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Bayesian network analysis of the potential underlying mechanisms linking emotional management ability and task efficiency

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Abstract Taking employees of service-oriented enterprises as the research object, this study explores the influence of emotion management ability on task completion efficiency through hierarchical regression modeling. Based on the data of 406 valid questionnaires, the four-dimensional structure of emotion management (emotion awareness, emotion expression, emotion adjustment, emotion utilization) and the dual connotation of task efficiency (task performance, relationship performance) were constructed. The empirical analysis showed that the reliability of the emotion management scale was good, with an overall Cronbach's α = 0.822 and a factor cumulative variance explained of 65.38%. The Emotion Expression dimension scored the highest with a mean value of 4.32, and the Emotion Awareness dimension scored the lowest with 3.68. Pearson correlation analysis showed significant positive correlations among the four dimensions of Emotion Management, r=0.602~0.776, and significant positive correlations were found with Task Performance r=0.617~0.774, Interpersonal Facilitation r=0.586~0.702, and Work Devotion r=0.634~0.746, which were all significantly positive. 0.746 were all significantly positively correlated. The hierarchical regression model further verified that emotional awareness β=0.274, emotional adjustment β=0.284 and emotional use β=0.263 had significant positive predictive effects on task performance (p<0.001), and the model as a whole did not have the problem of multiple covariance VIF<1.2. The results of the study provide data support for service-oriented enterprises to optimize the training of employees' emotional management and to improve the efficiency of tasks.

Index Terms emotion management, task completion efficiency, hierarchical regression model, factor analysis

I. Introduction

In today's fast-paced work environment, the efficiency of work task completion is crucial to the career development of individuals and the success of enterprises [1], [2]. Efficient task completion efficiency not only means time saving, but also a leap in knowledge absorption and utilization ability [3]. And emotion management ability, as an important factor affecting personal state and behavior, has a profound impact on task completion efficiency [4], [5].

Emotion management is the measures taken by individuals in dealing with their emotions, and different emotional states can have various effects on an individual's concentration, motivation, and creativity [6], [7]. Positive emotions stimulate our motivation and creativity, making us more motivated to face challenges at work and more able to stay productive for long periods of time [8]-[10]. On the contrary, negative emotional states can adversely affect work efficiency [11]. For example, anxiety, stress, and frustration can cause us to become distracted and unfocused in our thoughts, leading to a decrease in the quality of our work [12], [13]. Negative emotions also weaken our motivation and creativity, making us lose enthusiasm for our work and become lazy and hesitant [14], [15]. In this working condition, we are prone to make mistakes and our work efficiency will be significantly reduced [16]. Therefore, having good emotion management skills plays an important role in the healthy development of both life and work. By enhancing emotional cognitive abilities, seeking emotional support, learning positive coping strategies, and participating in emotion management training, individuals can enhance their emotion management skills and better cope with emotional challenges at work [17]-[20].

Focusing on the special context of service-oriented enterprises, this study explores the potential impact of employees' emotion management ability on task performance and relationship performance. The operationalized dimensions of emotion management and task efficiency are systematically constructed, and an analysis path that takes into account commonalities and group differences is proposed based on a hierarchical regression model. The four-dimensional structure of emotion management (emotion awareness, emotion expression, emotion adjustment, and emotion utilization) and the dual connotation of task efficiency (task performance and relationship performance)

were clarified through theoretical sorting. And combined with the uniqueness of the interaction between employees and customers in service-oriented enterprises, a targeted scale and research program were designed. On this basis, a hierarchical linear regression model was introduced to quantify the heterogeneity effect of the emotion management ability of employees in different service industries by decomposing the coefficient of commonality β and the coefficient of group individuality γ_j.

II. Dimension construction and hierarchical regression modeling of emotion management ability and task efficiency

II. A. Significance of research variables

II. A. 1) Emotional management

Emotional management refers to the ability of an individual to correctly perceive, cognize, and identify his/her own and other people's emotional states through psychological or physiological states, to positively judge and evaluate emotions, to express emotions through rational and accurate verbal or non-verbal media, and to supplement the use of emotion-related knowledge to reflect on and regulate negative emotions and to enhance positive emotions, so as to promote the growth of emotions and reason, and to bring oneself and other people's bodies and minds into a harmonious state. The ability to achieve a harmonious state of mind and body for oneself and others.

Emotion management is categorized into the following four dimensions.

Emotional Awareness: Individuals are able to correctly perceive, recognize, and identify their own and others' emotional states.

Emotional Expression: Individuals are able to accurately judge and evaluate their own emotions and at the same time display them appropriately through rational and accurate verbal or body language.

Emotional Adjustment: Individuals are able to adopt appropriate emotional coping strategies to alleviate, adjust, and change their own and others' negative emotions toward positive ones.

Emotional Use: Individuals use their knowledge of emotions to promote emotional and intellectual development, to balance their own and others' internal experiences and external expressions of emotions, and to think creatively to motivate themselves to maintain good relationships and achieve their life goals.

II. A. 2) Efficiency of mandate completion

Task completion efficiency is a unified synthesis of behavior and results, and this paper divides the dimensions of task completion efficiency into “task performance” and “relationship performance”. On the basis of relationship performance, “relationship performance” is further categorized into the dimensions of “interpersonal facilitation” and “work commitment”.

(1) Task performance refers to the outputs that are directly related to work inputs and can be directly visualized and objectively used as indicators and criteria for measuring the performance of this part of the work result. Task performance is closely related to the individual's work content, work skills, business level, personal ability.

(2) Relationship performance refers to although the organization does not formally and explicitly stipulated, but the employees due to self-consciousness and make the behavior of the organization's overall performance improvement. This kind of behavior is what the organization wants but cannot possibly require, and is not a direct production and service activity. Interpersonal Facilitation measures an individual's behavior in maintaining and promoting interpersonal relationships in the workplace, such as cooperating with or helping colleagues. Work dedication is used primarily to measure individual self-regulatory behaviours related to work, such as motivation, conscientiousness, adherence to organizational systems, and maintenance of organizational goals.

II. B. Study design

After completing the theoretical deconstruction of the core variables, how to transform the abstract dimensions into observable measurement tools and design the research program to address the specificities of service-oriented enterprises become the key issues to be solved at this stage.

II. B. 1) Objects of study

Every industry has its own characteristics, and this paper examines the emotional management of employees in service-oriented enterprises. This is because the service-oriented enterprises and other types of enterprises compared with its significant characteristics, service-oriented enterprises sell not only include tangible products, but also its intangible value of additional services. Service connotes an intangible equivalent exchange of “goods”, which is characterized by providing customers with behavioral activities to meet their interests. Service-oriented enterprise employees are usually through the language, behavior, skills for customers to provide quality service, through the communication with customers, listening to customer requirements, and strive to make the customer to obtain the satisfaction and pleasure of the service process. Various qualities of customers to a certain extent. To a

certain extent, the various qualities of the customer will have an impact on the working mood of the employees, and conversely, the emotional state of the employees' life is also more likely to be transmitted in the interaction with the customers, therefore, this kind of interactive relationship between the employees and the customers has higher requirements for the employees' emotional management ability. Research has proved that the level of emotion management of employees in service-oriented enterprises directly affects their attitudes toward interacting with customers, the quality results of providing services to customers, and the image and performance of the enterprise.

Therefore, in this study, the service-oriented enterprise employees as the object of research and investigation, in order to realize the feasibility and convenience of the research, the survey form of questionnaire was used to investigate the catering and hotel-type service employees, communication-type service enterprise employees (mobile, Unicom, telecom), bank-type employees and so on across the country, and the number of questionnaires distributed through the electronic questionnaire and written questionnaires in the form of 500 questionnaires.

II. B. 2) Scale design

The dimensions of the Emotion Management Scale for Employees of Service-oriented Enterprises designed in this paper include emotion awareness, emotion expression, emotion adjustment and emotion utilization, and the specific variables are elaborated as follows:

Emotional awareness includes:

(1) I can realize the change of emotional state through the change of physiological state.

(2) I can understand my true inner feelings and emotions.

(3) I can become aware of self-depreciating negative beliefs.

(4) I can perceive changes in my own emotions through my customers' reactions to me.

(5) I can recognize the emotional state of customers through their facial expressions and behavioral actions.

(6) I can recognize the true feelings of others.

Emotional expression is included:

(7) I can accurately express my inner feelings.

(8) I can express my emotions with rational) appropriate nonverbal (facial) words or actions.

(9) I can listen to and question others before relaying their true feelings.

(10) I can express anger appropriately.

(11) I can change the way I express my emotions depending on the client and the work situation.

(12) I can correctly express my inner thoughts and feelings.

Emotional adjustment includes:

(13) I can soothe my personal emotions by breathing deeply when I am nervous and anxious.

(14) When encountering difficulties at work, I have difficulty controlling my emotions and cannot calmly analyze the reasons for the difficulties. (Reverse)

(15) When depressed, I can break through by self-motivation.

(16) When angry or sad, I can find ways to divert my attention in order to gradually shift or eliminate negative emotions

(17) I can look at things in a positive light and not let negative feelings affect my work.

(18) I can maintain optimism and positive emotions to face problems in life and work.

Emotional adjustment includes:

(19) I can use communication skills to handle interpersonal conflicts between customers and organizations.

(20) I can correctly handle my irrational thoughts and internal language.

(21) I can motivate others to regain morale and confidence when they are depressed.

(22) I grow physically and mentally after setbacks and learn from my experiences without falling apart.

(23) I am able to control my emotions as much as possible and keep them in a stable state.

II. C.Hierarchical linear regression model

After completing the design of data collection tools, how to effectively integrate multi-group data and capture the differential impact of emotion management on task efficiency needs to rely on hierarchical regression models adapted to complex data structures.

Remember that the overall sample capacity is n and the samples are divided into K groups, $K \geq 1$. Let n_k denote the sample capacity of each group satisfying $\sum_{k=1}^{K} n_k = n$. Let $Y = ((y^{(1)})^T, \cdots, (y^{(K)})^T)^T$, with $y^{(k)}$ denoting the k th set of response variables and $x^{(k)}$ the k th set of covariates.

Suppose $\left\{(y_i^{(k)}, x_i^{(k)}), i=1,\cdots,n_k\right\}$ denotes the k th group of independently and identically distributed samples where $y_i^{(k)}$ is the response variable, and $x_i^{(k)}=(x_{i1}^{(k)},\cdots,x_{ip}^{(k)})$ are covariates. Assuming that $\dot{o}_i^{(k)}=y_i^{(k)}-x_i^{(k)}\beta^{(k)^*}$, the decomposition of $\beta^{(k)^*}$ is done as follows in order to reflect the grouping properties:

$$\beta^{(k)^*}=v^*+\delta^{(k)^*} \tag{1}$$

where $v^*=(v_1^*,\cdots,v_p^*)$ denotes the commonality regression coefficients without stratification of samples, and $\delta^{(k)^*}=(\delta_1^{(k)^*},\cdots,\delta_p^{(k)^*})$ denotes the individuality regression coefficients of the k th group, the decomposition method of the core idea is that the stratified regression coefficients are linear combinations of the commonality regression coefficients and the personality regression coefficients.

For the parameters to be estimated in equation (1), $(v,\delta^{(1)},\cdots\delta^{(K)})$, they can be estimated by solving the following objective function:

$$(\hat{v},\hat{\delta}^{(1)},\cdots\hat{\delta}^{(K)})\in\underset{v,\delta^{(1)},\cdots\delta^{(K)}}{\arg\min}\left\{\frac{1}{n}\sum_{k=1}^{K}\sum_{i=1}^{n_k}\left\|y_i^{(k)}-x_i^{(k)}(v+\delta^{(k)})\right\|_2^2\right\} \tag{2}$$

In order to make the coefficients in Eq. (2) satisfy the sparsity assumption, a regular term is introduced in Eq. (2), and the LASSO penalty function is considered in the paper, then Eq. (2) becomes Eq. (3) as follows:

$$(\hat{v},\hat{\delta}^{(1)},\cdots\hat{\delta}^{(K)})\in\underset{v,\delta^{(1)},\cdots\delta^{(K)}}{\arg\min}\left\{\begin{array}{l}\frac{1}{n}\sum_{k=1}^{K}\sum_{i=1}^{n_k}\rho_\tau(y_i^{(k)}-x_i^{(k)}(v+\delta^{(k)}))\\+\lambda_1\|v\|_1\sum_{k=1}^{K}\lambda_2^{(k)}\left\|\delta^{(k)}\right\|_1\end{array}\right\} \tag{3}$$

To facilitate the estimation of Eq. (3), it is transformed as follows, such that

$$\theta^{(k)}=\frac{\lambda_2^{(k)}}{\lambda_1} \tag{4}$$

$$X_{n\times(K+1)p}^*=\begin{bmatrix}x^{(1)} & \frac{x^{(1)}}{\theta^{(1)}} & \cdots & 0_{n_k\times p}\\ \vdots & \vdots & \ddots & \vdots\\ x^{(K)} & 0_{n_k\times p} & \cdots & \frac{x^{(K)}}{\theta^{(k)}}\end{bmatrix} \tag{5}$$

$$\beta=(v^T,(\theta^{(1)}\delta^{(1)})^T,\cdots,(\theta^{(k)}\delta^{(k)})^T)^T \tag{6}$$

Then equation (3) becomes

$$\hat{\beta}=\arg\min\left\{\frac{1}{n}\left\|Y-X^*\beta\right\|_2^2+\lambda_1\|\beta\|_1\right\} \tag{7}$$

Eq. (7) is the parameter estimator for the hierarchical linear regression model.

III. Empirical Tests of Employee Emotion Management and Task Efficiency in Service-oriented Enterprises

After completing the construction of theoretical dimensions and the design of hierarchical regression model of emotion management ability and task efficiency, this chapter systematically tests the applicability of the theoretical model based on the empirical research data of the employees in service-oriented enterprises, and reveals the specific influence path of emotion management on task efficiency through statistical analysis methods.

III. A. Demographic Characteristics and Scale Reliability Test of the Research Data

III. A. 1) Descriptive analysis of demographic characteristics

A total of 406 valid questionnaires were collected about the employees of service oriented companies with a recovery rate of 81.2%. The results of descriptive statistical analysis of demographic characteristics were summarized in Table 1.

Table 1: Description of demographic Characteristics of service-oriented Employees

Demographic variable	Category	Number of people	Percentage
Sex	Male	170	41.87%
	Female	236	58.13%
Age	Under 30 years old	236	58.13%
	Aged 31 to 40	95	23.40%
	Aged 41 to 59	54	13.30%
	51 years old and above	21	5.17%
Educational background	High school and below	172	42.36%
	Junior college	158	38.92%
	Undergraduate	71	17.49%
	Graduate student	5	1.23%
Years of working experience	Three years or less	216	53.20%
	4 to 8 years	119	29.31%
	9 to 15 years	51	12.56%
	More than 16 years	20	4.93%
Monthly income	3,000 yuan or less	188	46.31%
	3,001 to 6,000 yuan	155	38.18%
	60,001-9,000 yuan	54	13.30%
	9,001 yuan or more	9	2.22%

Of the 406 valid samples, 170 were male, accounting for 41.87% of the total, and 236 were female, accounting for 58.13% of the total. The number of females is significantly larger than that of males, which is in line with the gender ratio characteristics of frontline service employees.

In terms of age distribution, the sample size of 30 years old and below is the largest, with 236 people, accounting for 58.12% of the total number of people; there are 95 people aged 31-40 years old, accounting for 23.40% of the total number of people; there are 54 people aged 41-50 years old, accounting for 13.30% of the total number of people; and there are only 21 people aged 51 years old and above; accounting for 5.17% of the total number of people. More than 80 of the sample were young and middle-aged employees under the age of 40.

In terms of education distribution, there were 172 respondents with high school and lower education level, accounting for 42.36% of the total; 158 respondents with specialized education, accounting for 38.92% of the total; 71 respondents with bachelor's degree, accounting for 17.49% of the total; and 5 respondents with postgraduate education, accounting for 1.23% of the total. It can be seen that the frontline service employees in the sample do not have a high level of education.

In terms of years of working experience, those with 3 years and below were 216, accounting for 53.20% of the total; those with 4-8 years were 119, accounting for 29.31% of the total; those with 9-15 years were 51, accounting for 12.56% of the total; and those with 16 years and above were 20, accounting for 4.93% of the total. The respondents' working years are on the short side, reflecting the service industry's characteristics of high mobility and uncertainty.

In terms of monthly income, 1888 people, or 46.31% of the total, earned 3,000 yuan or less; 155 people, or 38.18% of the total, earned 3,001-6,000; 54 people, or 13.30% of the total, earned 6,000-9,000; and only 9 people, or 2.22% of the total, earned 9,001 yuan or more. The lower income level of front-line service employees in the sample is consistent with the characteristics of the industry and the distribution characteristics of education and years of working experience.

III. A. 2) Internal Consistency Reliability Analysis of Mood Scales

Regarding the internal consistency reliability analysis of the Employee Emotions Scale in service-oriented companies to meet the criteria of excluding CITC values greater than 0.3, the calculated Cronbath'sa coefficient of 0.8 or more is preferred, between 0.7-0.8 is considered as an acceptable range, and the coefficients of the subscales should be greater than 0.5-0.6. On this basis, the internal consistency of the emotion scale was analyzed, and the results of the internal-consistency reliability analysis of the emotion scale are shown in Table 2.

The CITC values of the 23 items of the emotion scale in the formal questionnaire all satisfy the criterion of greater than 0.3; the Cronbath'sa coefficient of the rectification of the emotion scale is 0.822, and that of the four subscales of emotion awareness, emotion expression, emotion adjustment, and emotion use are respectively 0.762, 0.788,

0.791 and 0.774, which are much larger than the standard value of 0.6. From the results, the reliability level after testing the sample of emotion scales about the employees of service-oriented enterprises is more satisfactory.

Table 2: Internal - Consistency reliability analysis of emotion scales

Measurement dimension	Item	CITC	The Cronbath's a coefficient after deleting this item	The Cronbath's A coefficient of the subscale	The Cronbath's A coefficient of the emotion scale
Emotional awareness	M1	0.350	0.785	0.762	0.822
	M2	0.493	0.781		
	M3	0.457	0.778		
	M4	0.515	0.789		
	M5	0.419	0.781		
	M6	0.508	0.784		
Emotional expression	M7	0.525	0.781	0.788	
	M8	0.425	0.786		
	M9	0.473	0.78		
	M10	0.343	0.781		
	M11	0.511	0.784		
	M12	0.386	0.793		
Emotional adjustment	M13	0.392	0.780	0.791	
	M14	0.524	0.791		
	M15	0.465	0.783		
	M16	0.454	0.784		
	M17	0.376	0.779		
	M18	0.423	0.784		
Emotional application	M19	0.399	0.789	0.774	
	M20	0.467	0.791		
	M21	0.352	0.778		
	M22	0.530	0.782		
	M23	0.389	0.781		

III. B. Factor Structure of Emotional Management Competence and Its Path to Task Performance

After clarifying the demographic characteristics and scale reliability of the sample, the four-dimensional structure of emotion management competence was further validated by principal component factor analysis, and its mechanism of action on task performance was revealed based on correlation coefficients and regression models.

III. B. 1) Principal Component Factor Analysis for Emotion Management

Whether a questionnaire is amenable to factor analysis begins with measuring its KMO measure and Bartlett's sphere test entries. When the KMO value is greater than 0.7. And the probability of significance of the x2 statistic value of the Bartlett's sphere test is 0.000. When it is less than 1%, it is suitable for factor analysis. The KMO value of the Emotion Management Scale for Employees in Service Oriented Enterprises is 0.877, which shows that it is suitable for factor analysis.

The principal components with eigenvalues greater than were taken as factors according to the method of maximum variance rotation, and the 23 items of emotion management were subjected to principal component factor analysis, with four factors explaining 65.38% of the variance. The results of the principal component factor analysis for each variable are shown in Table 3.

Table 3: The principal component factor analysis results of each variable

Measurement dimension	Item	Factor loading				Coefficient of α
		Awareness	Expression	Adjustment	Application	
Emotional awareness	M1	0.809	0.019	-0.008	0.069	0.762
	M2	0.736	0.121	0.012	-0.086	
	M3	0.853	0.123	0.102	0.088	
	M4	0.744	-0.116	0.114	-0.031	
	M5	0.852	0.120	0.038	0.046	
	M6	0.834	0.036	0.064	0.115	
Emotional expression	M7	0.076	0.748	0.085	0.043	0.788
	M8	0.074	0.791	0.093	-0.107	
	M9	-0.076	0.815	0.015	0.076	
	M10	0.081	0.749	-0.098	0.045	
	M11	0.018	0.674	0.042	0.022	
	M12	-0.139	0.832	0.041	-0.023	
Emotional adjustment	M13	0.085	0.102	0.748	0.122	0.791
	M14	0.015	0.113	0.817	-0.034	
	M15	0.097	-0.068	0.781	0.106	
	M16	0.112	-0.039	0.836	0.101	
	M17	0.055	0.031	0.642	0.059	
	M18	-0.106	0.061	0.806	0.020	
Emotional application	M19	0.034	-0.013	0.106	0.782	0.774
	M20	0.083	0.052	0.086	0.788	
	M21	0.037	0.013	0.078	0.852	
	M22	-0.123	0.023	0.048	0.741	
	M23	0.076	0.109	-0.106	0.662	

The factor loadings of each factor showed a clear four-dimensional structure: the factor loadings of the emotion awareness dimension (M1-M6) ranged from 0.736 to 0.853, those of the emotion expression dimension (M7-M12) from 0.674 to 0.832, those of the emotion adjustment dimension (M13-M18) from 0.642 to 0.836, and those of the emotion utilization dimension (M19-M23) from 0.662 to 0.852, indicating that the scale has good construct validity. The Cronbach's alpha coefficients for each dimension were higher than 0.76, further validating the internal consistency of the scale.

III. B. 2) Descriptive Statistics for Emotional Management

After completing the validation of the factor structure of emotion management ability, the combination of descriptive statistics and correlation coefficient analysis can be used to initially determine the potential direction of influence of each dimension on task efficiency, and then quantify its specific contribution through hierarchical regression modeling.

The scale is scored using the Likert 5 method - "strongly disagree", "somewhat disagree", "general", "somewhat agree", and "completely agree" are scored as 1, 2, 3, 4, and 5 points, respectively. The descriptive statistics about the emotion management of the employees of service-oriented companies from 406 valid questionnaires are shown in Figure 1.

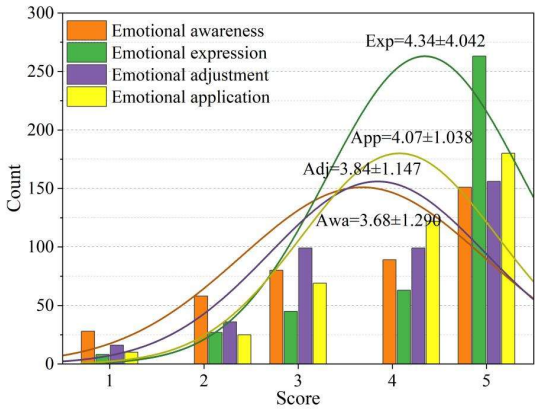

Figure 1: Descriptive statistics of emotional intelligence of service employees

The overall emotion management ability of employees in service-oriented enterprises is at a medium-high level, with the highest score for emotion expression, with a mean value of 4.32, followed by emotion use, 4.07, with a standard deviation of 1.038, emotion adjustment, 3.84, with a standard deviation of 1.147, and emotion awareness, with a slightly lower mean value of 3.68. The data suggest that employees are better at expressing emotions through language or behavior, but their ability to be aware of their own emotional state is relatively weak and varies greatly between individuals.

III. C. Correlation coefficients between variables

Pearson correlation coefficients between the variables were also measured in this study and the Pearson correlation coefficients between the variables (N=407) are shown in Figure 2.

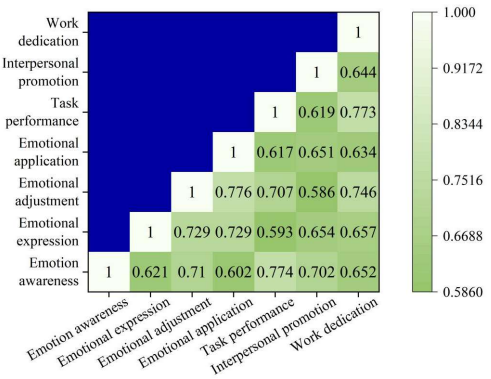

Figure 2: Pearson correlation coefficients among various variables (N=407)

There was a significant positive correlation between the four dimensions of emotion management, r=0.602~0.776, with the strongest correlation between emotion adjustment and emotion use, r=0.776. The highest correlation coefficient was found between emotion awareness and task performance, r=0.774, followed by emotion adjustment and work dedication, r=0.746. There was also a significant positive correlation between task performance, interpersonal facilitation and work dedication, r = 0.619~0.773, indicating that there is a synergistic enhancement effect between emotion management ability and multidimensional task efficiency.

III. D. Regression Analysis of Emotion Management on Task Completion Performance

This study used stepwise multiple regression analysis to verify the effects of emotion awareness, emotion expression, emotion adjustment, and emotion use on task completion efficiency. The results of stepwise multiple regression analysis of emotion management on task completion performance are shown in Table 4. As can be seen from the table, the tolerance of the explanatory variables are all above 0.8, the variance inflation factor is small, and there is no multicollinearity problem.

Table 4: Regression analysis of task completion performance by emotion management

Model	Enter the regression model variables	Non-standard regression coefficient		Standard regression coefficient	t	Sig	Collinearity judgment	
		B	Standard deviation	Beta			Tolerance	Variance inflation factor
1	Constant	3.387	0.143		11.578	0.000		
	Emotional awareness	0.478	0.115	0.501	6.424	0.000	1.000	1.000
2	Constant	2.012	0.087		7.072	0.000		
	Emotional awareness	0.317	0.106	0.388	5.725	0.000	0.974	1.073
	Emotional expression	0.328	0.085	0.365	5.272	0.000	0.981	1.042
3	Constant	1.725	0.134		5.751	0.000		
	Emotional awareness	0.307	0.063	0.341	4.598	0.000	0.953	1.089
	Emotional expression	0.284	0.149	0.330	4.198	0.000	0.948	1.112
	Emotional adjustment	0.296	0.096	0.317	4.077	0.000	0.934	1.082
4	Constant	1.274	0.228		4.995	0.000		
	Emotional awareness	0.251	0.137	0.274	3.632	0.000	0.863	1.134
	Emotional expression	0.218	0.196	0.268	3.727	0.000	0.834	1.163
	Emotional adjustment	0.236	0.068	0.284	3.275	0.000	0.856	1.203
	Emotional application	0.203	0.103	0.263	3.785	0.000	0.873	1.158

Stratified regression analysis revealed that all four dimensions of emotion management had a significant positive effect on task performance ($p<0.001$). The highest standardized regression coefficient was found for emotional awareness, $\beta=0.274$, followed by emotional adjustment, $\beta=0.284$ and emotional use $\beta=0.263$. The covariance indicator for Model 4, VIF<1.2 indicates that there is no multicollinearity problem between the variables, and the final regression equation is: task performance = 1.274 + 0.251×emotion awareness + 0.218×emotion expression + 0.236×emotion adjustment + 0.203×emotion utilization.

IV. Conclusion

This study reveals the mechanism of differential influence of employees' emotion management ability on task completion efficiency in service-oriented enterprises through hierarchical regression modeling.

Data analysis showed that emotion awareness, emotion expression, emotion adjustment and emotion use were all validated by principal component factor analysis with factor loadings >0.64, and the scale reliability and validity were reliable with Cronbach's α coefficient >0.76, indicating that the four-dimensional division is scientific and practically applicable.

Regression analysis showed that emotion awareness $\beta=0.274$, emotion adjustment $\beta=0.284$ and emotion use $\beta=0.263$ were significant predictors of task performance, with emotion adjustment having the highest contribution, while emotion expression had a relatively weak independent explanatory power due to its high correlation with the other dimensions, with r=0.729~0.776.

This study optimized the hierarchical regression model through the LASSO penalty function, solved the problem of high-dimensional parameter sparsity, and provided a methodological reference for cross-industry emotion management research.

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