Authentication of Psychosomatic Capability and Workplace Life of Teachers Scales by Structural Equation Modeling

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Abstract

A healthy workplace life of teachers or faculty members depends upon institutional environment in which they work. They are more satisfied and enjoy job life when they have mental satisfaction and feel psychological positive in the higher educational institutions. The mental satisfaction is an essential issue in current society and is basis to the improvement of social strategy devoted to people, group of individuals or society. The determination to conduct this study was to validate the scales related to psychosomatic capability and workplace life of teachers by using Smart PLS software. The study was quantitative and survey type in nature. Correlation design was used in this study. Sample of the study was consisted of two hundred university teachers. Responses were obtained from teachers on five point likert type scales regarding psychosomatic capability and workplace life. Data were collected personally and research subjects were briefed about nature of the study and necessary instructions were provided to them by researcher. Formal consent was taken from respondents before data collection. Different statistical techniques were applied to analyze the relevant data. The outcomes of the study indicated that psychosomatic capability and workplace life are interlinked with each other. If teachers are full of psychosomatic capability then their workplace life would be better and they perform their duties with confidence and motivation. Thus, job life depends upon mental capability of personnel. Instruments are valid and reliable because both variables are showing good, reliable and statistical significant values. The sample size may be increased for more detailed and comprehensive validation and reliability of scales.

Keywords: Psychosomatic capability, workplace life of teachers, and scales validation

Introduction

Psychology is the science of mind. Brain science concentrates exclusively and only on side effect and illness. The majority of the studies concentrated on side effect and malady rather than on the positive mental assets of people (Myers, 2000; Schaufeli

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& Salanova, 2007). Although, this worldview of brain research lost accentuation with the distribution of Selig-man and Csikszentmihalyi (2000), who protected that psychology ought to advance toward concentrate the qualities and mental limits of humans and associations, and how these can be made strides. Accordingly, positive psychology rises as a worldview that surmises into three levels research: (a) positive feelings; (b) positive attributes, qualities, and virtues of staff; and (c) constructive organizations that show excellences and are supported from positive feelings (Seligman, 2003).

The psychosomatic capability or mental assets which meet the criteria for positive behavior best are trust, self-adequacy, good faith and adaptability. Specialists in the field of psychology introduced the term 'psychosomatic capability. This idea is utilized for positive conduct of teaching staff and can be described as an individual's sure state of mind of development which is depicted by idealism (making constructive attributions), self-viability (having certainty), resilience (to accomplishing achievement) and expectation (diverting ways to objectives) (Luthans, Avolio, Avey & Norman, 2007; Luthans & Youssef, 2004, 2007).

As indicated by Dawkins (2014), psychosomatic capability is a person's condition of mental advancement having positive factors, for example, optimistic, self-viability, flexibility and expectation. The concept of psychosomatic capability through the four mental assets alluded above has appeared inner cooperative energy from the observational viewpoint, which implies that mental capability carries on as a high level paradigm (Luthans, Avolio, Avey & Norman, 2007).

A healthy workplace life of teachers or faculty members depends upon institutional environment in which they work. They are more satisfied and enjoy job life when they have mental satisfaction and feel psychological positive in the higher educational institutions. The mental satisfaction is an essential issue in current society and is basis to the improvement of social strategy devoted to people, group of individuals or society. Teachers have some instinctive thought of the personal satisfaction meaning, yet it can speak to particular perspectives and segments to several individuals. They demand mental satisfaction at workplace to perform their duties (Phillips, 2006).

The idea of personal satisfaction is famously linked with human beings, which has been approximated to the fulfillment in various parts of life. It suggests the capacity to make a combination of every single social component that specific culture thinks about their standard of solace and prosperity. The term incorporates numerous implications, which reflect learning, knowledge, and estimations of people and collectivities identified with it in various occasions, differing spots and stories, in this manner being a social variable with the brand of socializing relativity (Minayo, Hartz & Buss, 2000).

Psychosomatic capability and workplace life of personnel are strongly interlinked. It is common that a person can perform better at job station with positive mental capabilities. In past, very limited studies that explored psychosomatic capability and workplace teachers' life in higher educational institutions. But now this trend is updating with the passage of time. The findings of different studies showed that those teachers who have high level quality life at job, they are more satisfy in their profession in spite of those who have not satisfactory job life (Snyder et al., 2010). Different researchers for example Ishak, Razak, Hussin, Fhiri and Ishak (2018) described various factors to measure the workplace life satisfaction of individuals. Workplace life consists of living space and appropriate salary and incentives and it is basic need of each human being. Everyone works and put his/her efforts for the sake of reasonable compensations. Thus, personnel can support financial their families. Along with salaries, safe atmosphere of workplace is other factor to perform tasks effectively. It is the basic function of institutional management to provide democratic environment where employees have social network among themselves.

A Partial Least Square model is typically examined and inferred the information into two phases consecutively. First is the review and improvement of appropriateness of the estimation model and sought after by the assessment and evaluation of the basic or essential model. This is to guarantee the consistency of results, unwavering quality and legitimacy of the measures before the endeavor in making and the depicting the conclusion on the structural model.

Significance of the Study

Psychology is the science of human mind. Humans behave according to their psychosomatic capability and mentality depends upon psychological thoughts. Teachers perform their duties in a better way and enjoy workplace life with positive psychological thinking. Psychosomatic capability is the name of mental traits of humans. Teachers are self-efficient in their fields of expertise and area of specializations. They are hopeful at job and optimistic for workplace life in future. They also face resilience and tackle the uncertain situations at workstation humbly and with positive state of mental capability. Higher educational institutions are deliberated backbone of education system of any nation. And teachers are the basic ingredient to perform academic and administrative functioning in the universities. They give their best only when universities provide them safe and healthy working conditions. The results of this study may helpful to validate the scales of psychosomatic capability and workplace life of teachers. Findings may highlight the intensity of association between both variables psychosomatic capability and workplace life. This study is also significant because both factors have path relationship and scales were validated by Smart PLS software in which different statistical tests were applied. It is vital to understand the psychosomatic capability and workplace life of university teachers in

this context. Therefore, there is basic need to introduce valid and reliable scales to measure psychosomatic capability and workplace life of personnel. The findings of current study may add and increase new knowledge related to these phenomenon.

Research Objectives

The purpose of the study was to achieve the following objectives:

1. To explore the relationship between psychosomatic capability and workplace life through path analysis.
2. To explore the path coefficients between psychosomatic capability and workplace life.
3. To explore the outer loadings between psychosomatic capability and workplace life.
4. To explore the latent variable correlations between psychosomatic capability and workplace life.
5. To check the *R* square value of workplace life instrument.
6. To check the construct reliability and validity of psychosomatic capability and workplace life scales.
7. To check the discriminant validity of psychosomatic capability and workplace life scales.
8. To explore the bootstrapping path coefficients of psychosomatic capability and workplace life scales.
9. To explore the path coefficients histogram of psychosomatic capability and workplace life scales.

Research Methodology

The detail of the research methodology is described below.

Nature of Study

Quantitative approach was used to conduct the current study. The study was descriptive correlational and survey type in nature. The basic purpose to conduct this study was to check the validation of the scales related to psychosomatic capability and workplace life in teaching.

Population and Sampling

The population of the study was consisted of university teachers of different departments. Sample of the study consisted of two hundred teachers. Firstly four universities were taken and then same departments were selected. The particular participants of the study were selected by randomization.

Instrumentation

The scales related to psychosomatic capability and workplace life were used to obtain information from respondents. Psychosomatic capability scale was consisted of

four sub-factors (self-efficacy, hope, optimism, and resilience) and twelve items. As well as workplace life instrument has six factors (fair provisions, democracy, working capacity, safety, socialization, and living space). Research subjects gave their opinions on five point Likert type scale. All subjects of study fall in the series of lecturers to professors.

Scales Validation and Reliability

Research and subject specialists reviewed the questionnaires and played their role in validation process. After taking the experts opinions on questionnaire, it was distributed to teachers to complete the process of pilot testing. Overall values of Cronbach's Alpha were 0.81 and .85, which shows the good and significant desired worth of reliability.

Data Collection and Analysis

Researchers spent a heavy amount of time on data collection. It was good experience that gave opportunity to learn things. There are different ways to analyze the data. The data were analyzed by using Structural Equation Model (SEM) path analysis techniques to achieve the targeted objectives. Path analysis was conducted through the Smart PLS to evaluate the model.

Results and Findings

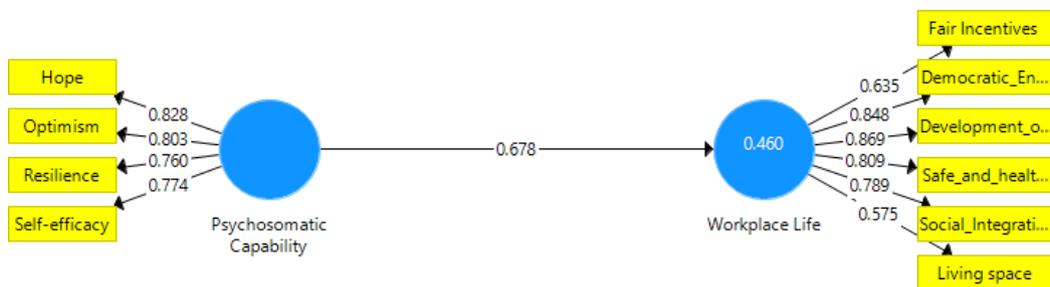The detailed data analysis is under follow.

Figure 1. PLS-SEM structural model

Above figure is demonstration of path analysis. It shows the correlation between psychosomatic capability and workplace life of teachers. There are two main variables in the form of psychosomatic capability and workplace life with its sub-factors. Psychosomatic capability is the name of mental approach of individuals and the workplace life means the time spend by staff at job. The association between variables appeared in the inward model and factor stacking estimations of every factor performed in external model. There is strong positive relationship between psychosomatic capability and workplace life $r = 0.678$ of teaching faculty members. Psychosomatic capability of teachers also effects their workplace life. It is concluded that both

variables (psychosomatic capability and workplace life) are strongly interlinked with each other. If teachers are full of psychosomatic capability then their workplace life would be better and they perform their duties with confidence and motivation. Thus, job life depends upon mental capability of personnel.

Table 1
Path Coefficients of Variables

Variables	Workplace Life
Psychosomatic Capability	0.68

Path coefficient is equal to the liaison among constructs and its dimensions. There are two variables in above table. Both factors have strong positive connection with each other. Below figure is showing path coefficients of variables.

Figure 2. Path coefficient of psychosomatic capability and workplace life

Table 2
Outer Loadings of Scales (Psychosomatic Capability and Workplace Life)

Sub-Factors	Psychosomatic Capability	Workplace Life
Self-efficacy	0.77	
Hope	0.83	
Optimism	0.80	
Resilience	0.76	
Fair provisions		0.64
Democracy		0.85
Working capacity		0.87
Safety		0.81
Socialization		0.79
Living space		0.58

In the inward model is the piece of the model that depicts the connections among the idle factors that make up the model. The external model is the piece of the model that depicts the relationship among the dormant factors and their dimensions. In table 2 all sub-dimensions are showing strong positive relationship with its variables psychosomatic capability and workplace life except working space. It means all sub-factors are part and parcel to measure the psychosomatic capability and workplace life among teachers.

Table 3
Latent Variable Correlations through Cross Loading

Factors	*1*	*2*
Psychosomatic Capability	1.00	0.68
Workplace Life		1.00

Table shows relationship among factors through cross loading. The primary purpose of cross loading is to cross match the values of factors. In which, each construct shows maximum value with itself, but lesser with other variables. Similarly constructs psychosomatic capability and workplace life are showing maximum values with its own and less with each other.

Table 4
R Square (R^2)

Variable	*R* Square
Workplace Life	0.46

The R^2 value shows that how well the square model calculates the data. This basically displays the goodness of suitable model. Its value ought to be more noteworthy than 0.3. In this study value of *R* square for variable is 0.46. This value is higher than set standard value, which shows goodness of model.
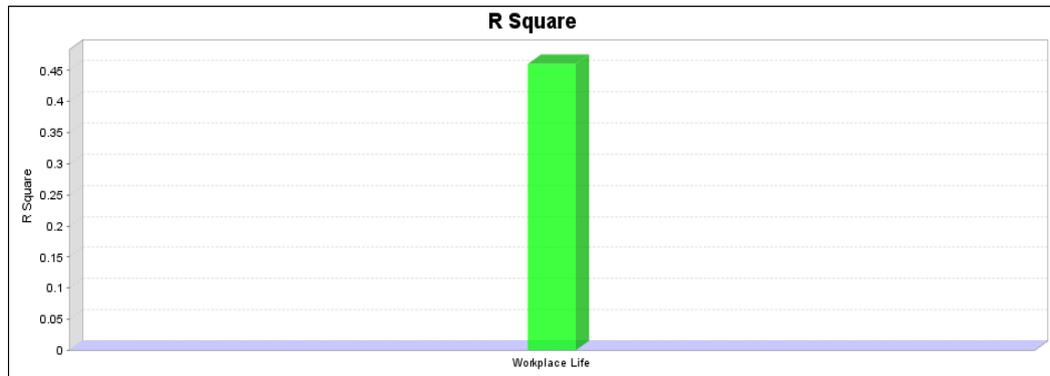

Figure 3. R square of workplace life

Table 5
Construct Reliability and Validity of Factors

Factors	Cronbach's Alpha	*rho_A*	*CR*	*AVE*
Psychosomatic Capability	0.81	0.84	0.87	0.63
Workplace Life	0.85	0.86	0.89	0.58

Table demonstrates the factors (psychosomatic capability and workplace life) validity and reliability. Reliability was checked by four different methods (Cronbach's Alpha, rho_A, Composite Reliability, and Average variance extracted). According to Hair (2014), reliability values are acceptable at 0.7. In above table both constructs have values above than threshold. Both variables are showing good, reliable and statistical significant values under the umbrella of composite reliability.

Wah-Yap, Ramayah, Nushazelin, and Wan-Shahidan stated in (2012) that Average Variance Extracted is the point which displays fact or sustenance the convergent validity. Hair (2014) described that AVE value is acceptable at .5. It is minimum standard and higher values show strong validity of the constructs. In current study, both factors (psychosomatic capability and workplace life) have AVE values above than .5, which indicates strong convergent validity.
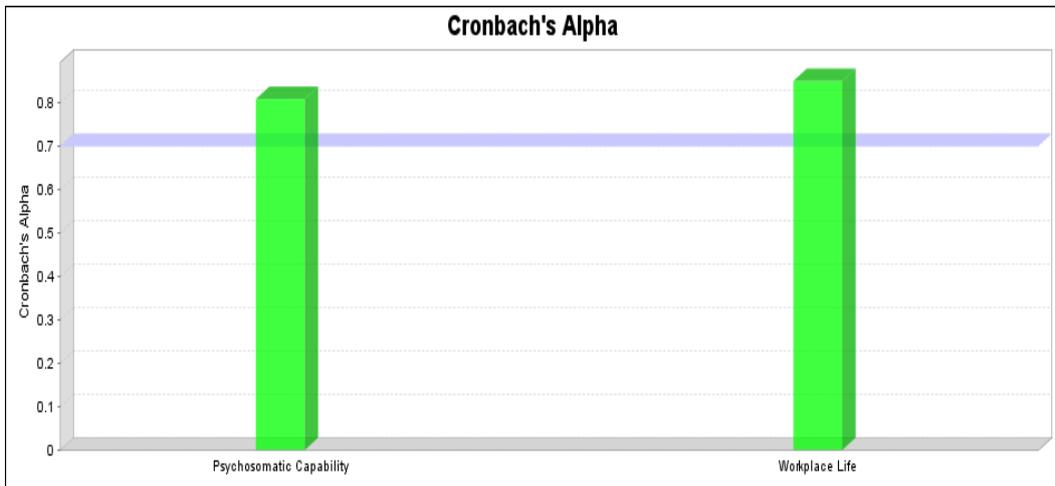

Figure 4. Cronbach's Alpha of psychosomatic capability and workplace life

Above figure displays the reliability values by using Cronbach's Alpha. It can be seen psychosomatic capability and workplace life show the height in green pillars and both lines are crossing the threshold. It means both constructs are reliable and have internal consistency.
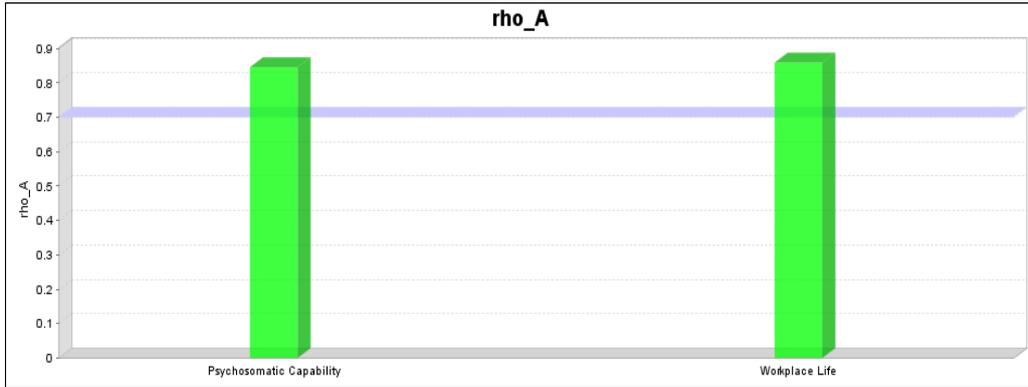
Figure 5. rho_A reliability of psychosomatic capability and workplace life

Figure indicates rho_A reliability of scales. Both constructs (psychosomatic capability and workplace life) in the form of green pillars are crossing the standardized cut line, which show the significant and acceptable values of reliability. It determines that scales are strongly reliable in local context to measure the psychosomatic capability and workplace life of university teachers.
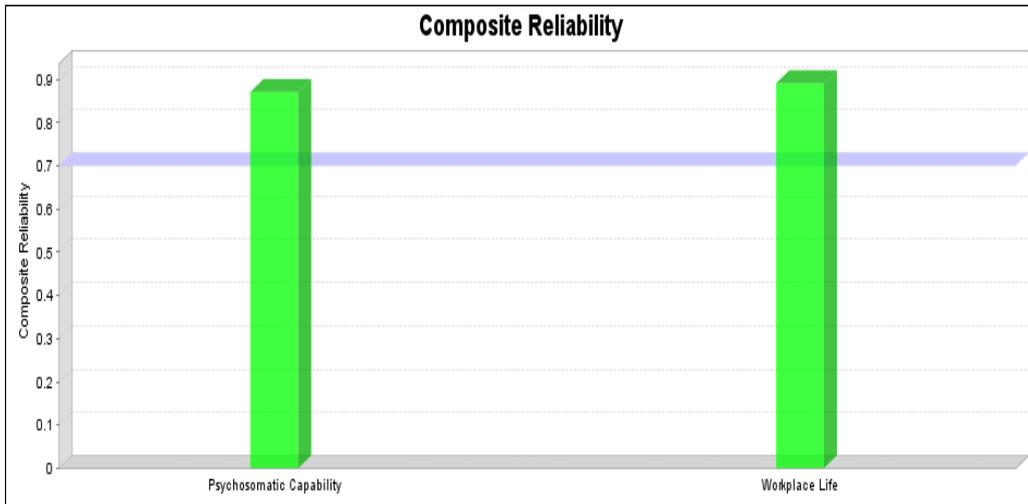

Figure 6. Composite reliability of psychosomatic capability and workplace life

Above figure displays the composite reliability. Both constructs in the form of green pillars are crossing the standardized cut line, which show the significant and acceptable values of reliability.
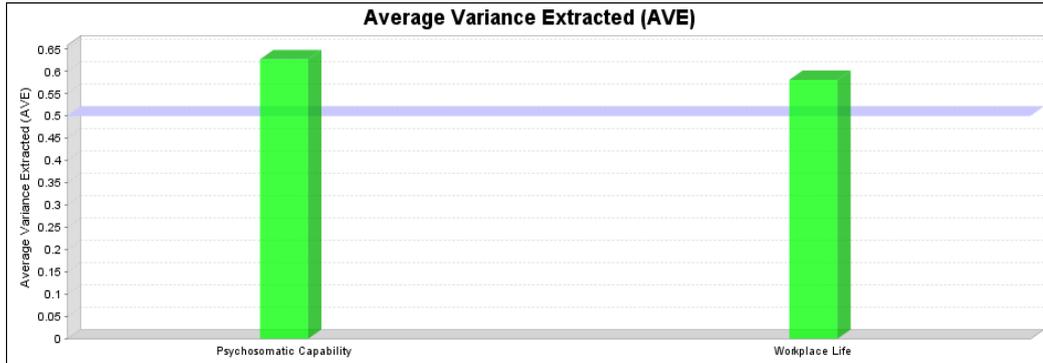
Figure 7. AVE of psychosomatic capability and workplace life

Above figure depends upon average variance extracted. Both variables (psychosomatic capability and workplace life) in the form of green pillars are crossing the standardized cut line at 0.5, which show the significant and acceptable values of reliability.

Table 6
Discriminant Validity of Factors

Factors	*1*	*2*
Psychosomatic Capability	0.79	
Workplace Life	0.68	0.76

Above table determines the discriminant validity of psychosomatic capability and workplace life. Surienty, Ramayah, Lo, and Tarmizi, (2014) different researchers and data analysts described discriminant validity. According to them this validity shows distinct concepts of constructs. They said values should be greater than 0.6 in this validity. As a researcher in my point of views this validity shows the discrimination of factors with other constructs. Each variable has maximum value but it shows less value with other variables. For example, in above table you can see that psychosomatic capability is one construct and it has 0.79 value which is maximum. But it has less value 0.68 with workplace life. Thus, it is concluded from the results that both factors have discriminant validity.

Table 7
Bootstrapping Path Coefficients

Factors	M	SD	t	p
Psychosomatic Capability -> Workplace Life	0.70	0.06	10.77	.001

Table displays outcomes of bootstrapping by presenting *T* and *P* values which are utilized to acknowledge or dismiss the assumptions in the form of objectives.

According to Hair (2014) *T*-value must be above than 1.96 and *p* value should be lower than .05. Therefore, in current study values of two variables psychosomatic capability and workplace life are $T = 10.77$, $P = .001$. Both constructs show positive, strong and significant values which are bigger than threshold. It means that goodness of fit exists. It is concluded that psychosomatic capability and workplace life have strong connection with each other.
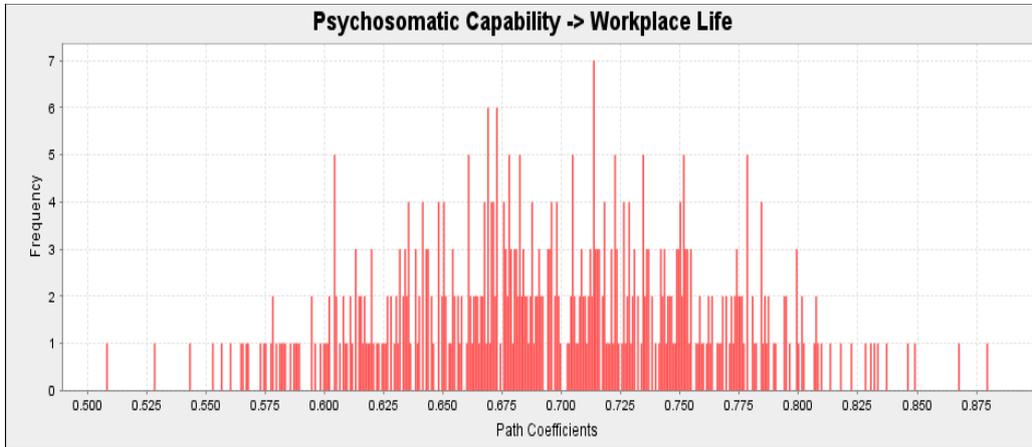

Figure 8. Path coefficient histogram of psychosomatic capability and workplace life

According to James (2009) histograms for path analysis produced by suitable group model to subjects which responded psychosomatic capability and workplace life. The value of histogram for respondents falls from 0 to 1. The red lines indicate path coefficient values of partakers. Generally coefficients expect a Gaussian appropriation focused about the group value. The X- axis is way coefficient esteem (barring values with supreme extent surpassing 1), and y- axis is number of participants with coefficients of this value. It shows that model fit exists in teachers data related to both variables (psychosomatic capability and workplace life).

Discussion

The basic purpose of this study was to authenticate scales of psychosomatic Capability and Workplace Life of Teachers with the help of Structural Equation Modeling. Results demonstrate that there was strong positive association between mental Capability and Workplace Life of Teachers. Both constructs are showing good, reliable and statistical significant values under the umbrella of Cronbach's alpha, rho_A, and composite reliability. The alpha values of psychosomatic capability and workplace life are .81, and .85 respectively. These results are aligned with past studies and fulfill the set criteria of researchers. According to Hair (2014), reliability values are acceptable at 0.7. Therefore, both variables have values above than threshold.

Therefore, it is confirmed that findings of the study showed consistency with past studies and met the standards of scales validation.

Conclusion

Psychosomatic capability and workplace life is evolving constructs in academic field. Psychosomatic capability is an individual's state of mind and mental advancement having positive thoughts, self-efficacy, hope, optimism, flexibility and resilience. A healthy workplace life of teachers or faculty members depends upon institutional environment in which they work. They are more satisfied and enjoy job life when they have mental satisfaction and feel psychological positive in the higher educational institutions. Psychosomatic capability and workplace life of personnel are strongly interlinked. It is general that a person can perform better at job station with positive mental capabilities.

The aim of this study was to authenticate the scales of psychosomatic capability and workplace life of teachers by using smart partial least square software. Authentication of scales were observed by using different statistical techniques (PLS-SEM path model, path coefficient, outer loadings, latent variables associations through cross loadings, R square value, reliability, discriminant validity, bootstrapping and histogram path coefficients) through Smart PLS software. The research subjects of this study were university teachers. They were obtained information regarding psychosomatic capability and workplace life by the researcher. Structural equation model shows the association between psychosomatic capability and workplace life through path analysis.

It seems that path diagram shows the strong positive correlation between two variables psychosomatic capability and workplace life. It is concluded that both variables (psychosomatic capability and workplace life) are strongly interlinked with each other. If teachers are full of psychosomatic capability then their workplace life would be better and they perform their duties with confidence and motivation. Thus, job life depends upon mental capability of personnel. The external model is the measure of the model that depicts the relationship among the dormant factors and their dimensions. Sub-dimensions are showing strong positive relationship with its variables psychosomatic capability and workplace life except working space. In cross loading, both constructs psychosomatic capability and workplace life have maximum values with its own and less with each other. The R square value confirms that model of fit exists, which is statistically significant. Both variables are showing good, reliable and statistical significant values. Discriminant legitimacy, bootstrapping and histogram path coefficients improved the validation and endorsement of the scales more because variables reached the threshold. Hence, the results of the study indicate that psychosomatic capability and workplace life have strong relationship and scales of both variables are valid and reliable in Pakistani context.

Recommendations

This paragraph consists of future recommendations on the behalf of findings and conclusion of current study. Findings show that psychosomatic capability and workplace life of teachers have relationship. Thus, it means that personnel perform better at workstation only if they have positive psychosomatic thoughts and capabilities. There is need to conduct the study on large sample to authenticate the outcomes of current study. The scales validated by Smart PLS, authentication may be confirmed by using SPSS and AMOS. The subjects of the study were university teachers, college and school teachers may be taken as sample to conduct another study for endorsement the instruments. The sample size may be increased for more detailed and comprehensive validation and reliability of scales. Future study may be surveyed on large sample to check the association between psychosomatic capability and workplace life of teachers.

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