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## **EXAMINING THE STRUCTURAL EFFECT OF WORKING TIME ON WELL-BEING: EVIDENCE FROM ABU DHABI**

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### **Abstract:**

Does working time affect workers' quality of life? We studied this question in the context of the Emirate of Abu Dhabi drawing on the results of its Quality of Life Survey conducted in 2019/2020. The empirical analysis examined the effect of working hours on various elements of the quality of life framework including health, job and income, life satisfaction and happiness, social connections, and mental feelings. Preliminary analysis along with path analysis justified the significance of eight variables: work-life balance, frequency of meeting with friends, happiness, stress, time spent with family, self-assessment of health, satisfaction with income, and difficulty in fulfilling family responsibilities. Path analysis showed direct effect of working hours on four variables: work-life balance, happiness, frequency of meeting with friends, and stress. In addition, the model became significantly less efficient when including variables such as job satisfaction, job security, time spent in sport, sleeping, and leisure. The implications were discussed in the light of international literature and in the context of Abu Dhabi.

### **Keywords:**

Working time, well-being, work-life balance, quality of life, Abu Dhabi

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## Introduction

Public sector employees in Abu Dhabi are commonly required to work seven to eight hours per day on normal weekdays. Private sector workers work significantly longer hours, and sometimes in a few shifts during working days. The results of the Abu Dhabi Quality of Life Survey conducted in 2019/2020 showed that 22.2% of the respondents who were in employment worked 41-45 hours a week, and 36.8% worked more than 46 hours a week. Initial correlation analysis revealed a significant negative impact of working hours: as working hours increases, the self-perceived health status of employees lowers.

The negative relationships between prolonged working hours and health, occupational and subjective wellbeing are highlighted in the health literature (Nakata, Ikeda, & Takahashi et al., 2006; Wong, Chan, & Ngan, 2019; Spurgeon & Harrington, 1997). Research evidence consistently suggests that various physical reactions including fatigue and physiological activation can be attributed to expending excessive amounts of time and energy at work (Hsu et al., 2019). Relevant studies also tend to show a negative effect of excessive working time on workers' work-life balance and quality of life (Golden & Wiens-Tuers, 2008; Kinnunen, Geurts, & Mauno, 2004; Yu, 2014). However, research findings on the effect of working hours remain inconclusive in many domains due to the complex relationships between and among those quality of life variables and the potential influence of multiple structural forces and contextual factors (Kodz et al., 2003; Roberts, 2007).

The main objective of this research is to develop a path model of working hours and its structural effect on various quality of life variables drawing on the results of the Abu Dhabi Quality of Life Survey, which adopts a broad conception of quality of life and thus affords the opportunity to conduct a systematic examination of the effect of working hours on quality of life. More specifically, the path model seeks to better understand the direct and indirect effect of working hours on a range of quality of life dimensions including work-life balance, social connections, subjective wellbeing, health, and job and income. It aims to provide evidence on the effect of working hours and work-life imbalance across the general working population, rather than focusing on a particular cohort, to allow broader generalization of results.

## Review of literature

The impact of working hours on work-balance and quality of life of the working population has consistently received substantial research attention (Gröpel & Kuhl, 2009; Moore, 2006). Various theoretical approaches posit that long working hours may be resulted from workload, work intensification, pay and career enhancement considerations, job insecurity, employee preference and occupational commitment (Kodz et al., 2003). Neo-classical microeconomic theories articulate that in efficient labor markets individuals choose their utility-maximizing labor time according to the demand and supply of labor at a market clearance wage (Altonji & Paxson, 1988; Golden, 1996). Thus, workers who want shorter hours will be matched with jobs offered by firms that consider short hours or flexitime and part-time work advantageous. Labor economists also argue that labor market institutions such as labor law and trade unions play an important role in influencing hours, wage rates, and the standard hours-demand and hours-supply schedules

between workers and firms (Oswald & Walker, 1993). Psychological theories, on the other hand, suggest working hours reveals people's meaning and joy attached to work (Isles, 2004; Seligman, 2002) and the fulfillment of their basic needs - competence, autonomy, and relatedness - through work, which consequently result in increased self-motivation and well-being (Ryan & Deci, 2000). From management perspectives, work-life balance practices are often linked with employee and organizational performance (Beauregard & Henry, 2009; Kelly et al., 2008). Social and cultural theories emphasize the important role of broader social and cultural contexts in well-being including social capital and social connections at workplace (Helliwell & Putnam, 2004; Helliwell et al., 2018), workplace culture and national culture (Landers, Rebitzer, & Taylor, 1996; McDonald, Pini, & Bradley, 2007; Spector et al., 2004).

### **Work-life balance**

Work-life balance is one of the significant factors in working hours related studies, as long working hours reduces the time that can be allocated to other domains of life, causing work-life imbalance or conflict (Carlson, Kacmar, & Williams, 2000). Considerable research interest has been placed over the topic of work-life balance, with a conventional focus on the interference between work and family responsibilities (Eby et al., 2005; Eikhof, Warhurst, & Haunschild, 2007; Grzywacz & Carlson, 2007; Wise, Bond, & Meikle, 2003). Meta-analytic review of the work-life balance literature shows a wide range of antecedents of work-family conflict from both work and family domains such as role stressors, role involvement, social support, and work/family characteristics (Ford, Heinen, & Langkamer, 2007; Michel et al., 2012).

Several studies reveal a negative impact of working time on family life due to reduced availability of time to spend with families and increasing work pressures (Doble & Supriya, 2010; Eby et al., 2005). Fein, Skinner, and Machin's (2017) study of Australian workers indicated that both longer work hours and work intensification predicted greater work-life interference, and work intensification also led to greater stress and reduced well-being. In addition to work intensification, Yu (2014) highlighted that the presence of job insecurity had a large effect on working hours in Australia. Conflicts may also arise between work-life balance policies and high-performance practices that are often associated with work intensification and over time (White et al., 2003). Berniell and Bietenbeck (2017) stressed that extensive overtime might exert pressure which further leads to job dissatisfaction, stress, and health problems. Hsu et al. (2019) examined the associations between working hours, job satisfaction, and work-life balance, and the mediating role of other variables such as occupational stress. Their survey of 369 respondents working in the high-tech and banking industries revealed significant correlations between long working hours and occupational stress, work-life balance, and job satisfaction.

Subjective well-being, measured in relation to stress, burnout, and poor physical health, has often been included as a dependent construct in respect to work-life conflict or work-life interference (Boxall & Macky, 2014; Burke, Singh & Fiksenbaum, 2010). Overall, a number of work- and health-related effects of work-life imbalance with strong evidence for impeded work and life satisfaction are reported (Allen et al., 2000; Byron, 2005; Kossek & Ozeki, 1998; van Rijswijk et al., 2004). Most workplaces therefore have stressed the importance of encouraging employees to lead a more balanced lifestyle that affects employee productivity and motivation, introducing

and promoting family-friendly policies (Berniell & Bietenbeck, 2017; Brough & O'Driscoll, 2010; Holly & Mohnen, 2012; Russell, O'Connell, & McGinnity, 2009).

However, the concept of work-life balance and its assumptions can be questioned (Eikhof, Warhurst, & Haunschild, 2007; Lewis, Gambles, & Rapoport, 2007), because the assumed negative impact of work on life does not hold across genders, occupations and some other individual and workplace characteristics (McDonald et al., 2005; Rapoport et al., 2002). Lingard, Francis, and Turner (2010) found that while weekly work hours significantly predicted construction workers' capacity to complete tasks at work and at home, it did not predict their satisfaction with work-life balance. In addition, while flexible working arrangements have been identified as one important means of balancing work and personal commitments, some studies also stress potential risks that flexible work such as telework may involve, which may enhance negative work-home interference (Felstead, Jewson, & Walters, 2003; Peters & van der Lippe, 2007). Moreover, critical discourse analysis illustrates that some flexible working practices phased as employee friendly are in fact more employer friendly (Fleetwood, 2007). The importance of giving workers greater control over working hours thus is emphasized (Heponiemi et al., 2008; Hsu et al., 2019). Dutch data and case study show that giving employees more control over work reduces employees' perceptions of negative work-home interference (Geurts et al., 2009; Peters, den Dulk, & van der Lippe, 2009).

### **Economic well-being**

Sousa-Poza and Henneberger (2002) explained the existence of hours constraints from several perspectives surrounding supply and demand of labor: long-term contracts, employer preference, asymmetric information, and job insecurity. Bell and Freeman (1995) argued that an unequal income distribution leads to hours constraints. As workers who are constrained prefer working more rather than less in order to increase income (Reynolds, 2004), longer working hours and overtime do not necessarily lead to lower satisfaction, instead a positive impact of actual working hours and working overtime on the job satisfaction of full-time employees is often found (Holly & Mohnen, 2012). Research suggests positive relations between income and happiness (Pouwels, Siegers, & Vlasblom, 2008). However, Pouwels, Siegers, and Vlasblom (2008) warn that there is a cost side, since the larger part of income is earned by working for pay. Merz (2002) examined the impact of working time on economic well-being and provided empirical evidence to show that while working time connected with income, there were many further dimensions of life satisfaction that are important to describe individual well-being.

### **Social connections**

Outside of work and family sphere, individuals have multiple social roles for their interpersonal, community and leisure needs (Frone, 2003). Such interpersonal relationships that form the basis of an individual's social connections matter significantly in a person's well-being (Helliwell, Huang, & Wang, 2014) and time is required to form and maintain social connections beyond work sphere within the larger social context of neighborhoods, communities, and societies. As shown in Helliwell, Huang, and Wang's (2014) study, the role of social capital in explaining aggregate well-being at the national level is substantial and extends well beyond its effects on health and economic outcomes.



## Health

Many studies find that working time has a significant effect on workers' health, especially on their mental health and psychological well-being (Bannai & Tamakoshi, 2014; Berniell & Bietenbeck, 2017; Li et al., 2019; Wong, Chan, & Ngan, 2019). In addition to sleep disturbances, excessive working hours could result in specific health issues such as depression and anxiety (Afonso, Fonseca, & Pires, 2017; Amagasa & Nakayama, 2013; Kleppa, Sanne, & Tell, 2008; Lee et al., 2017; Virtanen, Ferrie, & Gimeno, 2009). However, the results of a study conducted in Denmark among senior medical consultants did not fully support the hypothesis that long working hours increases the level of depression (Varma et al., 2012). In a study in South Korea, Ahn (2018) examined how working hours influence depressive symptoms and found the moderating role of gender on the effect of depressive behavior.

Possible reasons of the effect of working time on health have been explored. Some researchers argue that physical strenuous work leads to exhaustion and stress (Lindahl, 2005), others posit that longer working hours reduces the time available for health production at home including sleep, physical exercise, and leisure (Akerstedt et al., 2002; Sato et al., 2012). Some studies estimate the impact of working time on health and other variables such as income that might have an important independent effect on health (Frijters, Haisken-DeNew, & Shields, 2005; Lindahl, 2005).

## Happiness and life satisfaction

For some workers longer working hours produce negative effect in terms of work-family interference and happiness. For example, in the United Kingdom and Germany a positive effect of decreasing working hours on life satisfaction was found among employed women (Gash, Mertens & Romeu, 2010). Apart from happiness and life satisfaction, most quality of life research adopts and elaborates on a broad conception of quality of life, which encompasses many aspects of life that reflect the economic, social, psychological, and physical dimensions of well-being. The OECD's well-being framework accommodates both objective factors and subjective factors such as material resources, health, education, work status, family and living conditions. The World Happiness Report incorporates physical health, mental health, education, family, social capital, and work situation when it comes to human happiness (Helliwell, Layard, & Sacks, 2012).

Empirical investigations into the relationship between working time and quality of life tend to report a negative effect. Greenhaus, Collins, & Shaw's (2003) study of public accounting professionals shows that individuals who spent more time on their combined work and family roles and those who spent more time on family than work experienced a higher quality of life than individuals who spent more time on work than family. Data from the US 2002 General Social Survey Quality of Work finds that working beyond one's usual schedule is associated with higher family income. However, working extra hours is also associated with greater work-family interference and lesser ability to take time off from work for family needs (Golden & Wiens-Tuers, 2008). Golden and Wiens-Tuers (2006) looked at the effect of happiness, psychological health, and economic satisfaction on a net of relationships with working extra hours. Their results show that overtime generally is associated with increased work stress, fatigue, and work-family interference.

Moreover, overtime appears to offset the otherwise greater happiness and mental healthiness produced by its additional income.

Overall, despite some strong evidence to suggest the detrimental impact of long working hours on occupational and mental health, empirical studies looking into the effect of working hours on wellbeing have found mixed results (McDonald et al., 2005). Research findings about the effects of flexible working hours on work-life balance and organizational outcomes are ambiguous (Kelliher & Anderson, 2010; Russell, O'Connell, & McGinnity, 2009). It is the mismatch between preferred and actual hours worked that has been found to reduce wellbeing (Wooden, Warren, & Drago, 2009; Wunder & Heineck, 2013). The literature review briefly presented above tends to suggest that employees' preferred working hours and their satisfaction with work-life balance are likely affected by a combination of work and family factors, psychological, as well as social and cultural factors.

## **Methodology**

### **Instrument and data description**

Based on some international well-being frameworks and general social surveys including the OECD's Better Life, World Happiness Report, Gallup Global Well-being Survey, and European Quality of Life Surveys, the Abu Dhabi Quality of Life Survey covered a variety of dimensions and factors that are believed to affect the well-being of residents of Abu Dhabi. Those dimensions range from housing, household income, jobs and earnings, to health, education, safety, and social connections. The survey was administered online, from September 2019 to March 2020, to residents aged 15 or above in all regions of the Emirate of Abu Dhabi. For workers residing in worker residential cities, a team of trained enumerators from Statistics Center Abu Dhabi conducted face-to-face interviews to collect responses following a random sampling methodology. Ethical approval for this study was obtained from Statistics Center Abu Dhabi and the Abu Dhabi Department of Community Development.

More than 72,000 residents participated in the Abu Dhabi Quality of Life Survey, among whom a total of 34,499 respondents were employed or self-employed and constituted the target of this study. Table 1 provides the description of the sample in terms of gender, marital status, education attainment, age, and hours of work per week. More males (61.4%) as well as more married respondents (79.9%) are represented in the sample. With regard to age, the largest portion is within the 35-44 age bracket (44.3%), followed by those in the 24-34 bracket (30.2%). About 45.2% are bachelor's degree holders. Emiratis constituted 41.3% of the sample, while non-Emiratis accounted for 58.7%.

Consistent with much of the working hours literature (Booth & van Ours, 2008; Wooden et al., 2009), the hours categories adopted in the Abu Dhabi Quality of Life Survey are as follows: 35 hours or less, 36-40 hours, 41-45 hours, 46-50 hours, and more than 50 hours, whereas 36-40 hours category represents standard fulltime work hours, 41-45 hours and 46-50 hours stand for longer full-time work hours, and more than 50 hours indicates extremely long work hours. As revealed in Table 1, the highest proportion of respondents reportedly work 36-40 hours per week



(29.9%), followed by those with a 41-45 hours scheme per week (22.2%). About 18.2% report weekly working hours of more than 50.

Table 2 shows the distribution of weekly working hours by sector of employment. Proportionately more household workers work more than 50 hours per week (37.2%), followed by private sector workers (28.5%). Private sector workers also represent the largest group in the 46-50 hours per week category (26.9%). Employees working in semi-government organizations are more likely to have 41-45 or 36-40 weekly working hours. Those working in federal (38.8%) and local government sector (42.0%) record the highest percentages in the 36-40 hours category. Those working 35 hours or less per week are more likely to work in in federal government and in private household.

**Table 1. Demographics of the participants**

	Number	Percentage
<b>Gender</b>		
Male	21083	61.1%
Female	13416	38.9%
<b>Marital status</b>		
Married	27573	79.9%
Single	5300	15.4%
Divorced	1203	3.5%
Separated	251	.7%
Widowed	172	.5%
<b>Education level</b>		
Illiterate	63	.2%
Below secondary school	1128	3.3%
Secondary school	4811	13.9%
Post high school training certificate	1397	4.0%
College diploma	3761	10.9%
Bachelor's degree	15605	45.2%
Master's degree	6762	19.6%
Doctorate degree	972	2.8%
<b>Age</b>		
24 or less	1339	3.9%
25-34	10412	30.2%
35-44	15294	44.3%
45-54	6151	17.8%
55-64	1303	3.8%
<b>Hours of work per week</b>		
35 hours or less	3110	11.1%
36-40 hours	8386	29.9%
41-45 hours	6236	22.2%
46-50 hours	5217	18.6%
More than 50 hours	5093	18.2%
<b>Nationality</b>		
Emirati	14247	41.3%
Non-Emirati	20252	58.7%

**Table 2. Working hours by sector**

	35 hours or less	36 – 40 hours	41 -- 45 hours	46 – 50 hours	More than 50 hours
Federal government	23.1%	38.8%	16.9%	9.8%	11.4%
Local government	12.9%	42.0%	22.7%	12.5%	9.9%
Semi-government	4.7%	28.9%	30.6%	20.8%	15.0%
Private sector	5.8%	17.5%	21.3%	26.9%	28.5%
Household as employer	16.8%	16.8%	15.0%	14.2%	37.2%

## Measurements and analysis

The primary purpose of this study was to examine the effect of working hours on quality of life. Relevant questions from the survey were selected for the current study according to the literature review. These questions and constructs were assumed to be associated with the impact of working hours and to constitute various aspects of quality of life. These questions and constructs included job satisfaction, job security, satisfaction with household income, difficulty in fulfilling family responsibilities, satisfaction with work-life balance, self-assessed health status, self-assessment of stress level, self-perception of obesity, frequency of doing exercise, frequency of eating healthy food, amount of leisure time, frequency of meeting with friends, frequency of feeling isolated from people around, amount of quality time spent with family, satisfaction with family life, and happiness and life satisfaction (Table 3).

**Table 3. Specific variables chosen from the Abu Dhabi Quality of Life survey**

Variables	
1	How many hours do you usually work every week?
2	How satisfied are you with the current balance between your job and home life?
3	How many hours do you usually spend on leisure and personal care every day?
4	How do you rate your stress level during the past 4 weeks?
5	How would you describe your average level of happiness as an Abu Dhabi resident?
6	How satisfied are you with your household income?
7	How secure is your job or main business?
8	Are you satisfied with your current job?
9	In the last 12 months, how often has it been difficult to fulfill family responsibilities?
10	In general, how do you assess your current health status?
11	How often do you eat healthy food?
12	How often do you do physical exercises?
13	In your opinion, to what extent do you consider yourself obese?
14	How would you describe the amount of quality time you spend with your family?
15	In general, how satisfied are you with your family life?
16	How often do you meet socially with friends?
17	How satisfied are you with your life as a whole?

A descriptive analysis was conducted to determine the distribution of the data. An examination of the raw data carried out prior to data analysis revealed that less than 2.2% of the data were missing. Normality tests of all dimensions included in the study were conducted. Natural logarithm transformation was performed in cases where if the normality assumptions showed some deviations. In order to carry out path analysis, the data were standardized since the survey used different scales. Correlation analyses and linear regression analyses were performed to

investigate the relationships between the variables considered for inclusion in the model. As the result, some variables were excluded from further analysis. Table 4 shows the list of final variables considered for the path analysis.

**Table 4. Final list variables staying in the path model**

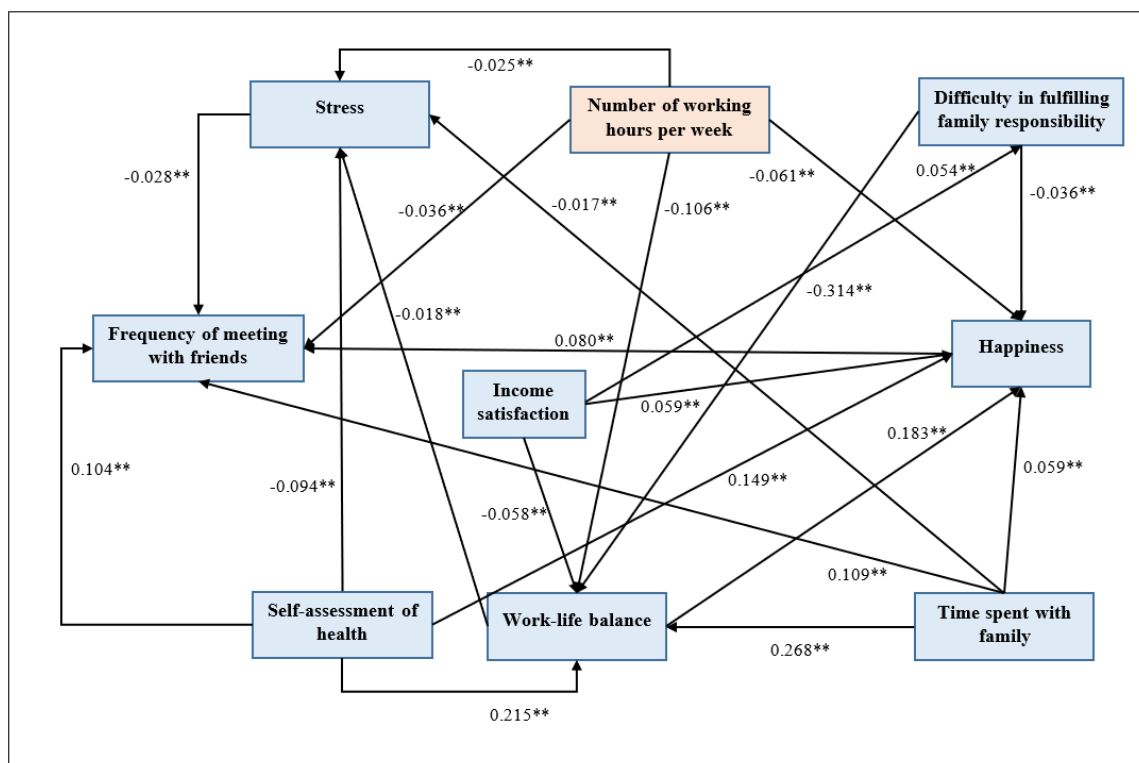
		Mean	Standard deviation	Type of scale
WRKB	Work-life balance	2.998	1.134	Scale (1 to 5)
DPRSS	Stress level	5.315	2.513	Scale (1 to 10)
FRNDS	Time with friends	2.234	1.207	Scale (1 to 5)
HPNS	Happiness	6.965	2.452	Scale (0 to 10)
INCOME	Household income	2.886	1.106	Scale (1 to 5)
WHRS	Working hours	Median of 3.0	n.a.	Scale (1 to 5)
FRESPN	Family responsibilities	3.202	1.043	Scale (1 to 5)
HEALTH	Health perception	3.137	1.016	Scale (1 to 5)
TMFMLY	Time with family	2.654	1.207	Scale (1 to 5)

A path analysis model is calculated in order to determine the statistical significance, if any, of the path coefficients. Path analysis was conducted using a step-by-step approach with working time as the major focus in the analysis. Many aspects of LISREL was used to come up with the optimal path model for the study. The aspects included several goodness-of-fit statistics such as the Degrees of Freedom, the Maximum Likelihood Ratio Chi-Square, the Root Mean Square Error of Approximation (RMSEA), the P-Value for Test of Close Fit, the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI), the Root Mean Square Residual (RMR), the Goodness of Fit Index (GFI), and the Adjusted Goodness of Fit Index (AGFI). The covariance matrix of variables in the final path model are shown in Table 5.

**Table 5. Covariance matrix (lower half)**

	WRKB	DPRSS	FRNDS	HPNS	INCOME	WHRS	FRESPN	HEALTH	TMFMLY
WRKB	0.991								
DPRSS	-0.041	0.834							
FRNDS	0.101	-0.024	0.711						
HPNS	0.268	-0.031	0.098	0.711					
INCOME	-0.004	0.009	0.029	0.048	0.772				
WHRS	-0.168	0.023	-0.061	-0.112	-0.084	0.985			
FRESPN	-0.400	0.018	-0.056	-0.148	0.010	0.088	0.988		
HEALTH	0.307	-0.037	0.138	0.220	0.032	-0.100	-0.157	0.963	
TMFMLY	0.289	-0.044	0.108	0.128	-0.019	-0.051	-0.177	0.148	0.733

**Figure 1. The path model**



## Results

The final path model is presented in Figure 1. Out of a list of 17 variables initially considered, only 9 variables are in the final model. The variables that did not make for the measurement fit include amount of leisure time, job satisfaction, job security, self-perception of obesity, frequency of doing exercise, frequency of eating healthy food, frequency of feeling isolated from people around, and life satisfaction. Several health-related variables were dropped out from the model.

All goodness-of-fit statistics are favorable for the model. The Degrees of Freedom (8) is with the Maximum Likelihood Ratio Chi-Square of 8.142, with a P-Value for Test of Close Fit of 0.097. The RMSEA is 0.016, the NFI is 0.999, the NNFI is 0.998, the CFI is 0.999, the RMR is 0.002, the GFI is 0.999, and the AGFI is 0.998. All measures are well above the recommended levels (Jöreskog & Sörbom, 1996).

**Table 6. The final path model and the standardized estimates**

Path from	Path to	estimate	t-value	Sig.
Working hours/week	Work-life balance	-0.107	-22.712	0.001
Working hours/week	Frequency of meeting with friends	-0.036	-7.796	0.001
Working hours/week	Happiness	-0.061	-13.935	0.001
Working hours/week	Stress	-0.025	-3.001	0.003
Difficulty in fulfilling family responsibilities	Happiness	-0.036	-7.609	0.001
Difficulty in fulfilling family responsibilities	Work-life balance	-0.315	-65.581	0.001
Time spent with family	Happiness	0.059	11.051	0.001
Time spent with family	Stress	-0.018	-3.358	0.001
Time spent with family	Frequency of meeting with friends	0.110	20.202	0.001
Time spent with family	Work-life balance	0.268	48.208	0.001
Work-life balance	Happiness	0.183	35.821	0.001
Work-life balance	Stress	-0.018	-3.131	0.002
Self-assessment of health	Work-life balance	0.216	44.641	0.001
Self-assessment of health	Stress	-0.094	-4.461	0.001
Self-assessment of health	Happiness	0.149	32.188	0.001
Self-assessment of health	Frequency of meeting with friends	0.105	21.508	0.001
Happiness	Frequency of meeting with friends	0.080	14.231	0.001
Stress	Frequency of meeting with friends	-0.028	-5.336	0.003
Income satisfaction	Work-life balance	-0.058	-2.902	0.013
Income satisfaction	Happiness	0.059	5.742	0.001
Income satisfaction	Difficulty in fulfilling family responsibilities	0.054	5.342	0.001

Table 6 provides a summary of path estimates, their t-values, and level of significance. All paths are significant at 0.001 level. As expected, working hours has one of the highest effects on satisfaction with work-life balance with a negative estimate of -0.106 and t-value of -22.712. Working hours also affects happiness negatively with an estimate of -0.061. It negatively affects the frequency of meeting with friends (-0.036) and the level of stress (-0.025). It is worth noticing that working hours has an indirect effect on some variables through mediators. For example, in addition to its direct effect on the frequency of meeting with friends, it also has an indirect effect through the variable of happiness. The same holds true for the variable of level of stress, as working hours affects it directly and indirectly through satisfaction with work-life balance (Figure 1).

Figure 1 shows that the variable with the largest number of arrows coming out of it and going into it is work-life balance. The path model thus portrays work-life balance as the most sensitive variable that has the largest number of interactions and reactions. Working hours has no connection with self-assessment of health directly or indirectly. The variable “difficulty in fulfilling family responsibilities” has direct effects on two variables: “happiness” and “work-life balance”, while it is also directly affected by income satisfaction. The variable “time spent with family” has direct effects to four variables: happiness, stress, frequency of meeting with friends, and work-life balance. Work-life balance meanwhile affects happiness and feeling depressed. Self-assessment of health affects four variables: work-life balance, stress, happiness, and frequency of meeting with friends.

## Discussions

The path model provided an overall view of the various interactions between the variables related to quality of life. The model was able to test the fit of a hypothetical model with the empirical data from the Abu Dhabi Quality of Life Survey. The model enables researchers and policy makers to have a better view of the complex relationships between working time and the quality of life variables, especially the mediating roles and different pathways through which quality of life variables affect each other.

The length of working hours significantly affect satisfaction with work-life balance of people in employment. The results presented in this research confirm other empirical findings that a more balanced work-life lifestyle helps bring more positive feelings and motivation (Holly & Mohnen, 2012) and that longer working hours might exert unnatural amount of pressure which leads to more dissatisfaction with work-life balance (Hsu et al., 2019). Work-life balance has demonstrated its central place in incorporating various linkages between many quality of life variables. The path model reveals that although some variables have no direct linkage with working hours, they are worthy of consideration through their links to work-life balance. Two variables ‘difficulty in fulfilling family responsibilities and ‘time spent with family’ have large effect on work-life balance, suggesting family stressors are particularly significant and relevant in the context of Abu Dhabi. The results are consistent with other studies that attach high concerns about the struggles to meet both work and family obligations and responsibilities in the light of prolonged working hours (Blair-Loy, 2003; Haas, Hwang, & Russell, 2000; Jacobs & Gerson, 2004).

Working time has direct negative influence on happiness. The results are consistent with those of other empirical studies (Gash, Mertens & Romeu, 2010; Golden & Wiens-Tuers, 2006). However, it is also clear from the path model that the presence of some other variables may enforce the effect of working hours on happiness. Those variables that influence happiness include difficulty in fulfilling family responsibilities, time spent with family, self-assessment of health, satisfaction with income, and frequency of meeting with friends. The social connection dimension is worth of particular attention as it affects the mental health of young people in Abu Dhabi (Badri et al., 2021).

The results of this present study are also consistent with other research that found that working time has a significantly negative effect on mental and emotional health (Berniell & Bietenbeck, 2017). However, this present study has found no significant effect of working time on self-

perceived physical health, which is not consistent with the findings of other research (Berniell & Bietenbeck, 2017; Jung et al., 2017). Employees with self-reported difficulties in managing work-life balance presented a significantly higher risk for poor self-rated health (Hämmig & Bauer, 2009). The path model of this study dropped several health and sport related variable as they did not produce a significant effect. Hence, it may be inferred from this study that longer working hours does not necessarily play a major role in reducing the time for leisure or physical exercise. This result tends to support the findings of other studies performed under certain conditions (Cook & Gazmararian, 2018). Cook & Gazmararian (2018) tried to include variables dealing with obesity, leisure, and physical activities, but yielded poor models in terms of measurement fits. It is likely that the self-rated health variable may capture the effects from these variables in an abstract manner. Future research should attempt to isolate those variables and other quality of life variables.

The path model did not incorporate any GDP or economic growth-related variable, which exhibits a negative relationship with working hours in a cross-national dataset (Sousa-Poza & Henneberger, 2002). The variable 'satisfaction with income' as a proxy may, to some extent, reflect the effect of economic growth on quality of life. This study has revealed no direct or indirect linkage between satisfaction with income and working hours. Satisfaction with income, however, affected three other variables: work-life balance, difficulty in fulfilling family responsibilities, and happiness. In many industries and organizations, overtime is motivated by pay, which is particularly applicable to manual workers. Construction workers in the UAE were keen to work overtime as overtime pay constituted a substantial portion of their pay (Yang, 2008). Thus, workers of different income groups, social status, and workplace and family circumstances have diverging views about and preferences over working hour schemes. It should also be noted that many studies that investigated satisfaction with income also had life satisfaction as a significant determining variable (Valente & Berry, 2015). However, in the current study, the life satisfaction dropped out from the path model. As happiness reflects a shorter time domain than life satisfaction, it implies that the impact of economic variables on subjective wellbeing tends to be short-term framed.

## Conclusions and Future Directions

The empirical research explored the effect of working hours on a range of variables of quality of life including health, job and income, life satisfaction and happiness, social connections, mental feelings, and income satisfaction. Path analysis justified the significance of eight specific variables: work-life balance, frequency of meeting with friends, happiness, stress, time spent with family, self-assessment of health, difficulty in fulfilling family responsibilities, and satisfaction with income. Working hours had direct effects on four of them: work-life balance, happiness, frequency of meeting with friends, and stress.

One advantage of this research is the availability of a relatively large sample and multiple-dimensional data that allow the exploration of how the effect of working hour is located within a wider system of direct, indirect, and moderating effects of different quality of life factors in the empirical context of Abu Dhabi. The results suggest that longer working hours leads to lower level of satisfaction with work-life balance, happiness, frequency of meeting with friends. This is consistent with evidence reported elsewhere that people perceive that working long hours leads

to poor work-life balance. While excessive working hours should be controlled for the benefit of employees, it is important to understand when, to what extent, and how working long hours will impact on work and family life of different individuals, based on which work-time flexibility and employee friendly practices can be effectively introduced (Galea, Houkes, & De Rijk, 2014). As suggested by several analysts, greater employee's autonomy to control and organize work time may be a useful tool to help workers maintaining a good work-family balance. Some flexible labor market policies such as 'working time banks' implemented in Finland and the Netherlands (Wilthagen & Tros, 2004) are worth of further exploration.

There are several limitations to this study. The current path model did not consider individual level demographic variables such as gender, age, nationality, type of family, and the number of dependents. Including these variables in a more comprehensive model may provide a better overall picture of the effects of working hours on quality of life variables. Other limitations include the use of some single-item variables and the cross-sectional design of the survey. Longitudinal data design and more complex measures of employees' responses to work-family conflict with greater clarity of antecedents and outcomes of work-family conflict at multivariate levels should be considered in future studies.

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