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## Article

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## HEAVY WORK INVESTMENT FROM THE PERSPECTIVE OF CULTURAL FACTORS AND OUTCOMES BY TYPES OF INVESTORS

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### Abstract

This paper aims to analyse the concept of *Heavy Work Investment (HWI)* by studying the factors determining this phenomenon, as well as its outcomes (both negative and positive). According to the European Directive of 1993, Heavy Work Investment occurs when an individual works more than 48 hours per week. The aim of this paper is to study the factors influencing the occurrence of the phenomenon of Heavy Work Investment from the perspective of time invested, using the multiple regression model, as well as the outcomes of Heavy Work Investment, using the structural equation model (SEM). The study used the data of the countries included in the International Social Survey Programme (ISSP), (37 countries and a total of 18,274 respondents) on employment status, the number of actual working hours, job and demographic characteristics. The results confirm the important impact of the cross-cultural differences on HWI behaviour as well as the outcomes of Heavy Work Investment according to the type of investor (dispositional / situational).

**Keywords:** Heavy Work Investment, working hours, cross-cultural differences, dispositional investors, situational investors.

**JEL Classification:** J22, J23, O15.

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**Introduction**

Snir and Harpaz (2012) introduced the concept of Heavy Work Investment (HWI), which includes both employee hours (time investment) and physical and mental effort (effort investment). The forerunner of HWI concept is workaholism, a concept intensely studied in the literature. In recent years there has been an increase in research dedicated to the study of workaholism (Clark et al., 2014). According to Oates (1971), the term workaholism refers to people whose need for work has become so exaggerated that it can be a danger to their health, personal happiness, interpersonal relationships, and social functioning. Although investing a large number of hours in work is considered positive by the employer and society in general, there is evidence that overwork can have negative outcomes, especially on health, but also on workplace relationships and couple or family life (Snir and Harpaz, 2012). For example, Kanai, Wakabayashi and Fling (1996) found that Heavy Work Investment can lead to health deterioration. However, work investment can lead also to increased professional satisfaction (Ng, Sorensen and Feldman, 2006).

A dispositional investor or a workaholic, as a person dependent on work, manifests an uncontrollable and incessant need to work and extends his or her work schedule beyond that stipulated by explicit and implicit legal regulations (Andreassen, Hetland and Pallesen, 2014). According to the assertion of Converso et al. (2019), the dispositional investor works beyond expectations and manifests an obsession with his or her activity as a result of an obsessive compulsive personality disorder expressed through perfectionism and excessive devotion to work. van Beek et al. (2012) added that dispositional investors are neurotic personalities, show insecurity, low self-esteem, are prone to stress and are severely affected by the negative events in their lives. Clark et al. (2014) characterize them as people who have difficulty disconnecting themselves from what they are doing, they are perfectionists, conscientious or with low self-esteem, suffer negative effects on a personal, interpersonal and organizational level. Moreover, they are subject to constraints and continually make commitments despite consequences such as burnout, stress, conflict between work and personal life, and also deterioration of health. For dispositional investors work motivation is high (Andreassen, Hetland and Pallesen, 2014), and they think about work even when they are not working (Clark et al., 2014).

According to Snir and Harpaz (2012), virtually no studies have been published on possible intercultural differences regarding HWI, except for the study they conducted in 2009. The authors also add that further research is needed on cross-culture differences in the types of HWI predictors and results. This study aims to contribute eliminate this gaps in the literature and to analyse the influence of the three cultural dimensions on the time invested in work (individualism, masculinity and uncertainty avoidance). As a distinctive feature, this study aims to analyse the effect that the dimensions of national culture listed by Hofstede (1991, 1994, 2011) have on the number of hours that the employees in various countries worked. This research uses data from a global study with the title "International Social Survey Program (ISSP): Work Orientations IV - ISSP 2015", being one of the few studies on work and its characteristics, allowing comparisons of large volumes of data (ISSP Research Group, 2017).

The objectives of this research is to study the factors influencing the occurrence of the phenomenon of Heavy Work Investment from the perspective of time invested, as well as the outcomes of Heavy Work Investment according to the type of investor in the context of the three cultural dimensions stipulated by Hofstede on the time invested in work.

To achieve its goal, this paper is organised in the following sections: introduction, literature analysis and development of research hypotheses, research methodology, results, discussions, and conclusions.

## **1. Literature analysis**

### **1.1. Heavy Work Investment and influencing factors**

An important strategic resource of a company is knowledge, a key element for obtaining comparative advantage, rooted in people's action and experience, in ideas, values and emotions (Bratianu and Bejinaru, 2019). Starting from the study of Bratianu and Bejinaru (2019), we appreciate that the massive investment in work is based on economic education, the ability to integrate decisions in the system of recognition and motivation, in organizational culture and behavior.

Heavy Work Investment was defined as a phenomenon occurring in employees who work at least 48 hours per week (heavy time investment). Many researchers seem to use this reference in accordance with the European Working Time Directive of 1993 (Snir and Harpaz, 2009). However, this is just a subtype of Heavy Work Investment, because there is also effort-based Heavy Work Investment (Snir and Harpaz, 2012). Following the introduction of HWI, Snir and Harpaz (2012) distinguished between two types of HWI antecedents, namely external (situational) and internal (dispositional), which are added to background predictors, and which include physical characteristics, culture, education, etc.

- *Background predictors:* Gender can be considered one of the most important HWI predictors (Snir and Harpaz, 2012). In a transnational study, the authors found that workaholism is mainly a masculine phenomenon (Snir and Harpaz, 2006). This is in turn influenced by several factors, including the employee's marital status and number of children. Another relevant HWI background predictor is the level of education. Employees with a high level of education tend to work several hours a week (Snir and Harpaz, 2012). In this study, background predictors are considered as control variables.

- *Internal (dispositional) HWI predictors:* Among the potential internal (dispositional) HWI predictors we can identify work involvement (Taris, van Beek and Schaufeli, 2015), passion for work, work addiction, etc. We do not intend to study internal predictors because they have been the subject of much research so far.

- *External (situational) HWI micro-predictors:* Employees typically work long hours (long shifts) due to personal economic constraints (financial needs) and / or excessive allocations and customer demands (workload) (Barnard, Deakin and Hobbs, 2004). Both factors can be considered external (situational) HWI predictors (Snir and Harpaz, 2012). This category of predictors is not the subject of our analysis because they have been intensively studied so far.

- *External HWI macro-predictors (cross-culture differences):* There are cross-culture differences among the less studied predictors (Snir and Harpaz, 2012) in terms of national culture, and they are external macro-predictors of Heavy Work Investment.

There are several models of analysis of cross-culture differences in the literature, such as Kluckhohn and Strodtbeck model, 1961 (Udin, 2019). Each model has different

advantages: Hofstede in 1980 and Laurent in 1983 attached particular importance to certain dimensions (Davel, Dupuis, and Chanlat, 2008). In this study we use the classical model proposed by Hofstede (1994, 2001), used to measure the differences in behaviours among people from different cultures. Hofstede proves to be one of the most cited authors in the field (Gelade, Dobson and Auer, 2008), and his model proved in time to be the most valid and reliable (Udin, 2019).

Hofstede (1994) defined culture as the collective programming of the mind (values and beliefs) which differentiates the members of a group or category of people from others (Hofstede, 2011, p. 3), with six distinct dimensions, the last one being added in 2010: *Individualism/Collectivism*, *Power distance*, *Uncertainty avoidance*, *Masculinity/Femininity*, *Long-term orientation* and *Indulgence* (Hofstede, Hofstede and Minkov, 2010).

Davel, Dupuis and Chanlat, (2008) analysed Hofstede's cultural model and supported the author's statement regarding the implications of national culture on different managerial practices (leadership, organisation and motivation). According to the author, leadership refers to individualism and power distance, the organisation refers to power distance and uncertainty avoidance, while motivation refers to individualism, uncertainty avoidance and masculinity. In this study we are interested in the motivational aspect of Heavy Work Investment analyzing the influence of three cultural dimensions on the time invested in work (individualism, uncertainty avoidance and masculinity).

- *Individualism/Collectivism*: shows the extent to which individuals are integrated into the group and their relationship to the group, *power distance*: the extent to which members of organisations and institutions accept that power is unevenly distributed, *uncertainty avoidance*: the degree of intolerance for uncertainty and ambiguity of individuals in a society, *masculinity / femininity*: assertiveness and competitiveness versus modesty, care and cooperation (Hofstede, 1991).

National culture was frequently studied from the perspective of its effect on individuals' organisational commitment (Gelade, Dobson and Gilbert, 2006; Kwantes, 2009; Top et al., 2015; Chong, 2014; Udin, 2019), without referring to the cultural factors which influence and determine the behaviour of Heavy Work Investment.

Gender differences assume that women and men have a different system of values (Berdahl et al., 2018). While feminine societies value humanity, teamwork, modesty and cooperation, masculine societies emphasise competition, ambition to advance in career, goal achievement (Hofstede, 1991), money acquisition (Eisinga, Teelken and Doorewaard, 2010) which reflects different behaviours regarding the type of individuals' work investment (Berdahl et al., 2018). It was found that in countries considered masculine, the difference of hours invested in work increases between men and women, because men work more hours (Snir and Harpaz, 2009).

Salminen-Karlsson, Wolfram and Almgren (2018) analyse how the concept of excellence as a characteristic of masculine society is perceived by academic researchers in two national contexts (Sweden and Germany). The study results show that most researchers work many more hours per week and prioritise work over other life issues, while most Swedish researchers prefer a more balanced life with a more permissive academic environment and many different ways to achieve academic excellence. Romania is a relatively feminine society that focuses on obtaining consensus in the organization, on equality, solidarity and quality of professional life (Baltador et al., 2013). Also, in this

society, the organization emphasizes the cooperation and development of interpersonal relationships: manager–employee–employees (Vranceanu and Iorgulescu, 2016).

Of these three cultural dimensions, Snir and Harpaz (2009) tested masculinity as a potential factor influencing and determining the behaviour of Heavy Work Investment. The authors conclude that the gender difference regarding time investment at work is higher in masculine societies compared to feminine societies. They also state that dispositional work investors are more common among men in masculine societies than among men in feminine societies.

Individualism/collectivism are obviously the most studied concepts both theoretically and empirically in the intercultural area (Green, Deschamps and Páez, 2005). Collectivist and individualistic societies have a different system of values regarding the relationship between group goals and personal goals, and collectivist cultures stand out by prioritising group interests over personal interests (Kwantes, 2009). Moreover, in collectivist cultures, individuals exhibit behaviours based on attitudes beneficial to the organisation as a whole, and the sustainability of the company is an important concern for them (Udin, 2019). According to Gelade, Dobson and Auer, 2008 employees who belong to an individualistic culture value their leisure time much more than those who come from a collectivist culture. Therefore, a study by Yang et al. (2012) shows that when the number of working hours is the same, the employees in individualist countries perceive a higher volume of workload than the employees in collectivist countries, and the latter are accustomed to a much higher number of working hours than in individualistic cultures, given the attachment to the values of the group, in this case of the organisation as a whole. Zhang and Seo (2018) contradict these results and demonstrate in the study conducted in South Korea that the relationship between perceived climate and employees' working hours is better for those with a low level of collectivism than for those with a high level of collectivism. These studies reinforce the importance of the impact of this cultural factor on the number of working hours and require further research from this perspective.

The societies with a high uncertainty avoidance promote rigid codes of conduct and are intolerant of unorthodox behaviours and ideas (avoidance uncertainty) to reduce uncertainty and ambiguity, and the employees' involvement in work in organisations is low (Schaufeli, 2016). Romania is a society with a high uncertainty avoidance index (Baltador et al., 2013; Marinescu, 2014; Vranceanu and Iorgulescu, 2016). The results of the empirical study conducted by Marinescu, (2014) showed that Romanian employees prefer at job stability, detailed instructions, rules and procedures. In this society, people are heavy workers, prioritizing precision and punctuality (Vranceanu and Iorgulescu, 2016). Udin (2019) emphasises in his conceptual study that members of organisations who come from a culture with a high uncertainty avoidance will have a higher interest in the organisation. Moreover, Marinescu, (2014) demonstrated a direct correlation between the high level of the uncertainty avoidance index of the Romanian society and the desire of employees to get more involved in their organizational culture. But, on the other hand, Barush (2011) adds that workaholism is perceived as positive in cultures with a high uncertainty avoidance index compared to those with a low index.

Starting from the gap in the literature mentioned by Snir and Harpaz (2012) and the need to cover it, we propose the following research hypotheses:

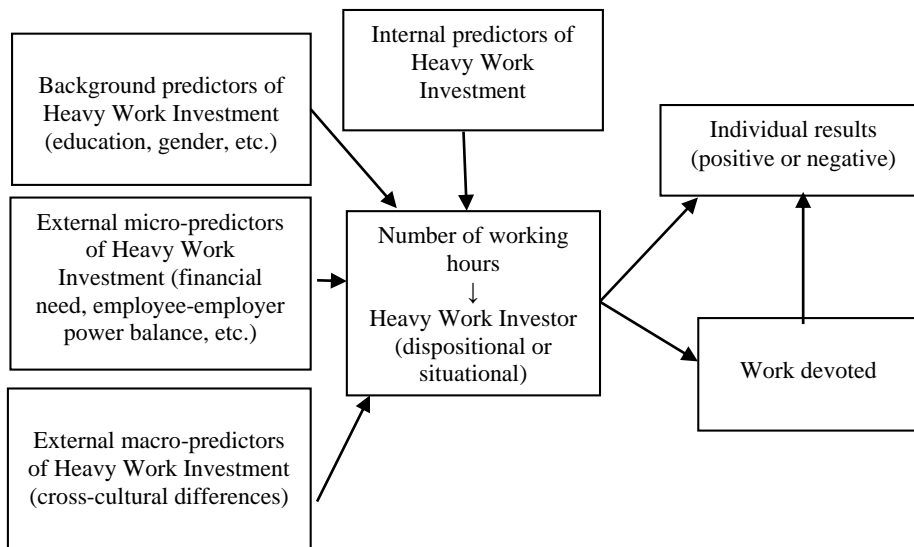
**H1:** The more masculine a society, the more individuals tend to work more hours a week.

**H2:** Gender difference regarding time investment at work is higher in masculine societies compared to feminine societies, with women working fewer hours per week in more masculine societies compared to men.

**H3:** The more individualistic a society, the more individuals tend to work fewer hours per week.

**H4:** The higher the degree of uncertainty avoidance in a society, the more individuals tend to work fewer hours per week.

Figure no. 1 shows a conceptualisation of a Heavy Work Investment model, adapted after Snir and Harpaz (2012) and Clark et al. (2014).



**Figure no. 1. A Heavy Work Investment model and its outcomes according to the types of investors**

**1.2. Heavy Work Investment impact and its outcomes**

Snir and Harpaz (2012) classify employees in terms of the number of working hours in two big categories: dispositional and situational investors. Dispositional investors or workaholics are addicted to work, manifesting a compulsive and relentless need to work, which forms a chronic pattern of overwork due to the many hours spent working (Andreassen, Hetland and Pallesen, 2014) and belong to the category of employees who allocate more time to work than others (Schaufeli, 2016). Dispositional investors are a Heavy Work Investment model, they accept extended working hours, workload beyond expectations and become obsessed with work (Converso et al., 2019), very common in less traditional societies (Snir and Harpaz, 2009). Some positive aspects of work addiction are described by the concept of “work commitment” (Andreassen, Pallesen and Torsheim, 2018), and derive from the relationship between the effort made and the reward received (Andreassen, Pallesen and Torsheim, 2018). Hu et al. (2014) and Minkov and Hofstede (2010) show the beneficial role of cultural factors in some Asian and European countries

which influence the way people work. However, the main positive aspect of work addiction is the attachment to the workplace (Andreassen, Pallesen and Torsheim, 2018). Considering the study of Cazes, Hijzen and Saint-Martin (2016), we induce a positive effect of work investment starting from the three dimensions of job quality, i.e. income, job security and improvement of the work environment. The job quality leads to the improvement of the well-being of the organisation by increasing the productivity, profitability, turnover (Clark, 2015). According to Clark (2015), a good job responds to six dimensions (salary, working hours, promotion prospects, physical and psychological working conditions, job requirements and interpersonal relationships), and the employees value a few more (autonomy, job security, how interesting the work is). Večernik (2006) also adds work usefulness and states that job satisfaction depends primarily on job security and income, which, in fact, characterise work quality. The same dimensions are showed in the table of values related to the workplace presented by Jutz, Scholz and Braun (2017).

Converso et al. (2019) refer to a paradox of “happy workaholic” which appears as a gap between work commitment as a pathological form of Heavy Work Investment and work as a form of positive manifestation. This is because dispositional investors have a behaviour associated with a certain organisational climate and certain personality characteristics (Schaufeli, 2016). Workaholism is a phenomenon characterising dispositional investors, occasionally considered to have a positive connotation (Schaufeli, 2016). Baruch (2011) considers that the phenomenon is constructive, generating, with beneficial effects on people, companies and society, intrinsic and extrinsic. The category of intrinsic effects includes job satisfaction, recognition from others, strengthening of social relationships (Hodson, 2004; Snir and Zohar, 2008), trust, and the results obtained by the organisation (Nugent and Abolafia, 2006). In the category of extrinsic effects, earnings and career advancement are the most important (Baruch, 2011; Večernik, 2006). Snir and Harpaz (2012) point out that the positive outcomes will be higher for dispositional investors and the negative outcomes will be higher for situational ones. Therefore, this study proposes to test the following hypothesis:

There are studies revealing the negative consequences of work addiction (Andreassen, Pallesen and Torsheim, 2018). Therefore, dispositional investors tend to suffer and have little control over their own behaviour (Andreassen, Pallesen and Torsheim, 2018). Other negative conditions associated with them are exposure to health risks, manifestation of psycho-somatic symptoms, exposure to stress and wear, lower job satisfaction, manifestation of a conflict between family and work, poor sleep, burnout, counterproductive behaviour at the workplace, and lower performance (Balducci et al., 2012; Falco et al., 2013; Schaufeli, 2016; Andreassen, Pallesen and Torsheim, 2018; Converso et al., 2019). An over strenuous organisational climate is negatively associated with work addiction (Andreassen, Pallesen and Torsheim, 2018). van Wijhe, Peeters and Schaufeli (2013) attribute compulsive and excessive work to rigid personal beliefs. Thus, the results of the empirical study conducted in Romanian organizations by Popescu et al. (2018) showed that a heavy workload characterized by additional tasks and overtime is the main factor that contributes to the onset of burnout syndrome. The study also mentions that the highest degree of emotional exhaustion is found in industry and construction. Ciutacu, Chivu and Hurley (2008) analyzed the balance between personal and professional life and mentioned that 59.3% of the employed population work an average of 40 hours per week, while 24.4% work more than 40 hours per week. Butucescu and Uscătescu (2013) mentioned in the study conducted in Romania that the more workaholic an employee is, the



more time and effort will be invested in his or her work. The results of the study showed some interesting correlations with variables such as: income level, communication difficulties, low emotional involvement and the presence of a dysfunctional dynamics in the couple.

Heavy work investment is associated with five personality models, which are, according to Schaufeli (2016), the neurotic one (emotional instability, insecurity, depression, stress), extraversion (sociability, ambition, energy, assertiveness), agreeability (cooperation, care, sympathy), conscientiousness (perseverance, dependence, good organisation) and openness (sensitivity, imagination, cleverness, curiosity and understanding). Disposable investors are dominant in masculine societies where employees are encouraged to be competitive, focused on acquiring power, task-oriented and not accepting failure (Ng, Sorensen and Feldman, 2006) because the characteristic of masculinity is dominance (Berdahl et al., 2018). Therefore, we intend to test the following hypothesis:

**H5:** Dispositional investors will bear more effects of investing in labor than situational ones.

**H5a:** Dispositional investors will bear more positive effects of investing in labor than situational ones.

**H5b:** Dispositional investors will bear more negative effects of investing in labor than situational ones.

Dispositional investors tend to be more attached to their workplace (Taris, van Beek and Schaufeli, 2015) and to increase their involvement. Dispositional investors are likely to be attracted to demanding jobs, selected by organizations for such activities, and to retain these jobs, and prefer them even when less demanding, fewer-requirement jobs are available (Snir and Harpaz, 2012). Snir and Harpaz also argued that situational investors are likely to adapt their investment in labor to changing circumstances, reducing their working hours when they can do so (e.g. they no longer have financial constraints), but dispositional investors will not consider job reduction options (Snir and Harpaz, 2012).

Attachment takes on the role of mediator (Converso et al., 2019), making the connection between work and satisfaction of its performance (Elfering, Odoni and Meier, 2016). Attachment appears to be a positive, tangible state based on vigour, dedication, absorption, physical and mental health, personal initiative, innovation, organisational affiliation, reduction of conflicts in the workplace, and lower counterproductive behaviour (Simpson, 2009; Christian, Garza, and Slaughter, 2011; van Beek et al., 2014; Schaufeli, 2016).

The study conducted by Asadullah et al. (2017) demonstrated a striking decline in attachment to work. Employees who have a strong perception of organizational identification have shown attachment and positive behaviors that the employer wanted. According to the same study, the attachment and performance of dispositional investors decrease when benefits are reduced, especially rewards, promotions and job security.

Attachment is directly and positively correlated with age. The older the employees, the more attached to their organisation (Johnson et al., 2017). Attachment also proves to have a significant influence on the burnout phenomenon. In general, attachment is considered a positive form of Heavy Work Investment, being associated only with positive outcomes, especially with promotion (van Beek et al., 2014). Therefore, we intend to test the following hypothesis:

**H6:** Dispositional investors are more devoted to work than situational investors.

Modern perspectives on devotion and passion for work support the premise that devotion to self-work is generally desired due to positive outcomes, including persistence, overall success, enthusiasm, financial gain, work performance, and well-being (Vallerand and Houliort, 2019).

Although the devotion to work seems similar to work addiction, Snir and Harpaz (2012) distinguish between the two concepts. While the former is considered by the authors a negative and uncontrollable behavior, devotion as an expression of passion for work is an internal, positive, controllable and stable predictor. There is also a difference between how and when this type of behavior occurs. While addiction occurs when individuals feel compelled to engage in an activity because of the internal contingencies that control them, devotion to work occurs when individuals have freely accepted an activity as important to them without any contingency attached to it (Snir and Harpaz, 2012).

Christen, Iyer and Soberman (2006) found a significant positive effect of job satisfaction on employee performance. Devotion is best described by Smith-Doerr (2004) who showed that in the case of young academics, scientists and technology professionals, despite the threat of extended program and the subordination of family relationships, the premise is that knowledge requires commitment and sacrifice (Smith-Doerr 2004). There is also a positive link between overall passion and financial performance (Ma, Gu and Liu, 2017).

Adherence to the work dedication scheme shows that the needs of paid work come before other life roles, especially family and personal responsibilities (Blair-Loy, 2009). This scheme encourages professionals to use their resources at work, such as control of authority and programme, in ways that increase the permeability of work and privacy, extend the working hours, and ultimately aggravate the conflicts between professional and personal life. Therefore, considering both the positive and negative effects of devotion to work, we intend to test the following hypothesis:

**H7:** Investors devoted to work benefited from advantages and disadvantages as a result of their behavior at work.

**H7a:** Investors devoted to work benefited from advantages due to their behavior at work.

**H7b:** Investors devoted to work benefited from disadvantages due to their behavior at work.

## **2. Research methodology**

### **2.1. Data analysis**

The objectives of this study focus on the analysis of the cultural factors contributing to the emergence of HWI phenomenon, and of HWI effect according to the type of investor (dispositional / situational). To do this, we used data from the ISSP survey: Work Orientations IV - ISSP 2015 database. The database includes data for people over 18 years of age, with the exception of the respondents from Finland (aged 15-74), Estonia (over 15 years old), Japan (over 16 years old), Norway (aged 18-79), South Africa (over 16 years old), and Suriname (21-74 years old). ISSP: Work Orientations IV - ISSP 2015 survey includes data for the following countries: Austria, Australia, Belgium, Chile, Croatia,

Czech Republic, Denmark, Finland, France, Great Britain, Iceland, Israel, Japan, Lithuania, Latvia, New Zealand, Norway, Philippines, Russian Federation, Slovenia, South Africa, Surinam, Sweden, Switzerland, Taiwan, Venezuela, China, Germany, Estonia, Spain, Georgia, Hungary, India, Mexico, Poland, Slovakia, United States of America (ISSP Research Group, 2017). The empirical analysis was performed with the help of the statistical software STATA, version 13.

**2.2. Selection and description of variables**

This study uses the variables presented in table no. 1.

**Table no. 1. List of variables used in the study**

<b>Variable</b>	<b>Description</b>	<b>Variable type</b>
<b>Number of working hours/week</b>	Respondents' number of working hours per week.	Numerical
<b>Age</b>	It represents the age of the respondents.	Numerical
<b>Gender</b>	A categorical variable, which takes the value 0 when the respondent's gender is masculine and the value 1 when it is feminine.	Categorical
<b>Years of education</b>	Number of years of formal education (primary school, secondary school, high school, university).	Numerical
<b>Individualism</b>	Individualism can be defined as a preference for a social setting in which individuals are expected to take care of themselves and of their immediate families (Hofstede, Hofstede and Minkov, 2010).	Numerical
<b>Masculinity</b>	In the countries with a high score on this dimension there is a society preference for achievement, heroism, assertiveness and material rewards for success.	Numerical
<b>Uncertainty avoidance</b>	<i>Uncertainty avoidance</i> , defined as intolerance for uncertainty and ambiguity (Hofstede, Hofstede și Minkov, 2010). In societies with a high score on this dimension there is a tendency to avoid ambiguity and the unknown.	Numerical
<b>Work devoted</b>	<i>Work devoted</i> is a latent variable measured according to 4 items: 1. I am willing to work more than I need to help the company or organisation I work for. 2. I am proud to work for my company or organisation; 3. I would refuse another workplace which offered a higher salary to stay in this organisation; 4. I am proud of the type of work I do. This variable represents the heavy work investors who are dedicated to the work and to the organisation.	Latent variable
<b>Dispositional vs. situational investor</b>	<i>Dispositional / situational investor</i> (DVS) is a latent variable. The respondents who invested at least 48 hours per week in paid work were classified as dispositional investors if they "agreed" with the statements: 1. My job is interesting; 2. I can work independently; 3. In my job, I can also help other people; 4. My job is useful to the society. Those at the bottom of the scale were classified as situational investors.	Latent variable

Variable	Description	Variable type
<b>Negative individual outcomes</b>	<i>Negative Individual Outcomes</i> (NIO) is a latent variable measuring the perceptions of HWI negative effect on the quality of life by answering the following questions: 1. How often do you find your work stressful? 2. How often do job requirements interfere with family life? 3. How often do the requirements of your family life interfere with your work?	Latent variable
<b>Positive individual outcomes</b>	<i>Positive Individual Outcomes</i> (PIO) is a latent variable measuring employees' positive perception of their workplace. Those who work more than 48 hours and answer positively to the following questions perceive HWI positive effects: 1. My job is safe; 2. My income is high; 3. I have career advancement opportunities.	Latent variable
<b>Marital status</b>	<i>Marital status</i> (marital), with the answer categories: "never married", "widow/widower", "divorced", "married" and "in civil partnership". The basic category is "never married".	Categorical

Source: Authors' contribution

To test the hypotheses presented, a two-step methodology was implemented. Consequently, in order to study the factors influencing the emergence of Heavy Work Investment phenomenon from the perspective of the time invested, a multiple regression equation was used. Then, in order to have a complete picture, the article studied the outcomes of Heavy Work Investment with the help of a structural equation (SEM). We made this choice in order to get a general (holistic) picture of Heavy Work Investment phenomenon, and due to differences among the variables selected.

### 3. Research results

#### 3.1. Factors influencing Heavy Work Investment

The first objective of this study is to study the cultural factors influencing the emergence of Heavy Work Investment phenomenon. These predictors were less studied in the literature.

- *Multiple regression model:* To test the hypotheses H1-H4 of this study and to find the factors affecting the number of working hours, the following multiple regression model was used:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n + \epsilon; \tag{1}$$

In this equation, Y is the dependent variable, x represents the independent variable. The value of  $\beta_0$  (which can be negative, positive or zero) is called the intercept, while the value of  $\beta_1$  is called the "slope" or "regression coefficient". The general form of the model from above can be rewritten in the following form:

$$\begin{aligned} \text{Number of working hours / week} = & \beta_0 + \beta_1(\text{age}) + \beta_2(\text{education}) + \beta_3(\text{i.gender}) + \\ & \beta_4(\text{i.marital}) + \beta_5(\text{masculinity}) + \beta_6(\text{individualism}) + \beta_7(\text{uncertaintyavoidance}) + \\ & \beta_8(\text{age} \times \text{i.gender}) + \beta_9(\text{i.gender} \times \text{masculinity}) + \beta_{10}(\text{i.gender} \times \text{individualism}) + \\ & \beta_{11}(\text{i.gender} \times \text{uncertaintyavoidance}) + \beta_{12}(\text{education} \times \text{i.gender}) + \beta_{13}(\text{i.gender} \times \text{i.marital}) + \epsilon, \end{aligned} \tag{2}$$

where: the number of working hours in a week is the dependent variable, the variables *i.gender* and *i.marital* are categorical variables,  $\beta$  are vectors of the parameter proposed to be estimated,  $\epsilon$  is the error, and the sign “ $\times$ ” represents the interaction between two variables.

- *Descriptive statistics:* This module contains information from 37 different countries on employment status, actual working hours, job characteristics and demographic characteristics. The data are the result of the efforts to collect data from the countries participating in the ISSP and are based on representative samples of the adult population in each country. The total number of respondents was 18,274. The respondents were selected randomly from the database, the only condition being the existence of data for each variable. If there were missing values within any variable, that observation was deleted. The respondents had an average age of 42.88 years, and an average of 13.45 years of education. About half (49.89%) of the respondents were men and the remaining 50.11% were women. Table no. 2 shows the parallel correlations among the variables, which are generally weak, with no correlation above 0.2.

**Table no. 2. Correlations among variables**

	Number of hours of work	Age	Gender	Marital status	Years of education	Individualism	Masculinity	Uncertainty Avoidance
<b>Working hours</b>	1.000							
<b>Age</b>	-0.051*	1.000						
<b>Gender</b>	0.232*	-0.002	1.000					
<b>Marital status</b>	0.036*	0.377*	0.013	1.000				
<b>Education</b>	-0.039*	-0.084*	0.097*	-0.030*	1.000			
<b>Individualism</b>	-0.153*	0.088*	0.052*	-0.020*	0.191*	1.000		
<b>Masculinity</b>	0.015*	-0.011	-0.026*	-0.012	0.123*	0.049*	1.000	
<b>Uncertainty Avoidance</b>	-0.018*	-0.035*	0.008	-0.009	0.032*	-0.269*	0.098*	1.000

Note: \* indicates that  $p < 0.05$ .

Source: Our own calculations using the statistical analysis software STATA

Even if there are some variables significantly correlated with each other, we can say that there is no multicollinearity, which means that there are no factors to prevent consistent results.

Table no. 3 shows the regression coefficients, the p value (in paranthesis) and the standard error. In a first stage, only the cultural variables and the control variables were included in the model (equation 1). Equation 2 also includes moderating effects of the interaction terms from our intention to analyse whether the influence of these variables differs in men and women. Interactions between gender and other variables reveal that gender has a significant influence on the interaction with several variables, including the number of years of education, marital status and masculinity. The results of equation 1 report a statistically significant negative relationship between gender and the number of working hours ( $\beta = -6.131, p = 0.000$ ). Age also has a negative effect on the number of hours worked, which means that, on average, older people tend to work fewer hours a week than younger people. The value of masculinity has a positive effect on the number of hours worked ( $\beta = 0.013, p = 0.07$ ), which means that in

countries with a higher degree of masculinity people tend to work more hours per week than in countries with a lower degree of masculinity. Regarding the effect of individualism on the number of hours worked per week, the results suggest that a higher level of values of this variable will result in an average of fewer hours of work per week. The uncertainty avoidance index has a statistically significant negative effect ( $\beta = -0.043$ ,  $p = 0.000$ ) on the number of working hours per week. The marital status variable shows a positive effect on the dependent variable for divorced, married and civil partners, compared to the basic category (single people), while for widowed respondents the results suggest a statistically insignificant effect.

Equation 2 includes the relationships between gender interaction and control variables, as well as cultural variables. The results of the multiple regression show that the cultural variables have an influence on the meaning and intensity of the relationship between gender and the number of working hours per week. By using gender variable as a moderator, we can see that masculinity acts as a negative moderating factor of the relationship between gender and the number of working hours, due to the fact that the difference in working hours in masculine societies is stronger and in favour of men than in female societies. The cultural variable of individualism also has a negative effect on the relationship between gender and the number of working hours, due to the fact that in more individualistic societies women work fewer hours than in more collectivist societies. Regarding the moderating relationship between gender and control variables, they mainly show a positive effect. The years of education and age have a positive effect on the relationship between gender and the number of working hours. However, although a married person usually works several hours, this is not also confirmed for married women, who tend to work less by 3.09 hours per week.

Goodness of fit statistics indicate the results of test F and  $R^2$ , which show in equation 1 that  $R^2$  has a value of 0.0840, which means that the model explains 8.40% of the total variation of the variables, while in equation 2,  $R^2$  explains 8.97% of the total variation of the variables. The F test is statistically significant for both models, which shows that independent variables improve the overall model.

**Table no. 3. Regression equation results**

Working hours	(1)		Number of hours of work/week	(2)	
	$\beta$	Err. Std.		$\beta$	Err. Std.
Age	-0.070 *** (0.000)	0.008	Age	-0.090*** (0.000)	0.012
Gender	-6.131*** (0.000)	0.192	Gender	-6.388*** (0.000)	1.360
Years of Education	0.053** (0.044)	0.026	Years of Education	-0.053 (0.141)	0.036
Marital Status			Marital Status		
Widow/er	0.302 (0.654)	0.674	Widow/er	0.632 (0.469)	1.264
Divorced	2.961 *** (0.000)	0.391	Divorced	2.428*** (0.000)	0.616
Married	1.841*** (0.000)	0.249	Married	3.354*** (0.000)	0.350

Working hours	(1)		Number of hours of work/week	(2)	
	$\beta$	Err. Std.		$\beta$	Err. Std.
<b>Civil Partnership</b>	2.322*** (0.000)	0.428	Civil Partnership	2.568*** (0.000)	0.634
<b>Individualism</b>	-0.102*** (0.000)	0.004	<b>Individualism</b>	-0.080*** (0.000)	0.006
<b>Masculinity</b>	0.013** (0.07)	0.004	<b>Masculinity</b>	0 .028*** (0.000)	0.005
<b>Uncertainty Avoidance</b>	-0.043*** (0.000)	0.005	<b>Uncertainty Avoidance</b>	-0.054*** (0.000)	0.007
<b>Cons.</b>	52.898*** (0.000)	1.034	<b>Gender×Age</b>	0.040** (0.08)	0.017
			<b>Gender×Years of Education</b>	0.228*** (0.000)	0.052
			<b>Gender×Marital Status</b>		
			Woman, widow	-1.171 (0.436)	1.503
			Woman, divorced	0.478 (0.550)	0.800
			Woman, married	-3.090*** (0.000)	0.498
			Woman, civil partnership	-0.713 (0.406)	0.859
			<b>Gender×Individualism</b>	-0.041***	0.009
			<b>Gender×Masculinity</b>	-0.029*** (0.000)	0.008
			<b>Gender×Uncertainty Avoidance</b>	0.021** (0.033)	0.010
			<b>Cons.</b>	53.025*** (0.000)	1.435
F= 167.42 Prob > F = 0.0000 R-squared = 0.0840			F= 94.70 Prob > F = 0.0000 R-squared = 0.0897		

Note: \*, \*\*, \*\*\* indicate that  $p < 0.10$ ,  $p < 0.05$ ,  $p < 0.01$ .

Source: Our own calculations using the statistical analysis software STATA

### 3.2. Heavy Work Investment outcomes

Another objective of this study is to analyse HWI results according to the type of investor (dispositional/situational). Consequently, hypotheses H5-H7 will be tested. Specialised studies, such as Clark et al. (2014), show that HWI can have both negative outcomes, such as health problems, overwork, workplace stress, negative family effects, and positive outcomes (higher income, workplace attachment, etc.). To test this idea, we performed a structural equation modelling (SEM) to evaluate the relationship between the variables in the following research model, adapted after Clark et al. (2014). The SEM analysis was performed using the STATA statistical program, version 13.

- *Method of data analysis:* We analysed the relationships among variables by structural equation modelling (SEM), following the steps of Dragan and Topolšek (2014), namely: performing an exploratory analysis, performing an analysis of confirmation factors, estimating the relationships among latent factors, and model validation.

- *Structural equation model:* In order to perform the factor reliability analysis, the sample size must be large enough. The Kaiser-Meyer-Olkin (KMO) measure of adequacy of sampling showed whether, in advance, the sample size is large enough to extract reliable factors (Field, 2009). A value as close as possible to 1 of the KMO will indicate the possibility of extracting reliable factors. The KMO value of this survey is 0.784, a result considered good.

Next, a Bartlett's test of sphericity was performed. A good result occurs when the significance level ( $p < 0.05$ ) is reached. In this case, the significance level is 0.000, which means that there are enough intercorrelations to perform factor analysis. The result of Bartlett's test of sphericity is 19467.483 and  $p = 0.000$ .

After an analysis of the exploratory factors, we proposed the research model, on condition that the standardised loadings are minimum 0.400. Moreover, there were no loadings on several factors ( $\beta > 0.35$ ). Regarding the cross-loading that occurs when a variable is loaded on more than one factor, it has been observed that there are no cross-loading cases for this analysis. Therefore, 4 coded factors resulted as follows: factor 1 becomes a latent variable, dispositional vs. situational, where a lower score represents a classification to the type of situational investor, while a higher score represents a classification to the situational type investor. Factor 2 becomes individual negative effects (NIO), factor 3 becomes individual positive effects (IOP), factor 4 becomes work devoted (WD). Factors can be classified according to eigenvalues as follows: factor 1 = 5.006, factor 2 = 2.758, factor 3 = 2.126 and factor 4 = 1.870. A factor is considered if it is part of a Confirmatory Factor Analysis equation for which the value is greater than 1 (Girden, 2001).

Consequently, the next step indicates the measurement model estimated with the help of the confirmation factor analysis (CFA). We used several goodness-of-fit tests to evaluate the general model. The study results show the overall framing indices for the proposed model, which are acceptable, with  $\chi^2/df$  of 4.98, RMSEA of 0.064, comparative fit index of 0.919, Tucker-Lewis of 0.896, and SRMR of 0.044. To measure the internal consistency of the indicators, we used Cronbach's Alpha score, whose range of variations is between 0 and 1. For the sample analysed, Cronbach's Alpha records the following values: DSV = 0.7674, NIO = 0.6811, PIO = 0.6652, AFFC = 0.7291. Therefore, because latent variables are on a lower reliability scale, we calculated Construct Reliability (CR) to have a better view of the reliability of the scales. The CR value is calculated as the square sum of the standardised loading factors  $L_i$  for each construct, and the sum of the error variation terms for a construct as shown in equation 3:

$$CR = \frac{(\sum_{i=1}^n L_i)^2}{(\sum_{i=1}^n L_i)^2 + (\sum_{i=1}^n e_i)} \quad (3)$$

where:  $L_i$  is the standardised loading of the factor and  $n$  is the number of items.



In addition, table no. 4 shows the results for the average extracted variance (AVE), the maximum shared variation (MSV) and the average shared variance (ASV), where the results confirmed the fitness of the proposed model.

**Table no. 4. Variable testing and validation**

Dimensions	Variable	Loading (Standardised)	CR (Composite Reliability)	Cronbach alpha	AVE	ASV	MSV
<b>Dispositional vs. situational (DVS)</b>	DVS1	0.685	0.775	0.767	0.54	0.17	0.32
	DVS2	0.597					
	DVS3	0.774					
	DVS4	0.658					
<b>Negative individual outcomes (NIO)</b>	NIO1	0.457	0.715	0.681	0.51	0	0
	NIO2	0.992					
	NIO3	0.518					
<b>Positive individual outcomes (PIO)</b>	PIO1	0.547	0.669	0.665	0.51	0.10	0.20
	PIO2	0.657					
	PIO3	0.696					
<b>Work devoted (WD)</b>	WD1	0.643	0.756	0.729	0.46	0.11	0.32
	WD2	0.874					
	WD3	0.487					
	WD4	0.614					

*Source: Authors' elaboration using the statistical analysis software STATA*

- *Structural model:* In the research model, we estimate how the dynamics of the dispositional vs. situational investor will have a negative or positive effect on perceptions and work devoted. The goodness-of-fit measures used to evaluate the classification of the general structural model presented in table 4 are acceptable according to Vandenberg (2006), with  $\chi^2/df$  of 4.96, RMSEA of 0.064, CFI of 0.918, TLI of 0.897 and SRMR of 0.044. The results of the regression coefficients reveal that a dispositional investor will enjoy better Heavy Work Investment outcomes (secure job, higher income) than a situational one. The results are presented in table no. 5.

**Table no. 5. Standardised regression coefficients**

	Parameter estimation	
	Coefficient	Is the hypothesis supported?
DSV→POI	0.454*** (0.000)	YES
DSV→NOI	0.013 (0.580)	NO
DSV→WD	0.573*** (0.000)	YES
WD→POI	0.018*** (0.000)	YES
WD→NOI	-0.019 (0.388)	NO

Note: \*, \*\*, \*\*\* indicate that  $p < 0.10$ ,  $p < 0.05$ ,  $p < 0.01$ .

*Source: Authors' elaboration using the statistical analysis software STATA*

#### 4. Results and discussions

Seven hypotheses were tested regarding the cultural determinants and effects of HWI. For hypothesis H1, regression analysis showed that there is a significant positive link between the two variables ( $r = 0.031$ ,  $p = 0.005$ ), which confirms the hypothesis that in a society with a higher score for the masculinity dimension, individuals tend to work several hours a week. This result is also confirmed by the study conducted by Salminen-Karlsson, Wolfram and Almgren (2018). To test the H2 hypothesis, the interaction between gender and masculinity was introduced into the regression equation. By using the variable gender as a moderator, it was observed that masculinity acts as a negative moderating factor of the relationship between gender and the number of hours worked, in male societies the difference in hours worked is stronger in favor of men than in female societies. This result is consistent with the study conducted by Snir and Harpaz (2009) and the one conducted by Salminen-Karlsson, Wolfram and Almgren (2018). The regression analysis showed that there is a significant negative link between the two variables ( $r = -0.084$ ,  $p = 0.000$ ), which confirmed the H3 hypothesis that in a society with a higher score for the individualism dimension individuals tend to work fewer hours a week. These results are consistent with a study by Yang et al. (2012). Testing the H4 hypothesis was performed by a regression analysis that showed that there is a significant negative link between the two variables ( $r = -0.055$ ,  $p = 0.000$ ), which confirmed the hypothesis that in a society with a higher score great for the size avoiding uncertainty individuals tend to work fewer hours a week. These results are in agreement with those of the study conducted by Lucia-Casademunt, García-Cabrera and Cuéllar-Molina (2015).

Following the analysis of the structural equation, the H5a hypothesis was confirmed and it was shown that dispositional investors value a safer job, greater opportunities for advancement and a higher income compared to situational investors. This result is also confirmed by the study conducted by Converso et al. (2019). The analysis of structural equation did not confirm hypothesis H5b. Several analyses are needed to reach a definitive result on this research topic. The result obtained is also confirmed by the study conducted by Andreassen, Pallesen and Torsheim (2018).

For hypothesis H6, the analysis of structural equation confirmed that the cultural dimensions of masculinity, individualism and uncertainty avoidance can have an effect on the phenomenon of HWI. It was also argued that dispositional investors will have more positive effects as a result of HWI, including a better opinion of their job, higher income, etc. This result was also confirmed by studies conducted by Vallerand and Houliort (2019).

Following the analysis of structural equation, hypothesis H7a was confirmed by the fact that investors devoted to work perceived the workplace as safer, with greater opportunities for advancement and a higher income. The result of path analysis ( $\beta = 0.018$ ,  $p = 0.000$ ) is statistically significant, but the value of  $\beta$  suggests a weak effect on investors devoted to work and the way they perceive the positive aspects of their workplace. However, the analysis of structural equation did not confirm hypothesis H7b that tested whether investors dedicated to work would have disadvantages due to their behavior. The result was also confirmed by the study conducted by Blair-Loy (2009).

## Conclusions

There are theoretical and empirical approaches investigating the importance and outcomes of HWI phenomenon, but a limited number of studies analyse possible intercultural differences regarding HWI. More research is necessary on these differences, as well as on similarities in HWI scope, predictors, types and outcomes (Snir and Harpaz, 2009). Therefore, this study approaches an important topic. It uses multiple linear regression and structural analysis models (SEM) at first to estimate the influence of the cultural dimensions stated by Hofstede (1991, 1994, 2011), and of other background factors (control variables) on the subjects' working hours per week. Then, using a SEM structural equation, we studied the effects of Heavy Work Investment behaviour according to the type of investor (dispositional/situational). The analysis was based on statistics collected by ISSP: Work Orientations IV - ISSP 2015 (ISSP Research Group, 2017).

This study tested seven hypotheses regarding cultural determinants and HWI effects. The results of the study confirmed hypotheses H1 - H5<sub>a</sub>, H6, H7<sub>a</sub> and rejected hypotheses H5<sub>b</sub> and H7<sub>b</sub>.

Thus, the study opens the door for future research on the effect of cross-cultural differences on HWI behavior and research to investigate this issue will be welcome. We consider that this study brings an element of novelty as it analyzes an interesting and little approached topic. Therefore, the study touches on an important topic and helps to understand the phenomenon of massive investment in labor, a result also confirmed by Taris, van Beek and Schaufeli (2015). First, a new theoretical model was developed and tested. It includes the effect of cross-cultural differences as predictors of the number of hours worked per week, and therefore of HWI-type behavior. Secondly, a SEM model was used to observe the effect of HWI on types of investors. The findings are consistent with previous theoretical developments. As Snir and Harpaz (2012) noted, dispositional investors devoted to work showed more positive effects of HWI compared to situational investors and those who are not devoted to work.

This study has a series of limitations. To perform an analysis on a sample of 37 countries, we used secondary data and a measurement instrument designed and applied internationally. For a future research we recommend the development of an instrument with compatible measurement scales allowing the analysis of variables. In order to study the evolution of the work investment phenomenon as well as the types of investors, we recommend the inclusion in a future research of other categories of predictors (internal and external micro-predictors) and the performance of a longitudinal analysis.

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