

Beyond the Firm Gates: Quality of Life and Housing issue of Laborers in Binh Duong, Vietnam

Pham Thi Hong Nhung, Nguyen Bach Dang*, Cao Thai Bao, Nguyen Trinh Minh Anh

*Becamex Business School, Eastern International University, Thu Dau Mot City,
Binh Duong Province, Vietnam*

nhung.pham@eiu.edu.vn, dang.nguyen@eiu.edu.vn, bao.cao@eiu.edu.vn, anh.nguyentrinhminh@eiu.edu.vn

**Corresponding author*

Abstract: This research aims to assess the quality of life among industrial workers in Binh Duong Province, Vietnam. A convenience sample of 189 workers was surveyed using a 5-point Likert scale to measure perceived satisfaction with various aspects of their living conditions. While the majority expressed overall satisfaction, significant dissatisfaction was noted regarding specific factors such as housing, healthcare, and non-profit services. The findings suggest that housing is a critical issue affecting the satisfaction with the living conditions of these workers. and that stronger community attachment could potentially mitigate these challenges.**

Keywords - Binh Duong, laborer, quality of life, industrial development, immigration.

1. Introduction

The province's current characteristic is the development of key industrial parks and industrial clusters with complete, synchronous and modern infrastructure that have attracted domestic and foreign investment capital flows. In addition, the province's socio-economic aspects began to achieve significant achievements, the economic structure shifted strongly towards industry - service - agriculture. That has attracted a lot of laborers from other provinces, leading to a very high population growth in the province. The immigrants account for more than 50% of the Binh Duong population (Le Van Dai, 2023). Immigrant laborers significantly contribute to the economic development of a locality. Nonetheless, they seem to have received insufficient support for their welfare and living conditions (Nguyen Duc Loc, 2014). Research on social welfare of immigrant laborers in Binh Duong pointed out that immigrant laborers had poor access to social welfare services such as healthcare, insurance, housing and children schooling..., which placed a heavy burden on immigrant laborers, especially low-income ones (Nguyen Duc Loc, 2014).

In the medium term, Binh Duong still depends on migrant laborers. Besides, the majority of immigrant laborers belong to the group of manual laborers (Binh Duong GSO, 2023). However, Binh Duong's labor demand is facing competition with other localities such as Ho Chi Minh City, Dong Nai, Long An and other regions which are currently seeing rapid expansion in their industrial sectors and are attracting a substantial influx of foreign direct investment (FDI) (Malesky et al., 2023). Therefore, there is a need for information about the satisfaction of the well-being of laborers in Binh Duong.

Binh Duong is a province that exhibits significant socio-economic advancement in comparison to the entire country. It boasts well-established industries, as seen by its Provincial IIP of 201.8% in 2017, indicating substantial growth compared to the previous year (Do Thi Y Nhi, 2018). Additionally, Binh Duong has a remarkably high rate of urbanization. Over time, as Binh Duong strives to transform into a prominent industrial hub at the national level, the matter of human resources will undoubtedly be a significant concern. Binh Duong Province draws hundreds of domestic and foreign direct investment projects, with labor needs ranging from 30,000 to 40,000 people annually (Ngoc et al., 2022). Textile and garment manufacture, machine and equipment operation, product assembly, construction, manufacturing and processing, wooden furniture production, and so on are among the industries in high demand for skilled laborers. Because of its status as a rapidly developing industrial province, Binh Duong annually attracts an immense number of laborers from all across Vietnam. However, the work force quality remains low; the majority of them are from rural regions, with a low educational level and learning capacity. The rate of trained laborers (over 15 years old) in Binh Duong in recent years only maintained at 16-17%, ranking third among the provinces and cities in the Southeast region (GSO, 2018). Highly skilled technical professionals make up 4.5% of the workforce (Nguyen Van Hiep & Le Tuan Anh, 2020). Many businesses said they were having difficulty recruiting laborers working in positions requiring high skills such as accounting, management and technical staff. Higher costs for training laborers and laborers leaving after being trained are becoming concerns for more businesses in the province. The province must seek to attract additional laborers from other regions; nevertheless, the labor markets in the Southeast region of Vietnam are highly competitive (Ngoc et al., 2022; Tien, 2019). Thus, it is necessary for Binh Duong province to support the elements that draw laborers from other areas and retain Binh Duong resident laborers. Hence, learning about the life quality and satisfaction of laborers in Binh Duong is critical, which is one of the motivations for this research. The research results are believed to serve for the better improvement of the well-being of laborers in Binh Duong, which thereafter improves the production productivity, laborers' attachment to the locality, fostering the sustainable socio-economic development of Binh Duong.

Research questions

- What is the situation of the labor force in Binh Duong?
- How is the laborers' satisfaction with quality of life (QoL) in Binh Duong?
- How does the laborers' satisfaction with quality of life affect the intention of long-term attachment of laborers to Binh Duong?

2. Conceptual and Analytical framework

The concepts of life satisfaction and life quality have been the focus of numerous studies (Argan & Mersin, 2020;

Mei et al., 2020; Potapov et al., 2016; Gullion et al., 2015; Rezvani et al., 2013; Sirgy et al., 2008; Sirgy et al., 2000). Life satisfaction is a key component of subjective well-being and quality of life, reflecting an individual's cognitive evaluation of their life as a whole (Schnettler et al., 2020). Quality of life (QoL) is a concept capturing the well-being of a community or an individual, related to both positive and negative factors throughout their existence at a particular time. According to Teoli and Bhardwaj (2023), general aspects of quality of life include personal health (physical, mental, and spiritual), relationships, educational attainment, work environment, social status, wealth, a sense of security and well-being, being safe and secure, being free and autonomous in decision-making, and the physical and social environment that surrounds them. In addition, hedonic and eudemonic approaches to well-being are frequently put into consideration. According to Anderson et al. (2013), hedonic well-being places an emphasis on the experiencing of pleasant emotions and the absence of negative emotions, whereas eudaimonic well-being places an emphasis on the realization of human potential and the pursuit of activities that are both meaningful and virtuous. There is a correlation between hedonic and eudaimonic aspects and overall subjective well-being, according to Sirgy et al. (2008) and (2009), respectively.

According to Brutschy and Zachary (2014), quality of life is a measure of a community's level of happiness in terms of quality-of-life issues in many areas including economics, education, and the natural environment, public safety, health and social environment. There is a well-established positive relationship between life satisfaction and various aspects of life quality (Argan & Mersin, 2020; Mei et al., 2020; Cao et al., 2022; Byeon et al., 2019). Studies have found that as an individual's level of life satisfaction increases, their overall quality of life, including physical, psychological, and social domains, also tends to improve (Argan & Mersin, 2020; Mei et al., 2020; Cao et al., 2022; Byeon et al., 2019).

Some multidimensional frameworks to study life quality and life satisfaction have been developed; the Integrative Quality of Life (IQOL), the Self-Evaluation of Quality of Life (SEQOL) model, Better Life Index (BLI), etc recognize the complexity of QoL and the importance of incorporating both subjective and objective factors, incorporating aspects such as well-being, life satisfaction, happiness, meaning in life, biological order, realization of life potential, fulfillment of needs (Ventegodt et al., 2003, OECD, 2024).

Clearly that many studies on life satisfaction and life quality often focus mainly on the individual perspective, life satisfaction and life quality are also influenced by factors at the community level. Sirgy and Cornwell (2001) and Sirgy et al (2000) proposed a quality-of-life research model, distinguishing between “community life” and “other life”. Community life is associated with a person's awareness of his or her community. In contrast, the “other life” dimension concerns non-community aspects, such as health, work, marriage and family, fitness, income, standard of living, neighborhood, among other areas. developed a measurement of community QoL is based on the life satisfaction of community residents as influenced by the satisfaction they experience with their lives (Sirgy et al. 2000, Sirgy and Cornwell 2001). They also hypothesized that satisfaction with the community is largely determined by satisfaction with government, business, and nonprofit services. In contrast, satisfaction with government services is largely determined by satisfaction with specific government services. Similarly, satisfaction with business and nonprofit services is largely determined by satisfaction with specific services. The framework of quality of life of Sirgy and Cornwell (2001) has been used by many scholars to measure the quality of life of community residents in towns, cities in the United States, and other countries (Forjaz et al., 2011; Gullion et al., 2015; Potapov et al., 2016; Rezvani & ManSourian, 2013; Rezvani et al., 2013). Research on life satisfaction and life quality under the influence of community factors is important to the locality to build support programs to improve the quality of life and satisfaction of residents. Thus, the research framework of Sirgy and Cornwell (2001) had been augmented and modified for the purpose of this study.

3. Research methodology

In order to accomplish the research objectives, we gather both primary and secondary data to get a sufficient level of understanding. Secondary data is collected using statistical books at both the national and provincial levels. Secondary data includes number and percentage of laborers in terms of economic activities, work position, level of training and education, etc. Questionnaires are used to collect primary data on several areas of local quality of life, laborer satisfaction, overall satisfaction with the locality, and intention of attachment to the locality. 119 questionnaires were collected by Google Form; 70 questionnaires were obtained through direct interviews.

3.1 Questionnaire design

The questions aim to assess laborers' satisfaction with various aspects of the local socio-political environment, economic conditions, cultural environment, medical and healthcare services, public service and infrastructure, education and training opportunities, local non-profit services, consumer goods, housing conditions, personal matters, overall satisfaction with local life, and laborers' attachment to the locality. The items in this part are assessed using a 5-level Likert scale, ranging from complete dissatisfaction to high satisfaction, with scores ranging from 1 to 5. The average score quantifies the level of satisfaction and attachment exhibited by laborers. Greater average scores are positively correlated with increased life satisfaction and stronger attachment to the locality.

3.2 Sampling

In order to gather data for our research, we employed the convenience sampling approach to acquire a research sample of 189 laborers employed in Binh Duong from March 2024 to April 2024. The sample consists of 50.8% female laborers and 49.2% male laborers (Table 1). The biggest proportion of laborers, 70.9%, falls within the age range of 25 to 45 years old. Approximately 76.2% of laborers have attained a high school education or below, and the majority of laborers are immigrants originating from three main regions: the Southwest (28.6%), the Central (35.4%), and the North (25.9%).

Table 1. Some demographic characteristics (n=189)

No	Characteristics	Quantity	Percentage
1	Gender		
	Female	96	50.8%
	Male	93	49.2%
2	Age		
	Under 25 years old	26	13.8%
	25 to 35 years old	50	26.5%
	36 to 45 years old	84	44.4%
	Over 45 years old	29	15.3%
3	Education		
	Below high school	40	21.2%
	High school graduation	104	55.0%
	College	34	18.0%
	University and post-university	11	5.8%
4	Marriage status		
	Single	48	25.4%
	Married	124	65.6%
	Divorced, widowed	17	9.0%
5	Hometown		
	Binh Duong and neighboring provinces	17	10.1%
	Southwest region	54	28.6%
	Central region	67	35.4%
	Northern region	49	25.9%

Furthermore, table 2 provides a comprehensive description of the specific attributes of laborers related to their place of residence and employment conditions. Currently, 77.2% of laborers are direct laborers, 64.0% live in rented housing, and 53.4% make between VND 5 mil. and VND10 mil. a month.

Table 2. Binh Duong laborers' characteristics of employment and housing

No	Characteristics	No of respondents	Percentage %
2	Time working in Binh Duong		
	Under 2 years	26	13.8%
	2 to 5 years	28	14.8%

	6 to 10 years	98	51.9%
	Over 10 years	37	19.6%
	<i>Working position</i>		
3	Manage	16	8.5%
	Office staff	22	11.6%
	Laborers and laborers	146	77.2%
	Other	5	2.6%
	<i>Income</i>		
4	Under VND 5 million	0	0
	From VND 5 to 10 million	101	53.4%
	From VND 10 to 15 million	60	31.7%
	Over VND 15 million	28	14.8%
	<i>Housing</i>		
	Have one own house	38	20.1%
	Staying at the home of relatives and acquaintances	20	10.6%
	Stay in rent housing	121	64.0%
	Housing provided by the company	10	5.3%
	<i>Living with</i>		
	Alone	17	9.0%
	With family and relatives	103	54.5%
	Shared housing	69	36.5%

3.3 Data analysis

To ensure the reliability of the collected data, we use the CMB test (Common method bias) as using a survey method to collect information can lead to inflated or misleading data (Podsakoff et al., 2003). To test CMB, Harman's single-factor analysis method is used. If the total variance for a single factor is less than 50%, it indicates that CMB does not influence the results of the data (Podsakoff et al., 2003).

The results of single-factor analysis show that the total % variance = 32,975% < 50%, so the collected data does not cause deviation and the results of subsequent analysis ensure reliability compared to reality.

The Cronbach's alpha coefficient was used to assess the survey content's reliability and suitability for research subjects. The reliability of the scales is guaranteed when both the variable-total correlation coefficient and the total Cronbach's alpha coefficient are greater than 0.3 and >0.6, respectively (Table 1). Given that all observed variables have item-total correlation coefficients of greater than 0.3 and the main scales' total Cronbach's Alpha coefficients of greater than 0.7, the scales used in this study are reliable.

Besides, to learn about the quality of life of laborers, the study uses a descriptive statistics method, in which statistical values include frequency, mean value, standard deviation. Along with it, to compare the difference in assessment scores according to the demographic characteristics of the surveyed labors, use T-test for characteristics with 2 groups and ANOVA for characteristics with more than 2 groups. The results after analysis are presented in the form of tables and charts.

4. Results and discussion

4.1 The situation of labor force in Binh Duong

In 2022, the population of Binh Duong is approximately 2.76 million, making it the fourth most populous province among the 63 provinces and cities in Vietnam. In the past, Binh Duong was mostly an agrarian province, with its residents heavily engaged in farming and cultivation. Presently, the province is distinguished by the establishment of crucial industrial parks and industrial clusters with comprehensive, coordinated, and contemporary infrastructure that have enticed both domestic and foreign investment funds. Furthermore, the province's socio-economic components have made notable progress, with a major change in the economic structure towards industry, services, and agriculture. The province has experienced significant population expansion due to the influx of laborers from other provinces and cities. Immigrants comprise almost 50% of the population.

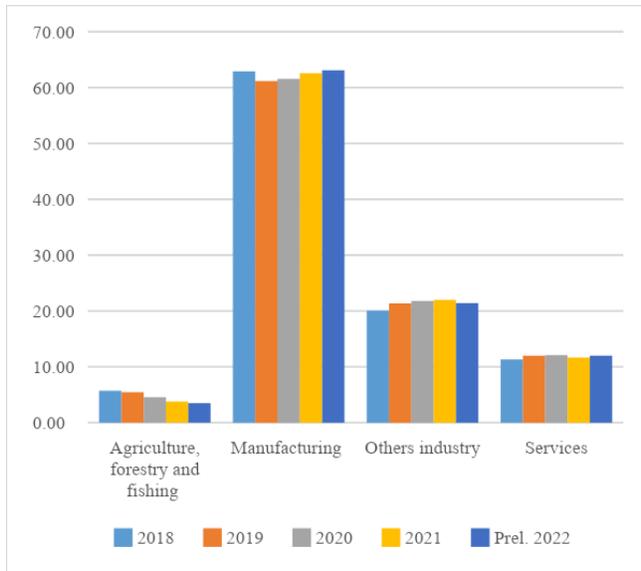


Figure 1: Percentage of laborer by sectors in Binh Duong

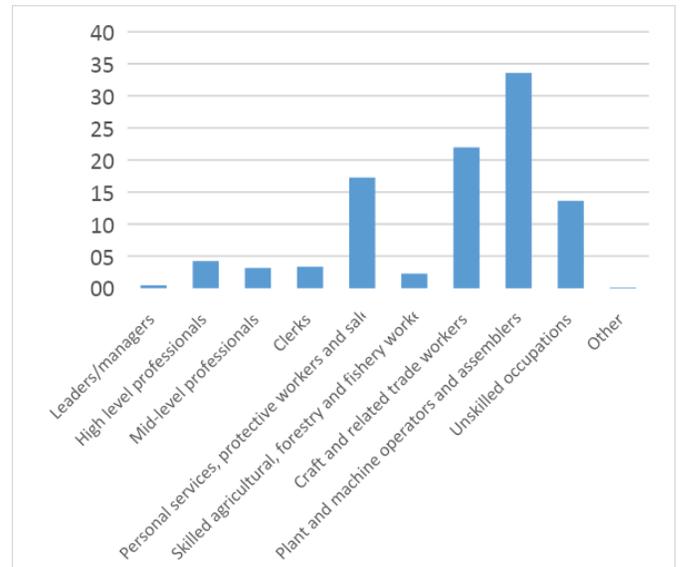


Figure 2: Percentage of laborer by types of occupations in Binh Duong

(Source: Binh Duong GSO, 2023)

Concerning the labor situation, the number of laborers in Binh Duong rose from 1.6 million in 2020 to 1.8 million in 2022. Among them, 63.5% are employed in the industrial production and processing sector (Figure 1). The proportion of high and mid-level professionals surpasses 7% (Figure 2, 3). The quantity of personnel of this particular category experiences a slight decrease (Figure 4). In addition, the proportion of skilled laborers (who have received vocational training or higher education) is about 23.5% (Binh Duong GSO, 2023).

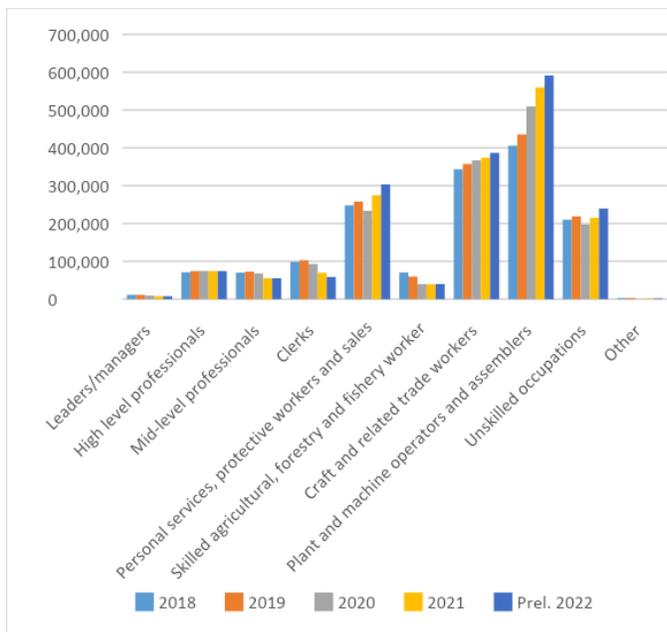


Figure 3: Number of laborers by types of occupations in Binh Duong (Unit: Person) Unit: Person

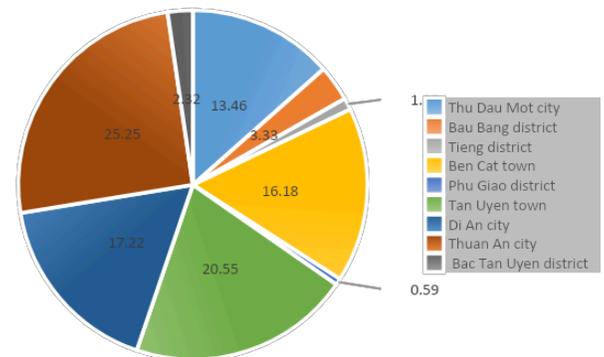


Figure 4: Number of laborers in enterprises by district

(Source: Binh Duong GSO, 2023)

The majority of laborers mostly work in towns and cities, accounting for 86% of the total. With respect to the workforce distribution among the districts, Ben Cat, Tan Uyen, Di An, and Thuan An cities employ the highest percentage of laborers, accounting for around 80% of the firm workforce (Figure 4). The percentage of laborers

employed by foreign and private companies is 96.94% (Binh Duong General Statistics Office, 2023). In 2021, manufacturing organizations are witnessing a decline in the quantity of their workforce (Figure 5).

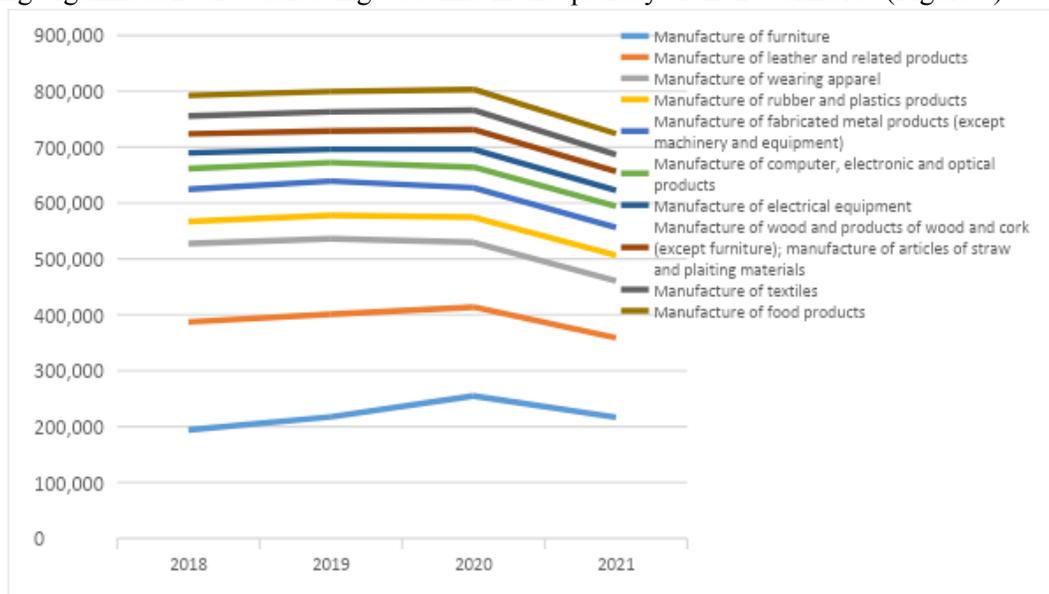


Figure 5: Number of laborers in manufacturing enterprises (Unit: person)

(Source: Binh Duong GSO, 2023)

4.2 . Multidimensional assessment of quality of life of Binh Duong laborers

Overall assessment

Multidimensional measuring is employed to examine the quality of life of Binh Duong laborers. Within this framework, the quality of life for laborers is determined by the level of satisfaction in relation to several aspects, such as healthcare, public services, infrastructure, education, training, local non-profit services, consumer goods, and the local socio-political and economic conditions.

According to the survey results, the accommodation aspect had the lowest level of satisfaction, scoring 2.56 out of 5 points, as shown in Figure 6. Aside from medical and health care (2.79 points) and local non-profit services (2.98 points), there are various additional aspects that do not reach the average rating of 3 points.



Figure 6: Perceived satisfaction of laborers in Binh Duong to quality of life

Note: Measure the perception of laborer satisfaction on a 5-level scale, from completely dissatisfied to very satisfied, corresponding to a score from 1 to 5.

Perceptions of life quality according to laborer characteristics

To examine potential gender disparities in perceptions of quality of life, a T-test for 2 groups was conducted. The results indicated that the P-values for all measured components exceeded the significance level of 0.05. This suggests that there were no statistically significant differences between male and female laborers in terms of their perceptions of quality of life.

Furthermore, to explore the potential impact of demographic factors on laborers' perceptions of quality of life, an ANOVA analysis was conducted. This analysis examined variations across groups based on education level, hometown, and age.

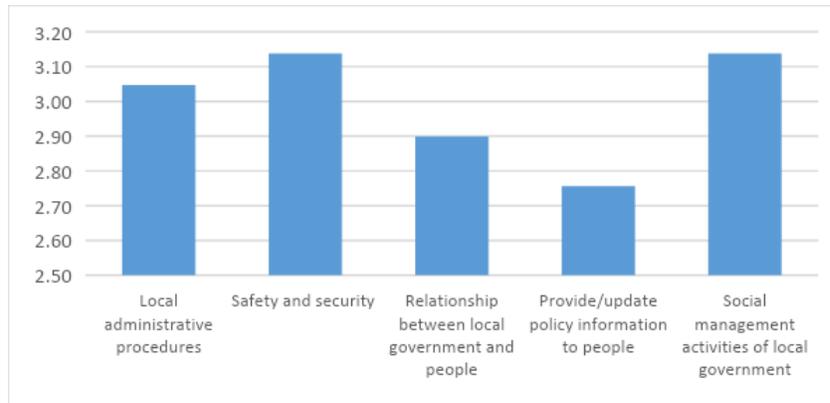
Regarding age, the results of the Levene test and F-test indicated non-significant differences in laborers' scores (P-value > 0.05). This suggests that age does not appear to have a substantial influence on how laborers perceive various aspects of their quality of life in Binh Duong.

Regarding the comparisons of laborers' perceptions of quality of life by hometown, the P-value obtained from the Levene test for housing and economic issues is less than 0.05, which is at a significance level of 5%. In order to analyze these two components, non-parametric tests are employed. The results of the F-tests and H-tests also indicate that the following contents differ statistically significantly: Housing concerns; Local political and social environment; Medical and health care concerns; Public service and infrastructure concerns; Education and training concerns; Housing concerns; Additional personal concerns. This study utilizes non-parametric techniques, such as ANOVA and Tamhane, to gain insights into the viewpoints of laborers from different places. Laborers hailing from the Southeast region, encompassing Binh Duong and its neighboring provinces, exhibited significantly higher scores across all dimensions of quality of life compared to their counterparts from the Southwest, Central, and Northern regions (P-value < 0.05). This finding suggests that geographic origin plays a crucial role in shaping the overall quality of life experienced by industrial workers in Binh Duong. Several factors may contribute to this disparity. For instance, laborers from the Southeast region may benefit from greater proximity to their hometowns, facilitating more frequent visits and stronger family ties. Additionally, regional differences in economic development, infrastructure, and social services may influence the quality of life experienced by migrant workers. To further investigate the underlying causes of these regional disparities, future research could explore factors such as income levels, access to healthcare, education, and social support networks. By gaining a deeper understanding of the factors that contribute to variations in quality of life, policymakers and employers can develop targeted interventions to improve the well-being of migrant workers from all regions.

To assess the potential impact of education level on laborers' perceptions of quality of life, a Levene's test was conducted. The results indicated that the variances in perceptions of economic and housing issues were not equal across different education levels ($p < 0.05$). Consequently, non-parametric tests were employed to analyze these two specific components. However, for the remaining components of quality of life, the variances were found to be homogeneous ($p > 0.05$) as determined by both F-tests and H-tests. This suggests that there were no statistically significant differences in perceptions of these components based on the laborers' educational background.

Laborers' perceptions of the local socio-political environment

Figure 7 provides a detailed measurement of the perception of laborer satisfaction with the local socio-political environment. The results show that laborers are least satisfied with the provision and updating of policy information (2.76 points on a 5-point scale) and the relationship between the government and the people (2.90 points). "Mostly dissatisfied" ratings for both of these contents exceed 40%. Furthermore, the percentage of respondents expressing "Mostly dissatisfied" satisfaction with regard to content concerning local administrative procedures is quite high (24.9%).



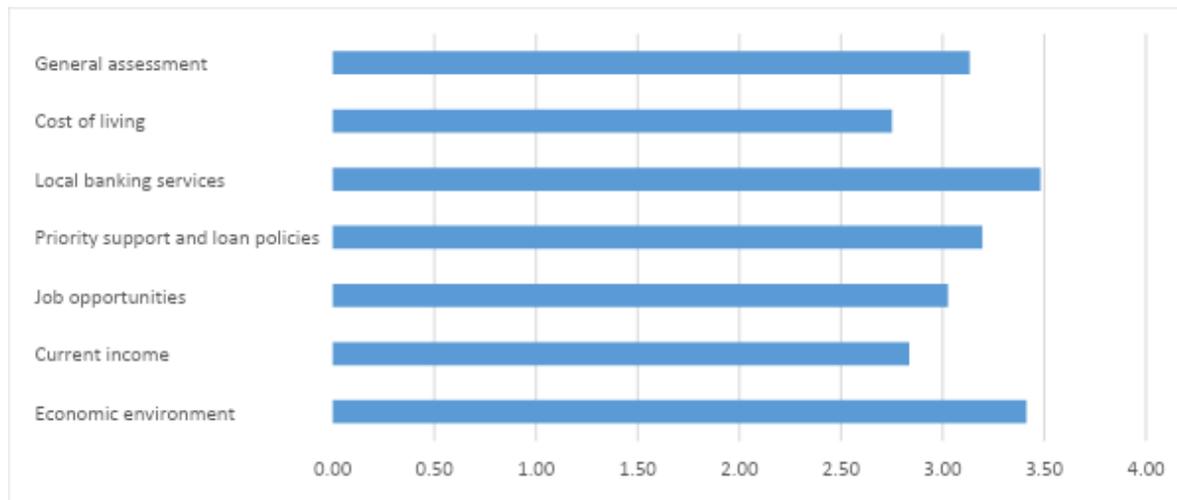
Note: Measure the perception of laborer satisfaction on a 5-level scale, from completely dissatisfied to very satisfied, corresponding to a score from 1 to 5.

Figure 7: Laborers' perceptions of the socio-political environment

Thus, issues related to the political environment such as administrative procedures, the relationship between the government and its citizens, and the provision of information and policies still do not meet the expectations of laborers. Some current administrative procedures still require a lot of paperwork, many trips, and sometimes a long wait. Besides, laborers often have little information about local policies.

Perceptions of the economic environment by laborers in Binh Duong province

The evaluation of laborer satisfaction with the local economic conditions is presented extensively in Figure 8. It is observed that living expenses (2.75 points) and income (2.84 points) are the aspects with the lowest level of satisfaction among laborers. Approximately 48.1% of respondents consider living expenses as "Mostly unsatisfied," while 32.3% describe income as "very poor." In addition, the aforementioned grade of 28.1% for work opportunities is relatively high.



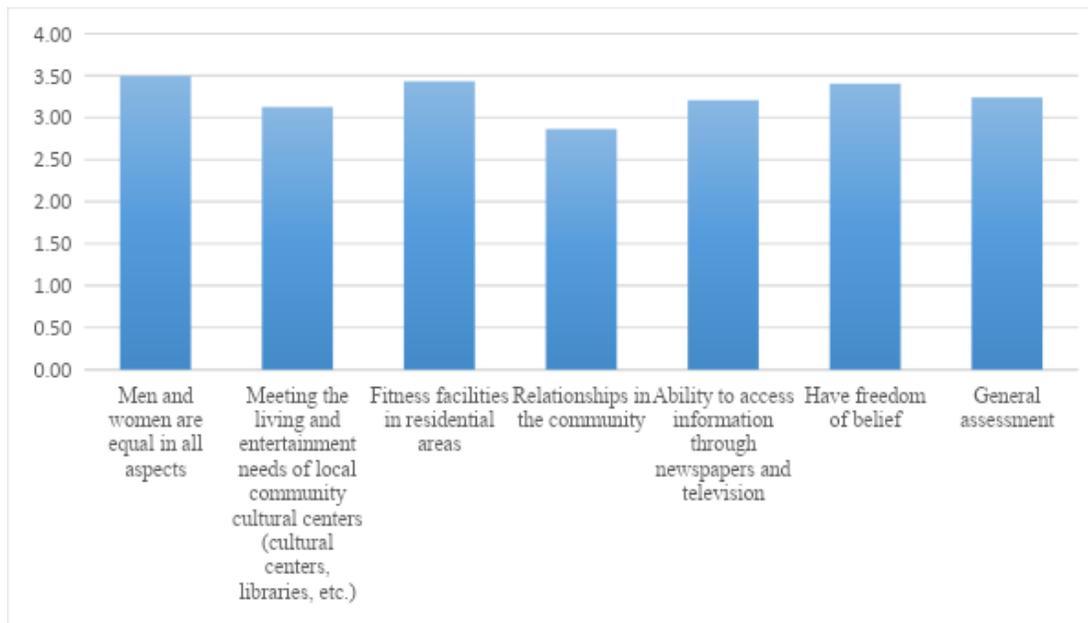
Note: Measure the perception of laborer satisfaction on a 5-level scale, from completely dissatisfied to very satisfied, corresponding to a score from 1 to 5.

Figure 8: Laborers' perception about economic environment

Thus, there is still a relatively high proportion of laborers who are not satisfied with issues of cost of living, income and job opportunities.

Laborers' satisfaction of cultural environment in Binh Duong

Regarding the perceptions of laborers' satisfaction with the local cultural environment, the research results indicate that although most laborers rated the cultural environment at an average level of 3 points overall, the assessment of health facilities in residential areas only reached 2.86 points (Figure 9). There are 32.3% of laborers rated these items below average (Very poor and mostly dissatisfied). Furthermore, a significant proportion of laborers, specifically 20.7%, assess the state of gender equality in all aspects as below average.

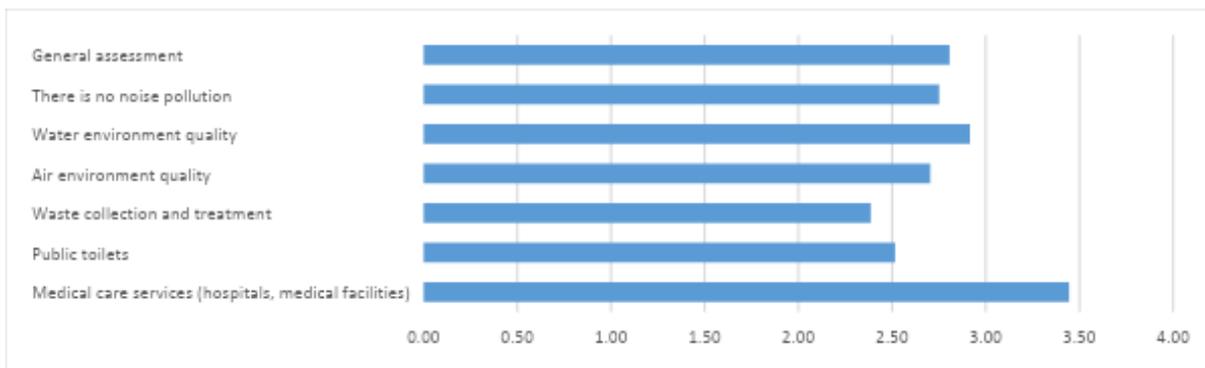


Note: Laborers' satisfaction on a 5-level scale, from completely dissatisfied to very satisfied, corresponding to a score of 1 to 5.

Figure 9: Laborers' satisfaction of cultural environment in Binh Duong

Generally, the laborers satisfaction with local medical and healthcare services was rated as less than 3 points on a 5-point scale. In particular, the issues of public hygiene and waste collection have below average ratings (very poor or mostly unsatisfied) at 55.9% and 69.8%, respectively. Besides, the issue of noise pollution and air pollution is also a matter of concern; these two contents are rated by 52.3% and 42.8% of laborers as very poor and dissatisfied.

Laborers' satisfaction of healthcare and medical services in Binh Duong



Note: Laborers' satisfaction on a 5-level scale, from completely dissatisfied to very satisfied, corresponding to a score of 1 to 5.

Figure 10: Laborers' perceptions about local medical and healthcare situation

Laborers often express dissatisfaction with healthcare and medical issues. The majority of public hospitals cater to a significant volume of people who receive medical treatment through their health insurance. Laborers frequently have significant waiting times for their turn to undergo examination, resulting in a substantial amount of time being wasted on medical evaluation and treatment at the hospital. However, they have no other option when they lack the financial resources to improve medical examination and treatment services at private and international institutions.

Laborers' perceptions of public services and infrastructure

For the public services and infrastructure sectors (Figure 11), laborers most appreciated postal services, telecommunications services and the system of parks and entertainment venues. All three of these contents scored

3.50 points (on a 5-point scale) or higher. In contrast, other contents such as employment support services and transportation systems were rated by laborers at the lowest level, the evaluation scores of these two contents were 2.57 points and 2.83 points respectively. The level of rating very poor or dissatisfied with employment support services is 61.4% and the transportation system is 43.3%.

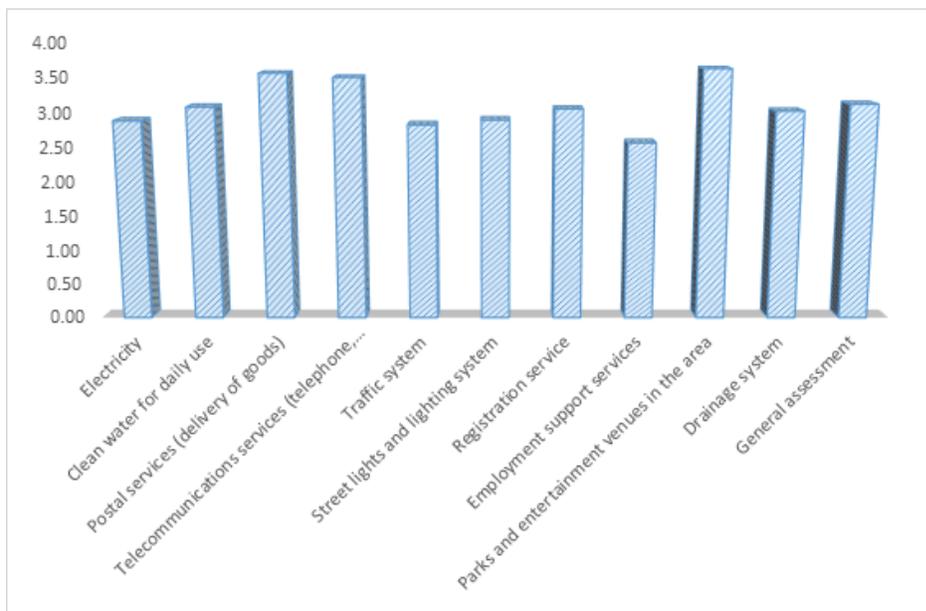


Figure 11: Laborers' satisfaction of public services and infrastructure in Binh Duong

Laborers' satisfaction of education and training in Binh Duong

Most laborers rank their satisfaction with education and training as above 3 points on a 5-point scale (Figure 12). 23.8% of laborers are dissatisfied with the capacity of vocational training facilities to meet their requirements, while a significant proportion (29.1%) of laborers continue to feel very poor or dissatisfied with learning opportunities.

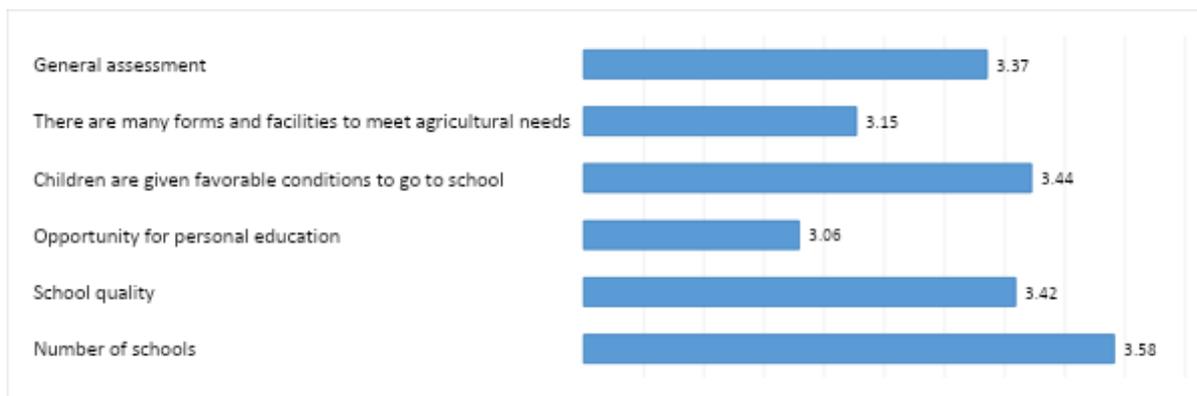


Figure 12: Laborers' satisfaction of education and training in Binh Duong

The local government always creates favourable conditions to admit laborers children in school-age to schools. More assistance is even provided to non-permanent residents.

Laborers' perceptions of local nonprofit services

Laborers' satisfaction scores with local nonprofit services are average (ranging from 2.82 to 3.20 points) (Figure 13). There is still a significant proportion of laborers who feel dissatisfied (very poor or mostly dissatisfied), especially the support and care services for the elderly and disabled (39.7%) and childcare services (31.2%).

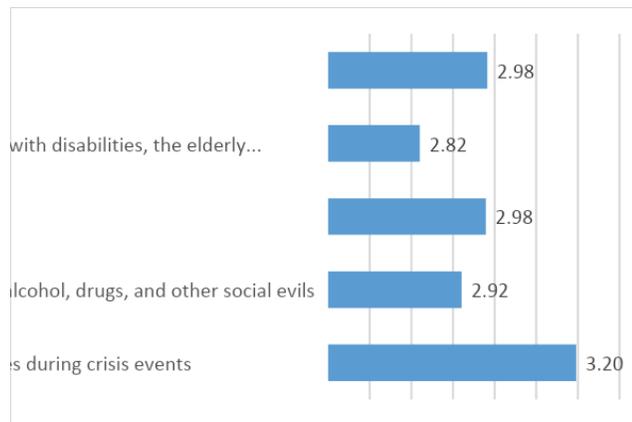


Figure 13: Laborers' perceptions about local non-profit services

Labors' perceptions of consumer goods

Most laborers are satisfied and very satisfied with the variety of goods and the transaction of goods. The laborers' purchasing power is constrained by their relatively low income, resulting in a restricted range of items available to them. The diverse assortment of affordable commodities from various sources in the market partially fulfills the consumption requirements of laborers. Furthermore, in close proximity to industrial parks and residential areas for laborers, one may frequently find a range of marketplaces that offer a wide selection of necessary commodities, hence minimizing the need for laborers to drive long distances in search of such things. Marketplace for purchasing, selling, and trading commodities. This also enhances laborer satisfaction in terms of consumption.

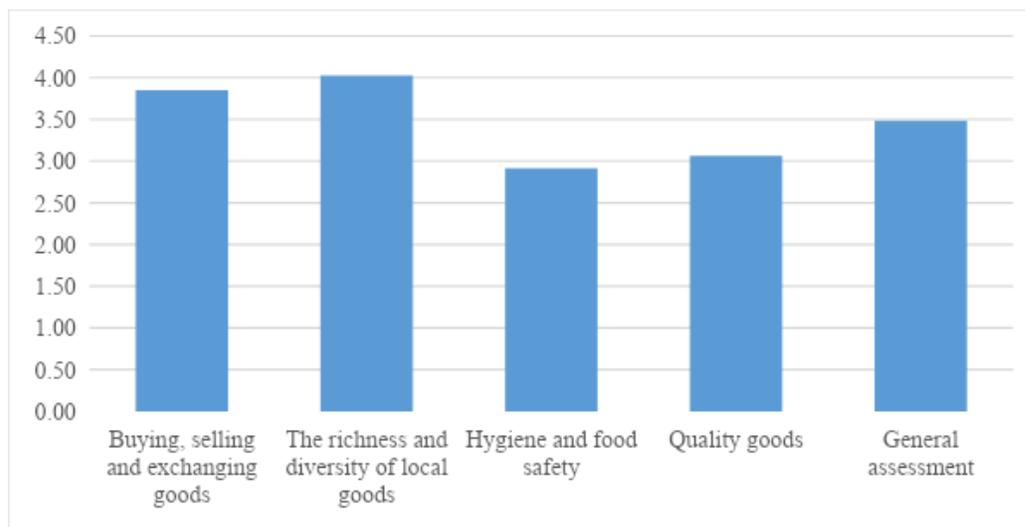


Figure 14: Laborers' perceptions of consumer goods in Binh Duong

However, the issue of food hygiene and safety still concerns many laborers. Specifically, up to 34.4% of laborers feel dissatisfied or very bad about this issue.

Binh Duong laborers' satisfaction of other personal issues

The majority of laborers expressed satisfaction with aspects of their personal lives, including spiritual life, social interactions, family life, and interpersonal relationships. These domains garnered satisfaction scores ranging from 3.5 to 3.6 points (Figure 15). However, a significant disparity emerged when evaluating aspects related to financial stability, employment opportunities, and training programs. A substantial proportion of laborers, ranging from 33.4% to 54.0%, expressed significant dissatisfaction or very poor satisfaction with these areas. This suggests that while laborers may be content with their personal lives, they face significant challenges in areas related to economic security and career development.

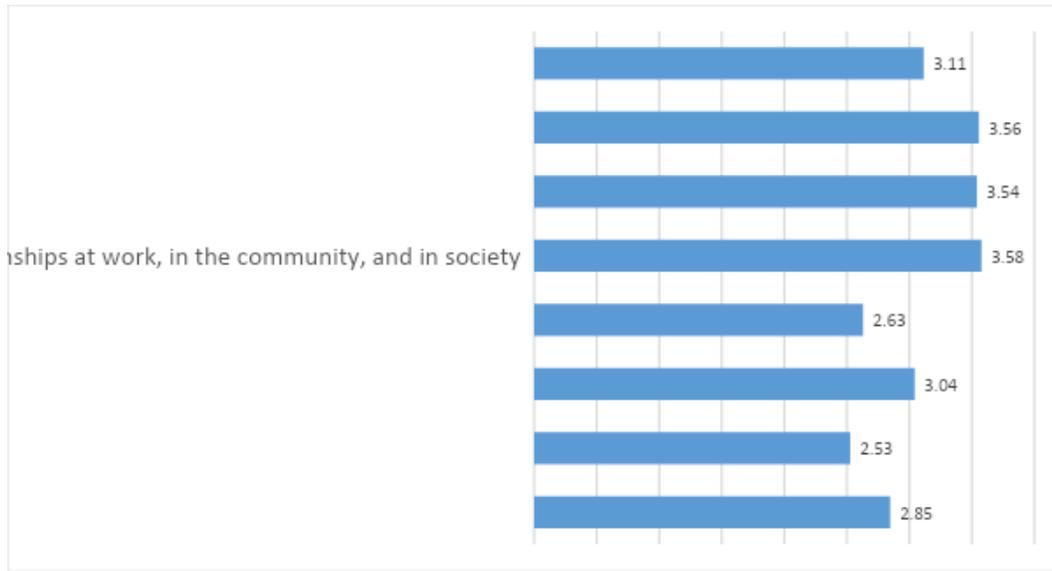


Figure 15: Laborers' satisfaction of other personal issues

Laborers' satisfaction of housing issues in Binh Duong

The laborers expressed significant dissatisfaction with housing conditions, as evidenced by a low average satisfaction rating ranging from 2.23 to 3.04 points (Figure 16 and table 3). In addition to housing quality, laborers are least satisfied (very poor or mostly dissatisfied) with other housing-related issues, such as: Local housing and land planning issues (60.8%); government support and attention to low-income housing (65.1%); and the cost of purchasing, selling, and renting homes and apartments (58.2%).

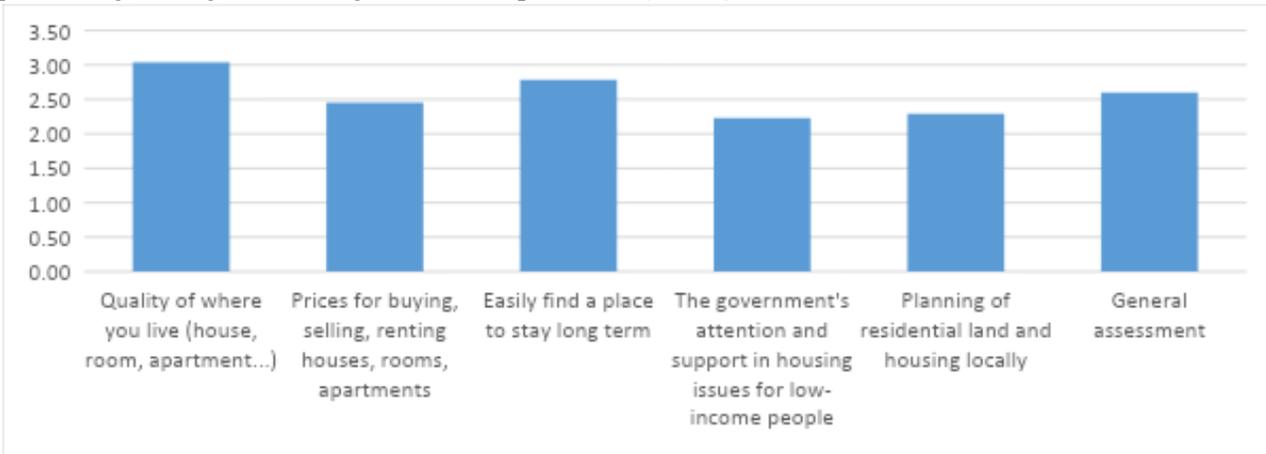


Figure 16: Laborers' satisfaction of housing issues in Binh Duong

Workers also express substantial dissatisfaction with housing issues (2.56 score over 5). Workers are currently expressing significant concerns regarding supporting policies and loans for the acquisition of social housing. The majority of laborers are not well-informed about loans or the processes involved in taking out a mortgage. Furthermore, the substantial annual escalation of real estate prices exacerbates workers' dissatisfaction, particularly when their pay remains relatively stagnant.

Table 3. Laborers' satisfaction of housing issues in Binh Duong

Items	Assessment				
	Very poor	Mostly dissatisfied	Normal	Satisfied	Very satisfied

Quality of where you live (house, room, apartment...)	7.4%	14.8%	47.6%	27.0%	3.2%
Prices for buying, selling, renting houses, rooms, apartments	19.6%	38.6%	21.7%	16.9%	3.2%
Easily find a place to stay long term	19.0%	7.4%	54.5%	14.3%	4.8%
The government's attention and support in housing issues for low-income people	28.6%	36.5%	21.2%	10.6%	3.2%
Planning of residential land and housing locally	25.4%	35.4%	28.0%	6.9%	4.2%

The substandard housing conditions, characterized by deteriorated facilities, contribute to worker dissatisfaction. Workers expect a cleaner and more spacious living environment at an affordable rental rate. However, at present, it is very challenging to locate suitable lodging. Labourers blame the local planning of residential land and housing.

The low satisfaction for accommodation can be explained from the type of ownership of the residential house. Table 2 shows that only a fifth of the respondents own a house while the majority is either living in a rented accommodation, living at a house belonging to relatives or acquaintances, or accommodation provided by the employer. Since nearly 80% of respondents are workers, we can assume that they account for the majority without house ownership. House ownership is an important factor for the living standard of the residents. According to Dang Thi Hoa et al (2020), house ownership highly correlates with the ownership of different home devices such as computer/laptop systems, electric water heater and air conditioning units. The presence of these home devices vastly improves the quality of life of the residents, which explains the dissatisfaction experience for those living in an accommodation to which they do not have the authority to install home devices. Secondly, the physical quality of accommodation for workers in Binh Duong Province would have an impact on the mental health of the residents, hence the satisfaction on housing conditions. Most of the workers in Binh Duong are migrants from other provinces. Without a direct family and having a moderate income, the workers tend to share their accommodation with friends or coworkers in order to reduce the rent. **They opt for affordable private rental housing, often built by local residents without proper planning or design (Hoa and Tuyen, 2021).** The accommodations are arranged in the form of a dormitory **and lack essential amenities like adequate open space,** meaning that the worker not only shares the private living space with friends or co-workers but also shares the entertainment, laundry, and cooking space with other residents. **While social housing initiatives exist, their high cost relative to market rates and average worker incomes limits their accessibility (Hoa and Tuyen, 2021).** The lack of affordable housing options is a serious problem for many migrant workers. The lack of privacy and constant exposure to neighboring social disturbance would put a toll on health issues (Argaw et al., 2021, Bui et al., 2021), exploitation and marginalization of workers (Sohaimi & Ramli, 2023). Local governments' failure to provide adequate housing support worsens the situation (Li & Zhang, 2011). The challenges of inadequate, unaffordable, and poor-quality housing significantly affect the well-being of workers, highlighting the need for comprehensive policy interventions that address housing rights and improve living conditions. Addressing these issues is crucial not only for the welfare of the workers but also for the overall socio-economic development of the province.

4.3 Laborers' life satisfaction and their intention to remain in the area

Laborers' satisfaction to the current living in the locality

Laborers evaluate all aspects of local life at 3.29 to 3.41 points (Table 4). Thus, the majority of laborers are content with their current living situation in the area. The level of satisfaction, however, is low when it comes to the specifics, ranging only from 5.3% to 9.5%. Meanwhile, between 18.5% to 20.1% of laborers are dissatisfied with their current situation.

Table 4. Binh Duong laborer's satisfaction of the quality of life in Binh Duong

Items	Assessment				
	<i>Strongly disagreed</i>	<i>Disagreed</i>	<i>Alright</i>	<i>Agree</i>	<i>Strongly agreed</i>

I am satisfied with my current life here	2.6%	15.9%	35.4%	40.7%	5.3%
I believe that the locality will develop more and make the quality of life better and better	4.8%	13.8%	27.0%	45.0%	9.5%
Life now is better than I expected	3.7%	16.4%	34.9%	37.6%	7.4%
Deciding to live and work here was the right decision for me	4.2%	14.8%	33.9%	38.6%	8.5%

A study found a substantial difference (p -value <0.05) in laborer satisfaction based on laborers' hometown (Table 5). Specifically, laborers from the Southeast region have a higher level of satisfaction than other regions. Furthermore, there are no statistically significant differences between the remaining comparison pairs, and laborers from the Northern region report much higher levels of satisfaction than those from the Central region (Table 6).

Table 5. Binh Duong laborer's satisfaction of the quality of life by different attributes

Characteristic	Comparison pair	Levene test	Anova / t test	
		<i>p.value</i>	<i>f/t</i>	<i>p.value</i>
Gender*	Male	0.524	-1.473	0.142
	Female			
Education	< High school	0.15	0.160	0.923
	High school			
	Vocational training and College			
	University			
Age group	<25 years old	0.414	0.928	0.428
	25 to 35 years old			
	36 to 45 years old			
	>45 years old			
Hometown	Southeast	0.484	5.556	0.001
	Southwest			
	Central			
	Northern region			

Note: * T-test

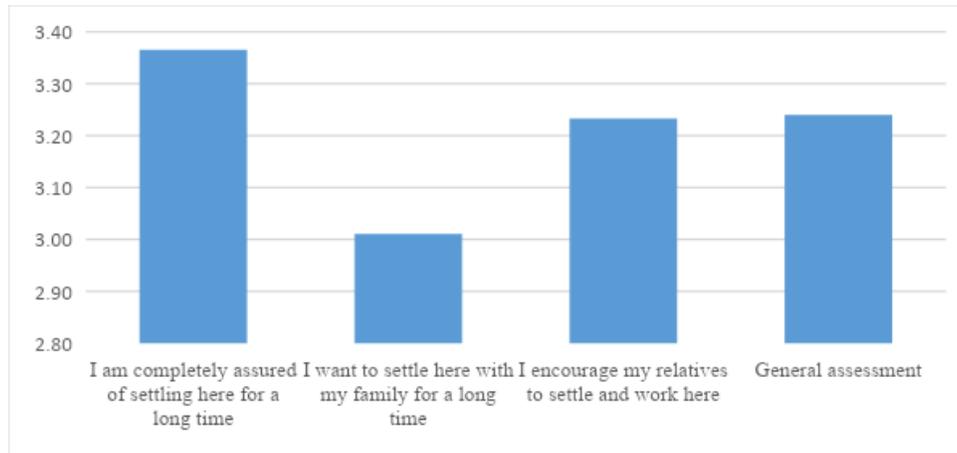
Table 6. Differences in satisfaction scores by hometown

Items	Region	Difference in rating (column-row)		
		Southeast	Southwest	Central
<i>Satisfaction</i>	Southwest	0.64*		
	Central	0.84*	0.20	
	Northern region	0.49*	-0.15	-0.35*

Note: * statistically significant difference at the >0.05 level

Laborers' intention of attachment to the locality

According to the survey's findings, laborers' ratings of their level of attachment to the community range from 3.01 to 3.37 points (Figure 18 and table 7). This indicates that they primarily have an average level of attachment to the community. Moreover, comparable to satisfaction, the percentage of laborers agreeing to a high level of commitment remains low ($<10\%$).



Note: Measure the laborer's attachment to the locality on a 5-level scale, from completely false to completely true, corresponding to a score from 1 to 5. The average score measures the level of satisfaction of laborers, the higher the average score, the higher the level of attachment to the locality.

Figure 18: Attachment intention of laborers to the locality

Table 7. Attachment intention of laborers to the locality

Items	Assessment				
	Strongly disagreed	Disagreed	Alright	Agree	Strongly agreed
I am completely assured of settling here for a long time	1.6%	12.2%	42.3%	36.0%	7.9%
I want to settle here with my family for a long time	0.5%	28.6%	48.1%	14.8%	7.9%
I encourage my relatives to settle and work here	1.6%	13.8%	51.9%	25.4%	7.4%

Moreover, the level of attachment to the community was evaluated in relation to a variety of laborer characteristics. The analytical results shown in tables 8 and 9 reveal that laborers from the Southeast region have a much higher level of attachment to their locale than laborers from the Southwest or Central regions. Moreover, statistically, the level of dedication exhibited by laborers in the Northern region surpasses that of the Central region. There are no statistically significant differences among the remaining comparison pairs.

Table 8: Attachment intention of labors to the locality by labors' attributes

Characteristic	Comparison pair	Levene test	Anova / t test	
		p.value	f/t	p.value
Gender*	Male	0.853	-0.273	0.785
	Female			
Education	< High school	0.416	0.350	0.789
	High school			
	Vocational training and College			
	University			
Age group	<25 years old	0.157	0.856	0.465
	25 to 35 years old			
	36 to 45 years old			
	>45 years old			
Area	South East	0.46	4.428	0.005
	Southwest			
	Central			
	Northern region			

Note: * T-test

Table 9. Attachment intention of labors to the locality by labors' originated region

Items	Region	Difference in rating (column-row)		
		South East	Southwest	Central region
Social and political environment	Southwest	0.46*		
	Central	0.65*	0.17	
	Northern	0.27	-0.19	-0.36*

*Note: * statistically significant difference at the >0.05 level*

The relationship between labors' satisfaction with current life and their intention of long-term attachment to the locality

To delve deeper into the relationship between life satisfaction and local attachment among Binh Duong laborers, a scatter plot analysis was conducted. This visual representation revealed a discernible positive linear correlation, suggesting that as life satisfaction increases, so too does long-term local attachment. The slope coefficient of 0.61 provides quantitative insight into the strength of this relationship. It indicates that for every unit increase in life satisfaction, there is a corresponding 0.61 unit increase in local attachment. This finding underscores the significant influence of life satisfaction on an individual's sense of belonging and connection to their current locality.

Several factors may contribute to this positive correlation. For instance, higher levels of life satisfaction may be associated with improved housing conditions, better access to healthcare and education, and increased social opportunities. These factors, in turn, can foster a stronger sense of community and belonging, leading to increased local attachment.

It is important to note that while this analysis provides valuable insights into the relationship between life satisfaction and local attachment, further research is needed to explore the underlying mechanisms and causal pathways. Longitudinal studies, for example, could help to determine whether changes in life satisfaction precede changes in local attachment, or vice versa. Additionally, qualitative research methods, such as in-depth interviews and focus groups, could provide richer insights into the subjective experiences and perceptions of Binh Duong laborers.

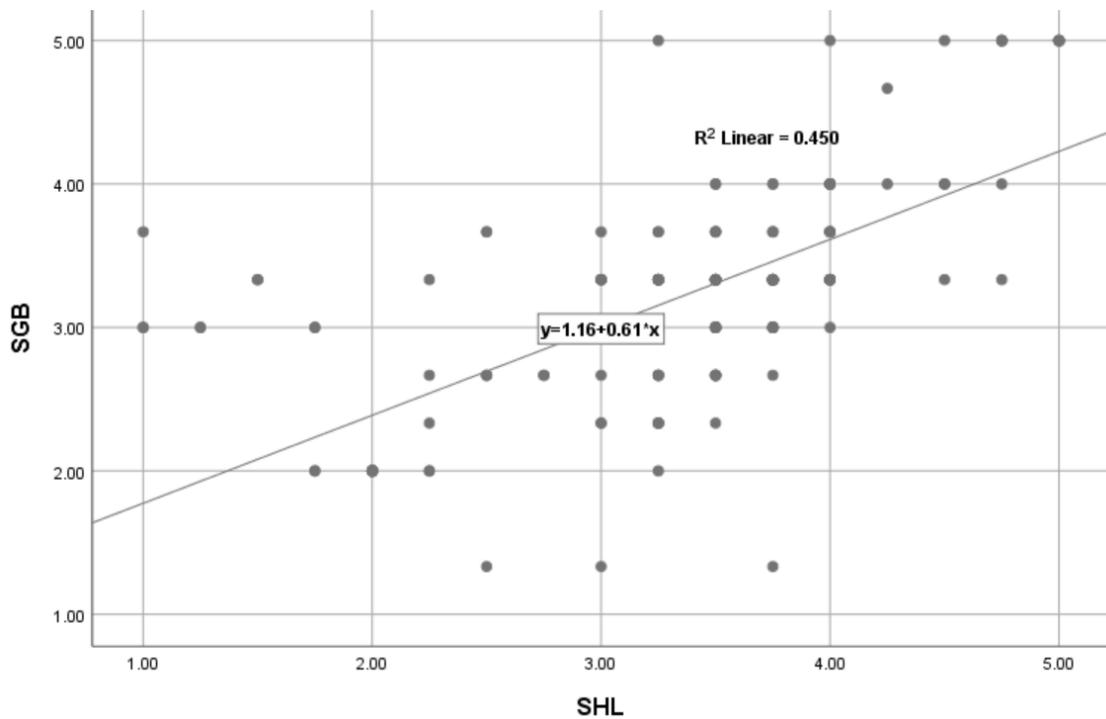


Figure 19: Relationship between laborers' satisfaction with quality of life and their intention of long-term attachment to the locality

5. Conclusion

Binh Duong province, a significant contributor to Vietnam's GDP, is characterized by rapid economic growth and a substantial population. However, the province faces challenges in terms of human capital, with a relatively low proportion of high- and mid-level professionals and a declining trend in this demographic. Additionally, while skilled laborers constitute approximately 23.5% of the workforce, a significant portion (63.5%) is employed in the industrial production and processing sector. The majority of laborers reside in urban areas, comprising 86% of the total workforce. Notably, over half of the population consists of migrant workers, underscoring the importance of enhancing their quality of life to foster retention.

To assess the quality of life of Binh Duong laborers, a multidimensional approach was adopted, encompassing various aspects such as healthcare, public services, infrastructure, education, training, non-profit services, consumer goods, and socio-economic conditions. While the overall satisfaction with the current living situation is relatively high, specific areas exhibit lower levels of satisfaction. Notably, housing and, to a lesser extent, healthcare and non-profit services emerged as significant areas of concern. Furthermore, several other aspects failed to achieve an average satisfaction rating of 3 points.

In terms of local attachment, the majority of surveyed laborers demonstrated an average level of connection to the community. This suggests that while many workers may be satisfied with their current living conditions, they may not have developed strong emotional ties to the locality. This could be due to various factors, such as limited social interaction with local residents, or a lack of opportunities for community involvement. To foster a stronger sense of belonging among migrant workers, it is crucial to implement strategies that promote social integration and community engagement. This could involve organizing cultural events, establishing community centers. By creating a more inclusive and welcoming environment, it may be possible to enhance the local attachment of migrant workers and improve their overall quality of life.

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