

Research Article

Enterprise Human Resource Allocation under the Background of Wireless Communication and Internet of Things

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Received 8 April 2022; Accepted 2 June 2022; Published 1 July 2022

Academic Editor: Wen-Tsao Pan

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With the rapid development of computer software and hardware technology, new progress has been made in wireless communication technology, and the Internet of Things technology has gradually penetrated into the daily work of citizens, which has led to a comprehensive upgrade of the work mode. In the context of increasing technological progress, market competition in various industries has gradually intensified, and enterprises also need to make corresponding adjustments to adapt to the development of the times. Human resource management, as the most important management link of contemporary enterprises, has a non-negligible influence on the development of enterprises, especially large and medium-sized enterprises. In order to adapt to the development of the times, most enterprises will choose to make timely adjustments to human resource allocation strategies. If an enterprise wants to develop in the fiercely competitive market, it needs to excavate talents and configure a reasonable human resource system. Starting from the related concepts of wireless communication, Internet of Things technology, and enterprise human resource allocation, this paper adopts the method of questionnaire survey to analyze the current situation and existing problems of human resource allocation in a large banking enterprise and then proposes targeted solutions for the existing problems. The ultimate goal of the plan is to optimize the allocation of human resources in the enterprise. The contribution of this paper is to select the relatively special field of banking for investigation and analysis, which fills the research gap to a large extent.

1. Introduction

1.1. Wireless Communication. At present, the research and development of communication technology in various countries has entered a stage of fierce competition. With the development of 5G and 6G, wireless communication technologies such as Bluetooth, Wi-Fi, and Zigbee have also made breakthroughs [1–3]. At present, electronic equipment used in various industries has adopted wireless communication more or less. In the future, with the continuous development of wireless communication technology and the same type of communication technology, all walks of life will be affected by this communication technology [2, 5].

1.2. Internet of Things. The development of the Internet of Things provides a new development direction for the progress of enterprises. The definition of the Internet of

Things is to use information sensing equipment such as radio frequency identification (RFID) and global positioning system (GPS) to connect objects through domain names and information according to certain protocols [3, 4]. At present, the Internet of Things technology has also developed different types of application protocols such as NB-IOT, Lora, and Modbus. In the future, the era of Internet of Everything will profoundly affect the operation and development of various industries [5].

1.3. Human Resource Allocation. Human resource allocation is defined as the allocation of manpower according to the business needs of the enterprise, matching employees with positions, giving full play to the advantages of employees, and realizing the highest economic and social benefits of the enterprise [6, 7]. Human resource allocation can help enterprises optimize talent management, improve employee

quality, and improve the strength of the enterprise. It can also help employees in the enterprise match the most suitable jobs and ultimately achieve the optimal management of human resources in enterprise operations [11–13]. The allocation of human resources in an enterprise mainly includes quality allocation, structural allocation, and total allocation. Quality allocation refers to the allocation of corresponding positions according to the different positions and educational levels of personnel, while structural allocation means that the enterprise reasonably allocates personnel of different ages and professions according to business and needs, which is in line with the enterprise's management and development philosophy [9–11]. Quantity allocation refers to the reasonable arrangement of personnel according to the total amount of personnel needs of the project and business. The allocation of human resources in enterprises is mainly based on the principles of flexibility and dynamics, reasonable complementarity, and matching between people and positions [12–16].

2. The Current Situation and Existing Problems of Enterprise Human Resource Allocation under the Background of Wireless Communication and Internet of Things

This questionnaire is mainly aimed at conducting a comprehensive survey on the natural conditions, working ability, and learning ability of the employees of the enterprise. The investigation is carried out several times according to the emphasis of the research content, and the subjects and emphasis of each investigation are different.

2.1. Age Survey. Investigate 50 human resources staff of 25 companies in different industries and obtain the age information of employees in each company. If each company has more than 500 employees, the questionnaire information in Table 1 can be obtained.

Table 1 shows that there are few young employees in each enterprise, and most of them are middle-aged employees, while older employees account for more than 30%. Through reliability and validity analysis, it is found that the reliability and validity of this questionnaire meet the set values in the theory, which proves that the reliability and validity of this questionnaire are normal. The specific values are shown in Table 2.

In Table 2, it can be seen that the true reliability of this project is much higher than the theoretical standard and meets the research needs. Through interviews with some of the surveyed employees, the author found that for enterprise staff, if the working years are short, they cannot accumulate enough practical experience; if the working years are too long, it is easy to produce burnout, and there is not enough motivation to learn. During the interview, we learned that employees under the age of 30 are highly mobile. Because of their career advancement, they often change jobs, and their business operation ability is weaker than that of older employees. For employees over 40 years old, It is said that due to the long working age and rich work experience, most

TABLE 1: Average age distribution of enterprise employees.

Age	19~30	30~40	40~50	Over 50
Number	105	235	120	40
Percentage	21%	47%	24%	8%

TABLE 2: Reliability and validity analysis.

	Reliability	Validity
Value	Alpha = 0.86	KMO = 0.78

people have formed inertial thinking, and the work innovation is not strong. In addition, the economy has stabilized, and the vitality and passion for work will correspondingly fade. According to the Markov chain formulas (1a) and (1b), the direct relationship between employee age and work enthusiasm can be calculated [17, 18].

$$\text{transient: } \sum_{n=1}^{\infty} p(X_n = s_i | X_0 = s_i) < \infty, \quad (1a)$$

$$\text{recurrent: } \sum_{n=1}^{\infty} p(X_n = s_i | X_0 = s_i) = \infty,$$

$$\mathbb{E}(T_i) = \sum_{n=1}^{\infty} n \cdot p(T_i = n). \quad (1b)$$

At present, the core group of employees of each enterprise is in the 30–40 years old. Among the interviewed 180 employees in a specific company, 28 employees are under the age of 30, 22 employees are 30–40 years old, 45 employees are 40–50 years old, and 85 employees are over 50 years old, accounting for the total number of employees [19–21]. The ratios are 15.56%, 12.22%, 25%, and 47.22%, respectively. Figure 1 reflects the age structure distribution of employees in the interviewed company.

From Figure 1, it can be seen intuitively that the current proportion of young employees in the bank is relatively young, but in fact, the role of young employees in the context of wireless communication and the Internet of Things is very important, and young employees can have more opportunities to learn wireless communication in school knowledge related to the Internet of Things and can take the lead in providing relevant technical advice to enterprises when they have related business. The reliability and validity of the questionnaires of the interviewed banking companies were analyzed, and it was found that the reliability and validity of this questionnaire belonged to normal values, and the questionnaire was valid (Table 3).

In Table 3, it can be seen that the true reliability of this project is much higher than the theoretical standard and meets the research needs.

2.2. Educational Composition. An online questionnaire survey was issued to the statistical employees of each enterprise. Taking a specific banking enterprise as an example, the SG Bank has a total of 182 employees. The education statistics are as follows: 50% have no college degree, 8.24%

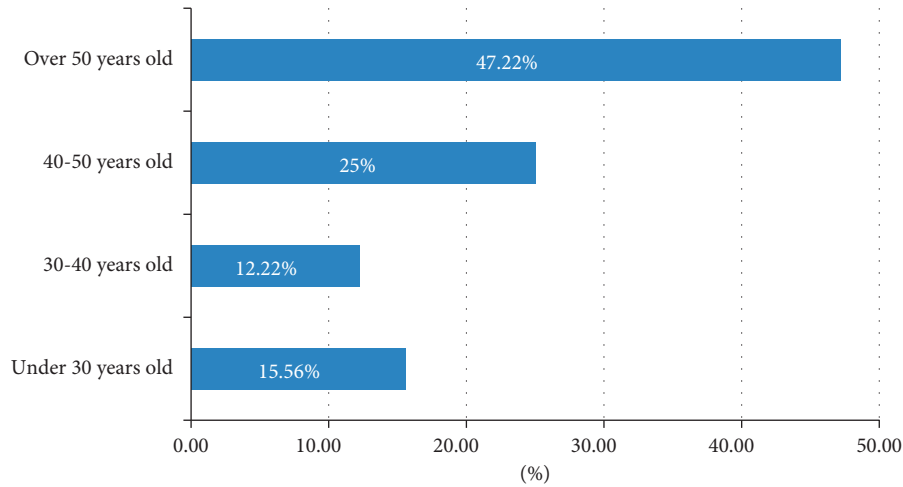


FIGURE 1: Age structure of on-the-job employees.

TABLE 3: Reliability and validity analysis.

	Reliability	Validity
Value	Alpha = 0.93	KMO = 0.85

have a college degree, 37.36% have a bachelor’s degree, and 4.4% have a master’s degree or above. The figure below reflects the distribution of the educational structure of the company’s employees.

As can be seen from Figure 2, the current educational composition of various enterprises is still relatively scattered. In the context of wireless communication and the Internet of Things, IT and electronic knowledge are more important. A high degree of education will allow them to understand new knowledge faster and make more knowledge for enterprises [22–25].

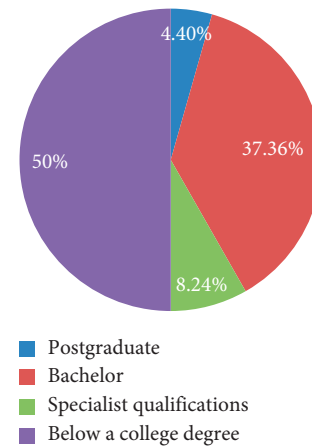


FIGURE 2: Educational structure diagram of on-the-job employees.

2.3. Post Distribution. The enterprise positions are divided into three categories: management, professional, and skills. Management positions account for 26.37%, professional positions account for 63.19%, and skilled positions account for 10.44%.

As shown in Figure 3, only about 10% of employees in skilled positions are employed. In the era of vigorous development of wireless communication and Internet of Things technology, technical employees will become an indispensable part of the enterprise, and there is currently a serious shortage of such employees [26–30].

The difference in the distribution of positions is also reflected in the departments and outlets. The following two tables, respectively, represent the distribution of positions of employees in each department and business outlets (Tables 4 and 5).

From Tables 4 and 5, we can see the specific personnel position settings and branch personnel composition of the bank.

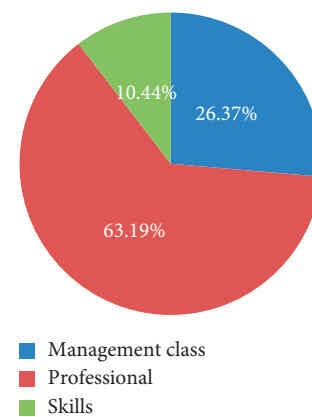


FIGURE 3: Position distribution map of on-the-job employees.

2.4. Human Resource Allocation. In terms of the hierarchical structure of human resources, the bank, like other commercial banks, is divided into core talents, middle and senior talents, general talents, and ordinary employees. The age

TABLE 4: Distribution of positions in different departments of the bank.

Department name	Management positions	Professional jobs	Skilled jobs	Total
Credit department	6	8		14
Personal finance business department	6	18		24
Trade finance department	3	6		9
Operation management department	2	5	2	9
Planning and finance department	3	8	5	16
General office	3	6	6	15
Technical support center	2	6	6	14
Sum	25	57	19	101

TABLE 5: Distribution of employee positions in different business locations.

Serial number	Location code	Management positions	Professional jobs	Skilled jobs	Total
1	SG001	5	11	9	25
2	SG002	5	8		13
3	SG003	3	6		9
4	SG008	4	7		11
5	SG009	2	5		7
6	SG0010	3	6		9
7	SG0011	2	5		7
8	SG0012	4	11	2	17
9	Sum	28	59	11	96

structure and quality level of employees at different levels are also different [36–32]. It has the color of administrative establishment, so the staff also has the dual identity of market and administration.

Efficiency is one of the factors for commercial banks to increase transaction volume. Therefore, in the selection of personnel, the bank adopts the method of post quota and selects suitable personnel according to the job requirements [33–36]. This method makes the bank’s human resource allocation efficient. The quality and ability can meet the needs of the work. However, the disadvantage is that some positions frequently select the same person, and some positions that require people are not selected.

At present, the human resource allocation mechanism adopted by the bank is an employee optimization mechanism. It formulates various plans to adjust the overall size, quality, and ability of personnel according to the specific situation of human resource allocation within the organization [37, 38].

3. Problems Existing in Human Resource Allocation of SG Bank Enterprises

3.1. *The Total Number of Personnel Is Out of Sync with the Growth of Per Capita Performance.* The author collected the per capita performance data from 2017 to 2021 from the General Office Department of Bank S, combined with the total number of personnel in the corresponding years, as shown in Figure 4.

From Figure 4, it can be found that the total number of employees of SG Bank enterprises from 2015 to 2021 is constantly rising, but the per capita performance does not increase year by year. In 2015, the per capita performance was 603,200 yuan, but the per capita performance in 2016

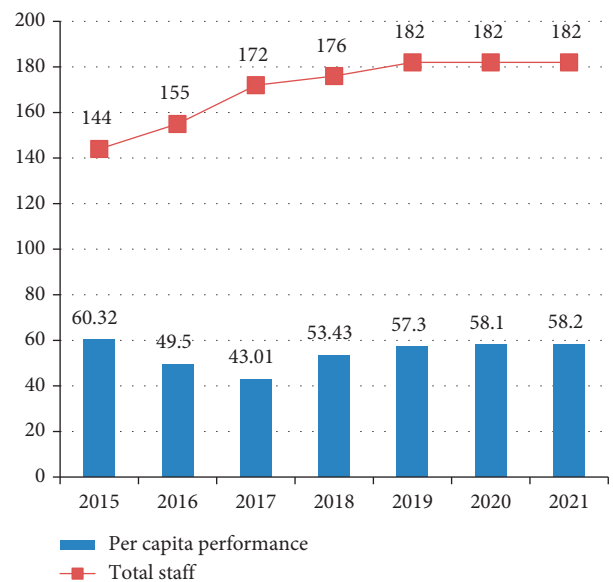


FIGURE 4: Total number of personnel and per capita performance during 2015–2019.

and 2017 dropped significantly. From the appearance, the total number of personnel increased rapidly in the past two years, resulting in the per capita performance being shared, thus showing a decreasing trend. Although the per capita performance from 2018 to 2021 has shown an upward trend, by observing the seven years from 2015 to 2021, the increase in the total number of personnel reached the largest increase in 2016 and 2017, and the per capita performance in 2021 compared with 2015 is still lower. From the perspective of internal factors, the fundamental reason for the unsynchronized growth of the total number of employees and the

per capita performance is that SG Bank has increased the number of employees without paying attention to both quantity and quality. The level is uneven, and there is a lack of reasonable planning for the overall size of the personnel [39–41].

3.2. The Age Structure of Personnel Is Not in Harmony with the Level of Business Development. In the early days, SG Bank companies recruited a group of old employees through social recruitment, allocation of state-owned enterprises, and acceptance of veterans. In the ten years from 2011 to 2021, SG Bank has been recruiting every year and has injected a lot of fresh blood. However, because young employees are in the rising stage of their careers and have high liquidity, the proportion of young employees is small. In a labor force survey report released by Zhaopin in 2021, it pointed out that the more the people over the age of 50 in the company, the higher the proportion of the total number of people and the more significant the aging structure of the company. The problem brought by the aging of personnel to SG Bank lies in the fact that a considerable number of “old employees” are passive in learning and have low enthusiasm for work. In recent years, SG Bank enterprises have mainly developed credit and personal financial services. Credit can be divided into legal persons according to types. Personal financial business mainly includes savings deposits, personal wealth management, e-banking, and outbound financial services, and pressure resistance, handling customer relations, problem solving, and other abilities have put forward higher requirements than before, requiring employees to exert their subjective initiative, learn to innovate, and continuously improve their own ability level. To sum up, if SG Bank does not optimize the age structure of its staff and reverse the working philosophy of older employees, it will have a negative impact on the current and future business development of the bank.

3.3. Personnel Distribution Is Not Commensurate with Internal Job Requirements. Due to the rapid growth of SG Bank’s corporate business in recent years, the competition has intensified. As the core business of SG Bank, credit and personal financial services require a lot of manpower to manage this huge amount of funds and customers. Obviously, the number of SG Bank account managers is insufficient. In addition, the staffing of other departments and business outlets of SG Bank is also unreasonable. For example, the planning and finance department is often overstaffed, and some core outlets have a large business volume and insufficient personnel, which makes the work impossible to complete. This is a manifestation of the disproportionate demand for manpower and posts.

3.3.1. The Talent Team Does Not Match the Requirements of Market Competition. With the intensified competition in the commercial bank market, talents have become an indispensable weapon for banks in the competition, especially

top talents are the backbone of the talent team. A survey result from Puyi Standard shows that the current main bank employees have a master’s degree on average, and the proportion of highly educated talents (master’s degree or above) in commercial banks of the same type as SG Bank is also 9.9%. Only 4.4% of employees with a master’s degree or above in banking hold a master’s degree or above. Obviously, there is a shortage of highly educated talents.

In addition to the shortage of highly educated talents, SG Bank’s talent team also lacks compound talents, professional talents, and scientific and technological talents to deal with competition. In the era of wireless communication and the Internet of Things, highly educated talents are more important, and they can create more for enterprises at critical moments. It is reflected in the following. (1) There are few compound talents who know both management and business operations. (2) There is a lack of professional talents in account managers and financial operations required for credit finance. (3) There is a lack of high-tech talents in information technology. Therefore, from the overall point of view, the talent team of SG Bank does not match the requirements of market competition.

4. Strategies for Optimizing Human Resource Allocation in SG Bank Enterprises under the Background of Wireless Communication and Internet of Things

4.1. The Size of Scientific Planners. In view of the current vigorous development of wireless communication and Internet of Things technology and the fact that the total number of employees of SG Bank has increased and the per capita performance has declined, SG Bank needs to scientifically plan the scale of personnel and requires a reasonable increase in the number of personnel, while also ensuring the quality of personnel.

Reasonably predict the number of employees required for each department and position and then scientifically implement the position and staffing work. The specific method is that the human resources management department of SG Bank will determine the position and staff according to the results of the work analysis, then check all the staff in the bank, sort out the list of people who are not in the staff and do not have the qualifications, and give it to the managers of various departments for review. After continuous revision and improvement, the final result refers to the current human resource needs of SG Bank. Combined with the future development plan of SG Bank, we can roughly understand the future work volume of each department. If the total work volume increases, we need to summarize the needs of each department. The forecast and statistics of the personnel who will retire in the future and the personnel who may leave the company are obtained, and the result is the human resource demand of future loss; the summary of these results is the forecast of human resource demand of SG Bank. It can help SG Bank to clarify the

number of personnel required for each stage, avoid blind expansion of enrollment, and reduce labor costs.

The improvement of per capita performance can not only depend on the increase or decrease of the number of personnel but also must ensure that the overall business ability of employees is at a high level. SG Bank can do the following. (1) Effective recruitment: first, do a good job in the analysis of recruitment needs, job responsibilities, and qualifications, then analyze the talent supply in the market, then select reasonable recruitment channels according to the three characteristics of purpose, economy, and feasibility, refine based on the perspective of competence and quantify the abilities required by employees in different positions, and use reasonable interview methods to select personnel, so as to ensure the quality of recruitment. (2) Effective training and motivation: first of all, it is necessary to provide a variety of learning and promotion channels for employees, strengthen business skills training, and supplement the training of comprehensive quality; secondly, it can also appropriately change the training form, such as the combination of exchange training and cooperative training, to mobilize the enthusiasm of employees to participate; finally, managers should pay attention to the training process and obtain feedback in a timely manner and continuously optimize and improve the training content to ensure that employees can truly implement the learning results into actual work, so that the overall level of personnel is maintained in a good state.

4.2. Optimizing Age Structure Combined with Changing Work Philosophy. At present, the most prominent problem in the personnel structure of SG Bank enterprises is the negative impact caused by the aging of personnel. It can be solved from two aspects. On the one hand, (1) it aims to optimize the age structure of SG Bank employees. “Dynamic adjustment” and “internal-oriented” principles encourage internal employees to be promoted, or tap potential employees by means of administrative allocation. (2) Continue to recruit outstanding graduates, strive to increase the proportion of employees under the age of 30, and try to reduce the number of employees over the age of 50. The proportion of employees injects new vitality into the organization and reserves young talents. It is also possible to introduce outstanding personnel through headhunting, industry insiders, etc., to expand the proportion of core backbone groups aged 30–40. (3) Retain young talents: first of all, we should create a good business environment and leisure environment, not only to provide a broad space for growth and development, but also to provide some entertainment and leisure facilities or places to help employees liberate from heavy and boring work, so that they can work more efficiently in the future; second is perfect career management, providing comprehensive training, systematic learning, overall care, and opportunities for improvement; third is relatively generous remuneration and benefit; if there is a lack of basic “survival” guarantees, other factors are castles in the air; the last is to provide a fair competition platform, so that talents understand that as long as they have enough ability, there is the possibility of promotion. On the

other hand, it is necessary to change the working concept of aging employees. For example, we can carry out training and education activities through innovative management methods, so that “old employees” can realize that they are in the period when they have the most accumulated qualifications and work experience, and they can still make progress and continue to work. Give full play to your own light and heat in the post, encourage employees to strengthen learning, and improve work enthusiasm.

4.3. Standardizing Job Placement and Distribution. The first reason for the incompatibility of personnel distribution with job requirements in SG Banking companies is that there is no standardized job setting analysis, resulting in insufficient personnel in positions with high demand for talents such as “customer managers.” Therefore, SG Bank should do the following. (1) Collect information on job content, working environment, etc., and use on-site observation, interview, or key event method. (2) According to the above-mentioned collected information, reasonably arrange the work flow and work of each position in the bank. (3) Write a job description, including a clear job description and qualification requirements.

The second reason is that there is no reasonable distribution of bank personnel, resulting in overstaffing in some departments and understaffing in some departments. Therefore, SG Bank should analyze the number of existing configurable human resources and the personnel needs of different departments and outlets under the premise of standardizing the setting of positions, and then in accordance with the principle of human resource allocation, internal transfer and reasonable allocation management of employees are carried out, so that the distribution of personnel matches the requirements of internal positions.

4.4. Strengthening the Construction of Talent Team. The previous article analyzed that SG Bank has few highly educated talents and lacks compound, professional, and technological talents. Such a talent team can no longer match the requirements of market competition. Therefore, SG Bank should strengthen the construction of the talent team. From a partial point of view, SG Bank should take targeted measures to strengthen talent construction. (1) Through external recruitment, it is necessary to improve the qualification standards and increase the number of undergraduates to more than 50% and the number of graduate students to reach more than 10%. Then, choose different recruitment channels according to different types of talents and find the talents needed for SG Bank. (2) Through internal training, according to the lack of quality and ability of employees, look for internal excellent personnel or other professionals to carry out special training and training. (3) For talents in important positions, excellent graduates can be selected from colleges and universities, and targeted training can be carried out according to their different characteristics, abilities, etc., to establish a reserve talent reserve team. (4) Create a learning atmosphere of mutual help and mutual

assistance, to achieve the goal of “high and low, low and common progress,” and create a competitive talent team.

Finally, through a questionnaire survey conducted by employees of Bank S enterprises, it is found that there is a large gap between the benefits of enterprises that have not been optimized for human resource allocation and those that have been optimized.

5. Conclusion

In the context of the rapid development of wireless communication and the Internet of Things, the allocation of human resources in enterprises needs to be changed according to technology and the characteristics of the times. Aiming at the current situation of human resources in enterprises, after combining the theory of human resources and analyzing the latest literature on human resource allocation in enterprises, it discusses in detail the educational background, age, and major of employees in enterprises, and proposes a reasonable allocation plan for human resources. The main work of this paper includes analyzing the problems existing in the current human resource allocation of enterprises, planning for the future human resource allocation of enterprises, and addressing problems such as job mismatches, insufficient training, age gaps, and other problems of enterprise employees, from job correspondence, employee quality improvement, and new employee recruitment direction for program design. In the future work, the research object of the questionnaire can be further expanded, the analysis method can be learned by reading more new literature, and more instructive programs can be designed in combination with other theories similar to big data technology and human resources.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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