

The Relationship between Personality Types and Occupational Environments among Workers in Jordan

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Abstract: This study identified personality types and their relationship to the occupational environments of workers in Jordan, as well as the extent of the differences in the personality types among them. The scales used were developed and verified for their validity, stability, and reliability, and given to workers of both genders in various occupational environments. The means, standard deviations, and multivariate analysis of variance findings were extracted according to participants' personality types, occupational environments, and gender. The extraversion personality type is higher than the introversion one among both men and women, but they differ in the ranking of other personality types. Respondents' answers to the judging personality type had the highest rank, while the perceiving type had the lowest rank, among both genders. Further, we found statistically significant differences in personality types between men and women, with there being no statistically significant differences in the extraversion and introversion personality types among these groups in different occupational environments. We then conclude with various recommendations that would provide opportunities for individuals at school, university, and in different occupational environments with which to learn about their personality and how well they are suited to each occupational environment.

Keywords: personality types; occupational environments; workers.

1. Introduction

Personality types can be used to determine the suitability of an individual to a given occupational environment through the interview process, which involves asking specific questions that often neglect this variable. [34] Stated that more than 45% of US companies have chosen to integrate personality tests into their hiring processes. This study focused on tracing the history of personality testing in the field of employment to the present day, with them finding that these tests are often conducted to verify a person's compliance with specific job criteria, which then helps employers to then evaluate their workers' actual behaviors. They provide information about the candidates' personality and how they are most likely to interact with clients and co-workers.

The study by [30] confirmed that garnering a match between one's personality traits and their occupational environment makes work life more enjoyable and beneficial for both them and society; however, the question remains on how to effectively match people with appropriate occupational environments. This prior research also emphasizes that there is now a need to provide information to people online through tools like social media and that can be used to match a job's criteria to people's psychological profile. This is useful in career counseling for various groups, including graduates, employees who are changing jobs, and the unemployed. Further, [19] confirmed that assessing personality types helps in the planning and occupational growth of high school learners, university students, and other job seekers.

The Greek philosopher Hippocrates was the first to classify various personality types based on four temperaments that distinguish people and which can be easily recognized, namely, melancholic, phlegmatic/apathetic, bloody, and angry. Following this, [15] explained the difference and uniqueness between people based on varying personality types [16] then pioneered his own theory of personality types. His is one of the oldest attempts that focused on regulating the uniqueness, branching nature, and differences between people. He stated that personality is a means by which an individual deals with others in all areas of their life, including in their occupation. [16] then divides personality into two main categories. The first is the introverted type, in which an individual's personality is self-centered, inward-looking, and is distinguished by them being thoughtful and intuitive. The second is the extroverted type, which involves a

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personality that is directed towards the outside world, tends to move towards the formation of social relations, and is distinguished by being sensing and intuitive. [16] then mentioned that these two types are then followed by four sub-types, including thinking and feelings (which represent rationality) and sensing and intuitive (which represent the more irrational side). In light of this, there are then eight distinguishable personality types: introverted thinker, extroverted thinker, introverted feeling, extroverted feeling, introverted sensing, extroverted sensing, introverted intuitive, and extroverted intuitive.

[29] conducted several investigations in the early 1940s on how to measure the personality types outlined in Jung's theory "which edited and translated (1971) by Gerhard Adler and R. F.C. Hull", with them applying their own research for over 50 years in order to identify the concepts of self-understanding, organizational development, and job choice. Herein, they recognized Jung's (1971) original personality types, then adding in two more. First, the judging type, which relates to gaining information that corresponds to the source of judgement referred to in the sensing and intuitive types. Then, the second is the perceiving type, which is characterized by a person who receives judgements or information from outside and accepts them, with them referring to the thinking and feeling types herein. After the introduction of these two new personality types, they then expanded on [16] classification into sixteen types, which are divided into two opposing groups based on behavior and preference. [28] then added in the fact that introversion and extroversion are characterized by energy or vitality, which are related to the aspects of sensing and intuitive. Further, feelings and thinking are characterized by one's decision-making; herein, this information is then used in a constructive manner to help an individual who is looking for a job or one who works and wants to learn more about the suitability of their personality type for their job, or one who wants to look at themselves in comparison to other people and occupational environments in general. Further, it can be used by employers when meeting potential new workers.

David Keirsey, in 1968, developed the Isabel Briggs Myer and Catherine Briggs personality types based on their study of personality and its use across the various domains of life for more than 20 years and, in the 1970s, he then presented his theory as a curriculum for California State University/Florentine. Further, in 1978, he published his book 'Please Understand Me I' which outlines the 16 personality types divided into two opposing groups for occupational behavior and preference [18]. Next, Keirsey shortened these sixteen types into four groups, whose prototypes form the classic four temperaments: SP (Artisan), SJ (Guardian), NT (Rational), and NF (Idealist). The book 'Please Understand Me II' (1998) was then developed based on this, whose methodology is generalized more so according to these four categories. He then presented an integrated program on the World Wide Web to test the classification of temperaments, which, until 2008, had been applied by more than seventeen million people from all over the world and included classifications that had been adopted by Jung's theory and the application of Myers-Briggs in the identifying of 16 personality types [18].

One of the most important theories in career counseling is that of John Holland that he developed through various long and extended investigative studies (Holland, 1966 - 1997). Further, [10] then confirmed the importance of the self-search scale of occupational interests, which is related to Holland's theory of choice of work and career counseling and has been translated into more than 125 languages, which then explains occupational interests and environments. Holland emphasized its connection with an individual's readiness and them thinking about their future occupation, with the difference between individuals in personality being due to the extent of their knowledge of their abilities and interests. Holland then developed his theory in the form of a self-search scale and identified six types of work interests associated with six occupational environments [12], namely:

Realistic: People with realistic occupational interests depend on the coordination of movement and physical strength within their work, with them being interested in activities requiring motor coordination, skill, and strength. In other words, they like to work with THINGS.

Investigative: People with an investigative mindset depend more on thinking about their work than on behavioral or practical performance. Herein, they like to work with DATA.

Social: People in a social occupation tend to depend on social relationships. Further, they are likely to seek close interpersonal relationships. As such, they like to work with PEOPLE.

Conventional: People within this occupational environment prefer to have a routine in their life and are interested in implementing rules and regulations within their occupations. They place value on reputation, power, or status. As such, they like to work with DATA.

Enterprising: People within this environment are characterized by verbal fluency and the desire to control others, with them valuing reputation, power, and money, which they will usually chase. As such, they like to work with PEOPLE and DATA.

Artistic: The artistic environment relies on aesthetic expression and expressing one's own feelings in a way that satisfies their needs. Further, people herein do not like structure and rules, often prefer tasks involving other people or

physical skills, and are more likely to express their emotions. As such, they like to work with IDEAS and THINGS [2, 11].

It is inherent in our presentation of these theoretical trends in personality types and occupational categories that there are individual differences in both of these contexts among workers, with some people making numerous career changes as a result. However, do human resource departments consider personality types, occupational environments, and individual interests when selecting workers from across different occupational settings? Further, how appropriate are the personality types of workers for the occupational environments in Jordan?

2. Previous Studies

There are many studies related to personality types and occupational interests, including those carried out by the authors of the two scales used in this study. First, [29] outlined different types of personality in relation to the occupational sector. These include the predispositions that are suitable within musical careers, psychology-based occupations, being a production manager, acting as an accountant, being a bank employee, etc. Specifically, you have intuitive types who go for jobs like science teaching, public relations, and sales management, while those with a more sensory-based personality tend to work within engineering, laboratory, and/or maintenance-based careers. [10] stated that the intuitive-thinker personality is a rational high achiever who is often independent. Further, intuitive feelings are an idealist's interpersonal skills that they then use to support others in developing sympathetic relationships, in managing crises, in being flexible when seeking to change, and in their need for variety in terms of freedom and space. Further, the sensing and judger types are guardians who are often dutiful, loyal to the system, are super-dependable, resist change, preserve traditions, and are as precise as possible.

[14] study found a correlation between Holland's (1985) work environments and interests and the personality types outlined by Myers (1989). They found that the extroverted personality type was characterized by its enterprising nature, while introversion was characterized by its investigative nature. Further, the intuitive type was characterized by being artistic, the sensing type was characterized by people of a conventional nature, the thinking type was characterized by those who are realistic, the feeling type was characterized by those who are more social, while the enterprise type was characterized by those who give and take and who tend towards more conventional occupations while being practical, investigative, and realistic.

Gottfredson, Jones, and Hollands (1993) conducted research on trainees in the US Navy, and found that those with social and/or enterprise work interests were characterized by extroversion, while those with artistic and investigative work interests were showcased by introversion. Those with conventional work interests were characterized by intuitive, but those with realistic occupations were characterized by thinking.

Furthermore, several studies have investigated the personality types of workers in different occupational environments. For example, [10] examined whether job requirements depend on personality types. They recruited a sample from the German workforce ($n = 13,665$) and examined them across five types of personalities: normal, flexible, tense, overly controlling, and without control. As expected, job requirements were found to be associated with personality types. Further, these relationships differed across personality types. For example, the personality type of those working in investigative and practical environments was characterized by the thinking trait and they were motivated by a more work-participation perception. [30] investigated whether postsecondary automotive technology students' interests were congruent with their chosen career paths using Holland's Self-Directed Search assessment. In this study, Realism was the predominant occupation found, which was then followed by enterprising. Further, most participants had a medium level of congruence between their interests and career choices. Their findings are particularly useful for educators. Additionally, a study by de Jong, [43] hypothesized that there are individual preferences for certain occupational roles, with them finding that extraversion is associated with various occupational interests including decision-making, while introversion was found to be involve a more in-depth perception of the occupational environment. These results emphasize the importance of recognizing differences in personality types and a person's unique interests in developing their occupational choices.

The results of [19] study go on to confirm that differing occupations involve the emphasis on different psychological traits, which can be used to predict one's likelihood of success within specific jobs. They found this by analyzing information collected through social media based on the responses of 128,279 Twitter users representing 3,513 occupations. Herein, they found that similar occupational clusters had specific psychological traits, indicating specific groups of jobs for which one might be well-suited, with them stating that psychological traits either increase or contradict the current classifications of emerging occupations related to the workplace in the 21st century. Additionally, their results showcase how social media can be used to determine the psychological traits of people in a way that can then determine their ideal occupation.

[43] indicated that personality traits correspond to occupations, with them conducting a study with 9,000 workers in

Germany who met their research criteria. People with a higher level of extroversion were found to be paid more than those with a lower level of this trait, meaning that the more a person's personality fits better with their occupation, the higher their income would be. However, they did also find that people with the highest possible levels of extroversion do not always earn the most money, meaning that only those with the appropriate level of extroversion get paid more and accepted for a given job. Finally, workers who were found to have the appropriate personality traits relevant to their jobs, when compared to those who had lower-than-average levels of those traits for their jobs, reported higher employment and greater overall income and prestige.

[32] used Holland's (1997) vocational counseling theory to aid job seekers in finding occupations that best fit their personality, based on the latter's RIASEC typology of personalities and work environments, within the sporting industry. They recruited employees in intercollegiate athletics and found that the sports industry is dominated by the social environment, which was evidenced by seven occupations possessing the social trait in the first letter of their profile and which were the top two for all occupations, which were then followed by realistic, enterprising, and conventional. Furthermore, there were differences found between employment disciplines.

[31] underlying profile analyses revealed six features of occupational interests, which represent distinct self-interests that increasingly show the fact that not all individual interest configurations can be adequately represented through standard models. In other words, we need to take advantage of multidimensional models when regulating occupational interests or the environment.

[36] Investigated the dynamics of the Myers-Briggs personality types and the average achievement of nursing students in the Philippines. The overall weighted averages were higher in introversion versus extroversion, in sensing versus intuitive, in judging versus perceiving, and in thinking versus feeling.

Further, a study by [19] aimed to identify the relationship between personality types and the occupational choices of undergraduate students at Moi University in Kenya. After choosing major occupations in their third year, they were then given another opportunity to change their major, with this study being based on the theory of Holland (1997). Their results reveal the positive impact of enhancing one's understanding of personality types during the planning and choosing of a job in high school, university, and while working.

[21] also confirmed that specific occupations are associated with specific personality traits. For example, they found that an accountant in a company (A) is more similar to an account in a company (B) than they are to the human resources manager in company (A). These researchers used a database of nearly 24,000 employees across 19 major job groups throughout 40 organizations, with the workers answering questionnaires to determine their personality traits. They then found that employees who are in the same occupation share certain features, even if they occasionally differ in the level of the given attribute, when they have the same job description.

[8] applied the MBTI test among sales managers to investigate the time it took before they were promoted to a managerial position and were given a senior managerial role. Their correlational analyses then revealed that a shorter time period for promotion is associated with an employee's personality type; for example, people with a more intuitive mindset were found to take longer to get promoted to managerial positions.

[30] identified personality types, unique problems, and influences in one's occupational life. Based on a sample of female and male students, they used the Myers-Briggs Scale and Holland's occupational environments to assess the work decision-making process of any undecided students in their sample. They found that the feeling and perceiving personality types appeared twice as often as did the other types among the students, with a relationship between personality types and occupational environments being found. For example, those with a judging and an investigative personality type were more likely to obtain a degree, with those of a feeling and enterprise type primarily being those who were earning money. Finally, those of an introverted and a conventional type were rather aiming for security for the future.

[10] mentioned there were limitations in attempts to represent all possible occupational interests, with them than relying on a multidimensional perspective and focusing on the individual to exempt their occupational interests and to identify their distinct features based on the RIASEC that integrates the formations of interests that are in line with the normal dimensions of employment environments, as well as investigating the basics around personal occupational environments

[35] conducted a study to determine managers' personality type according to the Myers-Briggs Scale. They focused on managers who are aware of the individual differences in their understanding of the various personality types, characterized by those that involve extroversion, feelings, and intuition that then emphasize positivity towards others, predictive behaviors, and honesty in dealing with staff. Further, Toomey and Livenson(2008) applied the Myers-Briggs scale of personality types and Holland's self-search of work interests scale to members of the American Society of School Psychology, who primarily work in providing psychological services. They were primarily characterized via the

extraversion type, with social interests being the highest ranked therein, followed by enterprise and then investigative interests.

[25] study on students of business administration majors found that there are statistically significant differences between students of management and marketing and those in economic sciences in the two personality types of intuitive and extraversion; however, in terms of the accounting course, students differed by the two personality types of sensing and thinking.

[32] confirmed that students who face difficulties in determining their university academic specialization typically answered the Holland scale for interests and the Myers-Briggs scale for personality types, which then helped them in determining their academic majors and the occupations related to them. They also found that the orientation test helped students by 45% in identifying the most appropriate academic specialization, while using the interest and personality scales together increased this by 50%. The results of their study confirm the importance of the Holland and Myers-Briggs scales in guiding university students who face difficulties in deciding on the specific academic major that is most related to their future occupation.

[44] mentioned in his study, which was conducted with students at Shanghai University, that students' primary personality type was thinking, which was followed by the extraverted and intuitive types. Furthermore, [33] found significant differences between university students enrolled in the College of Sports and Physical Sciences compared to a control group. Herein, they are primarily characterized by an extraverted personality type. Moreover, [26] found that managers' performance was positively related to the intuitive personality type, while the lowest level of performance was linked to those with the sensing type. [38] also indicated that there was a correlation between personality types and occupational environments, with the extroverted type being common in social work, the enterprising type being common in the business world, and the introverted type being common in more realistic environments, such as in mechanics. Further, people with an intuitive personality type tended towards investigative and art-based work, while people with a sensual personality type preferred mechanical work, maintenance, disassembly, and assembly.

[42] found there were no statistically significant differences between participants in the personality types of introversion, extraversion, thinking, and feelings. They did find differences in the personality types between business administration teachers and office administrators in terms of the intuitive and perceiving traits.

[40] found that female participants who are characterized by extroversion differed from their male counterparts, with them tending towards occupations based on their feelings, while male respondents tended toward occupations based on thinking and judging. Further, they found that their female participants preferred to work with people more than working with information, ideas, and things, while male participants preferred the enterprise environment.

[37] stated men were characterized by judging, unlike women who were characterized by perceiving, and that the latter who work in //family physicians then being characterized by feelings more than thinking. Further, they found that general medicine workers were characterized by extroversion, while men who chose to work in specialized surgery were characterized by thinking. Finally, women who chose to work in specialized surgery were found to be characterized by introversion and feelings.

[22] also found that there were differences between men and women in personality types and occupations. Specifically, they found that the perceiving and extraversion personality types were higher among women, with women in occupations that were defined via artistic interests, fashion, and fashion design being characterized by an intuitive personality type, Further, men with work interests based on the enterprise and realistic environments were distinguished by the thinking and intuitive personality types. Additionally, people who worked in more social environments were found to have a judging personality type. Furthermore, [41] also indicated that women were higher than men in the extraversion and feeling personality types, which were related to them working in occupations involving the helping of others and the taking care of children. Conversely, men were higher in the introversion, intuitive, and thinking personality types, which were associated with them taking jobs in engineering and investigative occupations.

Previous studies have also clarified that an individual may perform better in a given job than would someone else of another personality type who may not succeed in the same context. The studies, [21,13,10] mentioned the job requirements depend on personality types. someone with an introverted personality, type would be more likely to succeed in performing a job that is more related to this personality's unique characteristics; further, those of an intuitive or a sensing type may not succeed in the same job. Furthermore, people with a thinking or feeling personality type would also prefer different kinds of jobs, as the nature of the work involved requires specific personality traits. We can then conclude that personality type is an important variable in choosing an occupation, an academic major, or in choosing vocational training in general. Therefore, studying the personality types of workers from different occupational environments is important and would help in identifying the crucial differences among them. In this context, differences in personality types do not necessarily reduce the value of the individual but, rather, it helps them to

achieve better compatibility with their job and its tasks and helps them in being more receptive in dealing with others or in the performance of their roles at work or life in general.

3. Study Problem and Objectives

This study examines one of the core factors in the daily life of individuals: the relationship between personality types (including extraversion, introversion, intuitive, sensing, thinking, feelings, judging, and perceiving) and the occupational environments (including realistic, investigative, enterprise, social, artistic and conventional) by interpreting participants' answers on personality scales of among both men and women in various occupational environments. The researchers assumed that companies in Jordan, in general, do not look at the consistency of personality types with the occupational environments among workers of both genders because, usually in Jordan, job application is included paper related to the applicant contact information and his educational information, and the interviews are conducted according to standards, that do not take into account the link between occupational environments and personality types, with the suitability of the work tasks being entrusted to the applicant. Civil service receives employment applications for the positions after which the applicant downloads the required documents, and then the application system electronically transfers it to the job review page available to him to apply to [3].

The theories by [18] and [11,17] are among the best and most appropriate models with which to determine the more effective personality type for a given occupational environment and the more suitable occupation for a given applicant. The objective of this study aimed to identify personality types among workers in various occupational environments in Jordan by answering the following research questions:

Research Question 1: What are the personality types (including extroversion, introversion, intuitive, sensing, thinking, feelings, judging, and perceiving) among male and female workers in Jordan?

Research Question 2: What are the occupational environments (including realistic, investigative, enterprise, social, artistic, and conventional) among male and female workers in Jordan?

Research Question 3: Are there statistically significant differences in the personality types (extraversion, introversion, intuitive, sensing, thinking, feelings, judging, and perceiving) and occupational environments (realistic, investigative, enterprise, social, artistic, and conventional) among male and female worker in Jordan?

Significant of the Study

This study and its manuscript present theoretical literature and information related to personality types and occupational environments, which clarifies the most important basics that influence an individual's future work prospects, according to two important theories: those by [17,11]. These are the most widely used models in career counseling internationally. Specifically, they help in setting criteria for selecting workers or in assisting individuals when changing their job, as well as helping people who are unsatisfied in their job. Further, they help to verify the suitability of an individual's personality type in terms of the nature of the work that they are involved in. This study's main contribution is centered around the fact that personality types and occupational environments are not taken into account among Civil Service [4] companies and Jordanian peoples in choosing the study major or occupation. The current study also reveals the personality types among workers in various occupational environments in Jordan.

4. Study Methodology

The study design was based on a descriptive investigative model, with it aiming to compare the personality types among within different occupational environments in Jordan. The data were analyzed separately in terms of each variable, including participants' gender and the relationship between occupational environment and personality types. Herein, a causal comparison was adopted in order to determine the personality types variable via the use of a MANOVA and a Bonferroni correction in its statistical analyses. These help in examining the causes of an emerging or existing situation or the results of the effect of personality types on occupational environments.

4.1 Study Population

The study population consisted of workers in Jordan from various occupational environments, universities, schools, social services, health services, the press, media, television, politics, banks, commercial companies, industrial vocational sectors, and maintenance and repair from both the public and private sectors.

4.2 Study Sample

In determining our sample of workers, we based our criteria on the classification of occupational environments in Holland's theory, in which participants were divided into six interests across six occupational environments, including: realistic, social, investigative, artistic, enterprising, and conventional. The study sample was then identified in a purposive manner from workers in various occupational environments; specifically, among those who had worked in

their environment for more than three years. Holland’s Self-Search Scale and the Personality Types Scale were given to 10 counselors (who then handed out the two scales to our study sample). The items were reviewed and discussed with them, then applying on 1540 workers. However, 30 individual’s answers were deleted due to a lack of information, meaning that the number of the final study sample was 1510 workers, of whom 895 were men and 615 were women. The participants were asked if they were willing to participate in the study, and they provided written consent.

Table 1 shows the distribution of the men and women in our sample based across the six occupational environments.

Table 1: Distribution of the sample across different occupational environments and gender

Gender	Realistic	Investigative	Enterprise	Social	Artistic	Conventional	Total
Men	199	216	104	178	83	115	895
Women	77	140	112	111	93	82	615
Total	276	356	216	289	176	197	1510

4.3 Study Tools

4.3.1 The Keirsey Personality Types Scale (2008; 1998; 1978).

This scale includes 70 items representing all personality types, with the response options including two choices for each item, with each one representing a personality type and the other representing the personality types parallel to it. For example, it is structured as extroversion vs introversion, sensing vs. intuitive, thinking vs. feeling, and judging vs. perceiving.

The researcher then translated the 70 items of the scale into Arabic and then verified this version by presenting it to a professor specialized in English for re-translating it back into English. All the paragraphs were clear and correct, with 67 items being kept the same as in the original scale. Three items did differ following translation, but we made sure that they had the same meaning and rephrased them. Thus, no item from this scale was deleted.

Validity. The scale was submitted to five arbitrators (professors) who were specialists in counseling or educational psychology, in order to garner recommendations, suggestions, corrections, and additions. Overall, their comments were positive, and they did not recommend any modifications. Then, the scale was prepared in its initial form, with a sample of 46 counselors and teachers then answering the scale items. Following this, the discrimination and the difficulty coefficients for each item were extracted, with the items of the scale distinguishing between the upper and lower groups of answers. Finally, the validity of the items’ total correlation was extracted and was found to have a correlation range from 0,78-0,82.

The reliability coefficient of the scale was also extracted using the test-retest method applied on 46 men and women workers, (counselors and teachers) then, after two weeks, it was re-applied on them. Pearson’s correlation formula was used to calculate the reliability coefficients, with the correlation coefficients ranging from 0.76 – 0.81. Further, the internal consistency coefficient was extracted based on Cronbach’s alpha reliability coefficients equation and was found to range between 0.80 – 0.84.

4.3.2 Holland’s Self-Search Scale (1994). This is a tool for determining respondents’ occupational interests and environments. This scale contains items that define the activities, occupations, competencies, and personality types of workers across six occupational environments (realistic, social, investigative, artistic, enterprise and conventional). This scale was developed by Abueita (2004) and has since been adapted for use among Jordan populations. Herein, it was translated into Arabic, with the translation then being verified by presenting it to a professor specializing in English for re-translation. All the paragraphs were clear and correct, but he did ask that some words or verbs be replaced. Then, the validity of the scale was verified by presenting it to five professors in the field of counseling at various Jordanian universities, with the validity construction of the total item correlation being extracted and found to have a range of 0,76-0,82.

The reliability coefficient of the scale was also extracted using the test-retest method applied on 46 men and women workers, (counselors and teachers) then, after two weeks, it was re-applied on them. Pearson’s correlation formula was used to calculate the reliability coefficients, with the correlation coefficients ranging from 0,82 – 0,80. Further, the internal consistency coefficient was extracted based on Cronbach’s alpha reliability coefficients equation and was found to range between 0,82 – 0,90.

4.3.3 Data analysis

The study data on personality types and occupational environments were analyzed using the SPSS 23.00 package program. The means, standard deviations, ranks, content validity, Cronbach Alpha and Pearson’s reliability were computed, Multivariate Analysis of Variance Multivariate analysis of variance (MANOVA), included the results of Hotelling’s T² and Wilk’s Lambda tests on the study variables, and an analysis of covariance post-hoc test analysis

Bonferroni were conducted to test the differences according to gender, occupational environment, and personality types were all calculated therein. The significance level was set at .05.

4.3.4 Ethical Consideration

The researcher followed ethical guidelines of the **research ethics board (REB)** when conducting this study. The participant's complete permission was obtained before to the study's execution, the confidentiality of the research data was ensured, biases and other misleading information were avoided, and other works and studies that were used in this study were accurately referenced.

5. Findings

5.1 Research Question 1: What are the personality types (including extroversion, introversion, intuitive, sensing, and thinking, feelings, judging, and perceiving) among male and female workers in Jordan?

To answer the first question, the means and standard deviations of respondents' answers on personality types are illustrated in Table 2.

Table 2: Means, standard deviations, and rankings of female and male participants according to personality types.

Personality type	Male respondents			Female respondents			Together		
	Mean	Standard deviation	Rank	Mean	Standard deviation	Rank	Mean	Standard deviation	Rank
Extraversion	*5.29	1.85	4	*5.46	1.81	2	*5.39	1.83	4
Introversion	**4.52	1.81	5	**4.71	1.85	5	*4.61	1.83	5
Intuitive	8.16	2.90	6	8.99	3.03	7	8.50	2.98	6
Sensing	11.83	2.90	3	10.99	2.99	3	11.49	2.967	3
Thinking	11.93	3.32	2	10.89	3.472	4	11.50	3.49	2
Feeling	8.04	3.32	7	9.04	3.50	6	8.45	3.43	7
Judging	13.31	3.34	1	12.69	3.25	1	13.05	3.32	1
Perceiving	6.70	3.35	8	7.29	3.25	8	6.94	3.32	8

*The means of Extraversion were 10.92 for the female respondents, 10.58 for the male respondents, together they came to 10.78**. Further, the Introversion means were 9.42 for the female respondents, 9.08 for the male respondents, and together they came to 9.22. The comparison only averages were doubled to 20 as other types.

Table 2 reveals that the judging type is the first ranked among both gender groups, but that they differ in other types. For example, the female participants' second highest personality type is extroversion, followed by sensing, thinking, introversion, feeling, and intuitive. For their male counterparts, the thinking personality type was most common, followed by judging, then sensing, extroversion, introversion, intuitive, feeling, and perceiving. For the sample as a whole, thinking was followed by judging, then sensing, extroversion, introversion intuitive, feeling, and, finally, perceiving.

5.2 Research Question 2: What are the occupational environments (realistic, investigating enterprise, social, artistic, and conventional) among female and male workers in Jordan?

To answer our second research question, the means and standard deviations of the male and female participants' answers on occupational environments were calculated, with these then being illustrated in Table (3).

Table 3: Means, standard deviations, and rankings of the occupational environments across the male and female respondents

Occupational environments	Male respondents			Female respondents			Together		
	Mean	Standard deviation	Rank	Mean	Standard deviation	Rank	Mean	Standard deviation	Rank
Realistic	3.46	3.87	6	2.93	3.02	5	3.26	3.02	6
Investigative	3.40	2.93	5	3.40	3.68	6	3.39	3.68	5
Enterprise	3.79	2.90	2	3.65	3.11	2	3.70	3.11	2
Social	3.57	3.67	3	3.53	4.13	3	3.55	4.13	3
Artistic	3.69	2.88	4	3.48	2.94	4	3.51	2.94	4
Conventional	4.49	3.49	1	4.69	3.99	1	4.59	3.94	1

Table 3 shows that the conventional type is first, which is then followed by enterprise, then social, artistic, realistic, and, finally, investigative. Further, the female participants' answers were in line with those of their male counterparts in the order of four environments, including enterprise, conventional, social, and artistic, but differed in terms of investigative

and realistic. Taken altogether, the sample’s answers in regards to their occupational environments ranked conventional as the highest, which was followed by enterprise, social, artistic, investigative, and realistic.

5.3 Research Question 3: Are there statistically significant differences in personality types (extraversion, introversion, intuitive, sensing, thinking, feeling, judging, and perceiving) and occupational environments (realistic, investigative, enterprise, social, artistic, and conventional) among female and male workers in Jordan?

To answer our third research question, the means, standard deviations, and ranks, as well as MANOVA and Bonferroni analyses of comparisons according to gender, occupational environments, and personality types variables, were conducted. These findings are provided in Tables 4 and 5.

Table 4: Hotelling’s T² analysis of gender and a Wilk’s Lambda, MANOVA of occupational environments, personality types, and gender.

Source		Sum of square	DF	Mean Square	F value	Significance
Gender	Extroversion	3.38	1	3.38	1.012	.315
	Introversion	3.55	1	3.55	1.064	.302
	Intuitive	234.60	1	234.80	27.669	.000
	Sensing	244.25	1	244.25	29.009	.000
	Thinking	363.10	1	363.10	32.400	.000
	Feeling	352.84	1	352.84	31.310	.000
	Judging	138.17	1	138.17	13.464	.000
	Perceiving	124.40	1	124.40	12.07	.001
Occupational environments	Extroversion	29.370	5	5.87	1.76	.118
	Introversion	30.057	5	6.01	1.80	.109
	Intuitive	222.057	5	44.41	5.23	.000
	Sensing	214.60	5	42.92	5.10	.000
	Thinking	361.64	5	72.33	6.45	.000
	Feeling	374.61	5	74.92	6.65	.000
	Judging	854.42	5	170.88	16.65	.000
	Perceiving	848.28	5	169.66	16.46	.000
Interaction between occupational environments and gender	Extroversion	13.09	5	2.62	.78	.561
	Introversion	12.93	5	2.59	.78	.567
	Intuitive	208.17	5	41.64	4.91	.000
	Sensing	186.94	5	37.39	4.44	.001
	Thinking	88.96	5	17.79	2.59	.021
	Feeling	95.11	5	19.02	1.69	.134
	Judging	132.90	5	26.58	2.59	.024
	Perceiving	130.56	5	26.11	2.53	.027
Standard error	Extroversion	4995.36	1497	3.34		
	Introversion	4990.78	1497	3.33		
	Intuitive	12703.52	1497	8.49		
	Sensing	12604.61	1497	8.42		
	Thinking	16776.79	1497	11.21		
	Feeling	16869.10	1497	11.27		
	Judging	15362.53	1497	10.26		
	Perceiving	15432.73	1497	10.31		
Total	Extroversion	5049.32	1508			
	Introversion	5045.97	1508			
	Intuitive	13393.25	1508			
	Sensing	13279.13	1508			
	Thinking	17619.23	1508			
	Feeling	17714.85	1508			
	Judging	16588.65	1508			
	Perceiving	16634.39	1508			

Table 4 shows the (F) value at a statistically significant level of 0.00, and the statistically significant differences in personality types among the male and female workers. Furthermore, the results of the Wilk’s Lambda analysis reveal that the (F) values are significantly different in terms of the personality types between workers of different occupational

environments. Additionally, it reveals statistically significant differences according to gender, occupational environments, and personality types as per the MANOVA conducted, as shown in Table 4.

Table 4 also shows that there are no statistically significant differences in the personality types of extraversion and introversion among both male and female workers. However, we did find statistically significant differences between workers from different occupational environments, including in the realms of intuitive, sensing, thinking, judging, perceiving, and feelings. Furthermore, there are statistically significant differences between male and female workers in terms of the interactions between occupational environments, gender, and personality types; specifically, in terms of intuitive, sensing, thinking, judging, and perceiving.

To reveal any statistically significant differences according to personality types, gender, and occupational environments, a Bonferroni analysis was conducted for comparisons between the means of occupational environments and gender variables, as illustrated in Table 5.

Table 5: Bonferroni test of comparisons according to respondents' gender, occupational environments, and personality types

Variables			Differences means	Standard error	Significance
Intuitive	Investigative	Social	.77	.23	.012
	Enterprise	Social	.76	.26	.054
	Artistic	Realistic	1.25	.28	.000
		Social	1.39	.28	.000
		Conventional	1.03	.30	.010
Sensing	Realistic	Artistic	.69	.23	.040
	Conventional	Artistic	.75	.26	.050
	Social	Investigative	1.33	.28	.000
		Artistic	.97	.30	.019
Thinking	Realistic	Investigative	1.00	.27	.003
		Artistic	1.26	.32	.002
	Social	Investigative	1.24	.27	.000
		Artistic	1.49	.32	.000
	Conventional	Artistic	1.02	.35	.050
Feeling	Realistic	Investigative	.91	.27	.012
		Social	1.28	.27	.000
	Artistic	Realistic	1.23	.32	.002
		Social	1.60	.32	.000
		Conventional	1.08	.35	.030
Judging	Realistic	Investigative	1.74	.26	.000
		Artistic	1.24	.31	.001
	Enterprise	Investigative	1.10	.28	.001
		Social	2.26	.25	.000
	Social	Enterprise	1.15	.29	.001
		Artistic	1.75	.31	.000
		Conventional	1.12	.30	.002
Conventional	Investigative.	1.14	.28	.001	
Perceiving	Investigative	Realistic	1.72	.26	.000
		Enterprise	1.15	.28	.000
		Social	2.25	.25	.000
		Conventional	1.16	.29	.001
	Enterprise	Social	1.10	.29	.002
	Artistic	Realistic	1.20	.31	.002
		Social	1.74	.3070	.000
	Conventional	Social	1.08	.30	.004

The results of the Bonferroni test as shown in Table 5 reveal that there are statistically significant differences in the personalities among the participants in terms of their occupational type, including in the intuitive type, the investigative and social types, the enterprise and social types, the artistic and realistic types, and the social and conventional types. Further, the sensing personality type differed between the realistic and artistic environments, the conventional and artistic environments, the social and investigative environments, and the artistic occupational environments.

Furthermore, differences were found in the thinking personality type between the realistic, investigative, and artistic environments; the social, investigative, and artistic environments; and the conventional and artistic occupation types. The feelings type differed in terms of the realistic, investigative, and social environments; the artistic and realistic environments; and the social and conventional occupation types. Furthermore, the judging type differed between the realistic, investigative, and artistic environments; the enterprise and investigative environments; the social and investigative environments; the enterprise, artistic and conventional environments; and the conventional and investigative occupational environments. Finally, the perceiving personality type differed between the investigative and realistic environments; the enterprise, social and conventional environments; the enterprise and social environments; the artistic, realistic and social environments; and the conventional and social occupational environments.

6. Discussion

The answer to the first research question shows that the judging type is ranked first among all participants, with the perceiving type then being the last among both female and male workers. The mean of the judging personality type among both genders is higher than the in the perceiving type. This showcases that Jordanian workers prefer to judge instead of engaging in actively perceiving, which could then cause conflict and a lack of development. Notably, the first personality type of a human being is perceiving, with them continuing through life as perceiving being. Further, what the individual perceives through observing people, events, things, and information then develops their abilities and options around decision making. When judging is ranked higher than perceiving within a person, it then deprives the individual of acquiring new experiences or makes them unable to effectively communicate with others. Herein, a given worker may be in two locations wherein they are issued directions and have to then execute decisions, with previous studies [8, 25, 28] outlining the differences among workers in judging and perceiving.

The mean scores for the intuitive personality type between our male and female participants are lower than average, with the sensing type mean being higher than average, meaning Jordanian workers rely more on reality and their senses than on abstractions and expectations, as those with a sensing personality type depend on the transfer of perceptions from the outside world that are sent to the mind through the five senses. However, the intuitive personality type works to understand things and subjects in an unconscious way and helps the individual in understanding the meanings and relationships that lie behind this information. We did find that our male participants differed from their female counterparts in terms of the intuitive personality type, with this result being consistent with the studies of [18,43].

The mean score for the thinking personality type is higher than that for the feeling type, which is below average, with the former being higher among men and women, while the latter being lower therein. These findings clarify that Jordanian workers are more convincing, and tend to avoid emotions in their daily work, which is consistent with previous studies [35,27]. The extroversion personality type is higher than the introversion one among both male and female workers, which mean that Jordanian workers prefer occupational environments related to the former. However, our findings regarding our first research question are in line with previous studies [17,10, 63], in that there were differences found in personality types across different occupational environments.

The results regarding our second research question reveal that the male participants' answers in terms of their occupational environments are ranked, according to their means, as follows: the conventional environment was highest, which was followed by enterprise, then social, artistic realistic, and finally investigative. Further, the female respondents were similar in terms of their ranking of the first four occupational environments (including conventional followed by enterprise, social, and artistic), but they did differ in that investigative came fifth and realistic came sixth. Our female participants' answers are then consistent with the findings of [29] in regard to the enterprise and conventional occupational environments. Furthermore, [38] found that the artistic working environment is higher among women, with this being consistent with the work by [26], but which is not consistent with [29].

In terms of the entire samples' answers (i.e., those of both genders) in terms of their occupational environments, conventional was ranked first, which was followed by enterprise, then social, artistic realistic, and finally investigative. This reveals that most Jordanian workers across various occupational environments prefer more traditional and familiar jobs; therefore, they need to be made aware of the developmental trends and changes in the job market according to international and local developments in occupational environments. The results regarding our third research question where the findings of the MANOVA test show that there are no statistically significant differences between the female and male workers in terms of the two main personality types, extroversion and introversion personality types, with this likely being due to the life conditions in Jordan involving ongoing conflicts and war. Thus, these circumstances may have had a negative impact on the development of the extroversion personality type among both genders. However, this finding is not consistent with those of previous studies[40,22,37,43]. However, there are some occupations that do require a more extroverted personality type, with others then requiring a more introverted type; however, usually, being extroverted is higher among men and is related to greater job satisfaction. Notably, this finding is not in line with the studies of [44,22,11]. Thus, this finding demonstrates the need for the creation of opportunities in people's schooling

The F values reveal there are statistically significant differences among male and female workers in terms of the interaction of occupational environments, gender, and personality types, with the intuitive, sensing, thinking, judging, and perceiving types occurring in different occupational environments. To examine these statistically significant differences, a Bonferroni test was conducted for the comparisons between the means of the personality types and gender variables, which revealed there are statistically significant differences in the intuitive type in terms of the investigative and social occupational environments; the enterprise and social environments; and the artistic, realistic, social, and conventional environments. However, the sensing personality type differed between the realistic and artistic environments; the conventional and artistic environments; and the social, investigative, and artistic environments, with this result being consistent with prior studies [6,7,8]. Further, in the feelings personality type, differences were found among the realistic, investigative, and social environments and the artistic, realistic, social, and conventional environments. This finding is consistent with various prior studies [22,26].

In the judging personality type, we found differences between the realistic, investigative, and artistic environments; the enterprise and investigative environments; the social and investigative environments; the enterprise, artistic, and conventional environments; and the conventional and investigative environments. For the perceiving type, we found differences between the investigative, realistic, enterprise, social, and conventional environments; the enterprise and social environments; the artistic, realistic, and social environments; and the conventional and social environments. These findings clarify the fact that different occupational environments are related to specific personality types. These findings around our third research question are in line with previous studies.

7. Conclusion and Recommendations

This study investigated the relationship between personality types and occupational environments among both male and female workers in Jordan. This research was prompted by the fact that workers often make several changes in choosing a career. Therefore, there is a possibility that there are many that are in occupational environments that are not in line with their personality types and that they need help in establishing the status of the relationship between their personality types and the most suitable occupational environments. This study also revealed that there is a significant relationship between personality types and occupational environment among workers. In view of this finding, we concluded that personality is related to one's ideal occupational environment. However, many workers are in environments that are not in line with their personality types. These workers then fail to develop their personalities and interests in a meaningful manner.

In sum, we found that every occupational environment has a positive relationship with certain psychological traits, as well as the fact that men and women differ in certain personality types and occupational environments. Therefore, there is a need for providing opportunities to develop people's personality types at different developmental stages. For example, this would give children the opportunities to participate in different activities that develop their respective personality types, which can be requested by parents, educators, and supervisors of school or non-school activities. Further, because different kinds of occupational environments require different kinds of personality types, everyone in society will adopt differing positions throughout the course of their lives, with some being related to one or more personality types, which then helps them in achieving better interactions in their daily life.

Therefore, we provide the following recommendations:

- Take advantage of the two scales used in this study in different occupational environments through which employers can then approve the selection or training of employees, which would then have an impact on improving their and others' self-awareness of themselves through appropriate interventions at both the individual and the group level, which will assist employees and institutions to better understand the appropriate personality type of their specific occupational environment.
- Provide opportunities to develop certain personality types, particularly those involving introversion and extroversion, in order to achieve better job satisfaction.
- Provide opportunities to participate in association activities that allow individuals to practice the roles of judging and perceiving.
- Provide tools related to personality types at schools, universities, and human resource departments related to choices around the academic and occupational environments.
- Upgrade systems of teaching and hiring based on a person's competence and personality type, and not just their experience.
- Provide career counseling programs via schools, universities, workplaces, and human resource departments to help

applicants in learning about the most appropriate personality type for their current situation.

8. Study Limitations

This study has three limitations. First, it was conducted only among workers in Jordan, who were selected through our corresponding with different entities in both the public and private sectors. It is thus difficult to generalize our findings, meaning that this study should be repeated with other population groups. As such, our results apply only to the individuals targeted by this study. The second limitation is that the scores of the personality type scales used in this study are based on the participant's perceptions, meaning that their answers are self-exacted. The third limitation is the fact that the study tools may be characterized by a low level of reliability and a high level of bias because this research used a purposive sampling method.

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10. Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

11. References

- [1] Abueita, S. (2004). The differential aptitude of the tenth and twelve grade students' aptitudes and interests in Zarka and Amman. *Al-Manara Journal*, 4(10), 494-453.
- [2] Abueita, S. (2015). *Career counseling and development theories*. Dar Al-Fiker.
- [3] Al Nsser, S. (2022) Electronic system for receiving job application. Nabd News, Amman, Jordan. <http://nabdapp.com/t/107116191> retrieved on August, 3, 2022.
- [4] Berings, D., De Fruyt, F., & Bouwen, R. (2004). Work values and personality traits of enterprising and social vocational interests. *Personality and Individual Differences*, 36(2), 349-365.
- [5] Civil Service Bureau. (2007). Regulations on Jobs' Descriptions and Classification in Civil Service. Jordan.
- [6] de Jong et al. (2019). Personality traits and career role enactment: Career role preferences as a mediator. *Frontiers in Psychology*, 10(1720). <https://doi.org/10.3389/fpsyg.2019.01720>
- [7] Denissen, J. A., Bleidorn, A., Hennecke, M., & Zimmermann, J. (2018). Uncovering the power of personality to shape income. *Psychological Science*, 29(1):3-13. doi:10.1177/0956797617724435
- [8] Furnham, A., & Crump, J. (2015). The Myers-Briggs Type indicator and promotion at work. *Psychology*, 6, 1510-1515. <http://dx.doi.org/10.4236/psych.2015.612147>
- [9] Gottfredson, G. D., Jones, E. M., & Holland, J. (1993). Personality and vocational interests: The relation of Holland six interest dimensions for five robust dimensions of personality. *Journal of Counseling and Psychology*, 40(4), 518-524.
- [10] Herr et al. (2021). Personality type matters in perceptions of job demands, job resources, and their associations with work engagement and mental health. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Judging*. <https://doi.org/10.1007/s12144-021-01517-w>
- [11] Holland, J. (1994). *Self-Directed Search* (4th ed.) Psychological Assessment Resources.
- [12] Holland, J. (1997). *Making vocational choices: A theory of vocational personalities and work environment* (3rd ed.). Psychological Assessment Resources.
- [13] Holland, J. L. (1985). *Manual for the Vocational Preference Inventory*. Odessa, FL: Psychological Assessment Resources.
- [14] Holland, J. L. 1973. *Making Vocational Choices*. Englewood Cliffs, NJ: Prentice Hall.
- [15] Jung, C. (1932). *Psychological types*. Harcourt, Brace, and co.
- [16] Jung, C. (1971). *Psychological types-collected works of C.G. Jung*. edited and translated by Gerhard Adler and R. F.C. Hull, Volume 6. Princeton University Press. ISBN 0-691-09744.
- [17] Keirse, D (1998). *Please understand me II, Character temperament, and intelligence*. Prometheus Nemesis Book Co.
- [18] Keirse, D., & Bate, M. (1978). *Please understand me I, Character temperament, and intelligence*. Prometheus Nemesis Book Co.
- [19] Kemboi, R. J., Kindiki, N., & Misigo, B. (2016). Relationship between personality types and work choices of undergraduate students: A case of Moi University. *Journal of Education and Practice*, 7(3), 102. www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online).
- [20] Kern et al. (2019). Social media-predicted personality traits and values can help match people to their ideal jobs. *Psychological and Cognitive Sciences*, 116(52), 26459- 6464. <https://doi.org/10.1073/pnas.1917942116>.
- [21] King et al. (2016). Personality homogeneity in organizations and occupations: Considering similarity sources.

- Journal of Business and Psychology*, 32(6), 641-653. doi:[10.1007/s10869-016-9459-4](https://doi.org/10.1007/s10869-016-9459-4).
- [22] Lippa, R. A. (2005). Subdomain of gender-related occupational interests. *Journal of Personality*, 73,(3), 693-731.
- [23] Maldonado, L. G., Kim, K., & Threeton, M. D. (2020). An application of Holland's theory to career interests and selected careers of automotive technology students. *Journal of Career and Technical Education*, 1(35), 36-54. <https://eric.ed.gov/?id=EJ1327135>
- [24] Mallari, S. D. C., & Pelayo, J. M. G. (2017). *Myers-Briggs type indicator personality profiling and general weighted average of nursing students' assessment*. Counseling, Alumni and Placement Center (ACAP).
- [25] Morgan, A., & Barbour, K. (2008). An initial study into the personality types of undergraduate business students. *Proceedings of the academy of educational leadership*, 13(1), 33-38.
- [26] Moutafi, J., Furnham, A. I., & Crump, J. (2007). Is managerial level related to personality? *British Journal of Management*, 18, 272 -280.
- [27] Myers, I. (1980). *Introduction to type*; 3rd ed Psychologists Press, Inc., Palo Alto, CA,
- [28] Myers, I. (1998). *Introduction to type; A guide to understanding your results on the Myer Briggs Type Indicator*. Gainesville. Florida; Centre for Application of Psychological Type.
- [29] Myers, I., & Briggs, C. (1962). *The Myer-Briggs type indicator manual*. Education Testing Services.
- [30] Nieken and Störmer (2010). Personality as Predictor of Occupational Choice: Empirical Evidence from Germany
- [31] Perera H., & McIlveen, P. (2017) Vocational Interest Profiles: Profile Replicability and Relations with the STEM Major Choice and the Big-Five. *Journal of Vocational Behavior*, 106, 84-100. doi: [10.1016/j.jvb.2017.11.012](https://doi.org/10.1016/j.jvb.2017.11.012).
- [32] Pierce, D., & Johnson, J. (2017). Applying Holland's vocational choice theory in sports management. *Sport Management Education Journal*, 11(2), 72-87. <https://doi.org/10.1123/smej.2016-0015>
- [32] Pulver, C. A., & Kelly, K. R. (2008). Incremental validity of Myer Briggs type indicator in predicting academic major. *Journal of Work Assessment*, 16(4), 441-445.
- [33] Reiter, M. D., Liput, T., & Nirmal, R. (2007). Personality preference of college student-athletes. *College Student Journal*, 1(41), 34-36.
- [34] Riya, K. (2019). The use of personality testing in personnel selection. CMC Senior. Theses. 2038. <https://scholarship.claremont.edu/cmc>
- [35] Schumacher, S. (2009). Personality differences. *Rock Product*, 112(4), 28-31.
- [36] Stephen A., Woods, S. A., & Hampson, S. E. (2010). Predicting adult occupational environments from gender and childhood personality traits. *Journal of Applied Psychology*, 95(6), 1045-1057. doi: [10.1037/a0020600](https://doi.org/10.1037/a0020600).
- [37] Stilwell, N., Wallick, M., & Burlison, J. (2000). Myers-Briggs type and medical specialty choice: A new look at an old question. *Teaching and Learning in Medicine*, 12(1), 14-20.
- [38] Sullivan, B. A., & Hansen, J. C. (2004). Mapping associations between interests and personality. *Journal of Counseling Psychology*, 51(3), 287- 299.
- [39] Toomey, K. D., & Livenson, E. M. (2008). The vocational personality of school psychologists in the USA. *School Psychology International*, 29(4), 418-425.
- [40] Tuel, B., & Betz, N. (1998). Relationships of work self-efficacy expectations to the Myers-Briggs type indicator and personal types scales. *Measurement and Evaluation in Counseling*, 31(3), 150-164.
- [41] Turner et al. (2018) Gender differences in Holland personality types implication in school counselors. *Occupational School Counseling*, 11(5), 317-326. <https://doi.org/10.1177/2156759X0801100505>
- [42] Waner, K., & Echternacht, L. (2003). Using the Myers-Briggs type indicator to compare business teachers with personality types of office occupations. *Delta Pi Epsilon Journal*, 35(2), 53-68.
- [43] Wosepka, J. (2010). *Relationship between Myers-Briggs personality type and the work decision-making process*. Unpublished thesis. Master's degree. Discipline Education - College Student Personnel University of Wisconsin.
- [44] Zhang, L. F. (2007). From work personality types to interests for teachers' teaching types: A new perspective on type match. *Personality and Individual Differences*, 43(7), 1863-1874.