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Satisfaction Survey on the Joint-Training Open Base for Engineering Postgraduates in Guangdong – Take Guangdong Province Foshan Graduate Joint Training Base as an Example

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Abstract: *The Joint-training Open Base for Engineering Postgraduates is a government-built engineering practice open platform for the integration of production and education. In order to acquire the satisfaction of postgraduates with the engineering practice, a questionnaire survey was conducted on 399 postgraduates jointly trained by 15 universities and 101 enterprises from Guangdong Province Foshan Graduate Joint Training Base (hereafter denoted as Foshan Base). The results show that the overall satisfaction rate of the Open Base is 83.4%, which is higher than comparable Open Bases nationwide. The satisfaction rate with the academic ability of enterprises and enterprise tutors is relatively low, and the cohesive courses and R&D projects are strongly related to the satisfaction rate. Postgraduates are advised to pay close attention to the development of engineering professional ability and government guarantees delivered by the Open Base. It is recommended to further improve the Open Base operation system, accelerate replication and promotion, and further enhance the ability of service industry development.*

Keywords: *Engineering postgraduates; Satisfaction; Open Base*

1. Introduction

The Joint-training Open Base for Engineering Postgraduates is the cultivation carrier for the outstanding engineers' reserve talents. The "Engineering Degree Postgraduate Education Development Plan (2020-2025)" proposes to implement the national joint training base plan for postgraduates integrating production and education, and encourage enterprises and industries to build open joint training bases for postgraduates [1]. However, the current Joint-training Open Base do not have a clear organizational framework and construction standards, resulting in the base failing to play its due role in cultivating engineering practice capabilities. As a result, the quality of engineering postgraduates training needs to be improved urgently. Wang Chuanyi et al. pointed out that professional practice has a significant positive impact on the practical innovation ability and professional quality of engineering degree postgraduates [2]. Ma Yonghong and Zhang Shulin pointed out the necessity and urgency of establishing a postgraduate practice base where the government participates in the construction of a combination of government, industry, academia and research based on the surveys of 28 and 108 engineering postgraduates joint training demonstration bases across the country [3][4]. Lin Yanzhi et al. pointed out that "professional quality improvement plus professional ability training plus enterprise project practice" is an Open Base model of an integrated "government-industry-university-research" open platform system [5]. In order to solve the current problems of weak engineering practice and the low quality of engineering postgraduate training, since 2015, the government of Guangdong Province has built three Open Bases for joint training of engineering postgraduates in manufacturing central cities such as Foshan. The joint training of universities and local enterprises provides guarantee services. Under the guidance of universities and enterprise tutors, postgraduates rely on enterprise engineering practice projects to complete professional practice and thesis. The Open Base strengthens the role of the government in engineering practice and forms a new mechanism for collaborative education and collaborative innovation.

Postgraduate satisfaction survey is an important way to obtain the feedback of postgraduate training quality. Many domestic scholars have carried out research on postgraduate satisfaction from different

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perspectives. Zhou Wenhui et al. conducted an overall satisfaction survey on the national academic degree and engineering degree postgraduates from the four dimensions of curriculum teaching, scientific research training, mentor guidance, management and service, and found that the overall satisfaction rate of postgraduates was on the rise as a whole. Some aspects of teaching, scientific research training, management and service are less satisfied, and the satisfaction of different postgraduate groups shows a balanced trend [6]. Diao Xin believes that the influencing factors of postgraduate satisfaction include three factors: individual, tutor, and learning environment [7]. Sun Yuwei et al. studied the satisfaction and key elements of the MLIS training process from the aspects of curriculum teaching, scientific research, professional practice, mentor guidance, dissertation, management and service of training institutions [8]. Bao Yanhong et al. conducted a survey on the satisfaction of the educational service quality of engineering postgraduates in China from six dimensions: curriculum design, professional practice, mentor guidance, cooperative training units, ability improvement, and career development. He believed that the number of external tutors is insufficient, and the selection and training of engineering teachers still needs to be strengthened [9].

The current postgraduate education satisfaction is mainly based on the overall survey, and there is a relative lack of research on the satisfaction survey of engineering postgraduates from the perspective of engineering practice or Open Base. Focusing on the key aspects of engineering practice to conduct a satisfaction survey on Open Bases is conducive to clarifying the key influencing factors of engineering practice, providing a decision-making reference for the government to improve and promote the Open Base model in the next step, and is of great significance to the reform of engineering postgraduate education.

2. Investigation Method and Data Processing

2.1. Dimensional Design

Referring to Zhou Yonghui, Bao Yanhong and other scholars' dimension design on the satisfaction of postgraduates, combined with the unique organizational and training characteristics of the Open Base, it is further expanded to six dimensions, which are the design of joint courses, engineering practice, enterprise R&D projects, enterprise mentors, guidance from school-enterprise mentors, government management and service. The six dimensions not only cover the government, universities, enterprises and other objects that provide joint training management services, but also reflect the unique engineering practice sessions of Open Bases such as bridging courses, R&D projects, and management services of the base center.

2.2. Data Processing

Using the Likert five-point scale, the satisfaction evaluation is divided into five levels: "Very satisfied (denoted as VS); Quite satisfied (QS); General satisfied (GS); Dissatisfied (D); Very dissatisfied (VD) ". SPSS Statistics 26 was used for statistical analysis, where the KMO value was 0.972, the significant P value of the Bartlett spherical test was 0.000***. The level was significant, and the null hypothesis was rejected. Thus, the variables were correlated. The factor analysis was valid and the degree is suitable. In addition, Bernbach's alpha coefficient was 0.99 after calculation, which indicates that the reliability of the questionnaire was great.

2.3. Data Sources

This study selects the Foshan base as the research object. The Foshan base is one of the three key engineering postgraduate joint-training Open Bases in Guangdong Province. The annual postgraduate joint training scale accounts for about 65% of the total size of the province's Open Bases. Hence, it has a strong representation. The respondents of the satisfaction survey came from 399 full-time master degree students in engineering majors from 15 universities and 101 enterprises. Among them, the universities are all general colleges and universities in Guangdong Province, and the enterprises are mainly national high-tech enterprises in Foshan. Through online questionnaire distribution and answering, a total of 399 valid questionnaires were received, and the effective rate was 100%.The survey respondents were from the postgraduates who began their study in the year of 2016 to 2020. Among them, the sample size in 2016 and 2017 was small, which was less than 50 people. The postgraduates beginning in 2020 has been in the Open Base for less than 4 months when filling out the questionnaire. However, other grades have been jointly trained in the base for at least one year. Among the survey respondents, 251 were men,

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accounting for 63%, and 148 were women, accounting for 37%.

3. Investigation Results

3.1. Overall Satisfaction of Postgraduates

The overall satisfaction rate of postgraduates with the Open Base was 83.4% (see Table 1).

Table 1: Overall satisfaction with the Open Base

Options*	Proportion (%)	Mean	Median	Standard deviation	Open Base satisfaction rate (%)
VS	37.3	4.11	4	0.96	83.4
QS	46.1				
GS	10.3				
D	2.3				
VD	4.0				

* - VS: Very satisfied; QS: Quite satisfied; GS: General satisfied; D: Dissatisfied; VD: Very dissatisfied.

(1) Satisfaction of different gender groups. The overall satisfaction rate of men with the Open Base joint training model was 81.8%, and the overall satisfaction rate of women with the Open Base joint training model was 86.7% (see Figure 1). There was no significant difference between men and women (sig>0.05).

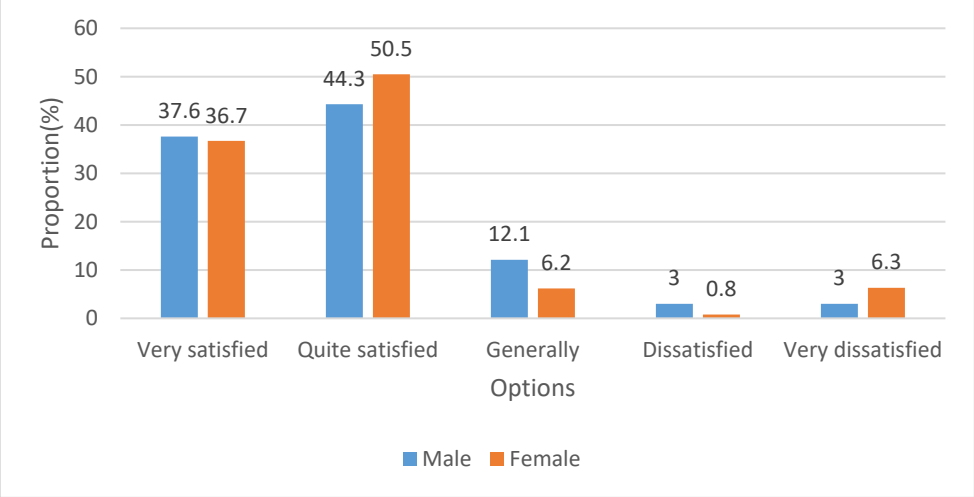

Figure 1: Comparison of overall satisfaction of postgraduates of different genders

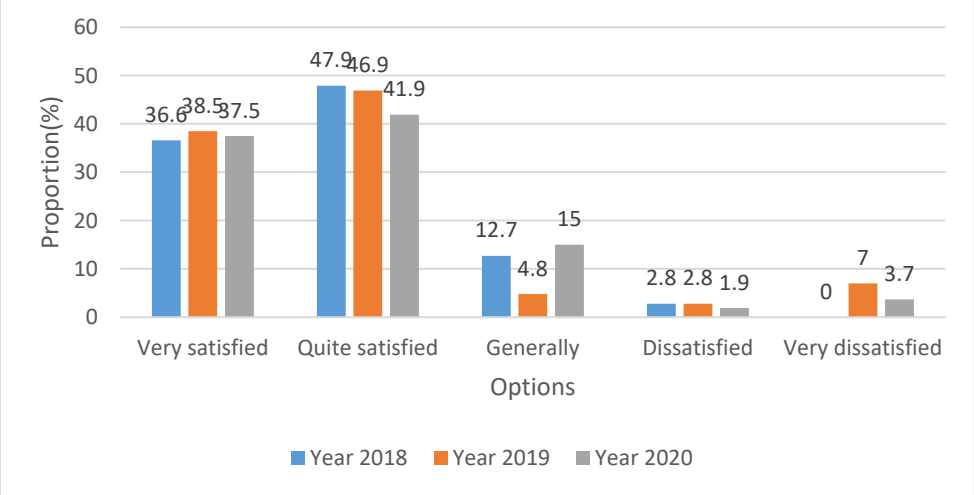

Figure 2: Overall satisfaction of postgraduates of different grades

(2) Satisfaction of different grades. In 2017, the first batch of postgraduates settled in the Open Base.

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The number of postgraduates in the first two years was small. Therefore, the sample size from the year 2016 and 2017 grades was small and was not included in the statistical scope according to the grades. The satisfaction level of the postgraduates began from 2018 to 2019 keeps increasing year by year, which is higher than the overall satisfaction rate of the Open Base. The level of satisfaction in 2020 showed a downward trend and was lower than the overall satisfaction rate of the Open Base (see Figure 2).

3.2. Bridging Courses Satisfaction

The overall satisfaction rate of postgraduates with the Open Base bridging courses is 82.2% (see Table 2), which is slightly lower than the overall satisfaction rate of the Open Base. Bridging courses include pre-job training courses offered by the base center, job-training courses offered by enterprises, and project courses jointly offered by school-enterprise tutors. The satisfaction rates are 86.8%, 83.1%, and 86.9% respectively (see Table 3), which are all higher than the overall satisfaction rate of the bridging courses.

Table 2: Bridging courses satisfaction

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	40.1	82.2	4.31	4	0.81
QS	42.1				
GS	14.8				
D	1.3				
VD	1.7				

Table 3: Postgraduate evaluations on all bridging courses

Course	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Base pre-job training	44.9	40.4	12	1	1.7	85.3	4.26	4	0.84
Corporate job training	42.9	40.4	14	1	1.7	83.3	4.23	4	0.85
Project	44.6	42.4	9.8	1.2	2	87.0	4.26	4	0.84

3.3. Engineering Practice Satisfaction

The overall satisfaction rate of postgraduates with enterprise engineering practice was 79.2% (see Table 4), which is the lowest among the overall satisfaction rate of the six dimensions. In the satisfaction rate of the sub-items, the satisfaction rates of postgraduates with the company's accommodation conditions, scientific research conditions, job subsidies, management systems, daily management, school-enterprise collaborative management, and academic exchanges are 86.1%, 84.6%, 85.3%, 86.8%, 88.6%, 88.4%, and 84.8% (see Table 5), which are all higher than the overall satisfaction rate of the engineering practice.

Table 4: Enterprise engineering practice satisfaction

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	38.6	79.2	4.31	4.29	0.71
QS	40.6				
GS	18.3				
D	2.0				
VD	0.5				

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Table 5: Evaluation of postgraduates on the engineering practice conditions and management of enterprises

Option	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Accommodation conditions	47.9	38.4	13.0	0.2	0.5	86.3	4.33	4	0.75
Research conditions	47.4	37.3	13.3	1.0	1.0	84.7	4.29	4	0.81
Post subsidy	46.6	38.8	11.3	2.8	0.5	85.4	4.28	4	0.81
Management System	47.4	39.6	12.0	0.5	0.5	87.0	4.33	4	0.74
Daily management	46.4	42.4	9.8	0.8	0.8	88.8	4.33	4	0.74
School-enterprise collaborative management	47.4	41.1	10.5	0.5	0.5	88.5	4.34	4	0.73
Academic exchange	45.6	39.3	13.0	1.3	0.8	84.9	4.28	4	0.79

3.4. Enterprise R&D Project Satisfaction

The overall satisfaction rate of postgraduates with R&D projects provided by enterprises is 81.5% (see Table 6), which is lower than the overall satisfaction rate of the Open Base. In each sub-item, the satisfaction rate of the suitability of the R&D project, the correlation between the R&D project and the thesis, and the enterprise's support and guidance for the R&D project were 85.3%, 84.3%, 87.3%, and 86.8%, respectively (see Table 7), which are all higher than the overall satisfaction rate of enterprises‘ R&D projects.

Table 6: Overall satisfaction of enterprises’ R&D projects

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	43.4	81.5	4.31	4.25	0.77
QS	38.1				
GS	15.3				
D	2.5				
VD	0.7				

Table 7: Postgraduates’evaluation on the sub-dimensions of R&D projects

Option	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Project suitability	46.9	38.6	12.3	1.2	1.0	85.5	4.29	4	0.80
Relevance to Dissertation	49.1	35.3	13.0	1.3	1.3	84.4	4.30	4	0.83
Enterprise support for projects	49.1	38.3	10.3	1.5	0.8	87.4	4.34	4	0.78
Enterprise guidance on projects	47.1	39.8	10.3	1.3	1.5	86.9	4.30	4	0.82

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3.5. Satisfaction of Enterprises' Mentors

The overall satisfaction rate of postgraduates with enterprises' tutors is 89.2% (see Table 8), which is the highest among the six dimensions, and is much higher than the overall satisfaction rate of the Open Base and other dimensions. In each sub-item, the satisfaction rates of postgraduates with the political quality, morality, practical ability, and academic ability of corporate tutors are 91.3%, 90.6%, 89.4%, and 88.1% respectively (see Table 9), where the academic ability satisfaction rate is lower than the overall satisfaction rate of enterprises' mentors.

Table 8: Satisfaction of enterprises' mentors

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	56.4	89.2	4.46	5	0.71
QS	32.8				
GS	9.8				
D	0.5				
VD	0.5				

Table 9: Evaluation of postgraduates on the quality and ability of enterprises' mentors

Option	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Political quality	57.9	33.7	7.8	0.3	0.3	91.5	4.48	5	0.69
Teacher's morality and style	58.6	32.1	8.3	0.5	0.5	90.7	4.48	5	0.71
Practical ability	56.7	32.8	9.5	0.5	0.5	89.5	4.45	5	0.73
Academic ability	55.6	32.6	10.3	1.0	0.5	87.2	4.42	5	0.75

3.6. Satisfaction of Joint Guidance of School and Enterprise tutors

Table 10: Satisfaction with the joint guidance of school and enterprise tutors

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	45.9	86.5	4.37	4.5	0.73
QS	40.6				
GS	12.0				
D	0.8				
VD	0.7				

Table 11: Evaluation of postgraduates on the joint guidance of school and enterprise tutors

Option	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Joint re-examination	49.5	38.1	10.8	0.8	0.8	87.7	4.35	4	0.76
Develop a training plan together	51.1	37.4	10.0	0.5	1.0	88.5	4.37	5	0.76
Co-directed project	50.6	37.8	10.0	0.8	0.8	88.4	4.37	5	0.75
Co-directed dissertation	50.6	38.6	9.5	0.5	0.8	89.2	4.38	5	0.74

The overall satisfaction rate of postgraduates for the joint guidance of school and enterprise tutors during the joint training period was 86.5% (see Table 10), which is higher than the overall satisfaction rate of the Open Base. In each sub-item, the satisfaction rates of postgraduates in the joint re-examination of school and enterprise tutors, joint development of training plans, joint guidance of research and

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development projects, and joint guidance of thesis are 87.5%, 88.4%, 88.4%, and 89.1%, respectively (see Table 11). They are all higher than the overall satisfaction rate of the joint guidance of school and enterprise tutors.

3.7. Satisfaction with Government Management Services

The government provides joint training services for schools and enterprises through the establishment of base centers. The overall satisfaction rate of postgraduates with base centers is 86.2% (see Table 12), which is higher than the overall satisfaction rate of the Open Base. In each sub-item, the satisfaction rates of postgraduates with the ideological and political education, cultural and academic activities, government subsidies, and incentive measures of the base center are 91.6%, 89.6%, 90.1%, and 91.1%, respectively (see Table 13), which is much higher than the overall satisfaction rate of the base center.

Table 12: Government Management and Service Satisfaction

Options	Proportion (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
VS	46.1	86.2	4.41	4.6	0.66
QS	40.1				
GS	13.0				
D	0.5				
VD	0.3				

Table 13: Postgraduates' evaluation on the management and services of the base center

Option	VS (%)	QS (%)	GS (%)	D (%)	VD (%)	Satisfaction rate (%)	Mean	Median	Standard deviation
Ideological and Political Education	52.4	39.3	7.5	0.5	0.3	91.7	4.43	5	0.68
Cultural and academic activities	51.4	38.3	9.3	0.8	0.2	89.7	4.40	5	0.71
Government subsidies	51.9	38.3	8.8	0.5	0.5	90.2	4.41	5	0.72
Incentives	51.6	39.6	8.3	0.3	0.2	91.2	4.42	5	0.67
Daily management system	51.9	38.8	8.5	0.5	0.3	90.7	4.42	5	0.69

3.8. Postgraduates' Evaluation on the Influence Factors of the Effectiveness of the Open Base

In the evaluation of the factors affecting the effectiveness of the Open Base, 84.4% of the postgraduates chose the factor that is helpful to personal growth. 81.8% of the choice is the ability and level of joint training of enterprises. 70.6% of the choice is the government's subsidies and other support policies. 50.4% of the choice is the government management and services of the Open Base (see Figure 3).The choice of the other three influence factors is all lower than 10%.

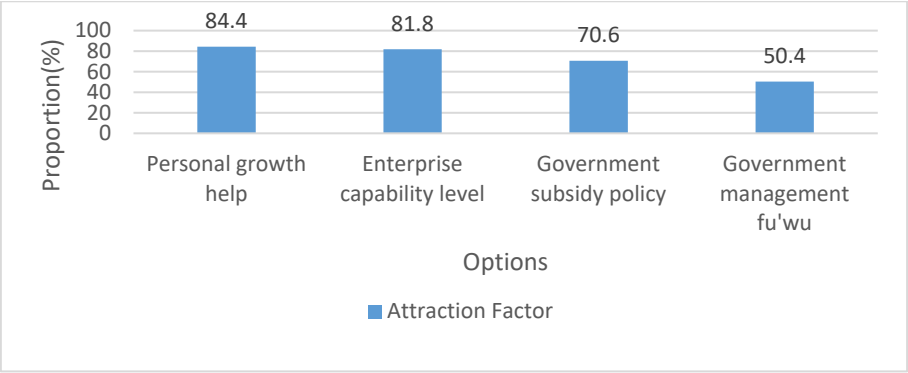

Figure 3: Postgraduates' evaluation on the influence factors of the effectiveness of the Open Base

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4. Conclusions and Suggestions

4.1. Conclusion

The overall satisfaction level of the Open Base remains high. Postgraduates of all grades are generally satisfied with the Open Base. The satisfaction level of the 2018 and 2019 postgraduates reached 84.5% and 85.4% respectively, while the satisfaction level of the 2020 postgraduates was 79.4%. Since the 2020 postgraduates entered the Open Base for only 4 months when they answered this questionnaire, their overall satisfaction rate is slightly lower (see Figure 4) when comparing with the one who has completed the joint training for one year. It indicates that the incomplete training cycle in the Open Base affects the overall satisfaction results of the 2020 postgraduates. It also reflects the training effect of the Open Base from the side. It shows that postgraduates' recognition of the Open Base is gradually increasing.

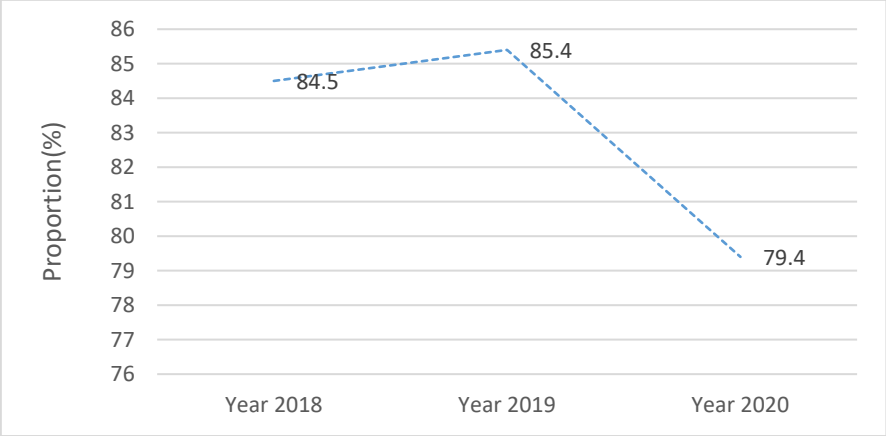

Figure 4: The changing of satisfaction rate from the 2018 to 2020 postgraduates

There is no significant difference in satisfaction of different gender groups. The ratio of males and females in the base is quite different, with males being about 1.7 times that of females. The joint training enterprises are mainly manufacturing, but there is no significant difference in satisfaction between males and females (sig>0.05). The overall satisfaction rate of males with the joint training mode in Open Base is 81.8%, while the overall satisfaction rate of females with the Open Base joint training model is 86.7%, which is even slightly higher than that of males. It proves that the Open Base joint training model is widely recognized by different gender groups, which provides important support for replicating and promoting the Foshan base.

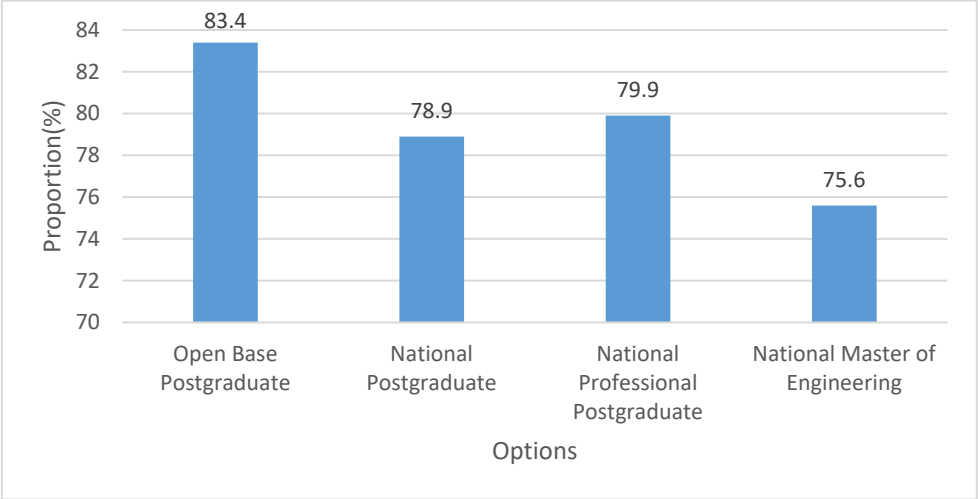

Figure 5: Satisfaction Comparison of postgraduates between the Open Base and nationwide

The satisfaction level of the Open Base is higher than the national level. First, the overall satisfaction rate of postgraduates in the Open Base is higher than the same level nationwide (see Figure 5). The national engineering master's satisfaction rate is 75.6% [10]. Second, the satisfaction rate of the key sessions in the engineering practice of the Open Base is significantly higher than the national level. The

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satisfaction rate of the joint guidance of the Open Base, school and enterprise tutors, engineering practice, and enterprise R&D projects (participation and support of enterprises) are 86.5%, 79.2% and 81.5%,respectively.The satisfaction rates of the corresponding options in the National Engineering Graduate Education Service Quality Satisfaction Survey are only 62.7%, 54.3%, and 56.4%, respectively (see Figure 6). The advantages of the Open Base are obvious, indicating that the quality of engineering practice in the Open Base is higher.

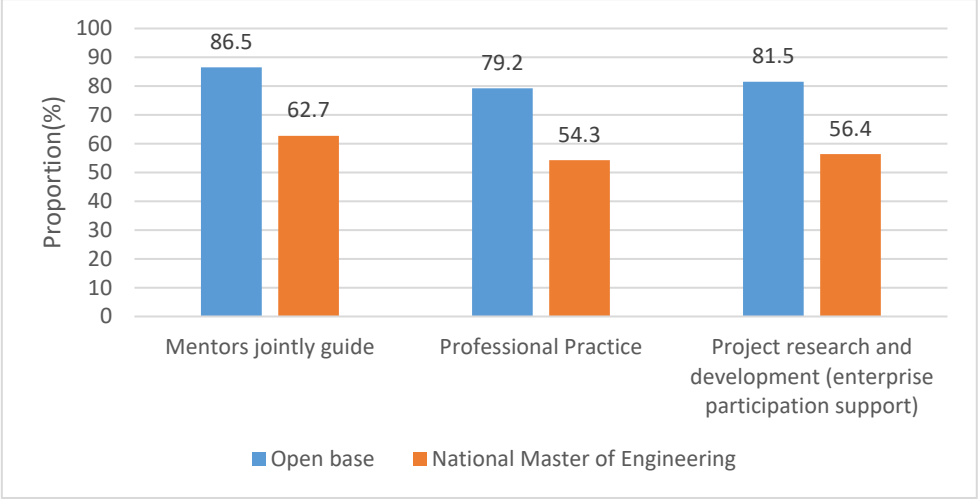

Figure 6: Satisfaction comparison of key indicators of postgraduates between the Open Base and national engineering masters

There is a strong correlation between bridging courses, R&D projects and Open Base satisfaction. By calculating the six dimensions of the Open Base using the entropy weight method, it is concluded that the information entropy value e of the bridging course is 0.993, the weight is 22.143%, and the weight is the largest. The weight of the enterprise R&D project is 18.782%, which ranks the second (see Table 14). Bridging courses, R&D projects and Open Base satisfaction results are strongly correlated. Bridging courses and R&D projects are the weak sessions in off-campus engineering practice of current engineering postgraduates. The Open Base takes advantage of government organizations and guarantees to offer multiple types of bridging courses, which promotes the connection between theory and practice, and research and application. It is conducive to the cultivation of engineering practice ability. The survey results illustrate the importance and effectiveness of the Open Base bridging courses. On the other hand, high-tech enterprises account for 93.1% in the Open Base. Joint training is project-driven, and a project-driven joint project of "government soliciting questions, enterprises generating questions, base reviewing questions, universities revealing questions, tutors solving questions, and students answering questions" is constructed. In the training mode, the company has the ability to provide a sufficient level of R&D projects and build a collaborative education system around the project to ensure the practicality of engineering practice.

Table 14: Entropy value and weight of six dimensions

Options	Information entropy value e	Information utility value d	Weights
Bridging Course	0.993	0.007	22.143%
Enterprise Engineering Practice	0.995	0.005	15.276%
Enterprise R&D Project	0.994	0.006	18.782%
Enterprise mentor	0.995	0.005	14.084%
Joint guidance of school-enterprise tutors	0.995	0.005	14.857%
Government Management Services	0.995	0.005	14.857%

The satisfaction rate of enterprise tutors is the highest, and the satisfaction of Enterprise engineering practice is lower than other dimensions. The highest satisfaction rate of enterprise tutors is 89.2%, but the satisfaction rate of academic ability is lower than the overall satisfaction rate of enterprise tutors. The overall satisfaction rate of postgraduates for the joint guidance of school and enterprise tutors is 86.5%, which is higher than the overall satisfaction rate of the Open Base. The above results show that the team of enterprise tutors is strong. The school-enterprise tutors can educate people collaboratively. The low satisfaction rate of the academic ability of enterprise tutors is related to the fact that the current enterprise

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R&D personnel pay more attention to practice than academics and professional titles. Targeted improvement measures in the later work should be proposed. The satisfaction rate of the Open Base engineering practice is 79.2%, which is the only option slightly lower than 80% in the six dimensions. The enterprise provides basic conditions for professional practice such as board and lodging, subsidies, scientific research and other professional practice environment as well as the professional practice environment such as daily management for the postgraduates in the Open Base. The innovation ability of the enterprise determines whether it can carry the professional practice of the postgraduates. The level and quality of the enterprise determine the quality and effect of the professional practice. The satisfaction rate of professional practice is lower than 80%, which indicates that it is necessary to further improve the quality of joint training enterprises.

Postgraduates pay close attention to the cultivation of engineering professional ability and government guarantee. In the evaluation of the factors that postgraduates pay attention to the effectiveness of the Open Base, 84.4% of the postgraduates chose the factor that is helpful for personal growth, and 81.8% of the choices are the ability and level of joint enterprise training, both of which are closely related to the cultivation of engineering professional ability. The postgraduates focus on the cultivation role of personal engineering ability from the Foshan base. In addition, 70.6% of the choices are subsidies and other support policies provided by the government, 50.4% of the choices are government management and services of the Open Base, and the selection rates of the other three influencing factors are all less than 10%, indicating that postgraduates value the government guarantee of the Foshan base. The triple helix structure theory holds that the government is an important factor in promoting industry-university-research cooperation in the era of knowledge economy. The triple helix structure transcends the single double helix structure of government-university, government-industry, and university-industry, overcoming the defects of the industry-university cooperation and the industry-university-research cooperation models that result from ignoring the role of government in innovation [11]. The survey results further explain the theory of the triple helix mechanism. In the current situation of insufficient enthusiasm for school-enterprise cooperation, the construction of Open Bases by the government and the provision of guarantees are indispensable for the smooth development of engineering practice and for improving the quality of engineering practice training.

4.2. Suggestions

The Open Base governance system should be further improved. The results of the satisfaction survey prove that the Open Base is an effective carrier of engineering practice for engineering postgraduates. Based on the survey results, the governance of the Open Base should be further improved from the following aspects. First, government guarantee and support should be further increased. A provincial and municipal linkage leadership and a multi-department coordination and management mechanism at the municipal level should be established. Government support for special enrollment targets and special funds should be increased. Macro-policy regulation and development planning for Open Bases should be done well. The professionalization and marketization of the base center as a third-party service platform should be promoted gradually. A complete daily management system for joint training through the base center, including joint training qualifications, quality assurance, performance evaluation, etc. should be established. Second, the issues that students focus on should be attached more importance and improved. The internal governance to improve management effectiveness should be strengthened. Further strictly review the qualifications of joint training companies is needed. The training and improvement of the academic ability of corporate tutors should be valued. The process guidance and policy support should be enhanced; further improvement of special project development and construction such as bridging courses is required. The quality and level of enterprise R&D projects should be strictly controlled.

The replication and promotion of the Open Base should be speeded up in order to further enhance the development capacity of the service industry. The Open Base can enhance the engineering practice ability of engineering postgraduates and promote the collaborative innovation of schools and enterprises. It is suggested that the education administrative department strengthen the summary and research of the Open Base, formulate the construction standard of the Open Base, and provide a template for the construction of the Open Base for the joint training of postgraduates through the integration of production and education. A regional Open Base alliance should be established as soon as possible. New Open Bases in Zhuhai, Huizhou and other cities focusing on urban strategic pillar industries should be replicated and set up. The role of Open Bases as a reservoir for "high-end engineering talents" and "high-level intelligence" should be shown. Besides, further enhancement the ability of Open Bases to serve the development of modern industries in the region is needed. The high-quality development of modern

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industries should be supported by talents and intelligence.

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