishing. pp. 195–224.
- Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2008). Warmth and Competence as Universal Dimensions of Social Perception: The Stereotype Content Model and the BIAS Map. *Advances in Experimental Social Psychology*, 40, 61–149. [https://doi.org/10.1016/s0065-2601\(07\)00002-0](https://doi.org/10.1016/s0065-2601(07)00002-0)
- Drucker, P. F. (1974). *Management: Tasks, Responsibilities, Practices*. Harper & Row.
- Ebner, N. C., Freund, A. M., & Baltes, P. B. (2006). Developmental changes in personal goal orientation from young to late adulthood: From striving for gains to maintenance and prevention of losses. *Psychology and Aging*, 21(4), 664–678. <https://doi.org/10.1037/0882-7974.21.4.664>
- Eisenhardt, K. M., & Galunic, C. (2000). Coevolving: At Last, a Way to Make Synergies Work. *Harvard Business Review*, 78(1), 91–101.
- Grah, B., Perme, E., Colnar, S., & Penger, S. (2019). Age Management: What Can we Learn from High-End Luxury Fashion Designer with More than 50 Years of Working Experience? *Organizacija*, 52(4), 325–344. <https://doi.org/10.2478/orga-2019-0020>
- Hair, J. F., Black, W. C., Babin, B. J., et al. (2009). *Multivariate Data Analysis*, 7th ed. Prentice Hall.
- Herzberg, F. I., Mausner, B., & Bloch Snyderman, B. (1959). *The Motivation to Work*, 2nd ed. John Wiley & Sons.
- Irving, P. G., & Montes, S. D. (2009). Met expectations: The effects of expected and delivered inducements on employee satisfaction. *Journal of Occupational and Organizational Psychology*, 82(2), 431–451. <https://doi.org/10.1348/096317908x312650>
- Iversen, T. N., Larsen, L., & Solem, P. E. (2009). A conceptual analysis of Ageism. *Nordic Psychology*, 61(3), 4–22. <https://doi.org/10.1027/1901-2276.61.3.4>
- Kanfer, R., & Ackerman, P. L. (2004). Aging, Adult Development, and Work Motivation. *The Academy of Management Review*, 29(3), 440. <https://doi.org/10.2307/20159053>
- Kazakov, S., Ruiz-Alba, J. L., & Muñoz, M. M. (2020). The impact of information and communication technology and internal market orientation blending on organisational performance in small and medium enterprises. *European Journal of Management and Business Economics*, 30(2), 129–151. <https://doi.org/10.1108/ejmbe-04-2020-0068>
- Kollmann, T., Stöckmann, C., Kensbock, J. M., & Peschl, A. (2019). What satisfies younger versus older employees, and why? An aging perspective on equity theory to explain interactive effects of employee age, monetary rewards, and task contributions on job satisfaction. *Human Resource Management*, 59(1), 101–115. Portico. <https://doi.org/10.1002/hrm.21981>
- Kooij, D. T. A. M., De Lange, A. H., Jansen, P. G. W., et al. (2011). Age and work-related motives: Results of a meta-analysis. *Journal of Organizational Behavior*, 32(2), 197–225. <https://doi.org/10.1002/job.665>
- Korsakienė, R., Stankevičienė, A., Šimelytė, A., & Talačkienė, M. (2014). Factors Driving Turnover and Retention of Information Technology Professionals. *Journal of Business Economics and Management*, 16(1), 1–17. <https://doi.org/10.3846/16111699.2015.984492>
- Kowske, B. J., Rasch, R., & Wiley, J. (2010). Millennials' (Lack of) Attitude Problem: An Empirical Examination of Generational Effects on Work Attitudes. *Journal of Business and Psychology*, 25(2), 265–279. <https://doi.org/10.1007/s10869-010-9171-8>
- Mackay, M. M. (2018). Does Employee Age Moderate the Association Between HR Practices and Organizational Commitment? An Application of SOC Theory to Organizational Behavior. *Organization Management Journal*, 15(4), 186–200. <https://doi.org/10.1080/15416518.2018.1528856>
- Magni, F., & Manzoni, B. (2020). Generational Differences in Workers' Expectations: Millennials Want More of the Same Things. *European Management Review*, 17(4), 901–914. <https://doi.org/10.1111/emre.12405>
- Marino, A. M., & Zbojnik, J. (2004). Internal Competition for Corporate Resources and Incentives in Teams. *The RAND Journal of Economics*, 35(4), 710. <https://doi.org/10.2307/1593769>
- McMullin, J. A., & Marshall, V. W. (2010). *Introduction: Aging and Working in the New Economy*. Edward Elgar Publishing. pp. 1–22.
- Ng, T. W. H., & Feldman, D. C. (2010). The Relationships of Age with Job Attitudes: A Meta-Analysis. *Personnel Psychology*, 63(3), 677–718. <https://doi.org/10.1111/j.1744-6570.2010.01184.x>
- Ng, E. S. W., Schweitzer, L., & Lyons, S. T. (2010). New Generation, Great Expectations: A Field Study of the Millennial Generation. *Journal of Business and Psychology*, 25(2), 281–292. <https://doi.org/10.1007/s10869-010-9159-4>

- Park, C., McQuaid, R., Lee, J., Kim, S., & Lee, I. (2019). The Impact of Job Retention on Continuous Growth of Engineering and Informational Technology SMEs in South Korea. *Sustainability*, 11(18), 5005. <https://doi.org/10.3390/su11185005>
- Parry, E., & Urwin, P. (2011). Generational Differences in Work Values: A Review of Theory and Evidence. *International Journal of Management Reviews*, 13(1), 79–96. <https://doi.org/10.1111/j.1468-2370.2010.00285.x>
- Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin*, 80(2), 151–176. <https://doi.org/10.1037/h0034829>
- Prockl, G., Teller, C., Kotzab, H., & Angell, R. (2017). Antecedents of Truck Drivers' Job Satisfaction and Retention Proneness. *Journal of Business Logistics*, 38(3), 184–196. Portico. <https://doi.org/10.1111/jbl.12156>
- Robbins, S. P., & Judge, T. A. (2017). *Organizational Behavior*, 17th ed. Pearson Education Limited.
- Roser, M., Ritchie, H., & Ortiz-Ospina, E. (2019). World population growth. Available online: <https://ourworldindata.org/world-population-growth> (accessed on 5 November 2023).
- Statista. (2022). Full-time employment in the information and communication technology (ICT) industry worldwide in 2019, 2020 and 2023. Available online: <http://www.statista.com/statistics/1126677/it-employment-worldwide> (accessed on 5 November 2023).
- Sutherland, M., & Jordaan, W. (2004). Factors affecting the retention of knowledge workers. *SA Journal of Human Resource Management*, 2(2). <https://doi.org/10.4102/sajhrm.v2i2.39>
- Šajeva, S. (2007). Identifying Factors Affecting Motivation and Loyalty of Knowledge Workers. *Economics & Management*, 12, 643–652.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*, 5th ed. Pearson Education Inc.
- Taylor, A. (2010). The Next Generation: Technology Adoption and Integration Through Internal Competition in New Product Development. *Organization Science*, 21(1), 23–41. <https://doi.org/10.1287/orsc.1080.0399>
- Terjesen, S., Vinnicombe, S., & Freeman, C. (2007). Attracting Generation Y graduates. *Career Development International*, 12(6), 504–522. <https://doi.org/10.1108/13620430710821994>
- The Computing Technology Industry Association—CompTIA. (2021). *IT Industry Outlook 2022*. Available online: <http://www.comptia.org/content/research/it-industry-trends-analysis> (accessed on 5 November 2023).
- Thielgen, M. M., Krumm, S., Rauschenbach, C., & Hertel, G. (2014). Older but wiser: Age moderates congruency effects between implicit and explicit motives on job satisfaction. *Motivation and Emotion*, 39(2), 182–200. <https://doi.org/10.1007/s11031-014-9448-8>
- Titko, J., Svirina, A., Skvarciany, V., et al. (2020). Values of Young Employees: Z-Generation Perception. *Business: Theory and Practice*, 21(1), 10–17. <http://dx.doi.org/10.3846/btp.2020.11166>
- Tolbert, P. S., & Moen, P. (1998). Mens and Womens Definitions of “Good” Jobs: Similarities and Differences by Age and Across Time. *Work and Occupations*, 25(2), 168–194. <http://dx.doi.org/10.1177/0730888498025002003>
- Truxillo, D. M., Cadiz, D. M., & Hammer, L. B. (2015). Supporting the Aging Workforce: A Review and Recommendations for Workplace Intervention Research. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 351–381. <https://doi.org/10.1146/annurev-orgpsych-032414-111435>
- Truxillo, D. M., Cadiz, D. M., & Rineer, J. R. (2014). The Aging Workforce. In *Oxford Handbooks Online*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199935406.013.004>
- U.S. Bureau of Labor Statistics. (2020). 5 out of 20 Fastest-Growing Industries from 2019 to 2029 Are in Healthcare and Social Assistance. Available online: <http://www.bls.gov/opub/med/2020> (accessed on 5 November 2023).
- United Nations, Department of Economic and Social Affairs. (2019). *World population prospects 2019: Highlights*. Available online: https://population.un.org/wpp/publications/files/wpp2019_highlights.pdf (accessed on 5 November 2023).
- van Selm, M., & van den Heijkant, L. (2021). In Search of the Older Worker: Framing Job Requirements in Recruitment Advertisements. *Work, Aging and Retirement*, 7(4), 288–302. <https://doi.org/10.1093/workar/waaa026>
- Visser, M., Lössbroek, J., & van der Lippe, T. (2020). The Use of HR Policies and Job Satisfaction of Older Workers. *Work, Aging and Retirement*, 7(4), 303–321. <https://doi.org/10.1093/workar/waaa023>
- Vroom, V. H. (1995). *Work and motivation*. Jossey-Bass.
- Wanous, J. P., Poland, T. D., Premack, S. L., & Davis, K. S. (1992). The effects of met expectations on newcomer attitudes and behaviors: A review and meta-analysis. *Journal of Applied Psychology*, 77(3), 288–297. <https://doi.org/10.1037/0021-9010.77.3.288>

- Warr, P. (2001). Age and work behaviour: Physical attributes, cognitive abilities, knowledge, personality traits, and motives. In: Cooper, C., Ivan, T. (editors). *Robertson International Review of Industrial and Organizational Psychology*. Wiley. Volume 16. pp. 1–36.
- Wright, J. D., & Hamilton, R. F. (1978). Work Satisfaction and Age: Some Evidence for the “Job Change” Hypothesis. *Social Forces*, 56(4), 1140–1158. <https://doi.org/10.1093/sf/56.4.1140>