Petrochemical employees’ vocational alienation  
-Kaohsiung County

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Abstract: - This study was to explore vocational alienation of petrochemical employees and selected variables and refined the instrument referring to a cautiously literature review. A survey was conducted/implemented to collect data from 520 samples in Kaohsiung County. According to the investigation, the age, position, seniority, and company scale were found to have significant differences on employees' vocational alienation while gender, qualification, and labor unions were not. Employees of middle age reached significant higher scores in the survey. Clerks also revealed higher vocational alienation than technicians, managers, and others. Six to ten-year employees showed higher vocational alienation. In terms of industrial magnitude, employees in the companies with 61-90 employees again reached higher scores in the survey.

Key-Words: - Vocational alienation, Petrochemical industries, Petrochemical employees

1 Introduction
Due to the high correlation in the field of petrochemical industry with other fields, the development of petrochemical industry has been becoming one of the most important parts in the government of Taiwan’s economic plan and development policy since early 1960s. It has been more than 30 years since the Petrochemical industry plants was established in late 1970s. Due to some geographical advantages including closing to ports, and large hinterland, Kaohsiung County became a place of strategic importance in the field of petrochemical industry in Taiwan. The works are mainly distributed to Industrial Districts such as Lin-Yuan, Ren-Wu, Da-She. The rejected water and gas from the petrochemical works are the main factors of sever pollution in Kaohsiung county. In fact, most of the pollutions refer to human errors, including lack of expertise and concepts of occupational safety; in addition, vocational alienation is also one of the most important factors. The purpose of this study tries to figure out the situations of petrochemical employees’ vocational alienation including personalities, job attitudes, and plants in Kaohsiung County.

2 Theoretical Background and Research Framework Definition
The alienation is a psychological phenomenon which is concerned by sociologist. Sociologists are emphasizing the relation between the alienation, and the psychological behavior or social phenomenon whenever they are describing anxiety states, conformity, apathy, deviant behavior, social disorganization, and escape uses of mass. While the society and culture are changing rapidly, the concept of alienation is not limited to one specific subject. Instead, it combines several sciences into a subject.
Seeman (10) believes that alienation is a multidimensional concept. He divided alienation into five independent factors: powerlessness, meainglessness, anomie, isolation, self-separated; in addition, he believes each of factors can be judged by attitudinal scale.
Maddi, Kobasa, and Hoover (7) believe that analyze alienation from the two points of view. One is types, and the other is objects. Both of them are needed when doing alienation analysis. In addition, they used two-dimensional framework to study alienation and there are four
dimensions to measure alienation framework including powerlessness, nihilism, adventurousness and vegetativeness.

Davids (2) separated alienation into five dimensions including egocentricity, distrust, pessimism, anxiety, and resentment.

Streuning and Richardson (12) utilized the factor analysis to get five positive dimensions such as emotional distance, authoritarianism, purposelessness, self determinism, family authority. Alienation has three negative dimensions such as trust & optimism, conventionality, religious orthodoxy. Miadleton (8) analyzed the alienation into five parts including powerlessness, anomic, meaninglessness, cultural estrangement, and social estrangement.

Aiken and Hange (1) investigated that individual in groups will feel estrangement with work and expressive relations. The employees who are involved or alienated to their company can highly affect their company. If employees are attractive to the company, it will indicate that employees have positive attitude on their duty. On the other hand, if employees feel alienated from their company then they have negative attitude on their duty. Therefore, the alienation of employees is related to their job satisfaction.

This study focuses on empirical study. In order to help the investigation going smoothly, we have to do operational definition for alienation. Hence, transform the conception of alienation into varieties to practically measure for discovering the relations between alienation and other varieties. In alienated operational definition and empirical measurement, this study consults Seeman’s multidimensional concept (10) and Maddi’s two-dimensional framework (7). The vocational alienation is divided into five parts including powerlessness, lack of fulfillment, meaninglessness, anomie, and adjustmentlessness. Petrochemical employees’ dimensions have seven parts including gender, ages, education background, seniority, service, whether joining labor union, and scale of plants.

3 The Relationship between Petrochemical employees’ attribute and vocational alienation

This study talked over petrochemical employees’ attribute and vocational alienation based on individual characteristic, positional characteristic, and environment of plants. Moreover, individual characteristics branches into three options: gender, ages, and education background; positional characteristic branches into two options: seniority and position; environment of plants branches into two options: whether joining labor union and scale of plants.

Erikson (3) brought up a theory called identity crisis. He believes that three elements are implicated when individuals' personal sameness are forming. First, individuals should have personal sameness and continuity. In other words, basically, every individual is the same person they were. Second, the people around individuals also understand that they are personal sameness and continuity. For example, teenagers need to be identified by others; if they cannot have an orientation towards self-concept and social visualization, they will fail in developing a stable feeling of self-concept due to suspicion, confusion, and emotionless. Third, individuals' self-concept needs to be proven by others' proper reaction. Individuals can have confident when others agree with their opinion.

Schiamberg (9) mentioned to knowing the other side of self-integration, role confusion, help us understand the idea of identity formation. According to Erikson’s Clinical experiences, there are two characteristics in role confusion. The first one is “break down.” It is a severe identity disturbance. It is normally happened when teenagers have to deal with problems like job choosing and self-contribution to the society. The second one is “true engagement.” When teenagers lack of identity complex, they will feel role confusion which is the root of alienation. According to the theories above and based on Erikson’s theory, identity complex, this theory explains that all results from petrochemical employees are confirmed by explained variable. Such as whether they have ability to change their working environment or not, they have some contributions to their company and so on. It
talked over are there any alienation between different characteristics or not. Hence, this study implied the following hypotheses:

H1: Is there significant difference between different catachrestic of labors in petrochemical field?
H1a: Is there significant difference between different sexes of labors in petrochemical field?
H1b: Is there significant difference between different ages of labors in petrochemical field?
Hic: Is there significant difference between different education backgrounds of labors in petrochemical field?

Fromm (4) addressed an idea called individualization. He claimed individualization might produce two results. One is submission that back to childhood with parents’ origin-relation; Moreover, it can develop four kinds of unsound personality such as receptive type, exploitative type, hoarding type and marketing type. The other is creativity relationship between human to human and human to nature which is called true love. 

In expectation theory by Robbins (11), it defined that people work hard is for benefits and it’s why the job is attractive. Meanwhile, people deem the more hard-working; the more rewards one can get. Hence, this study presents an examination on seniority to the labors in petrochemical industry field’s vocational alienation, in order to know whether vocational seniority and expectation theory are related or not.

H2: Is there significant difference between different positional characteristics of labors in petrochemical field?
H2a: Is there significant difference between different positions of labors in petrochemical field?
H2b: Is there significant difference between different seniority of labors in petrochemical field?

In the view of sociology, confliction includes opposition, scarcity, and blockage. Society is composed of many conflicts of interests, groups, or classes. The society has no harmony instead of continuous conflicts. Some classes possess more rights than others and they also share more benefits than other does. This is how the conflict happened.

According to Jourard’s (5) view of Humanism psychology, it considers that one becomes self-alienation because one is alienated by others and lack of open and straightforward attitudes are also the main reason which cause alienation. Jourard (6) also mentioned the one who is adjustmentlessness neither know himself well nor acquaintance from others. Moreover, others become a pressure that directly influences the extent of alienation. His alienation stresses on using open and straightforward attitudes to face external environment and achieve self-actualization. Furthermore, in the views of changing society function and the view of history developing, it defines the social structures of human history into three parts including pre-industrial age, middle industrial age, and post-industrial. In the pre-industrial age, people feel lesser alienation due to the unobvious social stratum and people’s independence. Therefore, people hardly feel alienated. The social segregation and bureaucracy was growing in the middle industrial age whereas social integration is not high. Then people feel more alienated. In the post-industrial age, the modern technology, computerized, and automation are appeared. Therefore, people can have more time to do activities. Consequently, they feel lesser alienated. Since Taiwan government declared martial law, the democratization and economical grow freely and stably. The only pressure which comes from the environmental controversial issues made the petrochemical industry stressful.

According to the theory above and based on the social-conflict theory and alienation theory made by Jourard, this study indicated the influences that whether joining the union or not for vocational alienation. Moreover, this study describes how the structure of the society is changing based on changing
theory. Moreover, the alienation of petrochemical employees in Kaohsiung County is analyzed by whether the system of the company is institutionalized or not and whether the disadvantages can be proved or not.

Hence, this study implied the following hypotheses:

H3: Is there significant difference of the vocational alienation between the petrochemical employees in different environment of works in Kaohsiung County.

H3a: Is there significant difference of the vocational alienation between the petrochemical employees whether joining the labor union or not.

H3b: Is there significant difference of the vocational alienation between the petrochemical employees in different scale of plants.

4 Data Collection and Samples
This study used “survey research” to confer alienated situation in the labors who do their duties on petrochemical industry plant. Therefore, the sample survey focus targets which all come from the filed. In Kaohsiung County, there are 163 petrochemical industry plants. In order to make the samples representative, the target focuses on managements, technician, salesmen, and other positions. The number of samples is depended on the scale of plant. The number of responses is 520 and the response rate is about 71.23%.

5 Variable Definition and Measurement
The target focuses on the labors of petrochemical industry field in Kaohsiung County. The attribute varieties of the labors are divided into the following seven elements.

1. Gender: Male and Female
3. Educational background: high school, vocational high school, five-year college, Bachelor, Master, Doctor.
4. Labor Union: whether joining or not.
5. Positions: managements, technical staffs, salesmen, and other positions.
6. The scale of plant: staffs below 30, between 31-60, between 61-90, over and above 91.
7. Seniority: below 5 years, between 6-10 years, 11-20 years, 21-30 years, 31-35 years.

Vocational alienation variety is divided into five parts including powerlessness, lack of fulfillment, meaninglessness, anomie, and adjustmentlessness in this study.

1. Powerlessness: It means that one is limited by external environment and one feel helpless and insignificant. For example, one, as a labor, is always limited and guarded and do not have any chance to show their ability.
2. Lack of fulfillment: It means that one cannot be identified by others even if they work very hard. For example, all of the achievements are belong to superintendent.
3. Meaninglessness: It means that one’s behavior has no meaning and goal. They live their live repeatedly and with no certain life-goal. For instance, they distribute themselves for their boss but they only get the wage.
4. Anomie: It denotes some labors do things step by step and follows the order made by superintendent. However, in this way, they just get unfairly treatment. For instance, labors who work very hard have more workload than others. On the other hand, the labors who dawdle in their work-time rarely get important duties.
5. Adjustmentlessness: It means that labors are unsatisfied with the whole situations when they are working. So, this unsatisfied emotion leads them to an unhealthy condition and the will of quitting the job.

Vocational alienation variety is divided into five parts including powerlessness, lack of fulfillment, meaninglessness, anomie, and adjustmentlessness in this study.

6 Results and Discussion
The table of vocational alienation is divided into five factors and total thirty five subjects.
results indicated that internal consistency (Cronbach’s α) is 0.90. Questionnaires are analyzed by SPSS/PC software.

1. **There isn’t an obvious difference between different genders, education background, and whether joining labor union or not.**

   This study indicated that the labors of petrochemical industry in different education background do not have a big difference in their scores. The PhD. has the lowest alienation because they are usually in a leader position and they are closed to the representing capital.

2. **The labors who are at different positions reach the standard of vocational alienation and adjustmentlessness in petrochemical industry in Kaohsiung County.**

   This study indicated in adjustmentlessness that the technicians’ feeling of adjustmentlessness is higher than that of management. On the whole, analyzing different positions in petrochemical industry, the sequence of vocational alienation degree from the highest to lowest is salesmen, technicians, and managements. The reason might be that petrochemical industry is more dangerous business than others. The salesmen’ vocational alienation is the higher than that of the technicians and managements, because they are not only transport chemical materials, but they are under great pressure of performance value. So their vocational alienation is higher than other positions. The second highest is technicians, while they are often exposed to some accidents like human errors, mechanical failure. However, the managers and others (purchaser) who are lesser alienated is because they are far away from workplace. Therefore, they feel less alienated. It is important to increase employees’ expertise because it can help increase the industrial safety. If accidents happened, it would be very serious and it might have low probability but high consequences.

3. **The vocational alienation differences between different ages of petrochemical employees.**

   According to this research, the petrochemical employees have different ages, so they have different kinds of vocational alienation in vocational alienation, powerlessness, lack of fulfillment, anomie, meaninglessness which reach the standard. Especially, the workers’ age between 31-40 years get highest scores. However, the works’ age between 51-60 years get lowest scores. In other words, the alienation of workers between ages of 31 and 40 is higher than that between 41 and 50 and between 51 and 60. The alienation of workers between 21 and 30 is higher than that between 41 and 50, and has reached to a certain level. Therefore, the H1b hypothesis is proved the existent connection between ages and alienation. The levels of alienation will decrease accompany with ages. That is to say, younger worker’s alienation is higher than the elder’s. Youngsters have a higher expectation of the freedom and the meaningful work, so they feel more alienated. The workers between ages of 31 and 40 are usually families’ pillar. They have to absorb the pressure of family, and they can’t have any serious accidents. As a result, in order to reduce the alienation, the employer should make a higher insurance to protect the rights of the workers and raise their safety.

4. **The vocational alienation differences between different seniorities of petrochemical employees in Kaohsiung County.**

   According the research, the levels of alienation between the seniorities of petrochemical employees in Kaohsiung County have notable differences in the factors of the alienation. It differs from the sense of vocational alienation, powerlessness, lack of fulfillment, meaninglessness, anomie, and adjustmentlessness. The record shows that the seniority between 6 to 10 years employees have the highest alienation, as well as those who below 5 years or work for 21 to 30 years, get the lowest rank of the alienation. The employees who work over 30 years have obviously meaninglessness. Hence, different seniorities of petrochemical employees have more vocational alienation which was proved in this study.
The level of alienation between the employees will go down with their seniorities. Experienced employees have less alienation because they are able to adjust the attitude on their jobs. However, due to the petrochemical policies in Taiwan, the employees of seniority between 6 to 10 years are considering switching to another line of profession or continuing the original job. As a result, they feel more alienated than that have more years of experience. To reduce their alienation, the employer should let employees decide their own methods to complete their works by carrying out the job enlargement, and let them try different works.

In addition, employers should found a sound system of precaution in petrochemical industry field. The vocational alienation might be reduced by accomplishing the methods above. Furthermore, the employer should give the seniorities pension and a chance to retire ahead of time, in order to renew the work force.

5. The vocational alienation differences between different scales of plants of petrochemical employees in Kaohsiung County.

According the research, the levels of alienation between employees in different scale of plants have notable dissimilarities in the factors of the alienation, the sense of powerlessness, meaninglessness, and adjustmentlessness. As a result, the appearance proves the H3b hypothesis of the research. The scale of plants have the number of employees between 61 to 90 are worse than that have more than 90 employees in the factors of meaninglessness and adjustmentlessness. The reason might be the centralization of the employers because most of the employees don’t have opportunities to participate in the administrative decisions. In other words, employees feel less alienated in participative leadership, whereas those in directive leadership have the highest alienation. We should undertake five core dimensions in order to solve this problem: multi-skilling, task identity, task significance, autonomy and feedback. Besides, we should concern more about the BPR (business process re-engineering), which is a new trend of management theory. By means of the flexibility and the humanity to achieve the workers’ advance and progress by planning research and studying activities. In this way, employees can improve their imagination and knowledge and lower their senses of alienation. On the other hand, employers should establish a carrot-and-stick leading style and a good relationship to set up a peaceful working atmosphere. In this way, employees will have better performance and lesser alienation.
Table 1. The results of the test value

<table>
<thead>
<tr>
<th></th>
<th>Gender (t value)</th>
<th>Ages (F value)</th>
<th>Education (F value)</th>
<th>Position (F value)</th>
<th>Seniority (F value)</th>
<th>Labor union (t value)</th>
<th>Plant Scale (F value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powerlessness</td>
<td>0.03</td>
<td>5.20</td>
<td>0.72</td>
<td>1.28</td>
<td>4.75</td>
<td>-0.26</td>
<td>2.94</td>
</tr>
<tr>
<td>Lack of fulfillment</td>
<td>-1.24</td>
<td>5.63</td>
<td>2.69</td>
<td>0.67</td>
<td>4.66</td>
<td>-0.40</td>
<td>0.50</td>
</tr>
<tr>
<td>Anomie</td>
<td>-1.87</td>
<td>7.89*</td>
<td>1.37</td>
<td>0.53</td>
<td>4.70*</td>
<td>-0.50</td>
<td>2.32</td>
</tr>
<tr>
<td>Meaninglessness</td>
<td>-1.67</td>
<td>3.4*</td>
<td>3.10</td>
<td>2.43</td>
<td>5.00*</td>
<td>1.09</td>
<td>2.96</td>
</tr>
<tr>
<td>Adaptlessness</td>
<td>3.71*</td>
<td>1.57</td>
<td>1.75</td>
<td>9.89*</td>
<td>3.04*</td>
<td>0.89</td>
<td>4.65*</td>
</tr>
</tbody>
</table>

Note: The measurement of the questionnaire items in this study was with a five-point Likert scale from 1 to 5. * means the p value <0.05.

References:


