



Tufts
UNIVERSITY

Labor
Lab

Conditions Related to Psychological Stress

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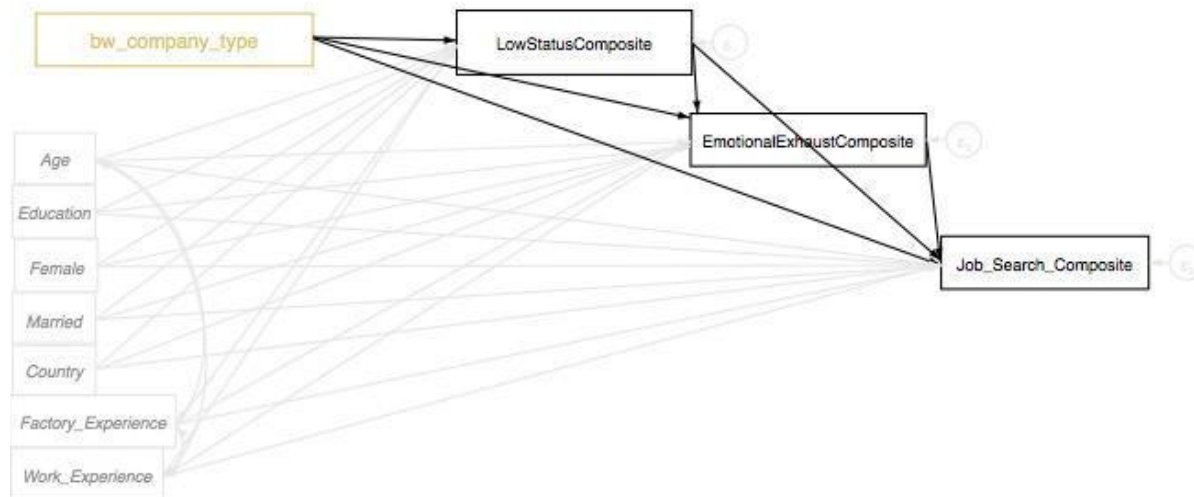
17 June 2020

Key Findings

- Those who had a harder time obtaining their jobs were more likely to have turnover intentions.
- Verbal abuse may negatively affect supervisor relationships, which may reduce worker perception of power in the workplace, which ultimately can lead to lower job satisfaction, higher turnover intention, and lower life satisfaction.
- Membership in a Better Work factory is a good indicator for decreased turnover intention, as workers in Better Work factories are less likely to have trouble balancing their work and home lives, and thus are less likely to be emotionally exhausted, which may lead to less turnover intention.

Work stress goes beyond physical working stress to include mental workload and psychological stress, and can have long-term implications for a worker's mental health, productivity, turnover intention, and more (Petreanu, Iordache, and Seracin 2013). The models in this section will map out systems of interest related to mental health and self-perception in the workplace. Our analysis found significant relationships between mental health stressors, self-worth, and individual worker outcomes.

Emotional Exhaustion and Turnover Intention



Variables of interest:

bw_company_type: Is the worker a member of a Better Work factory? (binary)

LowStatusComposite: A composite measure of feelings of low status consisting of the frequency at which a worker is made to feel unimportant, unappreciated, embarrassed, or humiliated in the workplace.

EmotionalExhaustComposite: A composite measure of emotional exhaustion, consisting of the frequency at which a worker feels fatigued or frustrated by their job.

Job_Search_Composite: A composite measure of a worker's intention to leave their current job (also known as turnover intention), consisting of thoughts about quitting, moving sectors, or devoting effort to looking for a new job.

The model above examines the relationship between Better Work training, feelings of low status, emotional exhaustion, and turnover intention. In this model, *LowStatusComposite* is the intermediate variable, *EmotionalExhaustComposite* is the short-term outcome variable, and *Job_Search_Composite* is the middle-term outcome variable.

Emotional exhaustion refers to feelings of overstrain, tiredness, or fatigue resulting from emotionally overtaxing work, which in this case is due to feelings of low status in the workplace (Maslach & Jackson 1981). This fatigue can lead to turnover intention because emotion increases physiological arousal, which may lead individuals to withdraw from or eventually quit the emotionally exhausting work (known as burnout) (Grandey 2000). This model seeks to test this theory of emotional exhaustion leading to turnover intention through feelings of low status and ultimately provides evidence that the theory holds. Regression coefficients in the table below show this system in effect. Membership in a Better Work factory decreases feelings of low status, decreased feelings of low status are related to decreased emotional exhaustion, and decreased emotional exhaustion is related to decreased intentions to leave the workplace. This is represented in the following pathway:

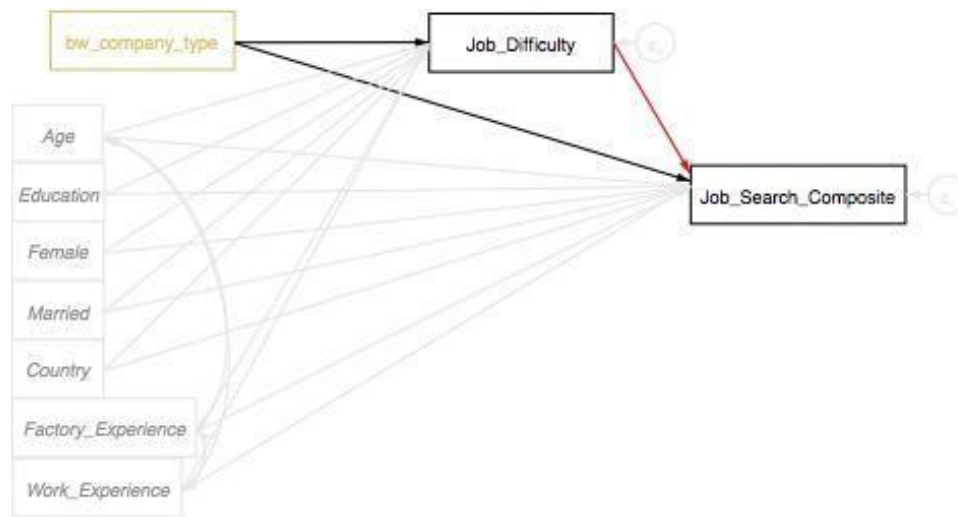
bw_company_type → *LowStatusComposite* → *EmotionalExhaustComposite* → *Job_Search_Composite*

Workers in Better Work factories may not experience feelings of low status as often because Better Work training may improve relationships and decrease ridicule between workers and their superiors, as well as give workers the skills needed to feel more confidence and agency in the workplace.

There are also strong significant direct relationships that work outside of this system, such as a direct link between Better Work training and *EmotionalExhaustComposite*, between Better Work training and *Job_Search_Composite*, and between *LowStatusComposite* and *Job_Search_Composite*. There are multiple potential avenues, both direct and indirect, between membership in a Better Work factory and decreases in a worker's intention to leave their job. All significant relationships are highlighted in the table below. All coefficients have a p-value less than .01.

	1	2	3
VARIABLES	LowStatusComposite	EmotionalExhaustComposite	Job_Search_Composite
bw_company_type	-0.0511*** (0.0184)	-0.284*** (0.0342)	-0.0911*** (0.0186)
LowStatusComposite		0.613*** (0.0247)	0.286*** (0.0141)
EmotionalExhaustComposite			0.148*** (0.00710)
Age	-1.81e-05 (0.00174)	-0.0160*** (0.00323)	-0.00730*** (0.00174)
Country	-0.104*** (0.0190)	0.0609* (0.0352)	-0.00328 (0.0190)
Factory_Experience	0.00609** (0.00255)	0.0255*** (0.00473)	0.00131 (0.00260)
Education	0.0398*** (0.0101)	0.0257 (0.0188)	0.0587*** (0.0101)
Female	-0.0611** (0.0239)	0.131*** (0.0444)	-0.129*** (0.0245)
Married	-0.0263 (0.0238)	-0.0413 (0.0443)	-0.0640*** (0.0241)
Work_Experience	-0.00274 (0.00241)	-0.00738* (0.00445)	-0.00596** (0.00241)
Constant	1.572*** (0.0730)	1.688*** (0.141)	1.424*** (0.0771)
Observations	6,521	6,521	6,521
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Difficulty in Obtaining a Job and Turnover Intention



Variables of interest:

bw_company_type: Is the worker a member of a Better Work factory? (binary)

Job_Difficulty: How hard was it to get your current job in the factory? (1-Extremely Easy, 2-Easy, 3-Moderately Hard, 4-Hard, 5-Extremely hard)

Job_Search_Composite: A composite measure of a worker's intention to leave their current job (also known as turnover intention), including thoughts about quitting, moving sectors, or devoting effort to looking for a new job.

The above model seeks to explore worker rationality in remaining an employee at a given factory. The model examines whether the difficulty of obtaining a job in a factory impacts a worker's decision to remain working at the factory through the following pathway:

bw_company_type → *Job_Difficulty* → *Job_Search_Composite*

Worker rationality is examined within the framework of the sunk cost fallacy, a psychological concept dictating that human beings tend to continue a behavior once they have invested through time, money, or effort, despite the potential of choosing a more rational and beneficial path (Arkes and Blumer 1985). According to the sunk cost fallacy, workers may be reluctant to leave even an abusive work environment because of the false belief that they have an investment in a particular place of work through their time and effort. This model is of particular interest in a context in which women may have a harder time obtaining labor opportunities.

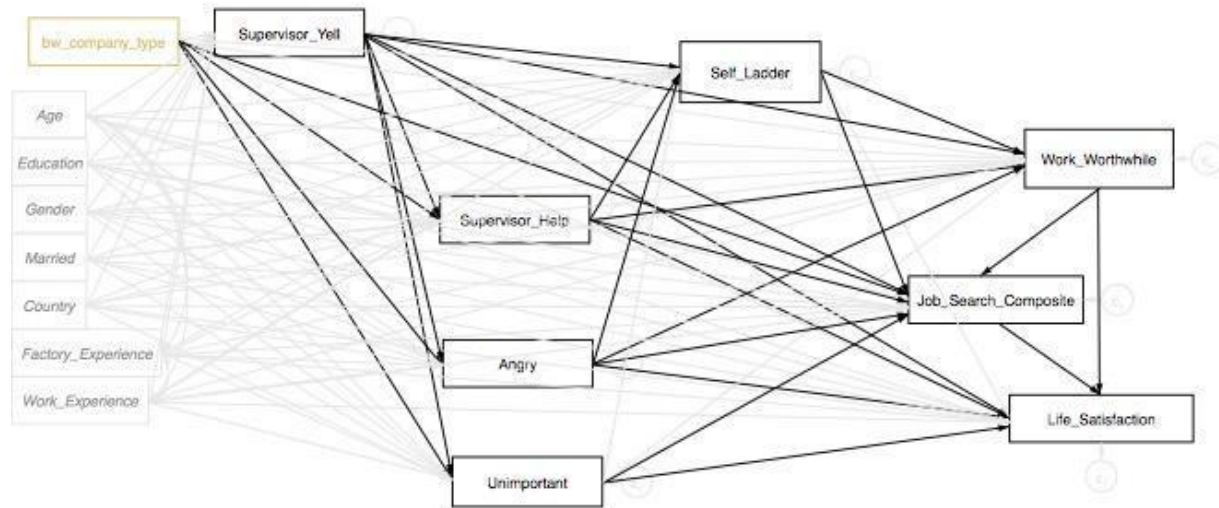
Our analysis yielded surprising results by uncovering a positive relationship between *Job_Difficulty* and *Job_Search_Composite*. This means that those who had a harder time obtaining their jobs were more likely to have turnover intentions. This relationship remained significant even when unfavorable working conditions were added into the system such as

Unfair, Hungry, Thirsty, and Hot_Cold (not shown). An empirical question remains to explain what conditions prevent the sunk cost fallacy from setting in. It is possible that the process of obtaining their job was no longer salient to workers, preventing them from experiencing the sunk cost fallacy, but that for some reason jobs that were harder to obtain also happened to be in factories that were less pleasant workplaces for other reasons, leading to increased turnover intentions.

All significant relationships are highlighted in the table below. All coefficients have a p-value less than .01.

	1	2
VARIABLES	Job_Difficulty	Job_Search_Composite
bw_company_type	-0.0532*** (0.0181)	-0.149*** (0.0204)
Job_Difficulty		0.0642*** (0.0151)
Age	-0.00261 (0.00172)	-0.00952*** (0.00192)
Country	-0.334*** (0.0187)	-0.0112 (0.0214)
Factory_Experience	0.00852*** (0.00251)	0.00516* (0.00287)
Education	0.0266*** (0.00993)	0.0770*** (0.0112)
Female	-0.0678*** (0.0234)	-0.112*** (0.0270)
Married	0.00479 (0.0235)	-0.0814*** (0.0266)
Work_Experience	-0.00273 (0.00238)	-0.00781*** (0.00266)
Constant	2.809*** (0.0718)	2.072*** (0.0905)
Observations	6,521	6,521
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Verbal Abuse and Life Satisfaction



Variables of Interest:

bw_company_type: Is the worker a member of a Better Work factory? (binary)

Supervisor_Yell: Measure of how often a supervisor yells at a worker to work faster or for making a mistake. (commonscales)

Supervisor_Help: Measure of a worker's comfort in seeking help from a supervisor with complaints or concerns about work. (comfordscales)

Angry: Measure of how often a worker feels angry or frustrated after talking to a supervisor. (commonscales)

Unimportant: Measure of how often a worker feels small or unimportant after talking to a supervisor. (commonscales)

Self_Ladder: How the worker ranks themselves on a scale of 1 to 10, with 10 being the most powerful and 1 being the least powerful.

Work_Worthwhile: The work I do on this job is worthwhile (agreescales)

Job_Search_Composite: A composite measure of a worker's intention to leave their current job (also known as turnover intention), including thoughts about quitting, moving sectors, or devoting effort to looking for a new job.

Life_Satisfaction: I am satisfied with my life. (satisfyscales)

The model above explores the impact of supervisor verbal abuse on a worker's job and life satisfaction. As seen in earlier models, worse working conditions lead to worse health outcomes, productivity, and life and job satisfaction. This model examines the effects of working conditions, specifically verbal abuse, on mental health. In this model, *Supervisor_Yell*, *Supervisor_Help*, *Angry*, *Unimportant*, and *Self_Ladder* are mediating variables, with *Work_Worthwhile*, *Job_Search_Composite*, and *Life_Satisfaction*, serving as short-, middle-, and long-term outcomes, respectively. The variables *Angry* and *Unimportant* indicate worker anger and degradation in the workplace, which is representative of an environment that is harsh on worker mental health. *Self_Ladder* shows how these feelings manifest in a worker's perception

of their power in the factory. This system is supported by our earlier work showing that workers reporting lower instances of verbal abuse by supervisors had improved productivity and individual worker outcomes, along with improved mental health prospects (Brown et al. 2016).

While Better Work training does not have a significant effect on supervisor verbal abuse in the workplace, the SEM analysis sheds light on the role of verbal abuse in harming workers' mental health, self perception, satisfaction levels, and turnover intention through the following pathway:

Supervisor_Yell → *Supervisor_Help/Angry/Unimportant* → *Self_Ladder* → *Work_Worthwhile* → *Job_Search_Composite* → *Life_Satisfaction*

Our analysis shows that *Supervisor_Yell* has a significant negative relationship with *Supervisor_Help*, and a significant positive relationship with *Angry*, and *Unimportant*, indicating that the presence of verbal abuse in the workplace leads to worker discomfort in seeking help, anger and frustration toward supervisors, and feelings of being unimportant or unappreciated. *Supervisor_Help* has a positive relationship with *Self_Ladder*, and *Angry* has a negative relationship with *Self_Ladder*, showing that those who are more comfortable approaching their supervisors and those who are less angry tend to perceive themselves as having more power in the workplace. *Self_Ladder* has a direct positive relationship with *Work_Worthwhile*, showing that workers who believe they have more power also tend to be more satisfied with their jobs. *Work_Worthwhile* has a direct negative relationship with *Job_Search_Composite*, and *Job_Search_Composite* has a direct negative relationship with *Life_Satisfaction*, showing that those who are more satisfied with their jobs are less likely to have turnover intentions, and those who have lower turnover intentions are more likely to be satisfied with their lives. Therefore, verbal abuse may negatively affect supervisor relationships, which may reduce worker perception of power in the workplace, which ultimately can lead to lower job satisfaction, higher turnover intention, and lower life satisfaction.

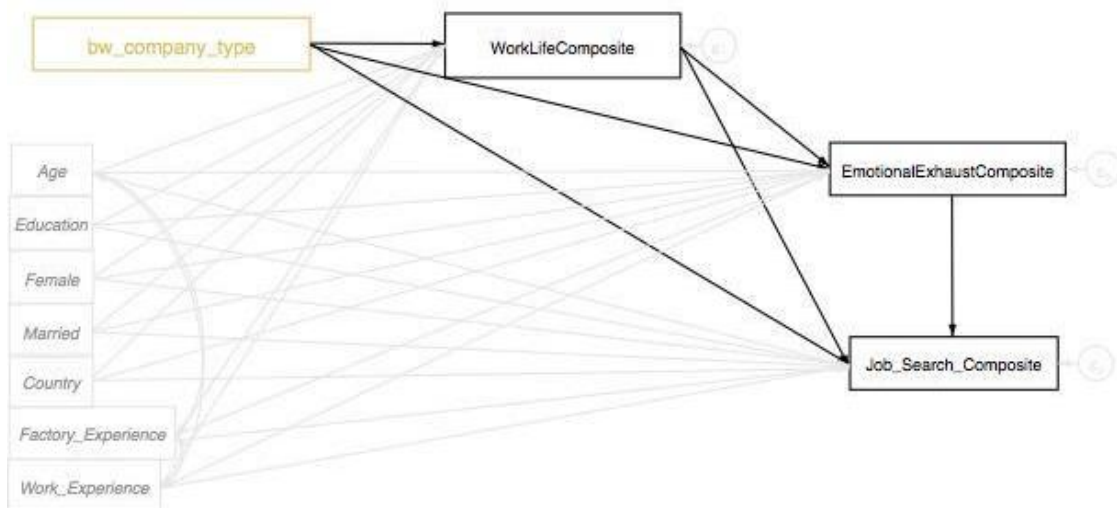
Direct relationships also occur between all mediating variables and outcome variables as expected, with the exception of *Unimportant* on *Self_Ladder* and *Work_Worthwhile*, where no significant relationship exists. This system is important for consideration in terms of a company's productivity, as our earlier assessments of the Better Work program have demonstrated that psychological disempowerment leads to worse firm productivity and profitability (Brown et al. 2016).

All significant relationships are highlighted in the table below. All coefficients have a p-value less than .01, except for *Angry* → *Self_Ladder*, *Unimportant* → *Job_Search_Composite*, and *Self_Ladder* → *Work_Worthwhile*, which have p-values less than .05.

	1	2	3	4	5	6	7	8
VARIABLES	Supervisor_Yell	Supervisor_Help	Angry	Unim portant	Self_Ladder	Work_Worthwhile	Job_Search_Composite	Life_Satisfaction
bw_company_type	-0.0157 (0.0291)	0.0956*** (0.0290)	-0.0753*** (0.0210)	-0.0741*** (0.0205)	-0.0215 (0.0500)	0.0247 (0.0159)	-0.128*** (0.0189)	0.0119 (0.0222)
Supervisor_Yell		-0.225*** (0.0130)	0.293*** (0.00936)	0.261*** (0.00914)	-0.195*** (0.0250)	-0.0231*** (0.00792)	0.113*** (0.00945)	-0.0463*** (0.0112)
Supervisor_Help					0.0766*** (0.0234)	0.0708*** (0.00738)	-0.0261*** (0.00894)	0.0535*** (0.0103)
Angry					-0.0814** (0.0364)	-0.0322*** (0.0115)	0.160*** (0.0139)	-0.121*** (0.0161)
Unim portant					0.0202 (0.0377)	-0.0146 (0.0119)	0.0294** (0.0145)	-0.0522*** (0.0165)
Self_Ladder						0.00952** (0.00433)	-0.0334*** (0.00504)	0.0111* (0.00595)
Work_Worthwhile							-0.156*** (0.0156)	0.127*** (0.0184)
Job_Search_Composite								-0.154*** (0.0164)
Age	-0.00318 (0.00275)	0.00778*** (0.00275)	-0.00294 (0.00200)	3.12e-05 (0.00194)	0.0144*** (0.00475)	-0.000363 (0.00152)	-0.00744*** (0.00178)	3.32e-05 (0.00210)
Country	-0.0615** (0.0301)	0.403*** (0.0300)	-0.0411* (0.0217)	-0.269*** (0.0212)	0.882*** (0.0531)	0.0615*** (0.0173)	0.0401** (0.0203)	0.248*** (0.0240)
Factory_Experience	0.00802** (0.00402)	-0.00720* (0.00402)	0.0107*** (0.00292)	0.00941*** (0.00284)	0.00597 (0.00692)	0.00702*** (0.00220)	0.00337 (0.00266)	0.00224 (0.00307)
Education	0.0364** (0.0159)	-0.0521*** (0.0159)	0.0323*** (0.0115)	0.0526*** (0.0112)	0.0833*** (0.0274)	-0.000369 (0.00871)	0.0715*** (0.0103)	-0.0152 (0.0122)
Gender_Preference	-0.0737*** (0.0160)	-0.0567*** (0.0160)	0.0222* (0.0116)	0.0341*** (0.0113)	0.206*** (0.0275)	-0.0200** (0.00884)	-0.0171* (0.0104)	-0.0458*** (0.0122)
Married	0.0434 (0.0375)	0.0995*** (0.0375)	-0.0649** (0.0271)	-0.0546** (0.0264)	-0.0990 (0.0646)	0.0190 (0.0206)	-0.0876*** (0.0245)	0.0584** (0.0286)
Work_Experience	-0.0101*** (0.00380)	-0.00767** (0.00381)	0.00293 (0.00277)	0.000764 (0.00269)	-0.00735 (0.00653)	0.00123 (0.00209)	-0.00566** (0.00247)	0.000786 (0.00290)
Constant	2.293*** (0.115)	3.367*** (0.118)	0.968*** (0.0857)	1.135*** (0.0837)	1.103*** (0.226)	3.587*** (0.0717)	2.317*** (0.102)	3.503*** (0.125)
Observations	6,521	6,521	6,521	6,521	6,521	6,521	6,521	6,521

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Work-Life Balance and Turnover Intention



Variables of interest:

bw_company_type: Is the worker a member of a Better Work factory? (binary)

WorkLifeComposite: A composite measure of how hard it is to balance both home and work life, consisting of not having enough time to fulfill family/social responsibilities and being unable to complete home responsibilities because of the demands of work (such that higher values indicate worse outcomes, or less work/life balance).

EmotionalExhaustComposite: A composite measure of emotional exhaustion, consisting of the frequency at which a worker feels fatigued or frustrated by their job.

Job_Search_Composite: A composite measure of a worker's intention to leave their current job (also known as turnover intention), consisting of thoughts about quitting, moving sectors, or devoting effort to looking for a new job.

The model above is an examination of the relationship between membership in a Better Work factory, work-life balance, emotional exhaustion, and turnover intention. *Bw_company_type* is the treatment variable, *WorkLifeComposite* is the mediating variable, *EmotionalExhaustComposite* is the short-term outcome variable, and *Job_Search_Composite* is the middle-term outcome variable.

The work/life composite variable measures the degree to which role responsibilities from the work and family domains are incompatible, so "participation in the work role is made more difficult by virtue of participation in the family role," and vice versa (Netemeyer, Bolles, and McMurrian 1996). Family interference with work, or FIW, is theorized to directly lead to turnover intentions (Frone et al. 1997) and withdrawal from work (Greenhaus et al. 2001) because individuals are willing to minimize external stressors in order to fulfill their obligations at home. Greenhaus states that FIW is associated with turnover intentions through its influence on employees' work overload, thus contributing to their emotional exhaustion through fatigue and frustration.

In our analysis, we found a strong significant relationship between *bw_company_type* and *EmotionalExhaustComposite*, meaning members of Better Work factories were less likely to believe that their work life interfered with their family, social, and home responsibilities. Furthermore, there is a strong significant relationship between *WorkLifeComposite* and *EmotionalExhaustComposite*, meaning those who had a harder time maintaining a work-life balance were more likely to be emotionally exhausted. Finally, there is a relationship between *EmotionalExhaustComposite* and *Job_Search_Composite*, indicating that workers who are more emotionally exhausted are more likely to have turnover intentions. These relationships define the following pathway:

bw_company_type → *WorkLifeComposite* → *EmotionalExhaustComposite* → *Job_Search_Composite*

Workers in Better Work factories are less likely to have trouble balancing their work and home lives, and thus are less likely to be emotionally exhausted. Ultimately, decreased emotional

exhaustion may lead to less turnover intention, and therefore Better Work employees are less likely to have intentions to leave their jobs.

There are also significant direct relationships between *bw_company_type* and *EmotionalExhaustComposite*, *bw_company_type* and *Job_Search_Composite*, and *Work_Life_Composite* and *Job_Search_Composite*. Members of Better Work factories are less likely to be emotionally exhausted and less likely to have turnover intentions. In addition, those who are able to balance their work and home lives are less likely to have turnover intentions. These direct links further enforce the strength of the pathway that makes membership in a Better Work factory a good indicator for decreased turnover intention. All significant relationships are highlighted in the table below. All coefficients have a p-value less than .01.

	1	2	3
VARIABLES	WorkLifeComposite	EmotionalExhaustComposite	Job_Search_Composite
<i>bw_company_type</i>	-0.181*** (0.0247)	-0.248*** (0.0348)	-0.0841*** (0.0192)
WorkLifeComposite		0.375*** (0.0182)	0.0703*** (0.0105)
EmotionalExhaustComposite			0.179*** (0.00724)
Age	0.00543** (0.00234)	-0.0182*** (0.00328)	-0.00727*** (0.00180)
Country	-0.0544** (0.0255)	0.0200 (0.0357)	-0.0248 (0.0196)
Factory_Experience	-0.00317 (0.00343)	0.0296*** (0.00480)	0.00138 (0.00269)
Education	-0.0152 (0.0136)	0.0553*** (0.0191)	0.0703*** (0.0104)
Female	0.0212 (0.0322)	0.0928** (0.0451)	-0.144*** (0.0253)
Married	0.0861*** (0.0320)	-0.0913** (0.0451)	-0.0743*** (0.0249)
Work_Experience	-0.0105*** (0.00324)	-0.00488 (0.00453)	-0.00533** (0.00249)
Constant	2.797*** (0.0985)	1.605*** (0.147)	1.578*** (0.0818)
Observations	6,521	6,521	6,521
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Works Cited

- Arkes, Hal R., and Catherine Blumer. "The Psychology of Sunk Cost." *Organizational Behavior and Human Decision Processes* 35, no. 1 (1985): 124-40. doi:10.1016/0749-5978(85)90049-4.
- Brown, Drusilla, Rajeev Dehejia, Ann Rappaport, Elyse Voegeli, Mary Davis, Raymond Robertson, Laura Babbitt, et al. "The Impact of Better Work: A Joint Program of the International Labour Organization and the International Finance Corporation" (2016) Tufts Labor Lab. http://cdn-ws003.sabentis.com/php_preveccionintegral/sites/default/files/noticia/34913/field_adjuntos/tufts-university-final-ia.pdf
- Frone, Michael R. "Work-family Conflict and Employee Psychiatric Disorders: The National Comorbidity Survey." *Journal of Applied Psychology* 85, no. 6 (2000): 888-95. doi:10.1037//0021-9010.85.6.888.
- Grandey, A. A. "Emotional regulation in the workplace: A new way to conceptualize emotional labor." *Journal of Occupational Health Psychology*, (2000) 5(1), 95-110. doi:10.1037//1076-8998.5.1.95
- Greenhaus, Jeffrey H., Karen M. Collins, and Jason D. Shaw. "The Relation between Work-Family Balance and Quality of Life." *Journal of Vocational Behavior* 63, no. 3 (2003): 510-31. doi:10.1016/s0001-8791(02)00042-8.
- Maslach, Christina, and Susan E. Jackson. "The Measurement of Experienced Burnout." *Journal of Organizational Behavior* 2, no. 2 (1981): 99-113. doi:10.1002/job.4030020205.
- Netemeyer, Richard G., James S. Boles, and Robert Mcmurrian. "Development and Validation of Work-family Conflict and Family-work Conflict Scales." *Journal of Applied Psychology* 81, no. 4 (1996): 400-10. doi:10.1037//0021-9010.81.4.400.
- Petreanu, Viorica, Raluca Iordache, and Mihaela Seracin. "Assessment of Work Stress Influence on Work Productivity in Romanian Companies." *Procedia -Social and Behavioral Sciences* 92 (2013): 420-25. doi:10.1016/j.sbspro.2013.08.695.