

Research on Knowledge Employees' Work Engagement and Work-related Flow on the Perspective of Self-determination

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Abstract

This research was conducted to explore the relationship of knowledge employees' psychological empowerment, work engagement and work-related flow on the perspective of self-determination. Through statistical analysis and structural equation model test of survey, data collected from 505 knowledge employees in China, the results indicated: psychological empowerment has a significant predictive effect on knowledgeable employees' work engagement and work-related flow; basic psychological needs have a part intermediary effect on the relationship of psychological empowerment, work engagement and work-related flow.

Key words: *knowledge employees; work engagement; work-related flow; basic psychological needs*

1 Introduction

The late 20th century, a group of psychologists headed by Seligman, who was President of the APA at that time, launched the Positive Psychology Movement. Studies of positive psychology can be traced back to the 1930s when Terman started studying on marital happiness and Carl G. Jung started studying on the meaning of life. The positive psychology emphasized the study of human's positive emotions, excellent qualities and positive mental states with scientific methods in order to promote individuals' self-awareness, explore their own potential, and help people live a happier and more positive life, to enhance their well-being, team effectiveness and organizational effectiveness. Subsequently, a group of scholars led by the American famous managerialist Luthans introduced the idea of positive psychology to the field of organizational behavior, and hoped that by measuring and developing positive organizational behaviors, to obtain competitive advantages of sustainable human resource. Discusses in the research on theories of work engagement, work-related flow, psychological empowerment and self-determination are all areas of positive psychology.

The term "knowledge employee" was first proposed by the American management guru Drucker in *Milestone of Tomorrow: Report on a New Post-modern World* in 1959, which was said that today's era was the era of knowledge economy, knowledge employees, as a carrier of knowledge, gradually replaced the traditional labor and became the core staff.¹ The appearance of this group had a profound impact on the social structure, economy and politics.

Organizations should create good working atmosphere for knowledge employees to meet their basic psychological needs, inspire their work enthusiasm and work engagement, improve their performance and organizational performance, thus making them more remarkable. This study planned to research on the relationship of knowledge employees' psychological empowerment, work engagement and work-related flow on the perspective of self-determination.

2 Theoretical Researches and Research Hypothesis

2.1 Work Engagement

The concept of work engagement, as a positive individual construct, has yet to form a unified conclusion. Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002) thought that work engagement is a positive, fulfilling, lasting and widespread emotional--cognitive state. The study of Schaufeli et al. on work engagement is one of the most widely cited paradigm in the academic and practical field, which contains three factors—vigor, dedication and absorption. Wherein vigor means a high energy level and mental resilience at work, a willingness to work hard and persistence in the face of difficulties; dedication is to integrate into the work, to experience the sense of meaning, passion, motivation, and pride; absorption is to focus on the work entirely and happily, so the individual will feel time flies and not easily separate them from the work.

Kahn put forward three preconditions that affect work engagement in research: a sense of meaning, a sense of security and availability.² Schaufeli et al. (2009) studied on employees of fast-food industry and found that daily work resources and self-efficacy can affect employees' work engagement;³ Cotter et al. (2012) found that optimism, social support, career management and self-efficacy can affect employees' work engagement; Ouweneel et al. (2013) studied on US college students and found that self-efficacy would affect work engagement.

2.2 Work-related Flow

1970s American psychologist Csikszentmihalyi put forward the concept of "flow", it referred to when people engaged in a controlled and challenging activity that required certain skills and driven by intrinsic motivation, a unique state of ecstasy would be generated, so they felt the feeling of "flow" and happiness of life.⁴ This experience usually occurred at work rather than in leisure activities. In 2005 Bakker formally introduced the concept of flow to the field of organizational behavior, focusing on employees' special experiences of work-related flow.⁵ He defined "work-related flow" as the peak experience of an individual appeared in a short time during working, mainly constituted by the following three core elements: absorption; work enjoyment; intrinsic work motivation. Absorption refers to the high concentrated attention, namely, the individuals fully concentrate on the work, and forget everything else around; work enjoyment refers to those employees who enjoy the work and feel happy have a very positive judgment, and this enjoyment is the cognize of flow experience and the result of emotional evaluation; intrinsic work motivation refers to the inner experience of pleasure and

satisfaction at work, impelling individuals become interested in work and engage in it.

2.3 Psychological Empowerment

Psychological empowerment proposed by Thomas and Velthous (1990) refers to the synthesis of an individual mental status and cognize, including work meaning, self-efficacy, and autonomy and work impact.⁶ Psychological empowerment pays attention to the individual cognition of the relationship of their work roles, beliefs and organizations, taking the loose management to stimulate their intrinsic work motivation. Among them, work meaning refers to the individual's cognition on work goals and work values based on their own value system and standards; self-efficacy refers to the individual's cognition of their own ability to complete the work; autonomy refers to the individual's control capacity of work activities; work impact means that in which extent the individual can influence decisions of their organization in terms of strategies, administration, management and operations and others. Psychological empowerment will work on employees' work attitudes, work behaviors and mental health. Studies of Spreitzer (1996), Chen (2008) and others had confirmed that psychological empowerment is possible to improve the level of organizational commitment of employees; Liden (2000) et al. suggested that when individuals feel that their jobs make sense, and they can influence others through completing their duties, then individuals will be more active to undertake their jobs, and to maintain a positive attitude in the face of difficulties. The model dimensions of work engagement and work-related flow mentioned above belong to the research category of work attitude and work behavior, and the research on these two factors find that the dimension of psychological empowerment has a significant impact on them, too.

2.4 The Theory of Self-determination

Deci and Ryan (1985) thought that self-determination is the individual independent choice on their behaviors when they fully recognize their own psychological needs and information of the external world.⁷ The self-determination theory mainly focuses on the degree of human's self-determination, premise of whose theoretical construct is to consider human as the pro-active organism in essence, namely, they are endowed with the tendency and potential of self-development and self-realization, while human self plays an important role in the forming process of their motivations, besides, behaviors are formed on the basis of the satisfaction of their psychological needs.

Ryan and Deci (2000) proposed that human beings are endowed with the capacity of positive self-control, that is, they will convert social norms to the content recognized by them and gradually integrate extrinsic motivation to intrinsic motivation.⁸ In the course, we can divide motivation from low to high according to the degree of self-determination, the lower end of the continuum is disappear of the motive, that is, when an individual feels certain activities can not bring some results for their own, the intention of behaviors does not occur. Then, in an ascending order of the continuum is external regulation, introjected regulation, identified

regulation and integrated regulation. They also noted that, according to the level of self-determination to divide extrinsic motivation into several types does not mean that each individual should go through each regulating stage one by one, but just may go through regulation at a certain point. Employees' intrinsic motivation influences their work performance and organizational commitment, and dimensions of work engagement and work-related flow belong to the same research category of work performance and organizational commitment.

2.5 The Overall Framework

In the above research on work engagement, work-related flow, the theory of self-determination, psychological empowerment, this study proposes the following research framework: the degree of knowledge employees' work engagement and work-related flow is affected by the degree of their psychological empowerment and basic psychological needs. The basic psychological needs play an intermediary role in psychological empowerment, work engagement, and work-related flow.

3 Research Methods

3.1 Subjects

A questionnaire survey was conducted on 530 nationwide knowledge employees with the method of stratified sampling, and a total of 530 questionnaires were distributed, of which 505 valid questionnaires, the effective rate of questionnaire was 95.28%. The specific data of subjects is listed in Table 1 below.

Table 1 – The data of samples

Characteristics	Category	Number	Rate	Characteristics	Category	Number	Rate
Sex	Male	260	52.1%	Age	Below 20 years old	18	3.6
	Female	239	47.9%		20-30 years old	202	40.0
Organization type	Administrative	55	11.5%		31-40 years old	142	28.1
	Public	160	33.4%		41-50 years old	123	24.4
	Enterprise	262	54.7%		Above 50 years old	20	4.0
	No Titles	170	36.6%	Education	Middle school	144	29.4%
Professional title	Primary	95	20.5%		College	131	26.7%
	Intermediate	148	31.9%		University	161	32.9%
	Senior	49	10.6%		Graduate and above	54	11.0%

3.2 Research Tools

Work engagement was measured by the UWES Scales (authorized by Schaufeli, etc.) revised

by Li Jinbo et al. (2006). The revised scale has a good reliability and validity, including three dimensions of vigor, dedication and absorption and a total of 17 items. Upon examination, the Cronbach α of the total scale is 0.924, that is, the scale has a good reliability.

Work-related flow was measured by the Work-related Flow Inventory authorized by Bakker et al. (2010), including three dimensions of absorption, work enjoyment and intrinsic work motivation and a total of 13 items. Upon examination, the Cronbach α of the total scale is 0.909, that is, the scale has a good reliability.⁹

Basic psychological needs was measured by the Basic Psychological Needs Scales revised by Mary M. Johnston et al. (2010), including three dimensions of needs for competence, needs for autonomy and needs for affiliation and a total of 21 items. Upon examination, the Cronbach α of the total scale is 0.802, that is, the scale has a good reliability.

Psychological empowerment was measured by the Psychological Empowerment Questionnaire (authorized by Spreitzer et al.) revised by Li Chaoping et al. (2006), including four dimensions of work meaning, autonomy, self-efficacy and work impact and a total of 12 items. Upon examination, the Cronbach α of the total scale is 0.878, that is, the scale has a good reliability.¹⁰

Questionnaires above were used the Likert-type 5 point score, 1 is “strongly disagree” and 5 is “strongly agree”. Statistical analyzing Methods in the research mainly are exploratory factor analysis, descriptive statistics, correlation analysis, difference tests, multiple regression analysis (using SPSS17.0) etc.; confirmatory factor analysis and structural equation modeling (using AMOS17.0).

4 Analyses and Discussions

4.1 Analysis of the Mean Value and Correlation of Knowledge Employees' Work Engagement, Work-related Flow, Psychological Empowerment and Basic Psychological Needs

First calculate every item represented by each factor of these four scales of knowledge employees' work engagement, work-related flow, psychological empowerment and basic psychological needs, and get these scores. Then use the SPSS statistical software to analyze the mean value and correlation of them. It is found that each factor of these four variables has a high correlation, and the highest ones of which is dedication (work engagement) and work meaning (psychological empowerment), the correlation coefficient is 0.761.

4.2 The Basic Model Construction of Knowledge Employees' Psychological Empowerment, Work Engagement, Work-related Flow and Basic Psychological Needs

To further study the relationship of knowledge employees' psychological empowerment, basic psychological needs and work engagement, work-related flow: in the influence model of psychological empowerment, take the various dimensions of knowledge employees' psychological empowerment as independent variables, and work engagement, work-related

flow and basic psychological needs as dependent variables, build the multiple linear regression equation; in the influence model of basic psychological needs, take the various dimensions of knowledge employees' psychological empowerment as independent variables, and work engagement, work-related flow as dependent variables, build the multiple linear regression equation, building a model with the approach of stepwise regression.

Statistics show that in the influence model of psychological empowerment, each dimension of psychological empowerment has an explanatory effect to some extent on work engagement and work flow, and its significance passes the test. In Model 1, three dimensions of psychological empowerment has explained a total amount of 33.6% variation on the interpretation of work engagement; in Model 2, three dimensions of psychological empowerment has explained a total amount of 38.0% variation on the interpretation of work-related flow; in Model 3, four dimensions of psychological empowerment has explained a total amount of 51.0% variation on the interpretation of basic psychological needs. The explanation of each factor in the models is ranked from high to low. Generally speaking, the explanation of psychological empowerment is higher on work engagement than on work-related flow. Specific items are shown in Table 2.

Table 2 – The influence coefficient of psychological empowerment on work engagement, work-related flow and basic psychological needs (Linear)

Model	Independent variable	B	Beta	t	P	ΔR^2	F	P	Dependent variable
1	Autonomy	0.295	0.344	8.125	0.000	0.380	100.065	0.000	Work engagement
	Work impact	0.214	0.264	6.407	0.000				
	Work meaning	0.150	0.167	3.742	0.000				
2	Work meaning	0.325	0.301	8.803	0.000	0.336	96.499	0.000	Work-related flow
	Work impact	0.286	0.353	7.951	0.000				
	Autonomy	0.167	0.113	3.259	0.000				
3	Work meaning	0.377	0.467	12.077	0.000	0.510	127.274	0.000	Basic psychological needs
	Work impact	0.143	0.187	5.087	0.000				
	Autonomy	0.127	0.151	3.596	0.000				
	Self-efficacy	0.090	0.096	2.506	0.013				

In the influence model of psychological empowerment, each dimension of basic psychological needs has an explanatory effect to some extent on work engagement and work flow, and its significance passes the test. In Model 4, two dimensions of basic psychological needs has explained a total amount of 33.9% variation on the interpretation of work engagement; in Model 5, three dimensions of basic psychological needs has explained a total amount of 34.6% variation on the interpretation of work-related flow. The explanation of each

factor in the models is ranked from high to low. Generally speaking, the explanation of basic psychological needs is slightly higher on work-related flow than on work engagement. Specific items are shown in Table 3.

Table 3 – The influence coefficient of basic psychological needs on work engagement, work-related flow (Linear)

Model	Independent variable	B	Beta	t	P	ΔR^2	F	P	Dependent variable
4	Needs for competence	0.357	0.474	10.810	0.000	0.339	80.102	0.000	Work engagement
	Needs for autonomy	0.165	0.165	3.503	0.001				
5	Needs for competence	0.347	0.349	10.300	0.000	0.346	96.039	0.000	Work-related flow
	Needs for autonomy	0.228	0.361	7.847	0.000				
	Needs for affiliation	0.172	0.262	3.448	0.001				

4.3 The Intermediary Role of Basic Psychological Needs on Psychological Empowerment, Work Engagement and Work-related Flow

In order to investigate the relationship of knowledge employees' psychological empowerment with work engagement and work-related flow more clearly and analyze the intermediary role of basic psychological needs in these variables, authors conducted the AMOS structural equation model fitting test, and got the models as shown in Fig. 1 and in Fig. 2. In the model of work engagement (Fig. 2), the model fit indices actually were: $X^2=201.220$, $Df=62$, $X^2/df=3.245$, $RMSEA=0.073$, $GFI=0.904$, $NFI=0.902$, $CFI=0.907$; the indirect effect produced by basic psychological needs was $0.60*0.43=0.26$, the overall effect was $0.51 (0.25+0.26)$, the mediating effect of basic psychological needs accounted for 50.98% ($0.26/0.51$) of the overall effect, which was a good explanation of this model. In the model of work-related flow (Fig. 3), the model fit indices actually were: $X^2=167.334$, $Df=52$, $X^2/df=3.217$, $RMSEA=0.072$, $GFI=0.918$, $NFI=0.921$, $CFI=0.935$; the indirect effect produced by basic psychological needs was $0.69*0.54=0.37$, the overall effect was $0.60 (0.23+0.37)$, the mediating effect of basic psychological needs accounted for 61.67% ($0.37/0.60$) of the overall effect, which was a good explanation of this model. In these two SEM models, the fit indexes all reached the statistical criteria, the ratio of χ^2/df was less than 5, the RMSEA value was less than 0.08, the GFI, NFI, CFI were all above 0.9. In conclusion, the fitted models were tested, and hypotheses were verified.

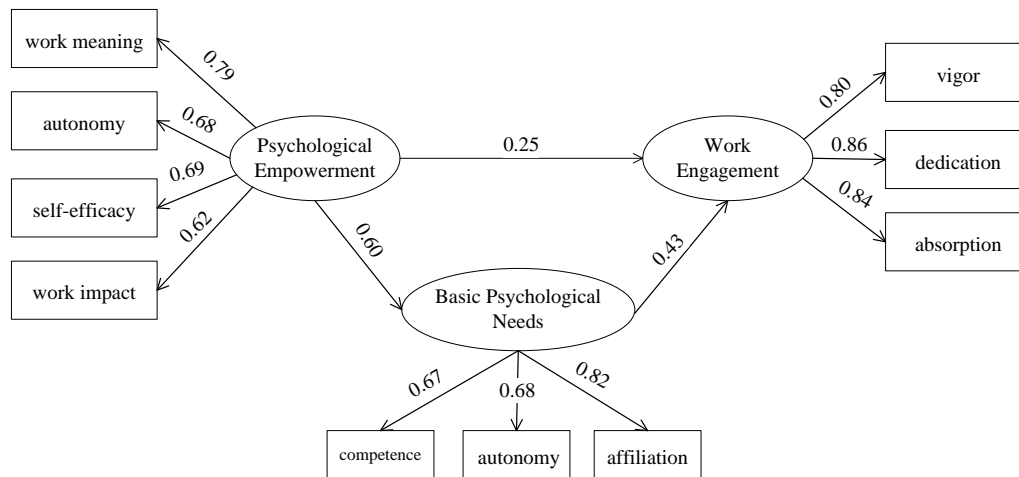


Fig. 1 – The intermediary role of basic psychological needs between knowledge employees’ psychological empowerment and work engagement

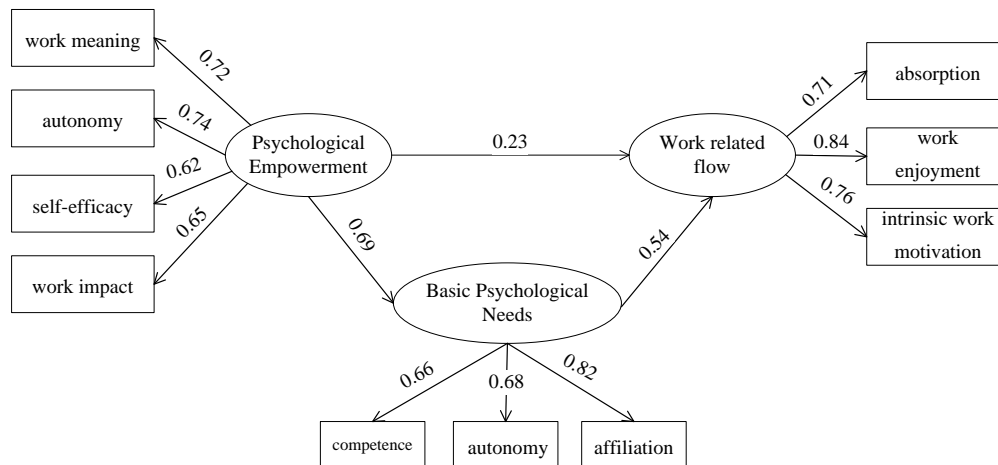


Fig. 2 – The intermediary role of basic psychological needs between knowledge employees’ psychological empowerment and work-related flow

5 Research Discussions and Research Conclusions

5.1 Discussions and Conclusions

This study explores the influencing mechanism of knowledge employees’ psychological empowerment on work engagement and work-related flow and the intermediary role of basic psychological needs on knowledge employees’ psychological empowerment, work engagement and work-related flow on the perspective of self-determination. Through statistical analysis and the structural equation model test, the hypotheses are verified.

5.2 Implications and Suggestions

Knowledge employees’ psychological empowerment, basic psychological needs, work engagement and work-related flow are in the middle level. Overall, the level of knowledge employees’ psychological empowerment, basic psychological needs, work engagement and

work-related flow are not very strong. While employees in the actual work can feel a certain degree of self-efficacy, their needs for autonomy and competence are satisfied with some extent, but without high level of intrinsic work motivation. During the interview, some employees said that companies pay more attention to work performance than employees' emotional needs, work competence and the sense of personal accomplishment, that is, they only care about whether employees have achieved desired results or not and don't concern about their psychological experience at work. Therefore, business managers need to focus on promoting knowledge employees' positive psychological experiences.

Psychological empowerment has a significant impact on knowledge employees' work engagement and work-related flow. Analysis results of correlation and regression show that dimensions of psychological empowerment have a significant correlation with dimensions of work engagement and work-related flow, that is, the higher the level of psychological empowerment, the higher degree of knowledge employees' work engagement and work-related flow. If organizations want to improve knowledge employees' work performance, especially innovating performance, they have to increase knowledge employees' psychological empowerment. The overall predictive effect of psychological empowerment on work engagement is slightly higher than on work-related flow.

Basic psychological needs play an intermediary role on knowledge employees' psychological empowerment, work engagement and work-related flow. Results of the mediating effect show that, the intermediary role of basic psychological needs between psychological empowerment and work-related flow is slightly higher than the intermediary role between psychological empowerment and work engagement. Needs for autonomy, competence and affiliation of basic psychological needs have varying degrees of intermediary effect, while needs for affiliation have the strongest intermediary effect. For enterprise managers, they should strength knowledge employees' sense of belonging through sufficient psychological empowerment, thereby promoting the degree of employees' work engagement and work-related flow, which can not only avoid the idea of be separated from the organization, but also enhance the cohesion of the organization.

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